University-National Oceanographic Laboratory System

UNOLS Report to RVTEC

October 16, 2006

Outline

- 2006: Issues, Activities, and Accomplishments
- Departing Council and Committee Members and UNOLS Council Election Results
- Appointments to Committees
- the FOFC Fleet Renewal Plan
- Codes of Conduct – The Impact of Scientific Studies on the Environment
- UNOLS Brochure
- Non-Operational Periods
- UNOLS Vision, Mission, Goals and Objectives

2006: Issues, Activities, and Accomplishments

- Briefed the Naval Research Advisory Council on "What is UNOLS"
- Submitted a document to NSF, ONR, and NOAA on Procedures for Recommending Non-operational periods in the UNOLS Fleet.
- Provided input to the FOFC Fleet Renewal Plan
- Created Marcus Langseth Science Oversight Committee
- Produced UNOLS Informational Brochure
- Initiated discussion on Codes of Conduct - The Impact of Scientific Studies on the Environment

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Departing Council and Committee Members

- Council:
  - Tim Cowles
  - Curt Collins
  - Wilf Gardner
  - Cindy Lee Van Dover
- DESSC:
  - Mark Chaffey, MBARI
- FIC:
  - Ron Benner, U So. Carolina
  - Niall Slowey, TAMU

Thank you for your service to UNOLS!

UNOLS Council Election Results

- **CHAIR-ELECT:** (2 year term) - individual affiliated with any UNOLS Member Institution
  - Dr. Vernon L. Asper, University of Southern Mississippi
- **OPERATOR REPRESENTATIVE:** (3 year term) - from among designated UNOLS Member Non-Operator institutions
  - Dr. Robert W. Collier, Oregon State University
- **NON-OPERATOR REPRESENTATIVE:** (3 year term) - from among designated UNOLS Member Non-Operator institutions
  - Dr. Mary Jane Perry, University of Maine
- **AT-LARGE:** (3 year term) - individual affiliated with any UNOLS Member Institution
  - Dr. John Diebold, Lamont-Doherty Earth Observatory

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Appointments to Committees

- MLSOC
  - W. Steven Holbrook, U Wyoming (Chair)
  - Michael Enachescu, Memorial Univ of Newfoundland
  - Nancy Grindlay, UNC Wilmington
  - H. Paul Johnson, UW
  - Graham Kent, Scripps
  - Peter Littlewood, Shell Int'l Exploration and Production
  - Mitchell Lyle, Boise State U
  - Raymond Schmitt, WHOI
  - Thomas Shipley, UT Austin
  - Peter Tyack, WHOI

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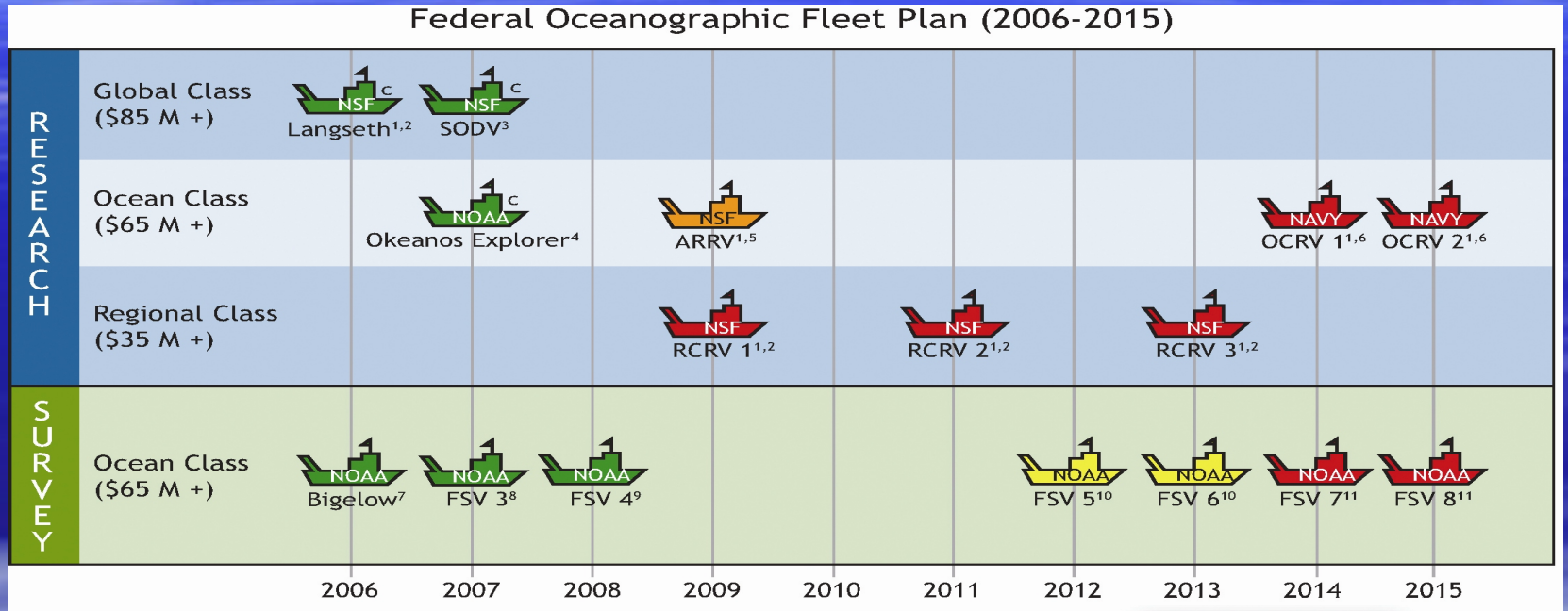
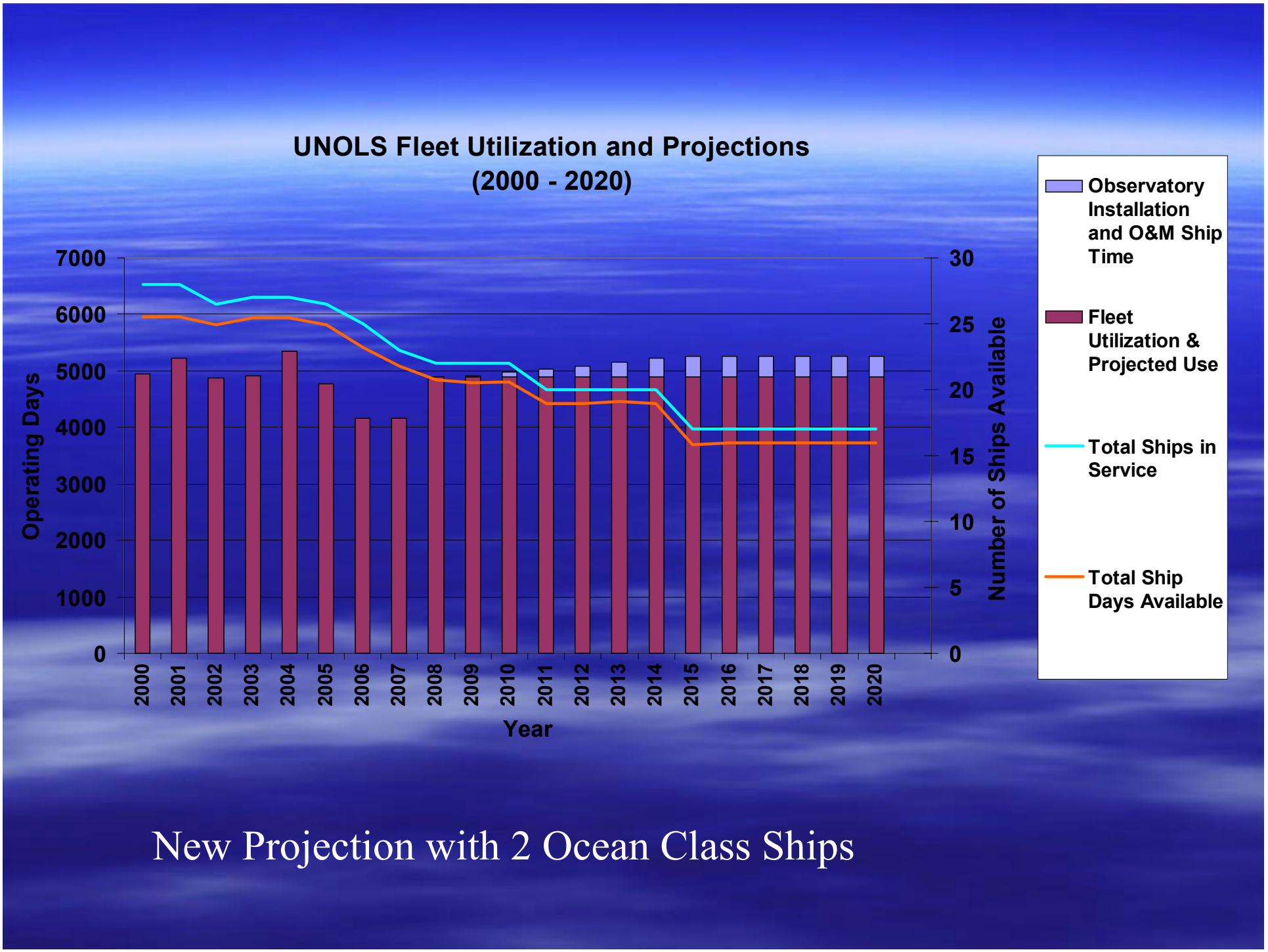
The Federal Oceanographic Fleet Plan

Planned Renewals



[1] It is anticipated that the operator will apply for status as a UNOLS vessel
[2] Construction/acquisition/conversion funded through NSF Division of Ocean Sciences budget
[3] FY 2005 and FY 2006 appropriation for conversion; FY 2007 President's Budget for conversion funds
[4] FY 2005 Appropriations for vessel conversion, operating funds in FY 2007 President's Budget
[5] FY 2007 President's Budget for Year 1 construction funds through NSF MREFC account
[6] Vessels planned by Navy
[7] FY 2007 President's Budget for operating funds
[8] FY 2005 appropriations for vessel construction
[9] FY 2006 appropriations for vessel construction
[10] Public Law 106-450 "Fisheries Survey Vessel Act of 2000" dated November 7, 2000 authorizes up to six fishery survey vessels
[11] FY 2008-2012 NOAA internal agency planning documents

= Planned
= Programmed
= Authorized
= Appropriated
C = Conversion



New Projection with 2 Ocean Class Ships

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Codes of Conduct – The Impact of Scientific Studies on the Environment

- Presentation by Lee Kimball Consultant, formerly Adviser to the World Conservation Union (IUCN) on International Ocean Governance.

"High Seas" Conservation and Marine Scientific Research

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UNOLS Brochure

1) What is UNOLS? Short description of what UNOLS is and what it does. Committee structure and tasks. The number of ships, their distribution, and decommisioning dates.
2) Status of the UNOLS fleet today
3) Status of funding

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Non-Operational Periods

Recommendations from the
UNOLS Council

Findings - 1st

- The shortfall in funding for the UNOLS fleet is not a short-term issue.
  - Approximately 80% utilization last ten years
  - Last two years worse due to increases in fuel and other operating costs.
  - Budgets are not keeping pace with cost increases, buying fewer days.

Findings - 2nd

- The under funded situation of the UNOLS fleet is unlikely to be rectified in the near future.
  - The costs of operating the entire fleet have increased by more than 5% per year over the past decade
  - There is no clear indication that there will be an increase in science or operations funding sufficient to increase fleet utilization.

Findings - 3rd

- While NSF support for the fleet has, until recently, supported a nearly constant number of operating days over the past decade, Navy and NOAA support has been gradually declining.
- This trend is unlikely to be reversed.
  - ONR 6.1 funds support less shiptime
  - NOAA requirements are not always a good match with UNOLS.
    - Ocean Exploration (OE) funding cut
    - New OE vessel to support and utilize
  - Fixed or Congressionally controlled budgets buy fewer days at higher day rates.

Findings - 4th

- The under-funded situation for the UNOLS fleet could potentially become even worse as new larger ships replace the intermediate and regional ships.
- Even though there will be fewer ships and days available (FOFC Plan), full utilization could still result in costs greater than currently available funding.

Findings - 5th

- The most funding for science field programs can be preserved with:
  - Cold lay-ups
    - lay-ups with little or no crew support and minimal maintenance costs for vessels with no plan for replacement
  - Early retirements
    - for vessels that have a plan for replacement
- Bringing a vessel out of cold lay-up or retirement is likely to be an expensive proposition and should be planned carefully.

Findings - 6th

- OOI has funding for installing ocean observatories that is over and above the funds currently budgeted to support UNOLS vessel operations,
- much of those dollars will be needed for special purpose vessels for cable laying, launching large moorings, etc.
- Some of that funding might come to the UNOLS fleet, but most likely for global class vessels.
- There is no “new” money yet identified for OOI science operations and maintenance after the installation phase,
- but that may indeed materialize (hence another good argument for not retiring any global ships early).

What values need to be considered in making a recommendation?

- The UNOLS Council has recommended a list of values, presented in order of priority to be used when making decisions about lay-ups, partial lay-ups and retirements.

1. Meeting Science Needs

- The choice of ships to operate should be made such that PIs are not waiting many years to get a ship that can handle the science program on account of the lay- up schedule.
  - The ramification of this value is that the special purpose ships, such as the *Atlantis* (Alvin) and the *Langseth* (MCS) will in all likelihood not be candidates for lay-up, as long as they have reasonable demand for their special-purpose equipment in any given year and that their schedules can be filled out with other programs that might have been accommodated on any of the large ships.

2. Geographic Availability

- Only the specialized ships (e.g., Atlantis) have no bias in their areas of operations imposed by the geographic location of the operator institution.
- Therefore, when laying up multiple ships in the same class (e.g., two regional ships) in any one year, they should be from different coasts.
  - taking into account the funded scientific demand for each region.

3. Cost of Operations

- Science programs could be scheduled on one of several vessels.
- One vessel or another ends up with a light schedule and is a candidate for lay-up.
- Funded science should be assigned based on which schedule maximizes the use of funding for science, as opposed to transit days or port days.
  - For example, an Atlantic ship with a full schedule by virtue of transiting to the Pacific to pick up one leg of work might not be a very cost efficient schedule.

3. Cost of Operations (cont.)

- There is not enough difference within a vessel class, assuming full schedules, to make decisions based on day rates.
- Efficient and cost effective operations should be encouraged.
- Cutting costs should not be encouraged in an effort to reduce day rates and operational costs at the expense of:
  - maintenance,
  - safety,
  - effective transit speeds,
  - Technical support & instrumentation
  - adequate meals and,
  - availability of crew overtime to support science operations

4. Quality of Operations

- Excellent ship operations that consistently meet or exceed the science mission requirements should be rewarded.
- Operations that consistently disappoint the PIs should not be rewarded.
- The post-cruise assessments provide some qualitative information on performance and should be taken into account when making decisions, particularly when the criteria above do not lead to a clear decision.
- Quality of operations can also be used when deciding between laying up or retiring a ship.

5. Sharing the Pain

- We recommend that in any one-year, no one institution should be asked to fully lay up two ships,
  - The impact on their marine operations is likely to be disastrous,
  - negate any of the advantages that the UNOLS fleet currently reaps from having multi-ship operators.
- Likewise, single-ship institutions should not be asked to lay up a ship for more than one year.

6. Diversity of Operators

- There are good arguments both for diversifying operators and for concentrating the operations in fewer institutions.
- The issue is clearly not black and white, but overall the benefits to graduate education of having ship operations at a large number of institutions tend to carry the day.
- Therefore, we recommend that diversity of operators be valued, but not at the top of the list.

How will out-year recommendations be made?

- The fairest mechanism for the out-year recommendations is to rotate the lay-ups among the operating institutions and their ships.

Who should develop the substantive recommendations?

- The substantive recommendations, using the above criteria, should be made by the Agencies to a subcommittee of UNOLS Council consisting only of members from non-ship-operating institutions.
- Within 30 days the subcommittee will conduct their review and then provide a response back to agencies after vetting their response through the full Council.
- The subcommittee will seek input from and share the recommendations from the Agencies with UNOLS ship operators, the Council, and any other interested parties.

What are the recommendations for 2007?

- Nothing formal received from the Agencies to date (10/2/06)
- Informal guidance has been provided by NSF and ONR program managers.

Global & Ocean Class Vessels

- No lay-ups are planned despite few schedules at optimal levels.
  - *Atlantis*, *Knorr* and *Revelle* have tentative schedules between 275 and 300 days, but with some possible weaknesses.
  - *Melville* is being utilized and scheduled by ONR with less than 250 days.
  - *Thompson* has less than 250 days with some real potential weaknesses
  - *Kilo Moana* has over 250 days and some unscheduled work.
  - *Langseth* has around 250 days, which is all the budget will allow.

East Coast Intermediates

- Run partial schedules on *Endeavor, Oceanus and Seward Johnson*
  - All at just under 150 days
  - Work in Med and Venezuela make consolidating schedules difficult without compromising science objectives.
  - Open periods are good candidates for additional funded work.
  - Venezuela clearances are a big factor for *Seward Johnson schedule.*

East Coast Regionals

- *Cape Hatteras* candidate for a full lay-up unless funded work materializes.
- *Hugh Sharp* has a light schedule at less than 150 days.
- *Atlantic Explorer* has a 150 day schedule, all local to Bermuda.
- *Walton Smith and Pelican* have viable schedules.
- *Longhorn* will be retired in 2006.

West Coast Intermediates

- *Wecoma and New Horizon* have reasonable, but light schedules just under 200 days each.
- Work is geographically spread out between San Diego and south, the Pacific NW and Hawaii making consolidation difficult.

West Coast Regionals

- *Point Sur and Sproul* will operate with very light schedules, each under 100 days.
- Available for additional work if funded or candidates for partial lay-ups.
- *Alpha Helix* will be retired in 2006.

Local Vessels

- *Clifford Barnes* has an exceptionally strong schedule.
- *Blue Heron, Savannah and Urraca* all have fewer than 100 days but will operate with partial schedules.
- Available for additional work if funded.

Budgets

- NSF budget will support additional work and/or partial lay-up support depending on final day rates and the extent of carry-forward from 2006.
- ONR budget may support some maintenance support for Navy vessels.

What Next?

- Should this informal plan be provided as a formal recommendation from the agencies and reviewed by the UNOLS Council's subcommittee?
- Doing so will keep the process open and encourage a fair and equitable approach in the future.

Agency Response

- Is this process effective? Yes
- Will the Agencies formally provide a set of recommendations to the UNOLS Council? Yes, would like to give this process a trial run.
- What should the timeline be for when these recommendations will be provided? Soon, now that the scheduling picture is a little clearer.

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UNOLS Vision, Mission, Goals and Objectives

2006 - 2007

UNOLS Vision

A healthy and vigorous United States research and education program in the ocean sciences requires broad access to the best possible mix of modern, capable and well-operated research vessels, aircraft, submersibles and other major shared-use facilities.

UNOLS Mission

UNOLS provides a primary forum through which the ocean science research and education community, research facility operators and the supporting Federal agencies can work cooperatively to improve access, scheduling, operation and capabilities of current and future academic oceanographic facilities.

UNOLS Goals

1) Promote broad, coordinated access to oceanographic research facilities (access)
   - Maintain a system and procedures that facilitate and promote broad access to research vessels and other major ocean science facilities.
   - Support coordinated, efficient and effective scheduling of research vessels and facilities.

UNOLS Goals

2) Support continuous improvement of existing facilities (improvement)
   - Foster co-operation among facility operators, funding agencies and research scientists with the goal of continuously improving the quality and capability of existing ocean science facilities and the quality, reliability and safety of their operation.

UNOLS Goals

3) Plan for and foster support for the oceanographic facilities of the future (planning)
   - Provide leadership and broad community input to the process of planning for and supporting the improvement, renewal and addition of facilities required to support the ocean sciences in the future.

Issues and Objectives for 2006-2007

1) Scheduling and Utilization
   - Address issues related to retirement of research vessels and planned retirements as it relates to fleet renewal and better utilization of the fleet.
   - Explore methods for better serving the requirements of NOAA and ONR programs and to better align NOAA funding processes with the UNOLS scheduling and proposal process.

Issues and Objectives for 2006-2007

2) Quality of Fleet Operations
   - Recruiting and retention of skilled and experienced technical personnel and crewmembers is extremely important to successful science operations.
   - Better identify areas needing improvement and successful operations through improved Post Cruise Assessments.

Issues and Objectives for 2006-2007

3) Fleet Renewal
   - Articulate UNOLS vision for Oceanographic Facilities of the future through the Fleet Improvement Plan that addresses the infrastructure needed to support new and innovative science.
   - Support and participate in ongoing fleet renewal programs such as ARRV, Regional & Ocean Class and new HOV.

Issues and Objectives for 2006-2007

4) Communications
   - improve communication within and between the UNOLS subcommittees and the UNOLS council. Too few people in the academic or congressional ranks really know what UNOLS is or what it does.
   - Better communication of important issues to the broader science community.

Issues and Objectives for 2006-2007

5) Data management:
   - We are entering a new era when PIs or groups of PIs will have to more effectively and efficiently make their data available within prescribed time periods to the community at large (other researchers, managers, and the public). UNOLS should play a role in the dissemination of the information on best practices for the collection of data/metadata when working at sea.

Issues and Objectives for 2006-2007

6) Communications:
   - better explain the process of proposing to use a UNOLS vessel and what is expected and the responsibilities of all the different parties (scientists, crew, technical services).

Challenges
Continuing access to the sea

- The projected shortfall in ship availability over the next 5-10 years despite the federal agency plan for oceanographic ship replacement.
- The increased demands made upon the oceanographic fleet as the Ocean Observatory Initiative is implemented
- The increased demands made upon the oceanographic fleet if the vision of the Ocean Commission is realized and ocean science funding is increased as recommended to the President.


END