

# National Marine Sanctuary Program



## Research Coordinators Meeting 2004

Hosted by the Channel Islands National Marine Sanctuary

Held in Santa Barbara and  
At the University of California Natural Reserve System  
Santa Cruz Island Reserve

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February 2-6, 2004

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## Agenda

### DAY ONE: Monday, February 2 - Chase Palm Park Center, Santa Barbara

- 3:00 PM Welcome, Introductions, Overview, Objectives, and Materials  
3:15 PM Annual Report by the Program Coordinators for the NMSP/NCCOS Long-Term Partnership: FY03 – Mark Fonseca, Steve Gittings

### DAY TWO: Tuesday, February 3 - Chase Palm Park Center, Santa Barbara

- 8:00-8:30 Status of NMSP Operations & Initiating Regional Observing Systems – Paul Orlando  
8:30-12:00 Marine and Aviation Operations – Dana Wilkes, Matt Pickett, and John Adler (AOC)  
12:00-1:00 Lunch - Channel Islands National Park, and the new Ocean Parks Strategy - Gary Davis (Channel Islands National Park)  
1:00-4:45 Monitoring Session  
• System-Wide Monitoring Framework – Charly Alexander, Steve Gittings  
• The NODC Archive Management System and SIMoN – Steve Rutz  
• The SIMoN Website as a Tool for Sharing Monitoring Information - Andrew Devogelaere, Steve Lonhart, Josh Pederson, Chad King  
• Merging Databases for Use in Management Decisions: A Case Study of Marine Mammals in the SBNMS – Dave Wiley  
4:45-5:00 Island Logistics – Sarah Fangman  
7:00-9:30 Evening Session on Census of Marine Life and National Marine Fisheries Service Issues – Upham Hotel – Catherine Marzin, Trevor Spradlin

### DAY THREE: Wednesday, February 4 – UC Reserve Station, Santa Cruz Island

- 7:15 a.m. Meet at Santa Barbara Harbor, Marina-3 end tie  
8:00 a.m. Depart for Santa Cruz Island aboard the RV *Shearwater*  
11:00 a.m. Arrive at Prisoner’s Harbor, Santa Cruz Island and Transport to UC Santa Cruz Island Reserve  
2:00-3:30 PPBS: the Facts, the Fiction, and What’s Still Unknown - Paul Orlando, Christos Michalopoulos  
3:30-5:30 Island Tour with Resident Director – Lyndal Laughrin  
6:00-7:30 Science Staff Updates – Steve Gittings

### DAY FOUR: Thursday, February 5 - UC Reserve Station, Santa Cruz Island

- 7:30-10:00 Field Trip – Orienteering - Ben Waltenberger, Dave Lott  
10:00-12:00 West Coast Regional Observing System – Steve Gittings, Charly Alexander, Paul Orlando  
12:00-1:00 Lunch Presentation – Summary of “Constituents Workshop: Assessing the Health of Coral Reef Ecosystems in the Florida Keys Using an Integrated Molecular Biomarker System” – Brian Keller  
1:00-2:00 West Coast Regional Observing System  
2:00-3:30 Partnering Updates and Plans  
• USGS/NMSP Joint Seabed Mapping Initiative - Christine Taylor  
• Reef Environmental Education Foundation – Steve Gittings for Christy Pattengill-Semmens  
• Implementing the NMSP/NURP Centers Agreement - Brad Barr (submitted remarks)  
• SPLASH – Sarah Marquis  
• National Park Service – Gary Davis  
3:30-5:00 IMaST (Information Management and Spatial Technology) - Dave Lott, Christine Taylor, Ben Waltenberger

### DAY FIVE: Friday, February 6 - UC Reserve Station, Santa Cruz Island

- 8:30-9:30 Ocean Exploration – John McDonough  
9:30-10:30 Integrated Ocean Mapping – John McDonough  
10:30-11:00 Communications - Media Opportunities – Sarah Marquis  
11:00-12:00 External Funds and Leveraging – Charly Alexander  
2:30 p.m. Depart Santa Cruz Island  
5:00 p.m. Arrive at Santa Barbara Harbor
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**National Marine Sanctuary Program  
Research Coordinators Meeting  
Monday, February 2 through Friday, February 6, 2004**

**INTRODUCTION**

The fifth meeting of the research coordinators of the National Marine Sanctuary Program (NMSP) was held February 2-6, 2004 in California. The first two days of meetings were held at the Chase Palm Park Center in Santa Barbara. A number of key research partners also attended, including representatives of the National Centers for Coastal Ocean Science (NCCOS), the National Ocean Data Center (NODC), NOAA's Ocean Exploration program (OE), the National Marine Fisheries Service (NMFS), the National Park Service (NPS), and the Reef Environmental Education Foundation (REEF). On the third day, the research coordinators and several of these guests enjoyed the generous hospitality of the University of California Natural Reserve System Santa Cruz Island Reserve on property owned and managed by The Nature Conservancy. The group stayed in housing at the UC research station for the second half of the week. A combination of field activities, meetings, and informal discussions allowed attendees to plan for upcoming science activities and build or enhance partnerships. Also in attendance were NMSP staff working on media and outreach programs. They addressed opportunities that might allow better dissemination of science information to the public. Reserve Director Lyndal Laughrin escorted the group on a driving tour of the rugged island, making numerous stops to teach about the island's unique geology, flora, fauna, and human history. And lively discussions at the end of the day around a warm campfire took some of the chill out of the evening air and allowed everyone to get to know each other a little better.

A major theme that carried through the meeting was the implementation of activities related to the System-Wide Monitoring Program. Consistent with the principles outlined in the program's framework document, a regional observing network for the west coast will be planned in coming months. The network will both support on-going monitoring in the sanctuaries and contribute to other regional observing activities. It will also utilize, to the extent practical, existing observing networks for data collection through cooperative partnerships with regional institutions and other federal programs. Several sessions served as opportunities to do some initial planned for this effort.

Other meeting sessions included one focused on updates of the NMSP/NCCOS relationship, whereby funds provided by the NMSP are used to support sanctuary related science directly and by leveraging external funds. Another involved breakout groups to plan for and coordinate NOAA vessel and aircraft operations over the next two years. An evening session provided for discussion about issues that require coordination with NMFS. Trevor Spradlin, from NMFS Office of Protected Resources led that session. Paul Orlando brought NMSP staff up to date on the implications and impacts of the new Planning, Programming, and Budget System (PPBS). Gary Davis outlined a host of opportunities for collaboration with the National Park Service. John McDonough did the same for OE. A session on information management for spatial technology set the stage for an upcoming evaluation of field capabilities and needs in this area. Finally, Charly Alexander led a discussion of the need to better track and respond to opportunities for external funding within and outside NOAA.

Three awards were presented to recognize outstanding service. Mark Fonseca received an award for his leadership, dedication and hard work in ensuring the continued success of the National Marine Sanctuary Program/National Centers for Coastal Ocean Science partnership. Sarah Fangman was recognized for her extraordinary effort in bringing the R/V SHEARWATER on line to support research in the Channel Islands and other west coast National Marine Sanctuaries. Sixteen people were recognized as a team for superb effort in developing the Sanctuary Integrated Monitoring Network and launching the program's website in 2003.

Below is the list of meeting attendees, as well as extended descriptions of these sessions and other meeting activities. This report is also available as a pdf document on the Special Offering page of the NMSP website: <http://sanctuaries.noaa.gov>.

**Attendees and Contact Information:**

	<b>Last</b>	<b>First</b>	<b>Affiliation/Location</b>	<b>Email</b>
1	Alexander	Charles	NMSP/Silver Spring	charles.alexander@noaa.gov
2	Bowlby	Ed	Olympic Coast NMS	ed.bowlby@noaa.gov
3	Chow	Malia	NW Hawaiian Islands	malia.chow@noaa.gov
4	Davis	Gary	National Park Service/Channel Islands	gary_davis@nps.gov
5	DeVogelaere	Andrew	Monterey Bay NMS	andrew.devogelaere@noaa.gov
6	Fangman	Sarah	Channel Islands NMS	sarah.fangman@noaa.gov
7	Gittings	Steve	NMSP/Silver Spring	steve.gittings@noaa.gov
8	Hickerson	Emma	Flower Garden Banks NMS	emma.hickerson@noaa.gov
9	Howard	Dan	Cordell Bank NMS	dan.howard@noaa.gov
10	Johnson	Claire	NMSP/Santa Barbara	claire.johnson@noaa.gov
11	Keller	Brian	Florida Keys NMS	brian.keller@noaa.gov
12	Lott	Dave	NMSP/Monterey Bay	dave.lott@noaa.gov
13	Marquis	Sarah	NMSP/West Coast Media Coordinator	sarah.marquis@noaa.gov
14	Marzin	Catherine	NMSP/Silver Spring	catherine.marzin@noaa.gov
15	Nichols	David	State of Hawaii/Humpback Whale NMS	david.nichols@noaa.gov
16	McDonough	John	NOAA Ocean Exploration	john.mcdonough@noaa.gov
17	McFall	Greg	Gray's Reef NMS	greg.mcfall@noaa.gov
18	Michalopolous	Christos	NMSP/ Silver Spring	christos.michalopoulos@noaa.gov
19	Orlando	Paul	NMSP/ Silver Spring	paul.orlando@noaa.gov
20	Roletto	Jan	Gulf of the Farallones NMS	jan.roletto@noaa.gov
21	Rutz	Steve	National Ocean Data Center/Silver Spring	steven.rutz@noaa.gov
22	Taylor	Christine	NMSP/ Silver Spring	christine.taylor@noaa.gov
23	Waltenberger	Ben	Channel Islands NMS	ben.waltenberger@noaa.gov
24	Wiley	Dave	Stellwagen Bank NMS	david.wiley@noaa.gov
25	Adler	John	NOAA Aircraft Operations/Tampa	john.j.adler@noaa.gov
26	Dwivedi	Parmesh	National Ocean Data Center/Silver Spring	parmesh.dwivedi@noaa.gov
27	Fonseca	Mark	National Centers for Coastal Ocean Science/ Beaufort	mark.fonseca@noaa.gov
28	King	Chad	SIMoN/Monterey	chad.king@noaa.gov
29	Lonhart	Steve	SIMoN/Monterey	steve.lonhart@noaa.gov
30	Spradlin	Trevor	National Marine Fisheries Service/Silver Spring	trevor.spradlin@noaa.gov
31	Semmens	Christy	Reef Environmental Education Foundation	christy@reef.org
32	Pederson	Josh	SIMoN/Monterey	josh.Pederson@noaa.gov
33	Pickett	Matt	Remote Sensing Division/Silver Spring	matt.pickett@noaa.gov
34	Semmens	Brice	Reef Environmental Education Foundation	semmens@u.washington.edu
35	Wilkes	Dana	NMSP/Seattle	dana.wilkes@noaa.gov

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## *PRESENTATION SUMMARIES*

### *Monday, February 2*

#### **ANNUAL REPORT BY THE PROGRAM COORDINATORS FOR THE NMSP/NCCOS LONG-TERM PARTNERSHIP: FY03**

**Presenters:** Mark Fonseca and Steve Gittings

**Summary:** Mark described the progress of the Long-Term Partnership. Over the past year, the Partnership was given formal structure. A timeline of activities was delineated that included an internal NCCOS Request for Proposals that addressed goals set down by the Office Directors. As part of the structuring of this process, NCCOS designated Liaisons to each of the Sanctuary Sites where research resources were applicable. Liaisons worked with Research Coordinators to establish a line of communication and to respond to the RFP process. In 2003, NMSP provided \$642K of operational funds and significant additional organizational resources in the form of personnel time in contributing to the creation of the process. NCCOS contributed \$30K in operational funds to support travel for the Program Coordinator and Liaisons. Thirty-five proposals were submitted by three NCCOS centers, for a total request of \$2,572,112 in FY04. Eighteen of the 35 proposals (51%) requested continuation into FY05 totaling \$1,778,034. NCCOS scientists, not counting salaries and associated overhead, in-kind services, or designated travel for Liaisons, brought another \$633,000 of leveraged funds to augment the FY04 request. From the 35 submitted, 11 projects were selected for \$800,000 of funding in FY04. Four additional projects will be added in FY05. No new proposal solicitations will be made until FY06. Organizational goals for FY04 include a group Liaison meeting in Beaufort, increased Liaison site visits, increased PI / Site communication, integrated Web links for report posting and increased role of Liaisons and PI in bringing NCCOS science support into Site Management Plans. The Research Coordinators are invited to advise the Program Coordinators (Gittings, Fonseca) as to what could we have done better, and what should be done in the future.

#### **Comments and Actions:**

The Research Coordinators, along with PIs, should identify additional applied research products for the Sanctuary Conservation Series. These should synthesize and analyze the results of projects to determine status and trends, and ensure that NCCOS work is meeting NMSP management plans. However, we also need to be sure that results make their way to peer review journals whenever possible.

Sites noted that it was difficult to rank NCCOS proposals without knowing whether, or how projects might be scaled back to meet the \$800K ceiling.

The group agreed that annual guidance provided to NCCOS should directly include site (RC) input as well as a distillation of science requirements documents. This may help to narrow the number and type of NCCOS proposals as well as ensure the most direct application of projects to NMSP management needs.

We discussed peer review of NCCOS work in meeting data quality requirements of NOAA, noting that it could involve reviewers both inside and outside NOAA.

We need to include Paul Orlando and Christos Michalopoulos in upcoming liaison meetings to ensure coordination with PPBS activities.

Sanctuaries are place-based and, therefore, are natural partners for NCCOS. NCCOS should consider re-aligning their areas of expertise to West Coast and Hawaii. There was even a recommendation that NCCOS consider establishing a west coast presence to enhance efforts in that region.

We also need to coordinate NCCOS and NMSP vessel requests in order to avoid lost opportunities.

**Volunteers/Teams:** Mark Fonseca will recommend that NCCOS and NMSP vessel coordination leads, Larry Settle and Dana Wilkes, collaborate on annual requests.

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## *Tuesday, February 3*

### STATUS OF NMSP OPERATIONS & INITIATING REGIONAL OBSERVING SYSTEMS

**Presenter:** Paul Orlando

**Summary:** Paul presented remarks that Dan Basta, who could not attend the meeting, had hoped to make. He started by giving the status of funding in the NMSP in FY04. In addition, Dan has made it clear that one of his priorities for SWiM is to implement an integrated observing system for the west coast sanctuaries as soon as possible. The Omnibus Bill provides for a one-time increase in funds for the NMSP for FY04. This could result in a \$450K allocation for implementation of the observing network for the west coast. Some other results of recent budget discussions include the following: a commitment to award Research Mini Grants (\$150K); NCCOS full funding at \$800K; continued development of telepresence systems; enhanced small boats safety and maintenance program.

The goal of this session was to stimulate thinking and discussion among NMSP staff about the west coast observing system so we could leave the meeting with plans on how to proceed with the development of an implementation plan. The session focused, on the development of an observing network that will 1) serve as a key implementation activity for the NMSP System-Wide Monitoring Program (SWiM) in 2004, and 2) support and contribute to the regional observing network of the Integrated Ocean Observing System (IOOS). The group began to discuss potential investments that would have relatively low recurring costs, and mechanisms to spend or allocate funds. Over the next month, a plan for the observing network will be generated.

It was recognized that such a system could become “the face” of SWiM, and provide momentum for further implementation activities. This session was the first time this issue was raised, and it came up several other times during the meeting.

**Comments and Actions:** Dan has requested a plan with multiple implementation options costing \$450K, for a tangible, in-the-water network, for west coast observing; he wants an implementation plan in four weeks. Possible targets including new sampling using existing or new equipment on ships, buoys, or aircraft, particularly at “sentinel” locations that contain resources of high priority. The proposed activities should take advantage of SIMON’s capacities for integration and dissemination of information, and connect effectively to existing regional efforts and the planned Integrated Ocean Observing System (IOOS) in the region. Properly developed, the plan should also support PPBS, specifically the Ecosystem Goal Team, and the Census of Marine Life, among other national initiatives.

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### MARINE AND AVIATION OPERATIONS

**Presenter:** Dana Wilkes, Matt Pickett, and John Adler

**Summary:** A new marine and aviation operations team in NMSP includes Ted Lillestolen (head), Dana Wilkes, Paul Orlando, and Pam Plakas. The team will work within the following thematic areas: NOAA Ship Allocation; NOAA Aircraft; NMSP Small Boats; NOAA Corps Officers; Dive Operations (administration); Safety.

Dana reviewed some of the vital statistics for certain NOAA ships used by the NMSP:

- Hi’ialakai – 224’ - Hawai’i-based possibly Sept. 04 (currently in Seattle) – multi-purpose with high-end multibeam – 22 science bunks – nitrox – Phantom ROV – dive chamber – full wet and

- dry labs - officers and crew being hired – A-frame and cranes with reach – J-frame – oceanographic winch
- MAC II – W. coast – deck plate for winch – transducer pole – FY05 \$1.3M for fantail and lab upgrades – 1 Apr-2 May: MBNMS & CCMA 20 d + 4 d transit; 22 May- 11 Jun: OCNMS & CCEHBR 20 d + 2 d transit
- Foster – FY04 nitrox compressor rebuild – dynamic positioning upgrade – SeaArk 23' with dive floor – FY05 \$0.5M for A-frame and small boat; 14 Jun-17 Jul: SBNMS 30 d + 10 d transit to Miami; 9 Aug-21 Aug: FKNMS 13 d + 1 d transit to Key West; 31 Aug-9 Sep: FGBNMS 10 d + 4 d transit to Galveston

The new ship allocation process will have a regional emphasis with greater involvement of users who will help resolve conflicts.

With NOAA aircraft, we are just beginning to expand our knowledge of aircraft available, instrumentation, scheduling, and costs. In addition, we have a need for training of NMSP staff for data collection and processing.

Small Boats: For FY05, there is a \$1.5M PAC fund request on hold with OMB. It is uncertain what exactly will happen with the one time FY04 budget increase. A 48' ship for Stellwagen is possible, as well as a larger vessel for MBNMS, and one for FKNMS enforcement. Maintenance funds will also increase, as will safety purchases. There is already heavy use of *Shearwater*, and costs are considerable both in terms of staff time and other expenses. A NOAA Corps officer will soon relieve Sarah so she can get back to her normal duties.

Regarding maintenance tracking, there is a vessel policy and manuals to help guide the sites. Manuals will be required for all vessels > 40' by March. Current manuals are complete but need annual updates.

Dive operations and safety: remote area operations are those >6 hr from chamber dive. Working in these conditions requires additional risk assessment, enhanced safety protocols, training and drills, and a recompression chamber and certified operator.

Both UDS and Dive Master should be identified for every site. The dive class schedule is as follows: 16-19 March dive refresher, 10-28 May and 13 Sep working diver and dive master training.

NOAA Corps Officers: a recruiting and outreach effort is underway to increase the number of officers working in the NMSP. New billets will be assigned to CINMS (Mar 04, XO); FGB, TB, CI GR, OC, NWHI (Ops officers in 2004); and FK (Jun 2004, replacement). Emerging duties may justify additional assignments. These may include multibeam operations and technical assistance at sea, and a POC for safety and maintenance.

March 1 is the kickoff for safety refreshers. This is an annual requirement for all sites. Required elements include personnel safety training and certifications (e.g., CPR), NAO small-boat compliance, dive operations, facility emergency operations, updated reporting and record keeping, scenarios and drills (man overboard, dive accident scenario, including a communication plan involving Coast Guard and local authorities). SHIELDS training will also occur at CI & OC.

There is a marine and aircraft operations intranet site with further information.

John Adler briefed the group on Aircraft Operations and opportunities available. The following bullets present key points of contact and other information:

- Aircraft Operations Center (AOC): Jim McFadden, John Adler, Nancy Ash, Jon Neuhaus, [programs.aoc@noaa.gov](mailto:programs.aoc@noaa.gov)
- NOAA Aircraft Allocation Council – two type of funds exist - base- and non-base-funds – LCDR Brad Kears ( [william.kearse@noaa.gov](mailto:william.kearse@noaa.gov) ) is the NOS rep on NAAC
- Aviation Request Process: there is sometimes the problem of funding not matching tasking – PPBS process may improve this (i.e., NMSP package submitted through rep; NMFS already does

- this) – contracted aircraft are also available through an interagency agreement with DOI - ~2,700 aircraft readily available with specs at web site – work with LT Debbie Barr [DC] if you are interested in accessing them.
- John also discussed the Lake amphibian and other aircraft, specifically with regard to safety and sampling capabilities (e.g., down-looking capabilities).

Matt Pickett also discussed aviation operations and the NMSP. Matt is with the Remote Sensing Division of NOAA and will work in partnership with the NMSP:

- Remote Sensing will provide 30 flight hours for training NMSP personnel in spring 2004 on the west coast. They will provide capabilities for LIDAR, a hyperspectral scanner, and digital camera (for data fusion)
- Dana Wilkes is the Aviation Operations Coordinator for NMSP
- Why aircraft? - marine mammal surveys, vessel use surveys (key in CINMS marine reserve planning process), enforcement, emergency response (oil spill, vessel grounding), remote sensing, education/outreach (air shows).
- What the future may hold for aircraft ops in the NMSP: standard survey protocols/software, regional aircraft, safety training, contracting support, increased use of remote sensing, and partnerships with other agencies.

**Comments and Actions:** Regional breakouts addressed allocation needs and schedules, including regional requirements for vessels, potential collaborators and competitors, POCs, and a schedule for meeting and resolving schedule conflicts.

Due dates: Feb 9 - FY05 vessel allocation requests; Feb 28 - aircraft allocation requests; Mar 5 - safety refresher plan.

We need to plan soon for the use of 30 hr of flight time on the west coast, as described above.

**Volunteers/Teams:** The team working to develop the west coast observation system will want to consider how vessels and aircraft factor into the plans, including whether additional instrumentation or testing of existing instruments would provide capabilities necessary to conduct key observations.

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## CHANNEL ISLANDS NATIONAL PARK AND THE NEW “OCEAN PARKS STRATEGY”

**Presenter:** Gary Davis

**Summary:** Gary provided an excellent history of marine resource protection by the National Park Service, and compared the NPS and NMSP. For example, like the NMSP, the NPS has sometimes conflicting policies regarding species protection and multiple use. NPS has 32 networks of parks with shared monitoring, a concept similar to that proposed for SWiM. There are 40 parks that include 3.2 M acres of coastal waters. They include National Wildlife Refuges, National Monuments, Great Lakes, Coastal Parks and Preserves, Coastal Recreational Areas, Maritime History Parks and Memorials, and National Seashores.

In 1970, the General Authorities Act united the parks as a system, much like the NMSA did for marine sanctuaries. It also adopted ecological principles and ecosystem-based management, and the mandates to know, restore, protect, and connect. Research now is often conducted by USGS/BRD and academia.

The NPS “Vital Signs” monitoring program is a fundamental aspect of stewardship, yet ecological understanding overall remains limited. Gary suggested, however, that we do have a general sense of what a “healthy” ecosystem is. He also used made the case that marine parks need the same level of protection as terrestrial parks. He described cascading effects of serial overfishing of abalone in CA, how kelp forests have destabilized, and how the fishery has switched to sea urchins. It is part of a broad pattern of failed fisheries nationwide. It is a strong argument for reserves, where we can “save all the pieces.” But despite



momentum in this area, it will take time. And there is still the need to better connect people to ocean parks. One possible mechanism described involves Research Learning Centers.

**Comments and Actions:** Gary handed out a copy of a document titled “Out of Sight, Out of Mind, Left Behind: Ocean Resources of the National Park System.” It is a new strategy for stewardship for the NPS. He prepared in his role as Visiting Chief Scientist for Ocean Programs for NPS. The strategy describes ways to meet the challenges of the “four pillars” of marine conservation – know, restore, protect, and connect. It calls for improved understanding of the ocean, and better assessments of effectiveness in restoring ecosystems, and a broad range of partnerships seeking a wide range of solutions to the problems facing coastal and ocean ecosystems. *Note: There are additional actions in a later section in this report titled “Partner Updates and Plans: National Park Service.”*

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## SYSTEM-WIDE MONITORING FRAMEWORK

**Presenter:** Charly Alexander, Steve Gittings

**Summary:** Charly introduced the monitoring sessions (the topic was the subject of several sessions, and Charly’s comments applied to the all of them). He presented the objectives, which focused on taking monitoring to the next level in the NMSP. He discussed the need to mobilize information for management and the possibility of developing standard approaches to consolidating and analyzing disparate data and information in order to inform management decisions. Another objective is to connect more directly to other NOAA/NOS programs as well as the Integrated Ocean Observing System (IOOS). Finally, he talked about the need to establish an internal team to develop the plan for a West Coast observing system.

Attendees were updated on the status of SWiM and were given a draft final version of the SWiM framework for review. A timeline proposed in last year’s meeting was shown and activities conducted during 2003 were described. In addition, changes to the framework document since the previous version were described. Results of the briefing to Dr. Spinrad were presented, and their impacts on the implementation phase for SWiM were discussed.

The draft final framework retains most of the aspects of SWiM familiar to the group, including an ecosystem-based foundation, a recommended design process that can be tailored to site-needs and applied at multiple spatial scales, a flexible reporting scheme, and reliance on support from partnering organizations for planning and implementation. This version, however, emphasizes to a greater degree how SWiM will support the regional network of observing systems proposed by IOOS, as well as monitoring within the marine protected area network of the U.S.

**Comments and Actions:** Comments on the draft final version were requested within 30 days. Afterwards, the document will be prepared for distribution.

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## THE NODC ARCHIVE MANAGEMENT SYSTEM AND SIMON

**Presenters:** Steven Rutz and Parmesh Dwivedi

**Summary:** Overviews of the National Oceanographic Data Center (NODC) and its new Archive Management System (AMS) were presented. This System enables original datasets to be accessed, archived, and disseminated in a web-enabled environment (<http://www.nodc.noaa.gov/Archive/Search>). The advantages of the AMS for data producers and consumers include:

- Long term data management at no charge to the data producer
- Data accessible to a worldwide audience long after the data producer is gone
- Fulfills contractual obligations of federally funded research
- Low cost access to global data from a reliable source

**Comments and Actions:** NODC worked with SIMoN over the last year in several areas. Links between SIMoN and MBNMS datasets in the AMS are planned. Four primary activities include

- Acquire MBNMS sponsored data and archive it
- Link SIMoN to archived data
- Rescue and digitize MB data
- Create dynamic link between species tables and IT IS

We should also explore linkages between other Sanctuaries and their datasets archived at NODC, which also hopes to improve activities related to other sanctuary data management needs.

- Automate data archiving
- Refine archive search capabilities
- Enable data analysis tools
- Integrate sanctuary data

**Volunteers/Teams:** NODC will continue to work with the SIMoN team. The team established to develop the options for implementation of a west coast observing system in the sanctuaries should work with NODC in relation to data submission, archiving, and dissemination needs.

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## THE SIMON WEBSITE AS A TOOL FOR SHARING MONITORING INFORMATION

**Presenters:** Josh Pederson, Andrew DeVogelaere, Chad King and Steve Lonhart

**Summary:** The Sanctuary Integrated Monitoring Network (SIMoN) is a comprehensive, long-term program designed to promote better understanding of natural and human-induced changes to Sanctuary habitats and resources. While it is widely accepted that coordinated, standardized approaches to monitoring are essential to effectively determine temporal and spatial trends, monitoring programs are often incomplete, inconsistent, redundant, and inaccessible as a result of insufficient infrastructure and funding. Beginning in 1999, Sanctuary staff worked with hundreds of regional academic scientists and resource managers to identify a series of priority questions that had to be addressed for effective monitoring and data dissemination. By 2001 the blueprint for SIMoN was complete, and with the addition of four staff and external funding, the program set out to address these questions.

The integration of high quality scientific research and long-term monitoring data will furnish the information needed for effective management and provide a greater basic understanding of the Sanctuary, its resources and its processes. The principal goals of SIMoN are to: 1) integrate existing monitoring conducted in the Sanctuary; 2) initiate basic surveys and characterizations of all habitats in the Sanctuary, while also initiating specific, hypothesis-driven monitoring efforts of fixed duration; 3) establish and maintain a series of essential long-term monitoring efforts that will continue into the future; and 4) disseminate timely and pertinent information to resource managers and decision makers, the research community, educators, and the general public.

Our team is gathering data and metadata on current and historical monitoring projects being conducted by over 40 research institutions operating within the MBNMS. SIMoN uses a website ([www.mbnms-simon.org](http://www.mbnms-simon.org)) to disseminate this information. For each of the major habitats and resource management issues, the SIMoN website shares overview information, maps and graphs, details on current and historic monitoring projects, educational materials, and links to other relevant websites. The site also has an interactive map containing spatial data that allows users to harness the power of GIS (geographic information systems) with their web browser. Along with capabilities to select and display particular spatial data, the site has a suite of GIS tools that allow users to zoom in and out, pan, identify features, download data, zoom to user-defined coordinates, and print customized maps. The novel and powerful combination of text information and mapping capabilities makes the SIMoN website dynamic and innovative, providing monitoring-based information to a broad spectrum of users.

A great deal of progress has been made since 1999. Rather than list all of the SIMoN milestones, here we list some of the highlights:

May 1999: Science Advisory Committee initiated  
April 2000: Workshop held to develop SIMoN priorities and approaches  
October 2000: \$425,000 agreement made (Monterey Bay Sanctuary Foundation/Sanctuary/Duke Energy N.A./State Water Resources Control Board) to fund a SIMoN Moss Landing Thermal Plume Assessment  
November 2000: \$1 million agreement made (Conservation groups/Duke Energy N.A./Monterey Bay Sanctuary Foundation) to fund SIMoN monitoring of Elkhorn Slough  
June 2001: Funds incorporated into Sanctuary base budget for SIMoN staff  
October 2001: \$2 million grant for SIMoN from the David and Lucile Packard Foundation  
October 2001: Endorsement of SIMoN by the National Marine Sanctuary Program at Leadership Team meeting  
January 2002: SIMoN office established Suite D, 299 Foam Street, Monterey, CA  
June 2003: Database to store regional monitoring project information developed  
August 2003: Interfaces to load and query regional monitoring information completed  
October 2003: SIMoN website launched

Like most large-scale scientific projects, SIMoN is a collaborative effort, managed by the Monterey Bay National Marine Sanctuary in cooperation with the Monterey Bay Sanctuary Foundation and the Monterey Bay Aquarium.

**Comments and Actions:**

1. Part of the SIMoN concept was to serve as a model for other NMS sites.
2. NMS sites, depending on their needs, may choose to implement all or parts of the SIMoN model. A multi-Sanctuary, regional program is also a possibility.
3. SIMoN should integrate with the permit process.

**Volunteers/Teams:**

1. Current SIMoN staff may be used to assist with transitioning the model (or parts) to other sites; however, establishment and maintenance will require more dedicated staff.

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**MERGING DATABASES FOR USE IN MANAGEMENT DECISIONS:  
A CASE STUDY OF MARINE MAMMALS IN THE SBNMS**

**Presenters:** David Wiley\_ (James Lindholm\_, Kristyn Stevens\_, and Michael Thompson\_ also helped prepare this presentation)

- \_ Stellwagen Bank National Marine Sanctuary
- \_ Perot Government Systems

**Summary:** Management decisions require the consideration of substantial bodies of information that often reside in disparate databases. To utilize such information to its fullest, such databases must be merged to provide an overall picture of an issue. This is particular true for National Marine Sanctuaries, which are obligated to use a systems approach to problem solving.

The Stellwagen Bank National Marine Sanctuary is currently undergoing a Management Plan Review, requiring managers to investigate issues involving the entanglement of marine mammals in commercial fishing gear and ship strikes to marine mammals. Decision-making with regards to these issues required information on the distribution and local abundance of marine mammals. However, standardized surveys to provide such information had been conducted on only a few occasions and were judged insufficient to identify long-term trends. Within the sanctuary, commercial whale watching activities had occurred, and scientists had used such vessels as non-standard platforms of opportunity, for almost 25 years. To bring such data into the decision-making process, the SBNMS worked with the two

largest whale-watch affiliated research groups in an effort to merge their databases into a single data set for analyses.

To accomplish this task, the sanctuary organized a series of meeting between scientists from the two groups, a contractor (Perot Government Systems) and SBNMS scientists. The various meetings and their goals were as follows:

**Meeting 1. Requirements Analysis**

- Develop an understanding of the data, database structures, data codes, data compatibility, and data differences
- Assure contributors of proprietary nature of data and safeguards against misuse.

**Meeting 2. Development of Data Analysis Approach**

- Discuss data limitations and assumptions
- Develop effort correction approach for data within and between groups

**Meeting 3. Review Results from “Within Group” Effort Corrections**

- Determine validity of “within group” effort correction approaches

**Meeting 4. Application of “Within Group” Effort Correction and Development of Effort Correction between Groups**

- Test validity of “within group” correction factors by examining results
- Refine methods for “between group” corrections

**Meeting 5. Application of Effort Correction between Groups**

- Review data process as it related to humpback whales
- Approve application of methods for other species

The successful merging of these databases resulted in the development of a comprehensive data set for determining the distribution and local abundance of marine mammals within the SBNMS over a 25-year period. The use of an inclusive systematic approach assured contributors that their data interests were protected and that data were used within acceptable parameters. Prior to the establishment of this database, managers had been regulated to the use of anecdotal information of low scientific and social power. Results from this work are currently being introduced into the sanctuary’s working group decision-making process.

## CENSUS OF MARINE LIFE

**Presenter:** Catherine Marzin

**Summary:** Catherine presented an overview of national and international efforts related to the Census of Marine Life (CoML). CoML has three large focus areas. The first is on geo-referenced information on species. The second is on determining historical levels of biodiversity. The third is on predicting future trends in biodiversity. There is increasing attention being paid to CoML by NOAA, and the NMSP needs to be a player. There is a growing momentum for the program to contribute a biological component to IOOS, and for using it to evaluate reserve effectiveness.

**Comments and Actions:** Catherine suggested we consider promoting sanctuaries as places to conduct CoML-related studies, perhaps by working with organizers to develop research plans tailored to that program, and, as appropriate, adopt protocols used for CoML work in our own monitoring and characterization programs. For more information, see [www.coml.org](http://www.coml.org).

**Volunteers/Teams:** Catherine will remain the primary liaison to CoML activities for the NMSP. She will also talk to National Program Branch staff in Silver Spring and individual sites about project opportunities and funding options.

**NATIONAL MARINE FISHERIES SERVICE SESSION**

**Presenter:** Trevor Spradlin

**Summary:** An evening session was held at the Upham Hotel to discuss various issues related to protected species and regional coordination involving NOAA Fisheries and the NMSP. For each issue, the group generally discussed problems they had experienced, obstacles to coordination, ways they now deal with issues, and how they might avoid problems in the future.

Trevor outlined NMFS programs, with an emphasis on protected species issues. The topics discussed included permitting guidelines (particularly with regard to protected species, seabed mapping, sea turtle rescue, and coral collection and protection), plans for upcoming regional coordination meetings between the two programs, the latest status of acoustics (Navy, scientific, industry use), whale/vessel collision avoidance, and marine mammal strandings.

**Comments and Actions:** Sanctuary staff is invited to participate in regional stranding network meetings. Dates for meetings have been set and sanctuaries should either have been notified or should notify the coordinators for more information and for an invitation.

A new program for issuing funds for strandings is available. It is called the Prescott Stranding Grant Program. Federal Register notices are issued each year and requests for up to 100K are accepted.

A national stranding meeting is planned. It will be held in October 2004 in the National Center for Training and Conservation (USFWS, Sheperdstown, WV).

NMFS requires permit applicants to make arrangements for NMS permits. Failure would constitute a NMFS permit violation.

Definitions of “harassment” (Levels A and B) and “harm” and permit guidelines and application process were presented, under both ESA and MMPA.

NMFS will host a workshop on ship noise May 18-19 in Arlington, VA. Roger Gentry is the lead. A separate lecture series is being developed and will occur throughout the US. Some dates have been set. The Marine Mammal Commission is also conducting workshops related to acoustics.

One problem area is the backlog of west coast stranding data. We may talk with Trevor about ways to encourage this effort. Perhaps we could apply for a small grant through the Prescott Grant program or supply a person to assist.

Another problem area is coral destruction during salvage. According to NMFS, the coral is not protected because the salvors are not targeting the corals. This leaves them vulnerable.

**Volunteers/Teams:** Jan Roletto will coordinate with Trevor. Emma will talk with Tom Hourigan about the coral issue.

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*Wednesday, February 4*

**RV SHEARWATER**

**Presenter:** Sarah Fangman

**Summary:** The groups was treated to a tour of the RV SHEARWATER, the latest addition to the NMSP fleet. Home ported at the Channel Islands NMS, the SHEARWATER also has supported science activities in the Monterey Bay NMS. The group was transported aboard the vessel from Santa Barbara to Santa Cruz Island on Wednesday morning. For more information on the vessel, see [www.cinms.nos.noaa.gov/res/cinms\\_res.html](http://www.cinms.nos.noaa.gov/res/cinms_res.html).

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## PPBS: THE FACTS, THE FICTION, AND WHAT'S STILL UNKNOWN

**Presenter:** Paul Orlando and Christos Michalopoulos

**Summary:** A brief introduction to NOAA's Planning, Programming, and Budgeting System (PPBS) was presented. The PPBS organizing units were reviewed, with emphasis on the composition of the Protected Areas Program and the Ecosystem Goal team. The completion of NMSP's "Program Baseline Assessment", a documentation of program requirements to fulfill mandated responsibilities, was discussed. The process of integrating NMSP needs with other NOAA programs and the methodology for preliminary budget allocations for FY06 were described. In all, the sanctuary program fared reasonably well, with an anticipated increase of \$2.5M in FY06. Successes, challenges, and lessons learned served as the foundation for proposed program activities designed to: (i) improve our effectiveness in the next round of PPBS and matrix management tasks and (ii) ensure adequate funding and resource allocations within the agency. Program branches, field sites, and specific groups (e.g., Research and Education Coordinators) should expect to participate in strategic teams to complete these tasks.

### **Comments and Actions:**

- Establish RC working group
- Develop science "Annual Guidance Memorandum-like" document
- Design and deploy NMSP observing system pilot (west coast) as the "face" of SWiM. We might also want to sell ourselves as places where a fully integrated ocean observing can happen and contribute to that end with an observing system that meets NMSP needs.
- Formalize connections with IOOS
- Articulate out-year science requirements (e.g., monitoring needs, ship and aircraft requirements, etc.). We need a 5 or 10-year planning document for marine and aviation assets.

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## SCIENCE STAFF UPDATES

**Presenter:** Steve Gittings

**Summary:** This discussion was held over dinner. It began with a number of updates on the status of action items identified during last year's Santa Cruz meeting. While a number of significant actions were addressed, it was suggested that too many action items were generated last year that were not accompanied by plans for accomplishing them. For that reason, this year we are proposing that volunteers working alone or in teams be identified to take on specific actions. This will allow the workload to be spread among a greater number of people. For large actions, implementation plans will be required, providing for more efficient project management.

Changes among headquarters staff were discussed. Certain activities that the Science Team had planned to conduct in 2003 were not accomplished because both Christos Michalopoulos and Paul Orlando were assigned to support the PPBS process for the NMSP. Kim Benson now works for another NOAA program focusing on science education, affecting a number of projects she had been leading. Lynn Takata, and more recently Jim Sullivan, completed their Sea Grant Fellowships. Lynn had been coordinating the Conservation Series and now worked for Mark Monaco's Biogeography Program. Jim worked on vessel program planning and Northwestern Hawaiian Islands regional science planning, among other projects. He is now at Gray's Reef NMS. (Mitchell Tartt and his wife will add twins to their life in a couple of months, a prospect that has already begun to affect his mobility, among other things!). We plan to back-fill Kim's contract position within the next two to three months, and hope that the PPBS load on Paul and Christos will lighten, allowing them to focus again on other projects.

Priorities that had been proposed for FY03 were, for the most part, addressed if not fully accomplished. These included SWiM, Northwestern Hawaiian Islands science planning, continuing the NCCOS partnership, supporting the Joint Management Plan review process in California, and providing GIS and mapping support. Three other activities were not supported to the level we would have liked.

These included telepresence (though others have been working on it), upgrading the science portions of the NMSP website, publishing several Conservation Series reports, and updating the Science Database.

In FY04, the following were proposed as priorities for action:

- System-Wide Monitoring implementation
- NWHI Regional Science Planning – completion of workshop summary with proposed initiatives
- NCCOS Coordination – continue support at full level
- Management Plan Review Support
- Biogeography
- Web and Conservation Series upgrades
- Information Management – support contract position and enhance capabilities and integration with other on-going efforts
- REEF Collaboration – continue and enhance
- Marine and Aircraft Operations – staffing, and improve coordination and planning
- Coral Recovery – chapter for CRC book involving Gittings, Joe Schittone, and others

Reference was made to a number of documents included on the CD given to all attendees. Some of these included

- guidance by OMB on new peer review and data quality requirements
- plans for IOOS
- guidance on science within the NOAA and NOS strategic plans
- opportunities within the Census of Marine Life program
- a recently completed Memorandum of Agreement between NMSP and the National Undersea Research Program
- plans for a "Watchable Wildlife" Program
- a request for internship support by Our World Underwater
- a summary of science activities at Monterey Bay NMS
- a summary of work for the NMSP conducted by the Reef Environmental Education Foundation
- a summary of science activities supported under the FY04 NMSP Annual Operating Plan

**Comments and Actions:** Staff was asked to consider what changes they would like to recommend to the National Marine Sanctuaries Act. Their comments should be submitted to the site manager or staff assigned to the reauthorization of the Act as soon as possible. A proposed new design for the NMSP website will soon be available for review. Comments should be submitted to appropriate staff. We will also be looking for volunteers to develop content for the preliminary release and then periodically to upgrade the site and keep it from stagnating.

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## *Thursday, February 5*

### **ORIENTEERING FIELD TRIP**

**Presenter:** Ben Waltenberger and Dave Lott

**Summary:** An excellent orienteering field trip was organized by Ben and Dave. Five groups were given GPS receivers, compasses, and clues to the locations of certain waypoints. The groups were required to find the targets, enter waypoints, answer certain questions about the locations (ecological or cultural), and return the information to Ben and Dave. Greg McFall and his group won the contest, returning first and having no errors in their data.

**Comments and Actions:** This was an excellent way to familiarize the Research Coordinators with the use of GPS for field activities. Most usually depend on others to navigate ships and boats. This exercise gave them a good change to improve their skills and become familiar with the latest technologies.

## WEST COAST REGIONAL OBSERVING SYSTEM

**Presenter:** Steve Gittings, Charly Alexander, Paul Orlando

**Summary:** *Note: Additional information on this subject can be found at the beginning of this report in the session titled “Regional Observing Systems.”*

A brief presentation was made on the guidance provided by Dan Basta on the need to develop observation capabilities within the NMSP. Three breakout groups then convened to discuss the vision for a west coast observing network to support individual sanctuary monitoring needs, SWiM, IOOS, and other regional programs. Each provided feedback on members’ opinions about potential focus areas, alternative approaches, potential selection criteria for observing locations, and critical linkages and partnerships. Most agreed that the NMSP should focus, to the extent possible, on observations that are both priorities for the program and within our areas of expertise. Addressing needs related to the integrity of ecosystems, particularly biological assemblages, should be a priority. Initially, selecting and monitoring at a limited number of sentinel sites, while not adequate for comprehensive monitoring, could be a good strategic approach. First, it would provide, as the group discussed, a “face for SWiM,” increasing the visibility of the program. In addition, establishing sentinel sites could encourage future development of observing systems and field sampling in the sanctuaries at long-term sites set aside for ecological studies.

The groups discussed various alternative approaches to observing in the network of sanctuaries. Options for remote sensing, aircraft, ships, buoys, and in-situ instruments are all being considered.

**Comments and Actions:** A plan for a west coast observing network is due in about four weeks. Planning will begin immediately, with a follow-up meeting of the headquarters-based members of the team and Dan Basta to discuss the outcomes of the session, the compilation of meeting notes, and preliminary suggestions on document preparation and sentinel site selection. A critical step in developing the program will be identifying the requirements of sites and the region, both in terms of science and information needs and with regard to observing systems that most appropriately address those needs.

**Volunteers/Teams:** An implementation planning team was formed to develop a plan for the observing network. Initial members include Charly Alexander (lead), Ed Bowlby, Jan Roletto, Andrew Devogelaere, Sarah Fangman, Greg McFall, Paul Orlando, Steve Gittings, Christos Michalopolous, and Christine Taylor. Dave Wiley offered his expertise on pop-up acoustic recorders as a potential observing system for tracking marine life and vessel traffic.

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## CONSTITUENTS WORKSHOP: ASSESSING THE HEALTH OF CORAL REEF ECOSYSTEMS IN THE FLORIDA KEYS USING AN INTEGRATED MOLECULAR BIOMARKER SYSTEM

**Presenter:** Brian Keller (Emma Hickerson also attended the workshop).

**Summary:** A project on assessing coral reef ecosystem health, led by Cheryl Woodley (CCEHBR), is using a mechanistic approach at the molecular level for early detection of higher-level effects: molecules and cells → tissues → organs → individuals → populations → species → communities → ecosystems → seascapes. Previous studies at sites off Key Largo in 1999 showed that there was an increase of oxidative-damage products in corals that bleached; corals that did not bleach had an increased level within symbiotic algae (zooxanthellae) of a protective protein. The oxidative theory of coral bleaching posits that high levels of light and temperature induce oxidative stress, resulting in coral bleaching. Molecular signals were present at least 6 months prior to bleaching. In 2000 a site was added farther north (closer to urban and agricultural areas) to investigate other possible stressors. Corals at this site had elevated levels of both ubiquitin, which is a “tag” placed on damaged proteins to be recycled, and a protein indicative of xenobiotics such as pesticides. These initial findings led to a broader-based investigation across different trophic levels to diagnose the condition of a coral reef ecosystem – a Sea Grant-funded project to support management actions using advanced diagnosis.

There was a presentation on the theory and practice of cellular diagnostics, which utilizes the cycle



of protein synthesis/maturation/death and associated biomarkers that indicate protein states along these degrees of maturation. As noted above, ubiquitin is the “death mark” – signal for protein degradation. Cellular prognostics assume that levels of various biomarkers indicate organism health. It is necessary to use multiple biomarkers, exercise care in interpretation at an organismal scale, and conduct time-series analyses.

This was followed by a presentation on an ecological assessment of the study sites, using the Atlantic and Gulf Rapid Reef Assessment (AGRRA) protocol. AGRRA focuses on key functional and structural elements of reef ecosystems: stony corals, fish, and algae. Then there were presentations on a series of cellular diagnostics on a range of types of species: white grunt, bicolor damselfish, a snail predator of corals, foraminifera condition/regeneration of coral lesions, and star coral. These demonstrated how different biomarkers could be utilized in biochemical “detective” research on stressors and organismal condition, using spatial and temporal variation of biomarkers as “clues.” There was a concluding presentation on environmental monitoring and risk assessment of coral reef ecosystems, which highlighted forams: the FORAM index (relative abundance of functional groups) as a bioindicator of water quality and bleaching of a foram species as an indicator of photic stress.

The entire group discussed validation of cellular diagnostics, linkages of these data to other data sets, and next steps. It is necessary to determine laboratory dose-response relations using “lab rat” equivalents such as mussels or other sentinel species and to validate laboratory results in the field. We need to know the relative importance of various stressors and the triggering mechanisms of diseases/syndromes. In a way, this equates to human medical screening, bearing in mind the enormous range of degrees of development of organs and tissues, and our often cursory-at-best understanding of immune systems and physiological responses in non-humans. We still need to know the causative agents of white band disease (first noted in the late 1970s) and the long-spined sea urchin mass mortality (mainly during 1983). Participants suggested some potential species of interest as indicators or sentinels: queen conch, a stomatopod, long-spined sea urchin, elkhorn and staghorn coral, star coral, spiny lobster, rock beauty, long-snout butterfly fish, forams, echinoderms generally, and clades of zooxanthellae. For some factors, reciprocal transplants can provide important insights. There is an over-riding concern about increasing CO<sub>2</sub> concentrations that cause reductions in calcification. There is a need for rapid assessments, e.g., pulsed-amplitude-modulation (PAM) fluorometry and turbidity thresholds; coral disease rapid-response teams are being assembled for South Florida and Hawaii.

**Comments and Actions:** Ecologists at the workshop noted that fundamental aspects of understanding coral reef ecosystem “health” are not addressed by cellular diagnostics. These include population dynamics (recruitment in particular), interactions that organize communities (predation, disturbance, and competition), and ecosystem- and seascape-scale processes. Corals at the Flower Garden Banks are in relatively good condition compared to many areas in the Florida Keys, but this could change with possible increasing threats from the petroleum industry and other sources. There is a broader issue of whether to fund another spatially extensive, long-term, and expensive monitoring program. Is the additional understanding at molecular/cellular/physiological levels “worth” it? I believe that the jury is still out down south.

Actions:

- FGBNMS and FKNMS will remain engaged
- Applications for FBNMS, NWHI, and GRNMS should be considered
- Consider extrapolations and utility for other NMSs
- Promote as an aspect of NMSS Observing Systems

**Volunteers/Teams:** Emma and Brian are involved in the Coral Disease and Health Consortium ([http://www.coral.noaa.gov/coral\\_disease/cdhc.shtml](http://www.coral.noaa.gov/coral_disease/cdhc.shtml)).

**PARTNERING UPDATES AND PLANS:  
USGS/NMSP JOINT SEABED MAPPING INITIATIVE**

**Presenter:** Christine Taylor (Brad Barr helped prepare the following report, but could not attend)

**Summary:** The background and status on JSBMI were presented. We are now in the second year of implementation of the MOA with USGS. We have held two very successful workshops (one on mapping natural resources, another on mapping maritime heritage resources) and have two reports, and annual report for the first year, and a report on the MHR Mapping workshop, available on the NMSP Web Page. A goal was established goal to acquire 100% base map coverage of all Sanctuaries (and the NWHICRER) with swath bathymetry and backscatter, appropriately ground-truthed, at a resolution of 10's of meters horizontal and 10's of centimeters vertical, with higher resolution mapping for selected areas. We have developed an inventory of available map coverages and metadata. Recently an Enhanced Needs Assessment/Mapping Prioritization Process was initiated, being coordinated by Christine Taylor. This will allow sites to establish priority areas for base mapping within sanctuary boundaries, and identify areas where higher resolution mapping is required. Next steps include the prioritization of needs assessment, leading to multi-year mapping plans for each site in the system, and establishing system-wide priorities. It is essential that this information be acquired for a report to Congress, due by October of this year, on full funding of the NMSP. We are working with USGS to craft a joint funding initiative to support this work, as well as the many NOAA offices and programs who map or use maps as part of the Integrated Ocean Mapping Initiative being led by OE.

**Comments and Actions:** Research coordinators were encouraged to review reports and provide timely response to the Enhanced Needs Assessment/Mapping Prioritization.

**PARTNERING UPDATES AND PLANS: REEF ENVIRONMENTAL EDUCATION FOUNDATION**

**Presenter:** Steve Gittings for Christy Pattengill-Semmens

**Summary:** Christy was not able to come to Santa Cruz Island, but prepared an excellent presentation on the historical level of effort by REEF to survey in marine sanctuaries, and on future plans. Over 66,000 surveys have been made by REEF divers overall, with about a third made within sanctuaries. Summary reports are available at a NMSP page on REEF's website ([www.reef.org](http://www.reef.org)), and raw data can also be obtained through Christy. The table below shows the totals for each site and the level of effort over the last two years (data as of December 1, 2003).

Sanctuary	Year Initiated	Total Surveys	# in 2002	# in 2003
FKNMS	1993	13312	2,257	1,702
FGBNMS	1994	2511	205	199
MBNMS	1997	1060	230	314
CINMS	1997	1145	291	368
OCNMS	1998	65	0	56
GRNMS	1998	153	67	37
HIHWNMS	2001	889	233	273
SBNMS*	2001	600	295	135
Monitor	2003	3	0	3

Sanctuaries sometimes directly fund special assessments by REEF. The Florida Keys contracts REEF to conduct zone monitoring, restoration monitoring at the *Wellwood* grounding site, and *Spiegel Grove* monitoring. Assessments and field surveys have been conducted at other sites, usually with partial funding from the sanctuary. In 2003, special assessments were conducted at Gray's Reef, Flower Garden

Banks, Olympic Coast, Monterey Bay, Channel Islands, and Hawaiian Islands Humpback Whale NMSs, and a limited number of surveys were conducted at the Monitor.

REEF data are increasingly being used for management and scientific purposes. The “Reefs at Risk” Caribbean report used it in a GIS-based regional evaluation of fishing pressure. The Pacific, South Atlantic, and Caribbean Fishery Management Councils, and the State of Florida have used it to supplement fish stock assessments and, more specifically, for Goliath Grouper and Yellowtail Snapper stock review. It is used to assess the effects of harvest restrictions and zoning, to identify areas of high diversity for eco-regional planning (The Nature Conservancy), to discover new and non-native species, and to evaluate biogeography of fishes (NCCOS).

Future plans include expanding the invertebrate program to California and the northeast (in some places, invertebrate abundances are estimated in addition to fish), developing a census program to support Fagatele Bay, implementing on-line data entry (currently, scan sheets are used exclusively), and developing on-line mapping capabilities for the website.

### PARTNERING UPDATES AND PLANS: IMPLEMENTING THE NMSP/NURP CENTERS AGREEMENT

**Presenter:** Brad Barr was not able to attend the meeting, but submitted the following information.

**Summary:** An agreement to enhance coordination among NURP, the regional Undersea Research Centers, and the NMSP was signed in October 2003. A copied of the agreement is included on the meeting CD. The next step is to begin implementation. We need to be working with Center Directors and NURP staff to identify what they feel would be most useful.

**Comments and Actions:** Brad would like feedback from Research Coordinators on what they feel would be useful and appropriate. Please contact Brad if you have ideas.

### PARTNERING UPDATES AND PLANS: SPLASH

**Presenter:** Sarah Marquis and David Nichols (David Mattila could not attend)

**Summary:** SPLASH stands for “Structure of Populations, Levels of Abundance, and Status of Humpbacks” in the North Pacific. This is a three-winter, two-summer research project. It may be the largest such project ever undertaken. Researchers from 13 countries are participating. The project website has additional information. Geographically, it includes the west coast sanctuaries. The research includes photo identification, biopsy (genetics and pregnancy), and tail stock photos for evidence of entanglements. It started in January of this year. The summer research will start in June (Channel Islands to Alaska). Sanctuaries and Fisheries are working together on SPLASH, along with other partners. John Calambokidis will be doing the work in the sanctuaries on the west coast, but we want the sites to take full advantage of the project and perhaps get more involved.

For more information, see:  
[http://hawaiihumpbackwhale.noaa.gov/special\\_offerings/sp\\_off/splash.html](http://hawaiihumpbackwhale.noaa.gov/special_offerings/sp_off/splash.html)

**Comments and Actions:** Olympic Coast, Cordell Bank, Gulf of the Farallones, and Monterey Bay are aware of the project and are willing to provide information on sightings. John Calambokidis works each year in the Channel Islands as well. OCNMS will be collecting sighting data on humpbacks and biopsies on the June *McArthur II* cruise. Some of their small boat operations are also dedicated to SPLASH through John. Andrew offered to consider putting together historical data from the Monterey Bay region to support SPLASH. Following an upcoming press release (February), talking points will be generated for sanctuary staff.

We would like to have a conference call to firm up relationships and to clarify the various roles and opportunities presented by SPLASH. David Mattila will need to help the other sites better determine what their efforts might be.

**Volunteers/Teams:** Sarah and Dave will set up a conference call between David and the west coast sites, hopefully to include John Calambokidis. They will also get press materials to the sites. Sarah will also set up a call with the west coast media coordinators.

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## PARTNERING UPDATES AND PLANS: NATIONAL PARK SERVICE

**Presenter:** Gary Davis

**Summary:** Gary presented a nice list of tangible ways in which the NMSP and NPS could work better together. He is working with Margo Jackson to convene a meeting this fall with the Leadership Team in order to initiate specific actions. NPS education coordinators are working with REEF on the Great American Fish Counts and it would be good to have them work with the sanctuary education coordinators on it as well. Another program we should coordinate on is developing standard resource inventories (NPspecies on the www.NPS.gov site), geological and habitat mapping. Guy Cochrane (USGS) and Mark Monaco (NOAA/NCCOS – Biogeography) are working on this effort. Working together may help us leverage other sources of support as well, such as USGS.

We should also work with NPS on getting electronic boundaries worked out. NPS would also like help from NOAA in getting their diving program revitalized. Marine reserves are obvious areas for cooperation, as is coordination between SWiM and Vital Signs. An Ocean Park task force will be established by DOI to communicate and resolve problems within a number of areas. A unifying theme for the joint meeting between NPS and the NMSP Leadership Team is “thinking outside the boundaries.” It might focus generally on the notion of thinking in new ways. Margo Jackson is the NMSP lead on this.

**Comments and Actions:** All sites should get to know the network coordinator for monitoring in each of the coastal regions.

**Volunteers/Teams:** Gary will get the information on regional network coordinators to the sites. We need to have Mitchell communicate with Gary on boundaries and on diving.

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## INFORMATION MANAGEMENT AND SPATIAL TECHNOLOGY

**Presenters:** Dave Lott, Christine Taylor, Ben Waltenberger (Mitchell Tartt helped prepare this session, but was unable to attend the meeting)

**Summary:**

The intent of the IMAST program is to enhance capacity and integrate capabilities for site and national program staff, in the utilization of geospatial technology. This program will also act as a conduit for data assets and technology while leveraging resources with our partners. IMAST will integrate NMSP geospatial technology development into NOAA’s emerging issues and the NOAA Vision through an improved model of integrated organizational structure. IMAST will create a “technology blueprint” for sites to follow from designation through maturity in the NMSP evolutionary framework. Creating a minimum requirement for technology resources and staff skills will prepare sites to meet program requirements and goals through the maturation process. Standardizing data development and distribution will result in an efficient use of financial and physical resources and enable the program to more effectively administer our resources in accordance with the NMSA. Further, standardized, streamlined data availability will assist NMSP in meeting NOAA’s goals of customer and constituent satisfaction through improved, intuitive data distribution nodes. The IMAST schedule calls for program rollout and site

assessment to take place in Fiscal Year 2004. It is estimated that full national implementation will take place through Fiscal Years 2005-2010.

IMAST will primarily support geospatial staff and technical personnel at field sites and headquarters. Additionally, by providing cross-cutting integration and data production, it will support NMSP staff involved in major program areas such as research, policy, emergency response, education, and Management Plan reviews. During NMSP life cycle phases 1-3, IMAST is based on a program partnership geared towards bringing sites towards a planned level of capability. During life cycle phases 4 -6, IMAST will enable sites to take a leadership role in data creation, collection, analysis, and dissemination among their partners and within their regions. By providing standardized datasets for view and distribution through the Internet, IMAST will support research-oriented users from within and outside the NMSP.

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## *Friday, February 6*

<b>OCEAN EXPLORATION</b>
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**Presenter:** John McDonough

**Summary:** John discussed the origin and history of the Ocean Exploration Program at NOAA. In FY05, OE may begin “Signature Expeditions” similar to the SSE concept. Justin Manley now works part time for OE to develop new equipment to enhance NOAA science. The program is becoming more active in marine archaeology and in education. Proposals are accepted for these sorts of activities just as they are for exploration projects, but they are reviewed in a slightly different way (not by the science panel, but through mail reviews).

The data management system used by OE is continuing to improve and is available for use. It was first developed during SSE and been extended to accommodate many different types of data. There is also a digital atlas that is an electronic atlas of information from expeditions. They are working with the NOAA library to archive information (e.g., tapes).

The project selection process is currently underway at OE. There seems to be a sizeable number of proposals related to marine life inventories, driven in part by the Census of Marine Life. This is likely to put greater emphasis on this type of activity than in the past, which has been dominated by habitat characterization.

Emma gave a brief update on the status of OE funded work at the Flower Gardens and other NW Gulf of Mexico banks. In 2002, a 200K grant supplement by 100K from MMS allowed USGS to create high resolution maps of 12 additional banks. The new data were used to select submersible dive sites and tracking information was laid over the maps, making surveys much more efficient. A signature expedition was conducted in 2003, combining several investigators and projects, and considerable media emphasis. Emma suggested beefing up the education aspect of your proposals when you submit them to OE.

Andrew talked about the Davidson Seamount expedition that occurred in 2002. They used the Western Flyer, a very well equipped and efficient operation. The mission had lots of ROV work as well as outreach. The seamount may in the future be considered for inclusion in the NMS.

**Comments and Actions:** John said that OE is planning to prepare a science plan this year. We should contribute to that to the extent possible.

**Volunteers/Teams:** John will provide a staff/expertise list that can be distributed to all the sites.

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## INTEGRATED OCEAN MAPPING

**Presenter:** John McDonough

**Summary:** John discussed IOM, saying that of the 12 million sq km of EEZ, only 10% has been mapped, leaving 10.7 million sq km, roughly the size of the US. John is the OE lead, and is leading the IOM team. The plan for implementing IOM will depend on understanding what has been done to what degree, and where priority gaps and needs are. Assets available, schedules, and execution will follow, as well as establishing data acquisition pipelines, archive procedures, and product development. Some of these activities are already in motion, including NWHI, Gulf of Maine, and others.

**Comments and Actions:** A multibeam workshop will occur in March (the third such meeting over the last year or so). This meeting will focus on implementation of the IOM plan. OCS, Fisheries and Sanctuaries may have the strongest mapping mandates in NOAA. We need to take advantage of any opportunities that arise before the political climate interferes to change the momentum that the program has. We all need to track the progress of IOM in order to jump on opportunities and avoid pitfalls.

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## COMMUNICATIONS – MEDIA OPPORTUNITIES

**Presenter:** Sarah Marquis, West Coast Media Coordinator, NMSP

**Summary:** Sarah Marquis represented NMSP's Communications Branch to discuss the potential for media coverage of upcoming research missions. This presentation was a forum to hear suggestions from the research coordinators and discuss potential news stories and current communications procedures.

**Comments and Actions:**

- Jan Roletto – a paper will come out next month on the history of chronic oil pollution. It will show a downward trend that can send a message about the success of marine protection efforts.
- Brian Keller and Billy Causey have a paper on using satellite imagery and water sampling to study black water events. A second paper on a similar event that may have been caused by water management policies in South Florida is also available to contribute to a story on resource management and the differences between natural and anthropogenic impacts.
- Next week is the science writers meeting in Seattle. OCNMS is doing a field trip for attendees.
- Science in the sanctuaries needs to be better conveyed to NOAA leadership. We should improve the way we write our science outcomes so they are easier to use.
- Recognize that the human interest side of stories is often more marketable than the natural science.
- Pre-planning can prevent lost opportunities, particularly if multiple partners are involved. Settling on the messages, press releases, and credits is very important.
- We ought to have standard headers and trailers for videos being generated by the sites for distribution.
- Sarah would like to have us generate a central calendar for science, including field seasons, cruise dates, special events, and so on. The IT group is working on an overall Oracle-based calendar for the NMSP. Perhaps this effort could be used to accomplish this. In addition, Sarah will start calling sites on a regular basis to ask about upcoming activities. Some web sites also have some of this information.

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## EXTERNAL FUNDS AND LEVERAGING

**Presenter:** Charles Alexander

**Summary:** Charly discussed options for leveraging external funds to support sanctuary efforts. Some of the sources include:

*NOAA/DOC*

- NOS Partnerships,
- Earth Systems Data and Information Management - ESDIM
- Coral Program
- Small Business Innovation Research – SBIR
- High Performance Computing and Communications – HPCC
- NCCOS Center for Sponsored Coastal Ocean Research – CSCOR
- Climate Data Modernization Program – CDMP
- Ocean Exploration - OE

*DOD*

- Legacy Grants
- Environmental Security Technology Certification Program – ESTCP

*National Fish and Wildlife Foundation*

*National Science Foundation*

- Tegner Grants
- Ocean Research Interactive Observatory Network - ORION

*Office of Naval Research/National Oceanographic Partnership Program – NOPP*

**Comments and Actions:** Charly suggested we form a small team to prepare annual lists of sources and mechanisms. The team would document opportunities, providing contact information and websites, schedules, criteria, funding ranges, clues to success, and other information. Based on the groups' feedback, the internal sources of funding may be the most important ones to track, as our partners already track the other sources. NODC and SIMoN intend to submit an ESDIM proposal this spring/summer. We might want to consider talking to the NMS Foundation about support for this effort as well. They might participate on the team and help prepare proposals.

**Volunteers/Teams:** Andrew offered to participate on the team, along with a small group from Silver Spring. We will also talk to the NMS Foundation about having one of their people on the team.

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## POLICY DEVELOPMENT

**Summary:** No one was able to attend from the NMSP Policy and Planning Branch, but Liz Moore sent a report on the status of development of program policies for a number of issues. The two-page summary listed issues for which policies are currently being developed, as well as issues to be dealt with in the near future, and policies that will be developed over the longer term. In about a month, specific information on these issues will be available on both the NMSP intranet site and via the NMSP website on the internet.

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