



National Association of Marine Laboratories

c/o Marine Biological Laboratory, Woods Hole, MA 02543

Secretary / Treasurer
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Synopsis and Action Item List
Board of Directors Meeting
National Association of Marine Laboratories
Rayburn House Office Bldg.; Room 2168
Washington, DC
February 20-21, 2001

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| 1. NAML Business Meeting | 1-5 |
| <ul style="list-style-type: none">● Voted approval: Treasurer's Financial Report for 2000.● Review of Meeting Activities● NAML's AIBS membership and representation● Reports from the Regional AMLs: WAML, SAML, NEAMGLL● LabNet Update — Ken Tenore● Harmful Algal Blooms Observing System (HABSOS) — Tom Malone● Aquatic Invasive Species Monitoring Project — Bill Wise● Council of Aquatic Sciences — Art Brooks● Commission on Ocean Policy — Brian Melzian● IAMSLIC Sponsorship Request — Lavern Weber● Emeritus Committee — Art Brooks● Biennial Meeting, 4-5 October — Lavern Weber | |
| 2. Invasive Species Symposium: | 6-8 |
| <p>The featured event for the Congressional Staffer Forum and joint program with OBFS.</p> <ul style="list-style-type: none">● James Carlton, Williams College/Mystic Seaport; NRC, Invasive Species Council — presentation on Invasive Species problems● Hilary Swain, Archbold Biol. Stat., Lake Placid, FL; OBSF — presentation on issues of land-based species invasions● Panel Discussion by four panelists on various aspects of invasive species | |
| 3. NAML Staffer Reception: Rayburn House Office Building | |
| 4. NAML Business Meeting Continued | 9-12 |
| <ul style="list-style-type: none">● Approval vote, 2000 BoD Minutes● Report and Motion of the Sponsorship Review Committee — Tim Nelson● Discussion of the Invasive Species Symposium● European Marine Research Stations Presentation (MARS) — Fred Grassle● Census of Marine Life Program, CORE — Cynthia Decker● National Institute of Environmental Health Sciences (NIEHS) — Ken Olden● National Ocean Science Bowl, CORE — Wes Tunnel● K-12 Education — Lavern Weber; Sarah Schoedinger, CORE; Sue Cook, NSF● Southern Universities Research Association (SURA), NSF Award — Madilyn Fletcher | |
| 5. Agency Presentations | 13-16 |
| <ul style="list-style-type: none">● National Marine Educators Association — Paula Keener-Chavis● National Institute of Environmental Health Sciences (NIEHS) — Bill Suk● NOAA — Al Beeton● NOAA/National Estuarine Research Reserves — Laurie McGilvary | |

- NURP — Barbara Moore
- Coastal America — Virginia Tippie
- National Sea Grant — Leon Cammen
- Minerals Management Services — Ken Turgeon
- Environmental Protection Agency (EPA) — Brian Melzian,
- EPA-2000 — Barry Burgan

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Action Items:

- Positive vote to have Art Brooks draft a letter to CAS stating NAML's vote of support for collaborative actions but not as a participating member. 4
- Positive vote to have Lavern Weber send a letter of support to the EPA Commission on Ocean Policy once their definitive meeting and implementation schedule has been announced. 4
- Defeat of a motion to be a sponsor for the Brest, France Meeting of IAMSLIC 5
- Positive vote to form a Sponsorship/Donation Policy Committee to recommend procedures and criteria for allotting NAML funds when requested by outside organizations or individuals. 5
- Positive vote to certify the election of James Clegg, retired director, Bodega Marine Laboratory, Bodega, CA, as an Emeritus Member of NAML. 5
- Positive vote to appoint Ken Tenore as NAML active representative to MARS with Fred Grassle as the alternate. 10



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**National Association of Marine Laboratories (NAML)
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Lavern opened the meeting and welcomed everyone in attendance (Appendix I). The Agenda was distributed. Lavern wanted to get the business items done before the presentations. He announced that tomorrow's meeting would be held at the Smithsonian's Ripley Center. Pam Rogers needed a list of all participants to turn in to their security office. Anyone not staying at the Capital Hill Suites needed to give their names to Pam or they would not be allowed into the building.

NAML Business Meeting

The Minutes of last year's BoD Meeting were distributed. Alan Kuzirian noted that the Appendix listing those in attendance was not included. However, he said the list would be included in the electronic version soon to be distributed. The Minutes of the joint NAML/OBSF Meeting held the night before were also handed out as well as the Treasurer's Report. The Minutes would be voted on tomorrow to allow time for participants to review them. Alan asked that everyone please sign in. Lavern noted the presence several new members, so he asked that everyone introduce themselves.

Alan reviewed the **Treasurer's Report** and noted the major expense items which were BoD Meeting expenses and computer services from the Marine Biological Laboratory (MBL). A motion to approved the reports was made by Ken Tenore and seconded Art Brooks. It was unanimously approved.

Lavern then reviewed the morning's program. The Invasive Species Symposium was to be highlighted. OBSF members were to join us later. Jim Carlton, Williams College/Mystic Seaport and Hillary Swain, OBSF, and the Archbold Biological Station, Lake Placid, FL were to give presentations and a panel discussion was to follow. Fifty nine staffers had signed up, and Lavern said he predicted approximately 80 people to attend. The Staffer Reception was to follow immediately after the afternoon's meeting in room 338/9. Lavern planned a discussion the following morning to assess the joint meeting concept and the Staffer Briefing, single topic forum format.

It was noted by Lavern that our membership in AIBS proved extremely beneficial for this Meeting, because about half of the Staffers came from their list. They were extremely helpful in securing meeting rooms also. Lavern noted that AIBS holds its annual Fall meeting in DC and they request a contact person from each member organization. Lavern said he would continue to hold that position until the end of his term as NAML President. He suggested that the representative remain with the NAML Presidency. Madilyn supported the notion and agreed to serve in Lavern's place.

Regional Reports:

- **WAML:** Tim Nelson reported that the Homer, Alaska meeting held in August was a success. He did mention however that they felt like Admiral Stockton who asked, "who are we, and why are we here?" The meeting was one of introspection. The next meeting will be held in Anacortes, Washington. WAML have put together a web page about the different labs and what is available especially for graduate students. Tim announced that Lynda Shapiro has retired from OIMB. One item for their meeting will be to elect a new WAML President-Elect.

● **SAML:** Wes Tunnel announced that the next meeting would be in Charleston, SC at Ft. Johnston. Four labs are present in that area. Included will be an initiative on data management. Kumar is to host the following meeting. SAML now has 59 members, a new brochure, and a revised handbook containing the bylaws, SAML history, and membership list.

● **NEAMGLL:** Bill Wise reported on the fall Meeting in Woods Hole and hosted by Alan Kuzirian. NEAMGLL added 4 new members and now totals 28. The topical white-papers that have been planned for some time are still on going but not yet completed. However, NEAMGLL has undertaken a new initiative which will be LabNet based and will involve an invasive species monitoring program. More information was to be given later in the agenda.

● **LabNet update** — Ken Tenore reported that the LabNet webpage is now linked to, and available from the NAML webpage. Originally conceived from the Sarasota workshop, LabNet is essentially in place with Margaret Davidson's NOAA lab providing the central infrastructure and connecting links to the regional hubs. There will be a meeting in St. Louis to incorporate the Stennis Space Center into the program. One aim is to improve the graphic capabilities of data presentation. The next step is to bring in the labs who wish to participate. Projects from individual labs will need to be integrated in. Tom Malone will lead the project on Harmful Algal Blooms (HABs). LabNet will provide the means for handling the data. Currently, funding is needed to support the infrastructure as well as projects. A review committee was formed and there is currently a vacancy because someone has retired. Ken extended an open invitation for new members. Madilyn will discuss the recent SURS grant award. Ken reported that he was sure that the NAML network strengthened the grant application and was a positive factor that allowed SAML members to be acquire their grants. It was emphasized that a technical person should be designated for each project. The LabNet committee will supply software and training at the Charleston center. It was further noted that Steve Weisberg is developing the second LabNet program on the California bight.

● **Harmful Algal Blooms Observing System** — Tom Malone gave a presentation on the Harmful Algal Blooms Observing System (HABSOS). He included material from a recent Workshop and gave background information on the Global Ocean Observing System (GOOS), which are administered by NOAA. More information can be found at their website (www.csc.noaa.gov/cts/coos/). There is a similar system in the Gulf of Maine (GoMOOS). The program's basic aim is to coordinate use of the collective resources for the coastal zone, improve our reliability to predict environmental changes and to increase funding support for coastal and estuarine research. The strategy is to develop a national system based on commonalities, which is user driven. It will also provide a national coordination for data management and common needs. The Ocean US office just formed to begin implementing the observing system. Cpt. David Martin will be its leader.

The major challenge to be faced is to get the agencies to collaborate and to obtain sustained funding for observing systems. The aim is that it should be driven by societal needs and run for long-terms. Currently, there is no mechanism in place to go from short-term single research projects, to sustained, long-term projects. This is especially true for the program selection process. Data management is a key issue. It must be improved because it is now in chaos. Weather forecasting and physical measurements are effectively being done, but how do you measure biological/chemical processes. In the US, ecological models with assimilation techniques for forecasting these kinds of processes are severely restricted to a very limited number of qualified people who can understand and do it. The international, Global Ocean Observing System (GOOS) is in place. It is a design plan for those EC members to buy into. Their model will help in the US system design. Coastal GOOS is still getting started and again sustained funding is necessary to insure its success.

Tom continued with further specifics. There was a workshop for representatives from the Global Oceanographic Data Assimilation Experiment (GODAE; for satellite data recording), the National Ocean Observing SYSTEMS (NOOSYS), and HABSOS (Harm. Algal BloomS Observing System). As conceived, HABSOS will be a user-driven, end-to-end observing system with SAML, state agencies, Oceans US, U.S. GOOS, and the Gulf of Mexico system. Its focus will be on state agencies that are outside the science arena that need this kind of data for decision making. Also included will be data managers and scientists developing ecosystem models. The HABSOS user-group will include, public health officials, resources managers, environmental protection and commercial groups. The important deliverables identified were: locations where HABs are occurring (public alert network), projections as to where HABs will go, and importantly, predictions as to where they MIGHT occur in the future. In the short-term, they will center on data communication and management topics: LabNet for academics, GMNet for state agencies, and NOAA's, National Coastal Data Development Center (NCDDC; which provides for the archive of, and access to, the long-term coastal data record). The immediate priority is to develop an integrated system based around the LabNet framework, to provide data inventories and sites where real data sets are located and accessible. Currently, data exists in all kinds of formats from paper files to sophisticated computer data storage systems. LabNet format standards are to be used so that all players can come to one place for data and management handling which they hope will lead to environmental predictability. One organism has been selected, *Gymnodinium breve*, because of its characteristics of being easily seen in bloom, and its widespread geographical occurrence. HABSOS will build on existing programs that are already collecting data, like: Texas Coastal Ocean Observing Network, Texas automated Buoy system, and the Northern Gulf of Mexico Littoral Initiative Program run by the Navy, etc.

Tom stated that the physics of the system must be done correctly so that the biology is meaningfully correct. An *in situ* hybridization system is being developed by Monterey Bay Aquarium Research Institute (MBARI) which can instantly transmit data and warn of beginning blooms. Kumar said that Florida has funded this research, but that will stop this year. He then asked if there is any federal agency who will take up the funding void. Tom says multi-state partnerships will attract funding attention. The Great Lakes also have similar HAB observing systems.

Break

● **Aquatic Invasive Species Monitoring Project** — Bill Wise reported on a proposed Aquatic Invasive Species Monitoring Project (AISMP) being initiated by NEAMGLL for the Great Lakes and NE Coastal labs. Its concept is to establish a coordinated regional observing system to record not only the presence of invasive species, but also to monitor their spread and study the ecology of the process. It will include scientists and environmental managers with science backgrounds, as well as outside stakeholders. It will include joint sponsorship with the Regional Association for Research on the Gulf of Maine (RARGOM). A Fall 2001 workshop is being projected if the steering committee can organize one that quickly. The workshop will include, designing sampling and reporting protocols, describing LabNet requirements, developing an initial list of network participants, elucidating potential funding sources, and establishing a project management committee to oversee the program.

Bill identified a preliminary set of potential collaborators including, members of NOAA's National Estuarine Research Reserves (NERR) program on invasive species, members of the Massachusetts Ocean Resources Inform System (MORIS), as well as David Reid at the Great Lakes Environmental Research Laboratory (GLERL) and his proposed FY2002 NOAA Invasive Species Initiative. Certainly members of Gulf of Maine Ocean

Observing System (GoMOOS) will play a pivotal role. An invitation list for the workshop will be circulated so that the Steering Committee could be alerted if any recognized players were not included.

In the discussion that followed, it was suggested that it would be appropriate for these kinds of initiatives to be underwritten to some degree by NAML, maybe even up to half. Tom Malone said that there should be a national coordination effort made so that data can be handled appropriately. Tom asked what would be the working definition of an invasive species. An invasive species is defined in the Federal Management Plan. However, Tom questioned whether their definitions would work. The working definition requires careful attention because it will define which species are to be monitored. Temporary invasive species, are they included? Bill reiterated that the Workshop will define the species list. Ray Highsmith asked if an algologist would be included. Lavern asked about funding and national representation. He suggested submitting a descriptive one-page synopsis of the project at the Biennial Meeting for consideration.

● **Council of Aquatic Sciences** — Art Brooks forwarded a request from the Council of Aquatic Sciences (CAS) to have NAML become a member. Dues are based on the number of members (\$100 currently). The organization has a website and operates through the collaboration of societies promoting the advancement of aquatic sciences and education. Members include American Fisheries Society (AFS), ASLO, NERR, etc. They are planning a 2005 joint symposium of all members to generate topical white-papers. Jack Stanford is the current leader. They recognize the need to do something positive to keep members and to prevent loss of members like the Phycology Society. Basically CAS is an organization of scientific societies. Tom Malone stated he didn't know if membership would benefit NAML. It is an association of competing members presently. Madilyn Fletcher suggested that NAML could support specific projects and would help them get information out through things like LabNet and exchange of programs.

Action Item: It was moved and seconded (Malone, Fletcher respectively) that NAML not join, but would assist and collaborate with CAS on specific projects as they relate to NAML's mission. Art was to draft letter to CAS explaining our position. The motion carried unanimously.

● **Commission on Ocean Policy** — Brian Melzian (EPA representative) distributed copies of the "Coastlines" newsletter, information on the Oceans Act, and the Commission on Ocean Policy (COP); a 16 member commission with a definitive timeline of deliverables to establish a national ocean policy. Art Brooks asked that Brian alert the membership to upcoming meetings. During the discussion, concerns were raised about COP's potential duplication with other governmental efforts, especially with state agencies, and the PEW commission on Ocean Policy. Brian reflected that COP is a powerful commission with a distinct mission and they might use the PEW information in their decision making. If the right people are chosen, it can have a great impact on ocean policy. It took 5 years to put in place said Kumar, and NAML has supported it early in its development. The Commission members should be pretty broad, and Kumar said that there would be a distinct economic weight to it. It is supposed to be balanced between science, environmental, economic, and commercial interests. NAML should look favorably toward the Commission. It is not easily determined when/where the meetings will take place. CORE is best poised to be a watchdog, as is NASULGC's Board of Oceans. We can send a letter once the Commission is formed expressing our support.

Action Item: Bill Wise moved to have Lavern write a letter and offer NAML'S assistance. The motion was seconded by Simon Beeching, and carried unanimously.

● **IAMSLIC Sponsorship Request** — Lavern relayed a request from International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC)

for sponsorship of their international meeting in Brest, France. He said donations usually range from \$200 to \$10,000. An open discussion followed. Madilyn Fletcher asked why we should support this organization and not others? In support of the notion to sponsor, it was noted that our donation would be only a small proportion to their value to us as Marine labs, and for the supported they have given to our libraries. Steve Brandt suggested that we set up guidelines and criteria for approving funding requests. Previous examples of our public relations expenditures were noted. They included the ASLO rental booth which we did to focus attention on NAML, and our long-standing support of IMBCs after such requests from Harlyn Halvorson. Bill Wise spoke in support of the request and suggested that the money be directed to something like speaker travel, etc., so it wouldn't be spent toward more frivolous items like banquets. Lynda Shapiro liked the idea of directed support.

Action Item: It was moved and seconded (Brooks/Shapiro) that \$1000.00 be donated to support the IAMSLIC Meeting in Brest, France. A vote was taken after further discussion of the priorities and size of the NAML budget. It was noted that strategic spending is important. There was 1 vote supporting the motion; the rest opposed. The motion failed.

Action Item: Lavern asked that a committee be formed to establish policies for NAML's donating money. Madilyn Fletcher, Tim Nelson, Steve Jordan, and Art Brooks will comprise the committee. Jeff Reutter suggested a scholarship to support participation in outside meetings. Participants could apply directly to NAML for funding, and perhaps the funding criteria would include some measure of what the ultimate benefit would be to NAML. Such requests should be broad based and not limited to organizations like IAMSLIC.

● **Emeritus Committee** — Art Brooks, chair, reported on the requested nomination of Jim Clegg, retired director, Bodega Marine Laboratory, Bodega, CA as an Emeritus Member. An email ballot was distributed and Alan Kuzirian received and recorded the votes. Alan reported that 42 votes were received and all supported Jim's nomination. There were none opposed. Ken Tenore supplied information on Jim's early attempts to get NAML recognized as an association and Alan noted his leadership in the formation of WAML and Alan's nomination as NAML Secretary/Treasurer "for-life".

Action Item: Art moved that the election be certified and that Jim be officially given that status. No second was needed as it carried the support of the Emeritus Committee. The motion passed unanimously.

● **Biennial Meeting, 4-5 October** — Lavern reported on plans for the Biennial Meeting and that things were proceeding with help of the WAML membership. Lavern's wife, Pat will put together some family activities and there will be a banquet at the Aquarium and perhaps a dinner-cruise. The Hatfield Lab is a multi-organizational site, so there will be plenty of show-and-tell opportunities. Lavern asked for input from the membership especially for Agenda items, possible workshops, etc. They will try and schedule a trip to Oregon Institute of Marine Biology (Lynda Shapiro's lab; about 2 hrs away) on 6 October. Newport is about 130 miles from the Portland airport, so a car rental is necessary. Art suggested that we might get a few Washington Staffers to come to a marine lab. It would be a good thing to get them there, even as a speaker perhaps. Kumar warned that there is usually no Congressional office money for them to go. Committee Staffers are the more important people to bring to get their perspective on issues. Congressional Hearing topics might be a good approach to get them there. Lavern will work further on this topic and others for the Biennial meeting.

Lunch: Rayburn House Office Cafeteria

Invasive Species Symposium

The afternoon session was led by Lavern Weber and Hilary Swain (OBSF). This session was planned jointly between NAML and OBSF and was intended to be the keystone session for the Congressional Staffers Forum. Staffer invitation letters were sent to 44 individuals or offices. Lavern introduced himself and Hilary, and thanked everyone for coming. It was pleasing to see such a large crowd; counted were 78 people that remained to the end of the session, plus an 24 or so left early.

Lavern introduced those present to NAML and gave them a brief history of what NAML is and its specific aims. Lavern then introduced Hilary who gave similar introductory remarks about her lab and OBSF.

Hilary is the Director of the Archbold Biological Station, Lake Placid, FL, which is an LTER site with a 10,000 acre cattle ranch. OBFS has 160 members from 42 states. They cover 72% of the ecological biota of this country. Hilary noted that several members of the organization are present in the audience and would be happy to speak with people later. She also emphasized the point that invasive species data collections are well within the purview of OBSF, especially seeing they also encompass terrestrial species. Lavern introduced one of the main invited speakers for the session.

● **James T. Carlton**, Williams College and Maritime Studies Program Director, Mystic Seaport, Mystic CT. He is a noted authority on marine invasive species and their causal relationship to modern-day extinctions of marine invertebrates. Jim is also a National Academy of Science panel member on the Invasive Species Council, founding editor of *Biological Invasions*, a Pew Fellow, member of the Steering Committee of the UN Global Invasive Species Program, and a member of the UN Global Invasive Species Program (GISP).

Jim told the audience that the general issues pertaining to marine bioinvasions and the process are in general, the same in freshwater or on land. The need for “bio-quarantine” does not enter into people’s thinking, and neither do the wide variety of possible vectors assisting in the invasion processes. Notable examples of introduction events or vectors include: seaweed used as packing for bait worms from Maine and discarded in San Francisco Bay; the introduction of the green crab, *Carcinus*, and the Chinese mitten crab, *Eriocheir* after careless handling of these species as imported food items; the USS Missouri’s relocation from Puget Sound to Hawaii and its subsequent introduction of mussels to the area that reproduced and ended up living in submarine ballast tanks; the introduction of the Atlantic salmon into Columbia and the spread of the Japanese crab, *Hemigrapsus*, from New Jersey to Massachusetts from docks brought to NJ; and the seaweed, *Caulerpa*’s introduction into a lagoon in San Diego. Jim pointed out that Bath, Maine has just received a huge dry dock delivered from China which was fully vested with its Chinese fauna and flora. The problem is not restricted to the marine environment as evidenced by the Hyatt Hotel’s released in Nevada of the Japanese freshwater crab, *Geothelphus*. These events have triggered massive eradication efforts in an attempt to remedy the situation.

Invasions are increasing at faster rates from increased global trade. It has increased number of vectors and the greater transport speeds of vessels fosters greater species survivorship. In the past, more species died at higher rates. For *Carcinus* in the 1800s, there were 2 vectors, in the 1900s, 5, and now there are 10 different vectors. A unique example is the New Zealand isopod *Sphaeroma* which is spreading from CA into OR. Its vector is styrofoam. It lives in styrofoam on floats and actually destroys it. Overall, the increased numbers of vectors result is a greatly increased patterns and pulses of invasions.

Jim emphasized that predictive models are now more important than ever. With the current state of coastal ecosystem stresses, invaders are further facilitated. Environmental stress examples include: estuaries nutrient enriched with natural habitat loss from eutrophication, the over-extraction of fishery resources (upsetting predator-prey stability), and significant climatic changes. The models will benefit from an improved predictive power derived from knowing how and the rates of environmental changes. Data comparisons and sharing are absolutely necessary for the predictability of invasions. In general, invaders are moving NORTH on both coasts because of increasing environmental temperatures.

Another related problem in tracking invasions is the need for increased published data. In the current atmosphere, the publication of (natural history-type) observations on species occurrences in scientific journals is very difficult. Web-based publications is perhaps a solution. The loss of skilled taxonomists is also exacerbating the situation.

Jim recommended the following tact: 1) increase efforts to prevent accidental introductions; 2) after an introduction is documented, institute measures to mitigate the socio-economic and environmental impacts, and removal issues; 3) stay vigilant and implement integrated vector management protocols; 4) use all available techniques to reduce the number of transported organisms; and 5) increase the number of trained observers to reduce the time it takes to find and document a new invasion. The number of persons as invasion detectors is now very limited because of the loss of natural historians and taxonomists. Currently, the people who most often find invaders come from the general public. Invasion spotters have come from local junior college students, fishermen, the Children's School of Science in Woods Hole, bait fishermen, and nature photographers.

Standardized surveys of bio-invasions are necessary to give a standard geographic measure of the process. Jim said there is usually a, "Hub-and-Spoke" model of invasions — every new populations forms a hub from which each radiates. As it grows further, it forms another hub, etc., all forming and interacting with increased numbers of vectors. Eventually, there is an invasional meltdown where each hub results in mass degradations, which in turn spawns another. There are currently, over 1000 invasive species known, costing over \$100 million yearly. If the constant flow of alien species continues, it will result in our playing a game of ecological roulette forecasting a concurrent economic roulette game of potentially even greater consequences.

The session continued with the second presentation of the afternoon.

● **Hilary Swain:** Hilary introduced her presentation by stating that it would center on more specific and personal issues of land-based invasions using Floridian examples. She emphasized that research helps to provide an understanding of the problem.

There is a universal vulnerability to invasions. For example, 85% of US plant imports come through Miami and there are increased demands for exotic pets, etc. Hilary stated that isolated islands are most vulnerability because they are normally removed from typical invasion vectors. However, natural disasters do increase chances for exotics to make successful island beach heads.

Another factor expediting successful invasions is the large numbers of endangered extant species that are increasing the number of niche vacancies open to invaders. Florida's climbing ferns (old world; *Ligodium*) introduced, pre-1958, are now growing wild everywhere. In general, invaders in one area are usually invasive in another. An example is Cogan grass. It is custom-made for invasions by possessing both seeds and rhizomes. In the case of a prescribed-fire setting, the grass promotes heavier damage by increasing the intensity of the fire. Ground Positioning Satellite (GPS) technology is a perfect tool for mapping where and how invasives are spreading. Hilary also mentioned that taxonomic species identification is critical to the problem, and that taxonomists are not being trained or funded.

Further examples of invasive species important to Florida were presented. The greatest invaders are the fifty two non-indigenous ant species (25% of ant species) have been introduced into Florida. An invasive bark-beetle (*Scolytid* beetles) is second. They came from ornamental trees and shrubs. Seven of them are ecological villains. Fire ants arrived in Florida 20 years ago. They have done large amounts of damage to native wildlife by swarming. Invasive earthworms have altered soil mechanics and reduced carbon reserves and nitrogen turnover, while in California, the yellow star thistle has similarly altered soil mechanics and leaching characteristics. This has had massive impacts in some areas in California.

Bio-control methods have been helpful. Scuttle flies that ingest specific parts of the fire ants' brain have been used to modify the ant's behavior to nocturnal grazing. Weevil beetles have helped control some plant species.

A National Management Plan has just been published by the Invasive Species Council. Highlights of the Plan include: declaring a clear need for leadership, good field biologists, and research training for taxonomists; formation of detection and rapid response teams for invasives, as well as improved tracking systems; money should be given for understanding basic ecosystem processes; bio-informatics is needed for recording and documenting invasions; prevention programs are needed to reduce the risks, as are removal strategies that target eradication of the worst invaders, first; changes in public attitudes toward invasives; the need for concurrent program development designed to increase public education and awareness of the problems that will be centered on the impact of invasives on their lives and that of endemic wildlife.

● **Panel Discussion:** A Question & Answer period followed next which was led by Susan Williams, Professor of Environmental Science & Policy, UC-Davis, and Director of the Bodega Marine Lab; Henry Lee, US Environmental Protection Agency, Newport, OR; Jack Stanford, Flathead Lake Biological Station, Montana, and Randy Curtis, The Nature Conservancy as panelists.

Questions centered on the vector links between the Mediterranean, Orient and the current Californian invasions and how to best manage the problem. It was agreed that an immediate response to a new invasion saves great amounts of havoc and destruction. An example to support this is the long-standing, *Caulerpa* invasion that was allowed to go unchecked for a long time. Research and management protocols are necessary to eradicate and control such problems.

Henry Lee spoke and addressed the issues of how invasions affect EPA goals and their strategies for environmental management. **Jack Stanford** (OBSF) related that river systems and glacial lakes are where his interests lie. Flathead Lake, MT has suffered from purposeful introductions; mysid shrimp were introduced and ate the salmon food, which then forced the salmon to move upstream and become food for eagles. As it turned out, the mysids were good trout food, and they increased in numbers and help to further eliminate the salmon and other fish species from the lake. **Randy Curtis** said his interests are directed toward long-standing invasions and long-term studies of the consequences. He especially likes to focus his efforts within the international arena and deal with multi-national problems.

The Panel concurred with the points of the keynote speakers. Most states have laws covering exotics, however enforcement is the key and that is the weakest link. Exotic plant species invasions are particularly important because of their potential danger for wide-spread faunal dominance. With regard to Public Information about invasive species, what works and what doesn't is still an unanswered question.

Everyone firmly agreed that there is no funding base for any sustained effort supporting work on invasive species. Prevention is key, but the development of workable management plans also needs funding as part of an overall effort. Early decisions are needed once an invasive species is recognized, as are sustained funding efforts directed toward eliminating the species. Jeff Reutter said he would send out their Ohio Sea Grant publication on invasives to any interested persons.

The Staffer Reception followed immediately in Rayburn - 338

Eighty two people signed the Guest Book

**National Association of Marine Laboratories (NAML)
Board of Directors Meeting
Ripley Center, Room 3031
21 February 2001**

Lavern opened the second day of the meeting with an announcement of agenda changes and additions. He thanked Chuck Myer of the Smithsonian Institution for the room arrangements and Pam Rogers for all her efforts. With a set of new guests present, introductions were then called for.

NAML Business Meeting Continued:

- **2000 BoD Minutes** — The approval of the Minutes was delayed until today so they could be reviewed. A motion to approve was put forward by Bill Wise with a second by Madilyn Fletcher. The motion carried unanimously.

- **Requests for Sponsorship** — Tim Nelson, as Chair of the Sponsorship Policy Review Committee, offered a motion for funding programs and sponsorship requests. In summary: a committee comprised of the immediate past NAML President plus the region Presidents would receive proposals biannually (15 Jan/15 Jul); the maximum amount disbursed by the Committee would be \$1000, with additional funds to be decided by the BoD.

In the discussion of the motion, it was recommended that some large percentage of the awards should benefit NAML as a whole and not just the applicants. This was then refined to require that all three NAML goals should be covered under the request. Ray Highsmith recommended that applications be reviewed by the initiating regional board first, however that was changed to read that the initial filter would be the lab directors who would carry the application forward. It was further decided that no formal calls for proposals would be issued. The final motion as detailed in Appendix II was passed by unanimous vote.

- **Discussion of Symposium** — Hilary Swain commented she thought it is was a great success. Lavern thought it was especially beneficial and enjoyable that OBSF got involved along with their congressional staffers and members. It was agreed that a Joint Press Release should be issued as a follow-up to the meeting. It would inform the members about the joint activities and they in turn could use it for their own release. Wes Tunnel asked what the successful turnout was due to. Lavern said that he pushed the invitation letters. Every Congressional member received a letter and that reminders were sent to staffers also. Lavern added that NAML members also contacted staffers and the AIBS Office contributed many staffer names. Tom Malone said that many of the people who attended were there from the Agencies. Ken Tenore thought it was too long and the graphics were not good; we didn't need to preach money to them.

It was suggested that we poll the staffers for their agenda needs. Steve Brandt felt that we might have left them with the impression that NAML/OBSF deals only with Invasive species. Tom agreed with the assessment. Single issues are best, especially those with distinct economic impacts. Bill Wise was concerned that we didn't give them clear information of what we could do for them. Hilary said she would have liked more information about what to produce for these meetings and suggested a Planning Committee. Art said we have tried that, but NAML members hadn't responded to the call and ultimately it all falls to the president. Lavern said that this topic would be addressed again at the Biennial Meeting. Lavern emphasized that OBSF was invited and they agreed to the joint meeting.

Tom suggested using other societies in DC to help form the meeting. Jeff Reutter suggested to target the society who can best help on a particular issue. Sue Williams made some good political comments including that she noted some attending staffers were part of the Congressional offices dealing with invasive species. She suggested working on writing a One-Pager that could be used to hand out to them. Hilary thought we should do it now as

a follow-up to the presentation, and be included with the press release. Lavern suggested that Hilary and the panel members were in the best position to write it.

● **European Marine Research Stations (MARS) Presentation** — Fred Grassle gave the MARS presentation noting that MARS is alive and well. He had just attended their Network and Census on Marine Life meeting. Including MARS and NAML, there were 60 labs present representing 21 countries, including former eastern block nations. Marine biodiversity is high on their efforts. They are targeting specific Reference Sites and Indicator Species of biodiversity. A Website in the Netherlands is being developed to publish the compiled list of European marine organisms. There is also a Steering Committee to push the project forward that has a representative from the EC.

Fred emphasized that there is ongoing representation between MARS and NAML; Ken Tenore is NAML's representative. MARS is dedicated to Web-based reporting of information and they are going ahead of NAML in getting things done according to Ken. Money is beginning to flow into the association to foster their efforts. They want to form an International Association of Marine Labs to foster total collaborations and efforts between interested parties. A lot of this collaboration will center around the issue of biodiversity. The association now includes Russia and New Zealand. Japan has decided to fund their own labs. Tom suggested integrating their efforts with the Ocean Observing Systems. Fred agreed and Tom agreed that biodiversity data gathering and the physical stations are definitely compatible.

Action Item: A motion was made and seconded (Malone/Shapiro) to officially declare Ken Tenore as the NAML representative to MARS, with Fred Grassle as the alternate. The motion carried without debate.

● **Census of Marine Life Program** — The presentation was made by Cynthia Decker, (CORE). Cynthia explained that the Census of Marine Life was research program to catalog marine biodiversity. It is an old, multinational, world-wide program that is growing. The AP Sloan Foundation initiated it as a spinoff from their astronomy survey. They held feasibility workshops (97/98) that was theme based. The Sloan Foundation agreed to fund a steering committee and secretariat. They feel there is an urgent need to conserve marine resources and support the UN framework on Environmental Concerns, the Convention on Biodiversity, the concept of marine protected areas and programs promoting sustainable fisheries. New technologies will be solicited to assist the Census Program: data management systems, ROV's, acoustic and optical sensors, algorithms for data analysis, and development of predictive models. CORE is the secretariat location, and Fred is chair. Under development is an Ocean Biogeographic Information System: an internet system displaying maps of the world with overlays of what lives there. They are promoting a distributed system of marine biological databases similar to LabNet, and are not archiving everything just on one server. Software conventions are also being set up to allow universal access. A GIS system format will be used to display data: both physical and biological with depth and perhaps time.

The Census of Marine Life (CoML) workshop will use OBIS for data management questions. The Proceedings of the Workshop, will be published in a special issue of Oceanography magazine. The magazine has been successful and they hope it will go international soon. It is available here and will be sent to anyone if desired.

Cynthia reported that currently, there are 63 partners from 15 countries that have funded projects. The taxa represented range from fish to inverts and plankton. The projects are museum-based for the most part and cover subjects like data compilation, to web-based displays of physical and biological data. In the US, there are currently projects funded from Gulf of Maine, a cephalopod database at U-Texas, Medical Branch, Galveston with Phillip Lee, and Anne Bucklin, UNH, is pursuing sequencing mDNA of copepods.

There was a joint meeting with Natural History Museum and Census of Marine Life workshop on Crete with 53 participants from 14 countries. Taxonomists and ecologists discussed trophic-level interactions. Ross Simmons at the Smithsonian was the organizer. Members of the Caribbean Coastal Marine Productivity Program (CARICOMP) attended and the Japanese also. Ross Simmons will publish the proceedings on their website. Information was made available on the back table.

Discussion: Brian Melzian asked about funding to which Cynthia replied that it came from NSF, ONR, and the Sloan Foundation.

● **National Institute of Environmental Health Sciences (NIEHS)** — Kenneth Olden has sent letters to form official links between NIEHS and NSF's Institute of Oceans and Human Health. The linkage is similar to their other environmental health centers except it will focus directly on relationships between the oceans and human health issues.

● **Consortium for Oceanographic Research and Education (CORE), National Ocean Science Bowl** — Wes Tunnel reviewed the program noting that \$10,000/region is budgeted to support the contest, but that Texas had raised extra money and spent \$30,000. Its mission to increase knowledge of the oceans by teachers, students, and parents, and develop a broad awareness of ocean-related issues. The competition is conducted by volunteers, and it is growing and moving inland. In 2001, there were 40 regional competitions. Wes said he highly endorses the program. He told the group that scientists are always needed for judges, and it is a very worthwhile experience. He encouraged individual labs to join, even if it was only to donate a prize. Marine lab visits as prizes are always welcomed. The National competition will be in Florida for this year.

Madilyn asked about teams that do very poorly and if there are minority issues. Should NAML members offer tutelage to those. Inner-city schools, etc. are certainly under-represented said Sarah Schroedinger. CORE is aware of the problem and held a workshop to get the right tact to address the issue. A Mentoring Program something that has been thought about, and would be welcomed. It was mentioned that graduate students mentor in MD. Steve Brandt said that schools in his area need transportation funds to the competition. Great Lakes Environmental Research Lab (GLERL) includes other activities parallel to the Bowl for the losers or those who just come for information. Sandy Sage said that multiple teams from the same school occurs in some New England regions. He asked if that was encouraged, and Sarah said no. CORE wants to increase participation by other schools, not just teams, and they particularly don't want varsity vs junior varsity teams. CORE will address that issue next year.

As for time commitments to the program, the more elaborate the regional Bowl, the more time is needed to accomplish it; the times can range from 3-4 months to >6 mos. Sea Grant coordinators and graduate students have been team leaders. Some labs often encourage a full-time staffer to take on the responsibility because they learn and know the system. Ken Tenore said that good questions are always needed and Sarah hoped that NAML would help on this topic. CORE paid for questions this year, but only for those accepted. The questions must come from periodicals, not text books, because access to periodicals is thought to be more equitable. They have been adding about \$1000/year for questions. Sarah said that non-vocabulary questions are the hardest to get and are the hardest to answer.

● **K-12 Education** -- This topic was to be Lavern's initiative and something he wanted to do through NAML. Sarah Schoedinger said that CORE has drafted white paper on K-12 Education which is coming out soon, and she asked for reviewers and feedback from NAML members. Lavern told the group that Tony Michaels who had prepared material on this topic but could not come at the last minute, so he was going to present his material. It was taken from web-based course listings for K-12. Lavern passed around a proto-type of Tony's

efforts that he was able to formulate from WAML listings. Lavern noted that CORE is working hard in this area, and he stressed his hopes that all of the various listings would eventually get web-linked and made easy to find and readily available to potential users. This discussion led to Sue Cook's presentation.

Sue Cook was here to speak on NSF's Oceanographic, Technology and Interdisciplinary Coordination (OTEC) Program. Sue is on loan to NSF from Harbor Branch. The OTEC program has as its focus the establishment of linkages between education and scientists. Finding and setting up Research Experiences for Undergraduates (REU) sites and related activities are also part of the program. AGFE awards to facilitate ocean Sciences education falls into this program too.

Sue said in general, there is a lack of any coordinated national leadership in ocean science education; ocean sciences are not even benchmarked by AAAS. NSF itself only funded a few K-12 awards to ocean sciences. Because of this lack of national focus or coordination of efforts for ocean education, a workshop held to recommend solutions to problem. It was sponsored by the Center for Ocean Science Education Excellence (COSEE). There was a wide scope of participants, from scientists and aquaria people, to marine educators. Unfortunately, the most under-represented were teacher colleges; those actually charged with training teachers. Career development for marine educators was one issue discussed. A meeting report is available on the web (www.ims.usm.edu/cosee.htm) or in hard copy. There is general agreement that COSEE should be the national coordinator for Ocean Science Education (OSE) in the US. OSE needs assessment criteria to be developed, and teacher preparation curricula need to be better coordinated with science programs. What OSE needs is to have real ocean science data translated and made available to present to students. Sue asked if LabNet could fill this need. She told the group that NSF is going to support an RFP for marine education that focuses on people and informal education settings like aquaria, etc. It may be advertised in the Fall with proposals due the first of next year.

Discussion — Bill Wise suggested that Education Standards committees should be involved because they control certification for teachers and also students. Tom Malone said they tried for 10 years and they decided it is simply easier to just fit their programs to state ed standards rather than vice versa.

● **Southern Universities Research Association (SURA), NSF Award** -- Madilyn Fletcher introduced everyone to new project, SURA. It is a regional framework for observation network. Madilyn stressed that LabNet formed the basis for this award from NSF. For the SURA network, they chose the name, CAST-NET. Members of the group want to get other SAML labs involved as well. Its premise is to facilitate linkages between the members into an observation network for those who need data management assistance, hardware assistance, and for those that need help getting hard data into digital formats. The grant also offers assistance for those participating in the program with institutional difficulties.

Gerald Seltzer is in charge of Facilities funding. An announcement (No: 01-59; deadline, 20 April 01) had gone out. However, they can be more flexible now and applications can come in later. Also they were able to increase the upper limit to \$500K with 1:1 match; amounts ranging from \$100-110K are expected to be the usual award. Madilyn said that proposals stressing communications issues will be favored, especially those fostering communications linkages for field stations and marine labs. There will also be some involvement with marine or field biology education. Madilyn mentioned that Judith Scott had joined their team.

Ken added that SAML had agreed to include the Geosciences in the proposal to help increase funding for the program. NAML did send a letter to Rita Colwell supporting the increases. As with many grants, the institutional match is difficult to obtain by many, so a lot of labs don't apply. Ken stated that we need to push forward on this match issue.

Agency Presentations

Lavern introduced this section of the Meeting, noting that it would follow in the tradition that had been started some time before. Basically, it is an opportunity for the different Agency representatives to give us an update on current or new programs. The order of the presentations was altered to accommodate people's schedules.

● **National Marine Educators Association (NMEA)** — Paula Keener-Chavis made the presentation for NMEA. Currently the association boasts 1200 members nationally with government officials and teachers as members. The Association has helped with NSF/COSEE, and President Clinton's Ocean Policy Panel with Bob Ballard. They also assisted with the NRC's book on the role of scientists in science education. The book tries to clarify the public perception of scientists and their role in teaching, because what they actually do is not clear even to the level of students. The California Bay Area's writing project is the model for new programs which is based upon, teachers teaching teachers. Teachers were incorporated into a working science lab for three days. The labs were asked not to restructure any of their daily activities because the teachers were there; the objective was to give them a direct, hands on experience. The program proved to be a good experience for everyone. Data compilation was a major item, and they discovered that what they teach is used everyday by scientists in their research. There is a huge misconception that knowledge of itself, imparts the ability to teach! Instructional strategy is at least half, if not more, of the basis for effective teaching. Paula said that group learning is now being used extensively, and active learning by immersion is also effective. For Professional Development programs, cooperation among all groups is needed, and teachers need to be treated as professionals. An effective knowledge of the change process is needed, if it is to be effective. Unfortunately, professional society involvement in educating teachers is only done by math and chemical societies. Biological sciences are less effectively represented in the process because of the large diversity within the discipline.

Discussion — Bill Wise asked how many are serviced by her program. Paula said a 3-wk graduate course for teachers was limited to 24. Financial support is given: \$300 stipend plus \$400 in supplies for the classroom. Bill asked about the split between the importance of content vs delivery. The answer was, content is first, but delivery is a close second. (chavis@cofc.edu).

● **Nation Institute for Environmental Health Sciences (NIEHS)** — William Suk, Deputy Direct for program development made the presentation. NIEHS focuses on environmental exposures and agents that affect human health over time. They support both marine and freshwater centers (i.e., Duke, Mt. Desert, ORST). A K-12 program has been in place for some time. It requires interactions between scientists and teachers on specific issues related to the environment and human health, and primary prevention. Marine science themes have been supported in the past. Zebrafish initiatives are present in all NIH agencies now including NIEHS. Transgenic models are accepted everywhere.

The topic of Oceans and Human Health originated in Bermuda (1999) with UNESCO's Health of the Oceans Committee. Xenobiotic exposures are a key focus area from an exposure angle, while the mechanistics of the effects on human health are also an issue. They have established a series of marine "centers of research excellence" to address this project. Interdisciplinary approaches are used like, toxico-genomics, and patho-xenobiotics. NIEHS has successes in partnership programs, and multi-agency for funding opportunities. HAB studies have been funded in relationship to health effects and the mechanisms of their causality, as have been studies on bio-pharmaceuticals from the oceans. These studies are important for the health of the world's oceans which are themselves being affected by anthropogenic effects. We also learned that a bio-engineering and bio-infomatics institute is being formed within NIEHS.

Ken Tenore asked about disease studies in marine organisms that are not funded because it doesn't fit the human model. Bill said one could build a strong case for funding such proposals if they could be extrapolated to humans. They recognize the current emphasis on natural products from the sea and so NIEHS will join the effort because of the expanded development of clinical programs. Prevention methods, no matter how good, will never be totally effective, so treatment programs will always be needed.

● **NOAA** — Al Beeton told the group that NOAA Headquarters has been cleared because of the administration change. He didn't expect a NOAA Undersecretary to be appointed until maybe May/June. Legislation for the re-authorization of the Aquatic Nuisance species Act is being considered, and it needs to be strengthened. The NOAA Management Plan is out and Al feels was well done. The program was founded by executive order, so it may not continue with Bush. However, the Sea Grant program will continue to deal with invasive species, and Al is targeting discretion money toward invasive species. Al mentioned the Argo-Float program for ocean-sensing and sampling of physical ocean data, especially for temperatures that may be predictable of El Niño events and global warming.

Education in NOAA is now being centered into one program; the Education Coordination Office which does involve some K-12, but it is more focused on outreach of NOAA generated information. In conjunction with Marine Protected Areas, initiated by Executive order (EO), the biota of those areas are being inventoried and classified along with center development. A NOAA research center has been established in Santa Cruz. Al mentioned that Strategic Planning is continuing with some changes occurring. There is a Coral Reef Task Force formed by EO with Department of Interior. Their meeting was to be held this February. A Science Advisory Board meeting was to be held in March to continue to review NOAA programs. There is also an Ocean Exploration directive by EO, with Marcia McNutt as chair. That Report is completed and available.

● **NOAA, National Estuarine Research Reserves (NERR)** — Laurie McGilvray stated that there are now 25 reserves in 21 states/territories. They are Long-term Ecological Monitoring Reserves (LTERs) with education coordinators for public outreach programs. There are also Stewardship coordinators so that land management is part of the program. The reserves offer good platforms for research and resource management. They are also stressing national monitoring programs by integrating monitoring over all the reserves (abiotic monitoring now being done, with weather data being added soon). Ecological monitoring will include habitat/land-use changes, plus eutrophication and its effects on water quality and biodiversity. A data management office has now been established as a coordinator. A graduate research fellowship program that sponsors up to 50 fellows/year (x2/center) has been operational since 1997. Their priorities include, invasive species, biodiversity, and education with an emphasis on teacher training and curricula development. The program also has a Coastal Outreach component for policy decision makers. It conducts 3 workshops/yr to encourage coastal training initiatives. Education and Outreach also includes training workshops, as well as National Estuaries Day; a program with live internet video links.

Laurie noted that about half of the reserves are associated with NAML members and joint programs are being fostered. They encourage associations with Coastal Ocean Observing Systems programs also. As part of their Invasive Species Program, there will be a workshop in Monterey, CA (18-21 September) to formulate strategies on how to address this problem. Ecological restoration projects are being done with a concomitant strategy development phase on the science needed to do it well.

● **NURP** — Barbara Moore told the audience about the President's new program for Ocean Exploration. Discovery and education was included from the beginning, but there was no program in ocean exploration. There is now a Panel report supporting the program. Stressed

will be ocean mapping, done at all scales, to discover what is currently there; from animals to structures. It will be dynamics in that it will have time as the fourth dimension. The program as defined will also include education and outreach as well as underwater archeology. It will be global in scope, but priority sites will include the Exclusive Economic Zone (EEZ), Arctic and Southern oceans, as well as the inland seas (Great Lakes). \$75 M will be available plus capital startup funds. The Program will have single-agency leadership, but with multi-agency collaborations. Themes will include, voyages of discovery, new resources development like bioactive compounds and natural products, origins of natural sounds, and submarine archeological and cultural heritage (aquaterra, lands that sunk, shipwrecks, etc.). The education portion of the funds will be set at 10%, with 5% for data management and technology development.

● **Coastal America** — Virginia Tippie said that this program is a partnership between all government agencies and it actually has a cabinet level representative. Its purpose is to protect, preserve and restore the coastal oceans. The program include state agencies and other stakeholders as well. It is governed by a Board of Directors of Assistant Agency Secretaries, and has an outreach component to inform the general public about coastal issues. Policies are to be defined at the National level, while regional offices are designated for initiating planning projects for restoration of environmentally sensitive areas. The local offices are where the actual project are to be accomplished. Funded projects have included restoration of wetlands and tidal estuaries, removal of dams for fish migrations, etc. There is also a Learning Center Network hosted in aquaria, marine science centers and universities (14 centers presently). They are set up to increase public awareness of problems in areas of coastal management. The program also sponsors Student Ocean Conferences for students and teachers to increase recruitment into science. There is collaboration with military (civil) engineers that allows these restoration projects to be used as training exercises. Another program component focuses on setting up Commercial and Corporate foundation accounts to receive for-profit derived contributions for wetland restorations. Gillette, Battelle, plus others are major players. Non-profit partnerships have been formed with universities, State Fish & Wildlife Services, etc. An example is the Sagamore Marsh Project, Scusset Beach, Cape Cod, MA that was initiated through the University of Massachusetts system. These partners can actually choose projects they wish to support. Research opportunities are available both before and during the restoration phases, as are funding opportunities to learning centers for research and student fellowships; paid teacher sabbaticals also qualify. (see, "Coastalamerica.gov" for more information)

● **Sea Grant:** Leon Cammen gave a brief overview of Sea Grant noting that it was established between 1966-68 to engage university research, educational outreach, and policy development on issues relevant to management of critical coastal areas. Sea Grant has always required a 33% institutional match. In general, 80% of funds go to research, with rest to the national program. Sea Grant is implementing new procedures which decentralized management. Programs and initiatives will be performance-based and evaluated regularly. One aim is to make peer review more standardized between member institutions. Their current annual budget is \$62M which represents a small increase from last year. Extension is the second largest portion of the budget. The Research portion directs roughly, 27% to aquaculture, 21% to seafood technology, and 31% to ecosystem health, and 14% for advanced bio-technology, etc. Programs for 2001 include, biotechnology, fisheries habitat, nuisance species, aquaculture, oyster diseases, and fellowships. 250 organizations were funded in 2000/01.

● **Minerals Management Services** — Ken Turgeon mentioned that this agency falls under the Interior Department and is engaged in the management of natural resources, from gas/oil to minerals. It is non-research oriented but highly focused. Competitive bidding for projects

occurs, with most awards going to outside firms. Their prime focus is in the Oceanographic realm. They are involved in funding Off-shore exploration for gas/oil and are now drilling at depths >800 meters. They also fund research on bottom currents, gas hydrates, and even historic shipwrecks. Issues like using gravel from the Outer Continental Shelf (OCS) for land-based restoration projects including barrier islands are among the more hotly-contested issues. They have also funded projects dealing with biofouling organisms on ocean platforms, as well as harvesting bio-materials and products, (bio-harvesting of Biostatin from the sea squirt, *Bugula*). The topic of invasive species and ocean platforms serving as their substrate is another important funding topic. As an example, Ken said that one 700-ft drilling tower with all its stabilizing chains encompasses the same surface area as the city limits of Houston.

- **Environmental Protection Agency** — Brian Melzian gave a review of current EPA programs, emphasizing those of the Office of Research of Development. He gave a review of recent publications dealing with coastal issues and environmental health. Brian noted that a Data workshop would be held in April to come to a consensus for data management within the EPA. He remarked that the EPA, “One-pagers” have swelled to 21 and provide useful synoptic information on various topics related to coastal subjects. Brian called attention to the EPA’s Star Program with \$100M in grant award funds.

- **EPA-2000** — Barry Burgan spoke on EPA-2000 telling everyone that the program is summarized in Sea Technology magazine. A National Coastal Condition Report, entitled, “Health of the Coastal Waters” was published in the Federal Register and has sought public response. Estuaries were the major focus of this report and not the broad coastal regions. The Coastal Research and Monitoring Program was released for publication last year. It covers monitoring, and associated policy issues with recommendations for improvements in research and environmental conditions.

Adjournment

Lavern thanked everyone for their presentations and the audience for their attentiveness. He expressed his hope to see many NAML members at the Biennial Meeting in October and wished everyone a safe journey home. The meeting was then adjourned by acclamation.

Respectfully submitted,

Alan M. Kuzirian
NAML Secretary/Treasurer

Appendix I
Attendee List: BoD Meeting, 20-21 February 2001

NAML Members

Albert Answini, Marine Science Consortium,
Wallops Island, VA
Simon Beeching, Marine Science Consortium,
Wallops Island, VA
Ivar G. Babb, NURP, U-Conn., Avery Point,
Groton, CT 06340
Robert Boyles, SC Div. Nat. Res., Mar. Res.
Div., Charleston, SC
Stephen Brandt, Great Lakes Environmental
Res. Lab., Ann Arbor, MI
Arthur Brooks, Center Great Lakes Studies,
U-WI-Milwaukee, WI
Susan B. Cook, (Harbor Branch Ocean. Inst.)
NSF-OCE, Washington, DC
Margaret Davidson, NOAA, Coastal Services
Center, Charleston, SC 29405
Madilyn Fletcher, Baruch Inst., Marine Biol.,
U-SC, Columbia, SC
Fred Grassle, Inst. Marine & Coastal Sci.,
Rutgers, New Brunswick, NJ
Gary Greene, Moss Landing Marine
Laboratories, Moss Landing, CA
Michael Hadfield, Kewlo Marine Lab., Univ.
Hawaii, Honolulu, HI
Roger Hanlon, Marine Biological Laboratory,
Woods Hole, MA
Raymond Highsmith, West Coast NURP, U-
AK, Fairbanks, AK
Stephen Jordan, MD Div. Nat. Resources,
Coop. Oxford Lab., Oxford, MD
Alan M. Kuzirian, Marine Biol. Lab, Woods
Hole, MA
Kumar Mahadevan, Mote Marine Lab,
Sarasota, FL
Thomas Malone, Horn Point Laboratory,
U-Maryland Cntr. Envir. Sci.,
Cambridge, MD
John Marr, Perry Inst. Mar. Sci., Caribbean
Mar. Res. Cntr. NURP, Tequesta, FL
Brian Melzian, US-EPA - Atlantic Ecology
Division, Narragansett, RI
Anthony Michaels, Wrigley Inst., USC,
Catalina Island, CA
Timothy Nelson, Blakely Island Field Sta.,
Seattle Pacific U., Seattle WA
Jeffery Reutter, FT Stone Lab., Ohio State
Univ., Put-in-Bay, OH
Sandy Sage, Bigelow Lab for Ocean Sci., W.
Boothbay Harbor, ME

Lynda Shapiro, OIMB, U-Oregon, Charleston,
OR
William Spitzer, New England Aquarium,
Boston, MA
Ken Tenore, CBL, UM Cntr. Envir. Studies,
U-MD, Solomons, MD
Wes Tunnel Cntr-Coastal Studies, TX-AM U.,
Corpus Christi, TX
Robert Van Dolah, Marine Div., SC Dept. Nat.
Resour. Charleston, SC
Lavern J. Weber Hatfield Mar. Sci. Cntr, OR-
State U., Newport, OR
Susan Williams, Bodega Marine Laboratory,
Bodega, CA
William Wise, SUNY, Stony Brook, Long
Island, NY

Science Community:

*Jim Carlton, Williams College/Mystic
Seaport, CT
*Randy Curtis, The Nature Conservancy,
Arlington, VA
*Cynthia Decker, CORE
Alison Gillespie, Ecol. Soc. America
Jason Goldberg, Nat. Coun., Science & Envir.
Rob Hedberg — Weed Science Soc. Amer.
Marge Holland, U-Mississippi
*Henry Lee, US-EPA, Newport, OR
Arthur McKee, OBFS, Oregon State Univ.
(OBSF)
William Michener, Univ. New Mexico,
Albuquerque, NM (OBFS)
Elisabeth Mountz — Great Lakes Tack Force
Eric Nagy, Mt. Lake Biol. Station (OBFS)
Sedra Shapiro, SD State U. Field Station
Prgm., San Diego, CA (OBFS)
Roger E. Sole, Exec. Dir., US-Man and the
Biosphere (US-MAB), OES,
Washington, DC
*Sara Schoedinger, CORE
Jack Stanford, Flathead Lake Biol. Station, U-
MT, Yellow Bay, MT (OBFS)
Sedra Shapiro, San Diego St-U, CA (OBFS)
*Hilary Swain, Archbold Biol. Stat., Lake
Placid, FL (OBSF)
Dean Wilkinson — Nat. Invasive Species
Council
Agency Participants/Guests
Brian Badgley, NOAA-NERRS

* Alfred Beeton, Chair, NOAA Science Board
 Kerry Bolognese, NASULGC
 * Barry Burgan, US-EPA
 * Leon Cammen, National Sea Grant
 * Susan Cook, NSF-OTEC
 Joel Edmundson, USDA-APHIS
 Joyce Gross, NOAA Public Affairs
 Debra Hayes, USDA/OSEC
 * Paula Keener-Chavis, NMEA
 George Loeb, US-EPA
 * Laurie McGilvray, Nat. Estuar. Res.
 Reserves
 * Barbara Moore, NURP
 Lisa Rom, NSF/OCE
 Erica Seiden, NOAA-NEERS
 * William Suk, NIEHS
 Gerald Selzer, NSF
 * Virginia Tippie, Coastal America
 * Kenneth Turgeon, Minerals Management
 Serv., Dept. of Interior, Wash., DC

* = *Denotes Meeting Participant*

Congressional/Governmental/Inst. Guests

Rabecca Bech — USDA-NISC
 Austin Bowker — Rep Mike Thompson; D/CA
 Gordon Brown — US-DOI
 Faith Campbell — American Lands Alliance
 Allegra Cangelosi — Northeast-Midwest Inst.
 Tim Carson, Washington, DC
 Emily Carter — Rep Ron Kind; D/WI
 Victor Castillo — Rep Roybal-Allard; D/CA
 Gabreila Chavanja — Nat. Fish & Wildlife
 Foundation
 Roberta Chen — State Dept.
 Laura Cimo — Rep Ron Kind, D/WI
 Kari Clift — House Agriculture Comm.
 Gwen Cooley — Sen Herb Kohl
 John Dennis, National Park Service,
 Washington, DC
 Chris Dionisi — DOI-NISC
 Kasey Gillette — Sen Bob Graham; D/FL

Julia Gray, Washington, DC
 Paul Griffin — Rep Greg Walden; R/OR
 Slade Gurr — Subcomm., Fisheries
 Melissa Haltner — DOS, Mar. Conserv.
 Melissa Haltrich — Dept. State Mar. Conserv.
 Brook Jamison — Rep Brian Baird; D/WA
 T. Johnson, Washington, DC
 Gary Johnston, Washington, DC
 Rick Kenin — Senate Commerce Comm.
 Marilyn Kent — US-EPA/Office of Water
 Stephannie King... — Sen Patty Murray; D/WA
 Arnold Kornstein — US-DOI
 Linda Lawson — US-DOI
 Rachael Lemarr, Washington, DC
 Matt Little — Northeast-Midwest Inst.
 Nicole Mays — Northeast-Midwest Inst.
 John McDonald — Rep Peter Hoekstra; R/MI
 Sally McGee — Rep Wayne Gilchrest; R/MD
 Patsy Minkzzio, Washington, DC
 Sarah Morison — House Resources Comm.
 Jennifer, Murphy — House Resources Comm.
 Amber Nightingale — Rep Robert Scott; D/VA
 Chris Obenshain — Sen George Allen; R/VA
 R.A. Oldds — USDA-ARS
 Kimberly Puglise — Rep Bart Stupak; D/MI
 Jim Reilly — Sen Thomas Carper; D/DE
 Julianna Rigg — Sen Patty Murray; D/WA
 Robyn Rubenstein — Sen Ron Wyden; D/OR
 Mike Slimah — US-EPA
 Christina Smart — Sen Barbara Boxer; D/CA
 Katie Swansey, Washington, DC
 Fred Swanson — US Forest Serv.
 Vivan Vera — USGS/BRD
 Seirdre Walsh — Rep Felix Grucci; R/NY
 Leo Wells — Headquarters-USGS
 Sean Whorley — Rep Bart Stupak ; D/MI
 Cameron Wilson — Rep Vernon Ehlers; R/MI
 Justin Wormmeester — Rep Peter Hoekstra;
 R/MI

Appendix II
Motion to the NAML Board of Directors

RE: Outside Requests for Funding Support or Sponsorships from NAML

Move: That NAML make awards in response to proposals and according to the following criteria:

- The purpose of the proposal must be consistent with the stated goals of NAML.
 - To advance the wise use and conservation of marine and coastal resources.
 - To promote the unique role of marine labs as windows to the sea for research, education, outreach and public service.
 - Provide for information exchange, cooperation and coordination among member labs and government agencies.

- All proposals must be forwarded to the Chair of the Review Committee by the director of a NAML member laboratory (in good standing) with a supporting letter.

- Proposals must be received by the NAML Review Committee Chair by January 15 and July 15.

- The total of all awards for a calendar year shall not exceed \$1,000.00 without review and approval of the Board of Directors. The committee may choose not to award any funds in a given year.

- That a standing Review Committee be formed that consists of the immediate NAML past-president and the presidents of the Regional Associations; NEAMGLL, SAML and WAML. The NAML past-president shall be the chair of the committee.