Draft

MEETING REPORT

UNOLS ANNUAL MEETING

8:30 A.M., Friday, 14 October 2005
National Science Foundation, Room 1235
4201 Wilson Boulevard Arlington, VA

Executive Summary

The UNOLS Annual Meeting was held at the National Science Foundation (NSF) in Arlington, VA on October 14, 2005. The focus of this year's meeting was fleet renewal and budget concerns. A keynote panel consisting of Dr. David Halpern, Office of Science & Technology Policy; Mr. Peter Hill, CORE, and Ms. Margaret Spring, Dept. of Commerce Subcommittee on Ocean, Fisheries, and Coast Guard provided their personal background information and then gave insight as to each of their organizations' views on implementing the U.S. Commission on Ocean Policy's Recommendations. There followed a question and answer period. All reports/presentations from the Federal Agency representatives also revolved around budget issues.

UNOLS Council elections were also held. Robert Pinkel, UCSD/SIO was elected Representative at Large. Incumbent, Peter Ortner, UM/RSMAS was re-elected to a second term at Operator Representative. A Ballot Measure to approve a new UNOLS Standing Committee, the Marcus Langseth Science Oversight Committee (MLSOC) was also passed.

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Science Oversight Committee (MLSOC) was also passed.

Welcome and Introductions

Peter Wiebe, UNOLS Chair, called the meeting to order and welcomed everyone. Introductions were made around the room. The meeting agenda is included as ***appendix I*** and the attendance list is included as ***appendix II***.

Peter then gave a brief overview of UNOLS activities over the past year (***appendix III***) including providing recommendations on budget shortfalls and the impact on 2006 ship use to the National Science Foundation (NSF).

In the area of fleet renewal, UNOLS conducted an evaluation of Ocean Class hull type alternatives and provided recommendations to the Chief of Naval Research (CNR) as well as participating in an extensive review and edit of the Regional Class performance specifications for NSF. The Arctic Icebreaker Coordinating Committee (AICC) conducted a thorough review of the U.S. Coast Guard's (USCG) icebreaker mission analysis and provided significant input to improve this study. Many of the other activities undertaken by UNOLS over the past year will be reported during this meeting.

Keynote Panel of Speakers - U.S. Ocean Commission Report

Peter then introduced the keynote panelists and the intent of the panel. Dr. David Halpern works in the President's Office of Science and Technology Policy (OSTP) and is a co-chair of the Joint Subcommittee on Ocean Science and Technology (JSOST) with Margaret Leinen and Rick Spinrad. Mr. Peter Hill is a former Ocean Commission staff member and is currently working with ADM Watkins and Leon Panetta on the Joint Ocean Commission Initiative as well as working at the Consortium for Oceanographic Research and Education (CORE). Ms. Margaret Spring is the Senior Minority Counsel for the Oceans and Fisheries Subcommittee of the US Senate Committee on Commerce, Science, & Transportation.

The U.S. Commission on Ocean Policy's recommendations for a coordinated and comprehensive national ocean policy "An Ocean Blueprint for the 21st Century," were provided to the President and Congress one year ago. In response, the Administration has developed the "U.S. Ocean Action Plan," which outlines immediate, short-term and additional long-term actions that provide direction for ocean policy. Similarly, the U.S. Congress has conducted various oversight hearings and is acting on important legislation designed to implement many of the Commission's recommendations.

Peter Hill reviewed the key elements of the Ocean Commission recommendations and provided a status of progress made to date. He also shared some thoughts from the perspective of CORE.

David Halpern covered the Administration's structure for ocean science research, technology and education within the Office of Science and Technology. He also discussed the President's response to the

Ocean Commission's recommendation in the Ocean Action Plan as well as the Ocean Research Priorities Plan, currently under development.

Margaret Spring addressed how the Senate and Congress in general plan to implement the Ocean Commission recommendations, covering the role of the National Ocean Policy Study subcommittee and significant legislation in the works.

Peter Hill – CORE

It is about one year since the report was issued and many of the problems outlined in the report still exist such as declines in Cod stocks, beach closures due to pollution and red tides. Action taken to date has not addressed many of these issues and we are not moving forward fast enough.

The Commission tried to bring a sense of the value of the coastal regions to our economy. 50% of the nation's Gross Domestic Product (GDP) is generated in our coastal areas. Hurricane Katrina showed that some poor planning and the lack of ecosystem based planning can lead to serious problems. We need to move towards an ecosystem based management plan and change the governance system for coastal and ocean areas. We also need to include science in the decision making process and enhance stewardship of the ocean. This means that we need to enhance science, infrastructure, and double the research budget. We need a national ocean science research strategy and a national science infrastructure strategy. We also need to improve ocean education and literacy of the public.

The progress to date includes the Administration's formation of the Cabinet level Committee on Ocean Policy and also the published Ocean Action Plan. This plan calls for the development of a National Ocean Science Research Plan and Implementation Strategy by December 2006. This will be the Administration's roadmap for future ocean science research and the community will want to be involved in this drafting this strategy.

In the Congress, the Senate has some fifty bills in progress, a few have passed to the House but not many have been signed into law. We are in a time of a difficult political climate and there are many other pressing issues facing Congress at this time, which have taken their attention away from much of this proposed legislation. There are come critical bills that must be passed such as the NOAA Organic Act.\

At the same time, there has been some significant progress at the State and Regional level. California has created its own Ocean Council and intends to lead the way in coastal governance. Alaska has created an Ocean Policy Coordinator and several other states are considering or implementing similar actions. Support from these State and regional organizations will be critical to moving the ocean agenda forward.

Admiral James D. Watkins, chair of the U.S. Commission on Ocean Policy and the Honorable Leon E. Panetta, chair of the Pew Oceans Commission have joined forces with the Joint Ocean Commission Initiative to promote and move the ocean agenda forward, using their respective reports recommendations. A few of the key issues that this joint initiative will focus on include:

• Doubling of the Ocean Sciences budget including funding for the supporting infrastructure.
• Strengthen NOAA - Pass a NOAA Organic Act, (HR-50) that would officially establish NOAA within the Department of Commerce and define its mission as a lead civilian agency for the oceans and atmosphere.
• Reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act.
• Urge the Senate to expeditiously provide advice and consent for United States accession to the United Nations Convention on the Law of the Sea.
• Strengthen the Coastal Zone Management Act and enhance our ability to preserve coral reefs under the Coral Reef Conservation Act of 2000.

A question to consider is how UNOLS and the UNOLS community fit into the process of defining the broader strategies. The CORE Board of Governors met last week and high on their list of priorities is the UNOLS Fleet. CORE will continue to provide a voice in support of Academic Fleet Renewal. Admiral West is about to send forth a letter in support of fleet renewal funding and operational support within the ONR budget.

David Halpern, OSTP

Dr. David Halpern continued the panel discussion. Dr. Halpern serves in the Science Division of the President's Office of Science and Technology Policy (OSTP). He is also a co-Chair with Margaret Leinen (NSF) and Rick Spinrad (NOAA) of the Joint Subcommittee on Ocean Science and Technology (JSOST). The OSTP was created by an Act of Congress in 1976. Dr. Halpern explained the role of OSTP in setting our National priorities for ocean research and education and the actions being taken by the Administration to implement the "Ocean Action Plan". The OSTP advises the President on science and technology policies, plans, programs and budgets. They are the designated-chair of the National Science and Technology Council (NSTC). The NSTC leads interagency efforts to develop Science and Technology (S&T) policies, plans, programs and budgets. They establish goals for Federal investments in S&T, coordinate S&T through NSTC, and provide annual interagency guidance on priorities, with OMB. Dr. Halpern reviewed the NSTC organization structure.

The Administration's response to the Ocean Commission’s recommendations, the "Ocean Action Plan" was implemented by Executive Order 13366 to establish a Committee on Ocean Policy and develop the Ocean Action Plan. The Plan will work to develop strategies that conserve living resources, advance policy through the best science and data, and work towards an ecosystem-based approach in resource management. They seek enhanced coordination, collaboration, and synergies between Federal agencies, State and local governments, academia, industry, nongovernmental organizations. The principles for an Ocean Research Priorities Plan will be developed in an open and transparent manner. Dr. Halpern explained that Town Hall meetings and other open forums are planned in December 2005 and early 2006. These forums allow opportunity for community input and UNOLS should keep abreast of these opportunities. They will develop performance metrics on meeting national goals and identify areas of highest priority and opportunity. They are establishing pillars for the Ocean Research Priorities Plan that

will identify gaps and deficiencies of knowledge for enhancing stewardship of ocean resources, advancing economic growth, improving national security, and promoting homeland security.

Dr. Halpern continued by discussing the governance of JSOST. Major governance areas include Ocean Observations, Ocean Infrastructure, Harmful Algal Blooms, Hypoxia and Human Health, Ocean and Coastal Mapping, Ocean Education, and Partnership Programs. Within the ocean infrastructure area, the task to develop a strategic plan for major infrastructure (ships, submersibles, ROVs, aircraft, observatories) is included.

Margaret Spring – Minority Counsel for Senate Commerce, Science and Transportation Committee (Commerce).

Ms. Spring is involved in the drafting of ocean related legislation and with the National Ocean Policy Study (NOPS), which is a subcommittee of Commerce. She discussed how the Senate and Congress in general plan to implement the Ocean Commission recommendations, covering the role of the National Ocean Policy Study subcommittee and any significant legislation in the works. She began by noting that it has been a very busy year for the Government as they have had to respond to the natural disasters. She indicated that the most important committee for UNOLS to focus on is NOPS, which is chaired by Senator John Sununu (R-NH) and includes ranking member Senator Barbara Boxer (D-CA). The re-creation of this committee is a signal from the Senate of its high importance. They have the ability for cross cutting other areas of the Government with subcommittee members who are also members of the Appropriations Committee. The Senate has moved a lot of legislation, but they will need to figure out how they can work with the House. In 2005, the NOPS did not receive much attention because of other more pressing issues. Hopefully in 2006, the second session, we will see more activity.

Questions and discussion:

Bob Knox – where are the roadblocks or friendly forces within the House?
(Reply) There used to be an ocean and fisheries committee, now there are transportation and resources and science committees. Resources include terrestrial resources. Because of the splitting up of resources, every bill has to go to several committees. If they can be dealt with simultaneously, then it is useful, but this usually happens at the staff level. If not then there are roadblocks. Also, House members cannot serve on authorization and appropriations simultaneously.

Dan Schwartz – why is UNCLOS stuck in Congress?
(Reply) A few conservatives make the Senate leader nervous about bringing it to the floor. It may require the President to request this directly of the Majority Leader.

Mike Prince – asked about the effectiveness and roll of the Ocean Caucus in the House.
(Reply) They have no real jurisdiction. They didn't even have members on relevant committees, but have moved to change this. Also, they need to put some focus on individual legislation, instead of broad vision bills.

Dennis Nixon - asked about the Magnusson Act (The Fisheries Conservation and Management Act of 1976) re-authorization.

Margaret discussed some of the details and political issues in creating this legislation as well as the international aspects.

Peter Wiebe - Asked about support for NSF funding.
Margaret said there is support for this in the Senate, but not sure where it stands in the House.

David Halpern mentioned that understanding was a theme of the Action Plan and that this in fact cuts across and is part of all the themes. Also, under OMB divisions NOAA is under Commerce, while NSF, NASA and other science agencies are differently reviewed. Recommendation is that NOAA be put under the same umbrella.

Bruce Corliss - asked about whether there was focus on ships in terms of support.
Margaret feels that it is considered as part of the view that infrastructure is needed for research.

The Oceans Act of 2000 is a good piece of legislation. It requires an integrated report every two years about Ocean and Coastal activities report, with where money is being spent. This year's report will come out any day now and we should look at it.

Agency Reports:

Larry Clark, National Science Foundation (NSF)

Larry began by recommending to everyone that they read Mel Bricso's article in Oceanography Magazine concerning the Ocean Action Plan. He then went over staff changes at NSF. Larry Epp has retired after 17 years of service. They will begin recruiting for someone to take over his position. New people at NSF include Elise Ralph and Mary Ellen Carr. NSF also plans to hire an environmental officer beginning in January 2006.

Larry then provided information on the proposed NSF budget. His slides are included as ***appendix IV***. Because appropriation bills have not yet been passed NSF is still operating under a continuing resolution. Their appropriations bill is waiting the outcome of the conference committee. The proposed increase for Ocean Sciences (OCE) in FY06 is 1.1% or about a $3.47M increase to $315M. The total Geosciences budget increase is 2.2% with Atmospheric and Earth sciences getting slightly larger increases because of new major infrastructure coming online for those divisions.

Next, Larry showed the trends of Geosciences and Ocean Sciences budgets and how they have spent their money over the past five to ten years. The trend for all divisions of Geosciences was to have steady increases in the early 2000's and then to start leveling off after FY03. Within OCE there was a large cut in FY05 following a record year for facilities spending. The FY06 budget attempts to restore some of the funding for research and education grants and keeps total support for the Academic Research Fleet level.

Within that flat budget there is a requirement to spend more on new infrastructure, so for 2006 there will be about a $5M reduction in OCE's support for ship operations.

Larry showed the trends of OCE spending by category over the last five years. Core research support peaked in 2003 and is declining the last couple of years. Ship ops funding peaked in 2004 and is now declining. A category that covers everything else except drilling has been increasing and includes education, OTIC, BE, and etc. At the same time that the budget for operations is flat or declining, the day rates for large ships are going up dramatically due to fuel cost increases and other factors. Also, NSF's share of the total fleet operating costs has been rising steadily while all other users of the fleet have remained relatively constant. The challenge for schedulers this year was to stay within a budget that was $5M less and this could well be the challenge for several years to come.

Larry also presented slides showing the alignment of NSF/OCE goals with the UNOLS goals, in particular fleet renewal using the mid-size infrastructure account for Langseth, Alvin replacement, and Regional Class research vessels.
What is ahead? – They were able to come close to meeting the 2006 budget. NSF will be really challenged in 2007 with new, more expensive ships coming on-line (Langseth and Sharp), unless there is a real increase in funding.

Ralph Rogers, National Oceanic and Atmospheric Administration (NOAA)

Beth White was unable to attend and so the presentation was given by Ralph Rogers. Ralph said that NOAA is also still under a continuing resolution. There is a wide disparity between the Senate and House budget marks. NOAA has a budget for about $12M in charters under the Senate version. NOAA Ocean Exploration (OE) has about $8M in charter, but this amount will probably go down with the advent of the Okeanus Explorer. NOAA Deep-ocean Assessment and Reporting of Tsunamis (DART) work will be a small part of UNOLS work in the future. NOAA is in the program planning stage for putting together future NOAA budget and charter plans.

John Freitag, Office of Naval Research (ONR)

Over the past few years, ONR use of the fleet was around 700 days of ship time. In 2005 they were down to about 500 days due primarily to programmatic requirement changes and not budget. They are back to 700 days in 2006 and unless fuel goes through the roof he believes that he can cover scheduled days with his budget. Every one dollar change in fuel price corresponds to about a $3,500 increase in the day rate.

Mike Prince mentioned that NSF director provided some additional support with sweep up funds to help cover the cost of fuel increases. Also, the Navy plus up for $5M is still included in the House mark. Lastly, some attempts by the DART program manager to contract for support has found very high prices, so they are coming back to UNOLS for some possible support.

Future Ship Time Initiatives and Demand

UNOLS Action Items - Peter Wiebe

Peter addressed the need to decide if there were action items with respect to budget problems for UNOLS (*appendix V*). Among other things we need to make accurate future fleet use projections for fleet renewal planning recommendations. If you take 2006 utilization and project forward you get a much different answer than we do using past utilization trends that have been the basis for our projections.

Also of great concern is the prospect of delayed access to sea. There appears to be an increasing back-log of projects that are delayed a year or more in getting scheduled. We need to talk about this. We need to study and understand this more clearly. We need to consider what kinds of changes are needed to alleviate these problems. It is not something that we are used to dealing with.

Wilf Gardner mentioned that in the past we did see some deferred work, but this was usually for reasons other than budget. Bob Detrick thought we should dispel the perception that the success of proposals including shiptime is in a death spiral. It is important to get the message out to the community about realities, including showing that there is still a lot of work going to sea every year. Suggestions include using the UNOLS Newsletter, an EOS article, or an NSF letter. Carin Ashjian suggested other science organizations such as ASLO should be employed as well. She also said that it was important to emphasize the continuing need to write good proposals. Peter Ortner said that when we do this we need to be careful about how we explain that the various components are impacted to different levels. There was a consensus that we should work carefully with NSF to make sure we agree on what the delay really is and what it magnitude is. Larry Clark said that this has been a bit of a moving target, but no matter what, we should dispel the rumors and that there will be a healthy budget and a need to continue submitting proposals.

Regional Class Update– Mike Reeve, NSF

Mike Reeve reported that once the NAVSEA/NSF agreement is signed, ship designs for the Regional Class would take about a year to complete. The current timeline, indicates that award to the two design/build teams could happen in January 06, with a final design selection one year later in January 07. This will incorporate a bid for the actual cost to build the ships of about $25M. So it is hoped that construction of the first ship would begin in 2007. There was some discussion as to selection of ship operators. NSF's default position is that this decision cannot be made until the NSF board has approved actual construction (late 2006/early 2007). Margaret Leinen will discuss this with the Board to see if there are alternatives.

Ocean Class Update - Frank Herr, ONR

Frank began by thanking UNOLS for their help on the Ocean Class hull form selection process.
ONR is in the middle of a discussion between the Navy and the Congress about how ONR funds research vessel construction. The Navy has twice helped to renew the UNOLS fleet. But now, with the growth of NOAA and NSF in promoting the civil side of ocean research (something the Navy used to do), and with

the rapidly changing world we live in, the Navy's focus has also changed.

The question is, should funding be an infrastructure expenditure under the SCN funds or should it be under the research funding as infrastructure in the ONR budget? At present, the Navy fleet is about half its previous size and the Ships Construction Navy (SCN) fund is much smaller than it used to be.

$4M was put in the 6.1 account for design, which displaces some research funds. RADM Cohen has offset some of this with other funds. The $25M per year for construction would displace an unacceptable amount of research funding. Language in the Appropriations bill calls for the construction money to be in the SCN accounts. Defense appropriation bills might not come out until December. Only new starts are being impacted.

The House Armed Services Committee has asked ONR to prepare a report on the issue of the renewal of the Academic Research Fleet and what provisions the Navy will make for the Ocean Class Research Vessel. They also looked at the issue of using the basic research funding for the design and construction. They de-authorized the funds in the basic research account and re-authorized it in a higher level research fund. The Senate disagreed with this decision and said basic research funds could be used to do the design, but that it would be detrimental to fund the construction from research funds. They directed the Navy to look at funding the construction through SCN.

The appropriators in the House did not say anything about construction of new ships, but they added $5M for use of the UNOLS Fleet. The Senate appropriators included $4M for the design, but used the same language to express their displeasure with using research funds for construction.

In the appropriations conference – the $4M and $5M will have to be justified. What is not clear is that the President's budget already included $4M for the design. So this needs to be resolved, because the $4M is included twice. Appropriations may not be finalized until December or January and the 2007 budget will be going up in January.

Every year in January the President reveals the FY07 budget. The FY06 language could end up in the FY08 budget. Frank says they have lost about a year and a half on the process. In the interim, they have received a strong message from Congress about the value of the Academic Fleet and the roll of the Navy in maintaining the infrastructure.

Federal Oceanographic Facilities Committee (FOFC) Plan

Bob Houtman commented that within the context of all the issues that have been discussed thus far, the Fleet Renewal Plan addresses these issues.

This new Plan has been in the works for over a year. The National Ocean Research Leadership Council (NORLC) was briefed in July of what they had hoped would be a final draft plan in September. The principals involved sent back a number of comments that the FOFC group is now working to address.

Bob presented the slides shown at the Council (***appendix VI***).

The FOFC plan has moved forward with the agency plans as they are depicted now.

We need to have an ongoing specific outline in place for moving forward with construction plans and designs for new ships. This could also be seen as presumptuous especially when ships are being laid up.

There is also the potential for rapid reductions in the fleet if appropriations for planned and authorized vessels do not materialize.

Planning suggests that renewal is keeping up with aging fleets.

We need to punch up the message on why ships are needed. He has been working with Peter Wiebe and Dave Hebert on developing the draft.

Curt Collins emphasized that support for education needs to be included in the FOFC Plan.

Dan Schwartz commented that perhaps the 30-year lifespan should be revisited. It has a huge effect on the affordability of the ships. Bob Houtman noted that this is a good point. Question: Do the existing ships have an increasing day rate?

UNOLS Membership Votes and Election Results:

Marcia McNutt provided background information on the ballot measure to form a new UNOLS standing committee to oversee science and operations for the R/V Marcus Langseth as a National Oceanographic Seismic Facility. The proposed terms of reference for the new standing committee are included as ***appendix VII***. The recommended name for the committee is the Marcus Langseth Science Oversight Committee (MLSOC). The membership voted to approve this ballot measure.

Elections were also held to fill two UNOLS Council positions. The Nominating Committee of Bruce Corliss (Chair), Eileen Hofmann, and Denis Wiesenburg assembled a slate of candidates for the UNOLS Council positions to be filled (***appendix VIII***).

The following individuals were elected to serve on the UNOLS Council:

• Peter Ortner, UM/RSMAS, was elected to a second 3-year term as an Operator Member (from any UNOLS Ship Operating Institution).
•Rob Pinkel, UCSD/SIO, was elected to his first 3-year term as Member-At Large (from any UNOLS Institution)

Committee Reports:

Research Vessel Operators' Committee (RVOC) – Tim Askew, RVOC Chair, provided the committee report (see ***appendix IX***). The RVOC would normally be holding the Annual Meeting the month of October; however, at the 2004 Annual Meeting it was decided to change the date to April 2006. This one time delay will ultimately allow the membership to attend meetings during a less demanding time of the operating year, leaving the September through November window open for maintenance/overhaul planning, and proposal writing.

The 2005 year has been busy on several fronts. Group purchases of radars were handled by Oregon State University (OSU). This purchase provided Furuno radars to seven vessels. Woods Hole Oceanographic Institution (WHOI) has ordered Furuno Doppler Speed logs for eight vessels and due to the long lead time the Speed logs have not yet been received. WHOI also did a group purchase for life rafts. Stability reviews for all UNOLS vessels that don't have a recent review in place is in the works by Scripps Institution of Oceanography. The plan will be to include eight vessels in 2005 and ten vessels in 2006.

The science van construction is progressing nicely with the East Coast pooled aluminum isotope van being completed along with the aluminum isotope van for the University of Rhode Island / Endeavor, and the steel general purpose van for a University of Delaware Scientist. Construction is in progress on the WHOI aluminum hydro van and scheduled to begin on a 10 foot isotope van for University of Minnesota / Blue Heron.

Regulatory issues still remain high on the RVOC list even thought the deadlines are long past and all the effected vessels over 500 GRT now have Vessel Security Plans (VSP), port facilities have Facility Security Plans (FSP) where required, and Non-Tank Vessel Response Plan (NTVRP) for vessels over 400 GRT. The NTVRP in some cases is still being reviewed by the U.S. Coast Guard but the vessels have a provisional letter in the interim.

The Spring RVOC Meeting Agenda is currently under development with crew retention and soaring fuel costs being hot topics. The meeting will be hosted by the University of Washington in Seattle. The meeting dates are April 25 through 27, 2006.

Fleet Improvement Committee (FIC) - Dave Hebert reported on the many FIC activities over the past year. His slides are included as ***appendix X***. Much of their focus has been on Fleet Renewal activities. Over the past year, FIC provided input to NSF on the Regional Class ship in regard to UNOLS Team representatives and Performance Specifications. FIC also provided input to ONR regarding the Ocean Class. UNOLS provided a recommendation that the hull form be a monohull in February 2005. Another activity that FIC is involved in the development of general purpose Global Vessel Science Mission Requirements (SMRs). Three of the Global ships are approaching the age that –Mid-Life refits are often carried out. The SMRs could provide guidance on some of the upgrades that could be considered during refits. A Global Class SMR Steering Committee has been formed and the Chair –is Bruce Howe (UW). Their tasking is to produce a Global Class general-purpose SMR document. As a follow-on activity they could incorporate heavy lift considerations, and seismic capabilities. Additional information about the

project is available on the web at <http://www.unols.org/committees/fic/global/global_smr.html>. An upcoming activity is to conduct a community on-line survey to identify global ship facility needs. Community input is requested.

Dave reviewed the Table of Contents for the UNOLS Fleet Improvement Plan that is under development by FIC. He also showed a chart of the current fleet versus the fleet of 2020. By 2020, there will be fewer ship days available than current utilization.

Other FIC activities include:
• Provide input to FOFC Long-Range Fleet Renewal Plan.
• Establishing ADA Guidelines.
• Ocean Observatories – Keep abreast of ORION Facility Needs
• Kilo Moana – Follow-up on issues previously identified - FIC Chair and University of Hawaii discussions are planned.
One position on FIC will open in January 2006. A Call for Nominations will be announced. Volunteers are needed.

United States Coast Guard (USCG) – Jon Berkson reported that the future course of the Nation's icebreaker fleet would be determined in the next year or so. Booz Allen Hamilton drafted a Science Mission Needs Analysis Report. The report is in its final review. Additionally, the National Academy of Sciences (NAS) is conducting a study on the need for USCG icebreakers. An interim report from NAS is expected in late November 2005 and the final report is expected in mid-2006.

Arctic Icebreaker Coordinating Committee (AICC) – Carin Ashjian, co-Vice-Chair, provided the AICC report. Slides are included as ***appendix XI***. The USCGC Healy has completed her 2005 science field season of three research legs and is transiting back from the Eastern Arctic with port calls in Tromsø, Norway (Sept. 20-Oct. 4) and Dublin, Ireland (October 10th). After two highly successful cruises for the National Science Foundation and NOAA's Ocean Exploration Initiative in the Chukchi and Beaufort Seas, with science personnel transfers in Barrow and a port call in late July in Dutch Harbor for refueling and to embark a new science party, Healy set sail for her final 2005 scientific mission, the transect of the Arctic Ocean. This third research leg involved a combination of detailed sampling and coring at specific sites and geophysical data acquisition using a seismic streamer and the ship's hull-mounted mapping systems during the transits between coring sites. Healy met up with the Swedish Icebreaker Oden on September 1 in the northern Canada Basin and transited to the North Pole, reaching the Pole on September 12 (Healy's second visit to the Pole). Upon leaving the Pole, the ships encountered heavy ice that seriously slowed their progress and limited the opportunities for science. Despite the difficulties encountered with the ice, all of the 2005 science missions were successful. The new laboratory layouts installed prior to the field season have received positive reviews from science participants on all three 2005 legs. Healy is scheduled to return to Seattle in early December.

At the request of the National Science Foundation, AICC has extended its efforts to improve Healy performance through the debriefing process. Since Healy's first surveys, AICC members have joined

principal investigators and Healy personnel in teleconferences to discuss the ship's performance during each individual field program. Suggestions for improving the ship and crew's operations were discussed verbally and recorded in the debrief notes, but no effort was made to formalize the recommendation process. Beginning with the 2004 field season, AICC members prioritized the list of recommendations that resulted from the teleconferences and forwarded this list to the Healy's captain, the NSF and USCG HQ for further action. At the AICC meeting in December the prioritized list of recommendations from 2004 will be discussed in an effort to monitor how well the recommendations of the science parties are being addressed.

The news continues to be less favorable for the POLAR Class icebreakers. Some funds (~$48M) have been obtained to initiate repairs to the engines of the Polar Sea. Polar Star completed repairs from damage incurred during the 2005 Deep Freeze in Antarctica, but the NSF has contracted the Russian icebreaker Krasin to support the 2006 McMurdo Station breakout, with the Polar Star serving as backup. Ice conditions near McMurdo Station are quite light this year. The present plan is for Polar Star to head south from Seattle in November, but as soon as Krasin is able to complete the break-in, Polar Star will return to Seattle.

In early August, the USCG and the NSF signed a Memorandum of Agreement outlining the terms for funding and scheduling the USCGC icebreakers for NSF science. The issue of the US icebreakers continues to be discussed. A National Academy Sciences Panel has been convened on the "Assessment of US Coast Guard Polar Icebreaker Roles and Future Needs". The Chair of the AICC, Margo Edwards, will speak to the panel via teleconference at their next meeting (November 3/4). The Coast Guard science mission needs analysis report commissioned by the Coast Guard from Booz Allen Hamilton has been completed and delivered to the Coast Guard. At the request of CDR Tom Wojahn, the AICC reviewed both the initial and revised versions of the report. Many science users contributed to the report either through interviews or through web-based surveys.

The AICC has no new members this year, but will replace three members (outgoing chair Margo Edwards, Dr. Robert Bourke and Dr. Peter Minnett) at the end of next year. The next AICC meeting is scheduled to take place December 12th and 13th in Seattle, WA.

DEep Submergence Science Committee (DESSC) – Annette DeSilva reported on DESSC activities, 2004/2005 Alvin and ROV operations, and National Deep Submergence Facility equipment/instrumentation upgrades (***appendix XII***). Annette began by reporting that Deb Kelley, DESSC Chair, could not attend the Annual Meeting because she as at sea aboard the Thompson. Her cruise, VISIONS '05 - Expedition to the Underwater Volcanoes of the Northeast Pacific, has had many highlights. The project included operations with ABE and Jason II and a high-definition underwater video camera. John R. Delaney and Deborah S. Kelley (UW) were the co-chief scientists. VISIONS '05 featured the first real-time broadcast of high-definition video from the seafloor.

Since last year's Annual Meetings, DESSC has met twice, once at the DESSC Annual community meeting in San Francisco on December 12, 2004 and then again on June 13-14, 2005 at WHOI. During

these meeting they heard reports from vehicle science users, Agency representatives, and the NDSF Operator. The learned the status of the NDSF Vehicle operations, tools and upgrades.

An activity that NSF and NOAA have tasked DESSC with is to establish safety standards for Human Occupied Vehicles (HOVs). The DESSC will form a subcommittee to carry out this task. The safety standards will address certification of the vehicle, certification of the ship, and training (vehicle and ship crew). Potential members of the subcommittee include a RVOC Safety Committee representative, HOV operators from WHOI, HBOI, and HURL, HOV pilots, Marine Superintendents, and science users. Input from the Navy and legal counsel would likely be required. This effort might span two years.

DESSC is also working to establish criteria for bringing new assets into the NDSF. In anticipation of the development of new deep submergence assets (ROVs, AUVs) and the potential requests for these assets to be included in the NDSF DESSC is drafting the criteria. At the June DESSC meeting, DESSC reviewed the draft criteria. Once the draft has been finalized, it will be circulated to the agencies, then the NDSF operator for comment. Pending revision, the draft criteria will be sent to the UNOLS Council for approval.

Annette presented slides showing the geographic area of requests for Alvin and the ROVs. Demand for Alvin is high and there is interest to continue work in the traditional research areas. Interest in using the Jason II and the towed vehicles is also high. Work areas include the Atlantic, off Hawaii, East, West, and South Pacific.

The Replacement HOV project is proceeding with a two-phase approach. Progress will be evaluated at the end of Phase One, which includes feasibility testing for prospective energy system, qualification testing for syntactic buoyancy foam, preliminary vehicle design for sphere attachments, and design and forging of the personnel sphere. Phase two (completion of sphere and final vehicle fabrication/testing) will proceed based on the review. The anticipated vehicle final assembly is 2008 and testing/technical support would take place in late 2008. In mid-2009 the vehicle could begin support of science programs.

The Hybrid ROV (HROV) project is underway at WHOI with expected testing and trials of the vehicle system in late 2006.

In DESSC membership news, Dave Mindell completed his second term in September. Nominations are needed to fill his position.

Lastly, DESSC will hold their winter community meeting on Sunday, December 4, 2005 in San Francisco.
Research Vessel Technical Enhancement Committee (RVTEC) – Bill Martin, RVTEC Chair, report on activities in 2004/2005 and plans for the 2005 RVTEC Annual Meeting to be hosted by Oregon State University. His slides are contained in ***appendix XIII***. The annual RVTEC meeting was held November 3-5, 2004. Rob Walker of the Florida Institute of Oceanography at the University of South Florida hosted the meeting. Highlights of the meeting included reports from UNOLS, NSF, NOAA, ONR, US Coast

Guard, FIC, AICC, RVOC and RVOC Safety Committee. Vessel replacements for the R/V Ewing and Cape Henlopen were presented as well as an update for the new Alaska Region Research Vessel (ARRV). Various technical and instrumentation topics relative to our community were discussed. Presentations regarding collating installation data and performance information from vessel mounted ADCPs, current and future installations of the HiSeasNet satellite communication system, SeaWave communication system, dragging for a lost mooring, and towed vehicles supported within the RVTEC community were given, to list a few.

Ongoing issues and topics of discussion included:

INMARTECH 2006 – Woods Hole Oceanographic Institution will host the conference in the fall of 2006.

Defined Level of Service In 2002 RVTEC created a subcommittee to address a problem that the UNOLS Council had presented to the RVTEC chair. The problem was the inconsistency of levels of support and instrumentation science users are confronted when utilizing different vessels within UNOLS. UNOLS requested a means of standardizing the support between platforms. The subcommittee worked during the next year and came to one conclusion; neither this subcommittee nor RVTEC could mandate what instrumentation or level of support institutions must provide. The committee then focused their work on how to present the information each institution publishes so users could easily compare, review, and access the data for cruise preparation. In 2004 the outline was groomed and is now awaiting web-based development. The technical services outline was reviewed. Each institution will complete the outline with their information. Users preparing to go aboard a particular ship can then click on a pull-down link and be taken to that vessel's support information. Once the web-based development is completed this outline will become an integral part of the UNOLS Data Information System under development.

HiSeasNet - The HiSeasNet Earth Station is maintained at the Scripps Institute of oceanography. Current C-Band links through the Pacific satellite (an IntelSat IS-701) to the R/V Revelle, R/V Melville, R/V Thompson, R/V Atlantis and R/V Kilo Moana. The R/V Knorr is linked through an Atlantic satellite. Shore-to-ship bandwidth is 160 kbps and each ship has 96 kbps bandwidth ship-to-shore. Additionally a Ku-Band antenna is operational with the R/V Endeavor running on this satellite. Future C-band additions include the R/V Langseth and Seward Johnson and Ku-Band on the R/V New Horizon.

Safe Working Loads - During the 2004 RVTEC meeting the 'Safe Working Loads' topic was addressed. It was the consensus of the RVTEC Group that this issue should be addressed by the RVOC Safety Committee. During the spring UNOLS Council meeting this year RVTEC asked for UNOLS to assist RVTEC to have the Safety Committee address this issue. RVTEC is confident progress will continue and the RVOC Safety Committee will address this issue.

SCOAR Appointment - Steve Hartz from the University of Alaska was appointed as the RVTEC representative to SCOAR. He attended his first SCOAR committee meeting in April 2005.
The meeting concluded after determining that Marc Willis of Oregon State University will host the 2005 RVTEC Meeting on November 8-10. The agenda is posted on the UNOLS website and major discussion

topics include:
• INMARTECH 2006 planning
• Seismic Operations Discussion - Permitting, observers, other requirements
• ADCP Update
• Defined Levels of Technician / Instrumentation Support Update / Equipment Inventories
• Wire Terminations
• Email and Data Downloading
• Vendor Calibrations in PDF Format
• Impeller anemometers versus heated sonic anemometers
• Shipboard Data Acquisition Systems - What is out there? - Dale Chayes
• Show and Tell Period
• Tours:
o WET Labs Facility
o OSU Marine Facilities and Research Vessels
o NOAA Facilities in Newport, OR
• RVTEC Manager's Roundtable Discussion
The 2006 RVTEC Meeting will be hosted by Barrie Walden at the Woods Hole Oceanographic Institution in conjunction with the INMARTECH 2006 conference.

Ship Scheduling Committee (SSC) – Rose Dufour, SSC co-Chair, reviewed ship-scheduling issues over the past year including agency budget shortfalls and their impact on ship schedules. Her slides are included as ***appendix XIV***.
The Ship Scheduling Committee held its July and September meetings in order to move towards viable 2006 operating schedules. Just prior to the summer scheduling meeting, ONR advised large ship schedulers that NSF and ONR had come to an agreement to use rotating extended maintenances periods in homeport. This would help absorb some of the monetary shortfall in the 2006 ship budgets for Navy owned AGOR ships rather than “laying-up” these vessels. This changed the momentum of efficiently scheduling ships and anticipating full schedules for all but one or two, back towards re-distribution of work on all AGOR Class vessels. The schedulers were instructed to prepare schedules for the Global/Ocean Class vessels with approximately 200-225 days.

A large portion of the shortfall in funds and ship days will fall upon intermediates and regional class vessels in 2006. Alpha Helix will be in lay-up status, while, Marcus Langseth, Oceanus, Endeavor, New Horizon and Wecoma are working on the premise of partial lay-ups. Many other vessels are operating well below optimal utilization. Some institutions will receive a monetary supplement from NSF to help with crew retention.

In 2006 there are 3,829 operating days scheduled. Rose presented a chart showing the operating days by agency. The next chart shows 2006 utilization after lay-ups by region. The lay-ups represent planned and partial lay-ups. A chart showing the estimated operating costs versus estimated budgets indicates that the estimated costs are still slightly higher than available budgets for NOAA, ONR and NSF.

The schedulers are working on their 2006 ship schedules. Large ship schedules still have questions, which can only be resolved with the final congressional appropriations for the Navy's plus-up and NOAA ship charters. During the September scheduling review, NOAA may have underestimated their ship/ROV costs. The net result will be a reduction of NOAA time to fit within their projected budget. Schedules are slowly moving from the Letter of Intent to posted preliminary 2006 schedules for public viewing. The 2006 UNOLS Ship utilization indicates that almost the entire fleet will be operating below their Full Optimal Year levels. A pie chart showing percent operating days by agency indicates that NSF will fund 55% of the days, Navy 19%, and NOAA 17% of the days. In 2006 the estimated cost for operating the fleet is $77M (ship and technician costs). NSF will provide 61% of the funding support; while Navy and NOAA will each provide 16%.

A chart showing fleet utilization from 2000 to 2006 shows a sharp decline in the number of funded days in 2006. The Navy and NOAA days have remained relatively level over the last few years, but the NSF days are down 1000 days since 2004. Unfortunately, the decline in ship days has not resulted in a reduced cost. Instead, fleet costs rose sharply in 2006. Increased fuel costs and the added costs associated with new regulations and security measures have contributed to the high costs.

Rose commented on some miscellaneous scheduling items. Some activity has occurred for UNOLS to play a small role in DART deployments in 2005/2006. NOAA/NDBC has taken a stance that once schedules have been developed, then they can better decipher opportunities to insert work for deployments, turnarounds, and repairs. The status of the Navy UNOLS $5M remains in the House bill. Thus at conference it is likely, though not guaranteed to survive. The NSF director provided OCE with approximately $3M to cover increases in fuel costs, which will help prevent deferring even more field programs into 2007. Despite large ship availability, some NSF programs have been moved to non-UNOLS ships in order to capitalize on savings realized by using regional assets.

Next Rose discussed 2007 scheduling. There are already a significant number of funded and deferred requests for 2007. The total 2007 funded NSF days is close to the level of days that were supported in 2006.
Ship scheduling has become a year-round activity.

Scientific Committee for Oceanographic Aircraft Research (SCOAR) – John Bane, SCOAR Chair report on the committee's activities in 2004/05 and major initiatives for the future. His slides are included as ***appendix XV***. John provided a list of the SCOAR membership. SCOAR activities completed and planned include:
• Drafted a white paper on how aircraft can and should support ocean sciences.
• Draft a letter to the ocean science community asking for feedback on aircraft requirements and current and future uses of them.
• Create a feedback questionnaire as a companion to the letter.
• Develop plans for a workshop with aircraft operators and ocean science users (and perhaps other science users) and funding agencies.

John showed a series of slides, “Visualizing the Coastal Ocean and Atmosphere.” This was a recent exercise. The charts represent seven hours of aircraft time.

Recognition of departing Council and Committee members - Peter Wiebe recognized the individuals who are completing their service on the UNOLS Council and Committees (***appendix XVI***). They included:
• Council: Denis Wiesenburg, UAK
• DESSC: David Mindell, MIT
• RVTEC: Steve Poulos (Vice Chair), UHI - 2nd term ends 11/05

On-going Design and Construction Efforts:
Alaska Region Research Vessel (ARRV) Design status and funding - Denis Wiesenburg (University of Alaska) reported on the status of the ARRV. His slides are contained in ***appendix XVII***. Denis began by reporting on the type of waters that the ARRV would service. Alaska has a huge coastline with nasty weather. A ship capable of operating in that climate is needed. The ship design has been completed and calls for a ship length of 236 feet, a beam of 48 feet, and draft of 18 feet. The cruising speed is 12 knots with an endurance of 44 days with an ice capability of 2.5 ft at 2.5 knots. The ship can accommodate 26 scientists.

Denis gave a recap of the timeline to date:
• Scientific Mission Requirements - April 2001
• Concept Design – Aug 2001
• Model Testing – April 2002
• Preliminary Design – Jan 2003
• Construction Design – July 2004
• Design Submitted to NSF – December 2004

Tasks remaining before construction includes the final design spiral, updated science instrumentation, enhance ADA configuration, and an updated science justification. Plans are underway to upgrade the Seward Marine Center to support the ARRV. They feel that an all weather dock, a dedicated warehouse, shops, and administrative offices are needed. Denis showed a sketch of what the new facility would look like along with a timeline for construction of the dock and ship.

R/V Hugh R. Sharp replacement of Cape Henlopen - Matt Hawkins (University of Delaware) provided an update on the R/V Hugh R. Sharp. His slides are included as ***appendix XVIII***. Cape Henlopen retired from service on October 2005. The new ship will be delivered to Florida in early December 2005. A cross-decking and final outfitting period will take place between December 2005 and February 2006. Sharp is scheduled to begin operations in late March 2006 following NSF Inspection and final test & trials in Lewes, DE.

Preliminary Acoustic Trials were conducted in September 2005 in Puget Sound. Extensive airborne, vibration, and underwater radiated noise measurements were made while the vessel was underway. The

underwater radiated noise goal is to stay below the ICES curve at 8.0 knots. Preliminary results appear to be excellent and significant propeller cavitation does not appear until ~10.0 knots. There was a 60 dB reduction in gen-set noise transmission to the hull from the double-stage raft. The only machinery excess is “gear mesh” tone from the Z-drives. This is to be remedied by adding additional noise treatments to hull in motor room. Formal acoustic trials are planned for late October at Dabob Bay near Seattle. Matt showed ICES curve charts in comparison to the noise measurements from Sharp.

Matt reported that the CTD handling system has been acquired from Caley Ocean Systems. This is a “Next Generation” system based on the results of the UNOLS Load Handling System Study. It is an all-electric AC winch. The system features motion compensation and a docking head with “auto-tension” capability to capture the science package. Delivered is planned for January 2006. Matt showed a picture of Sharp on the day of its launch, July 16, 2005.

R/V Marcus G. Langseth Conversion - John Diebold (Lamont-Doherty Earth Observatory) reported on the status of the Langseth Conversion. His slides are includes as ***appendix XIX***. Langseth has been in port at SYNESCO Shipyard in Quonset Point, RI awaiting the decision of which shipyard will conduct the conversion. While at the SYNESCO shipyard, LDEO has been carrying out dockside removals of some of the winches.

John displayed a sketch of what the ship would look after conversion. There will be space for 100 OBS storage and handling. A bottom sketch of the ship shows a 1 x 1 degree Kongsberg multibeam system. The ship includes a mammal observation tower. The principal mission for R/V Langseth is multichannel seismic work. It will have a multistreamer 3D capability and linear source arrays. There are now three management and national oversight groups for the facility: the Ewing Replacement Oversight Conversion Committee (ERROC), the Marine Operations Working Group, and the UNOLS Marcus Langseth Science Oversight Committee (MLSOC). A timeline of the conversion effort indicates that the ship would be ready for science operations in the fall 2006.

John showed a map of pending projects for Langseth. Work areas include off Bermuda, off Alaska, the Equatorial Pacific, the South Pacific and Western Pacific.

As a final note, John reported that R/V Ewing has been sold.

2005/2006 UNOLS Goals and Priorities - Peter Wiebe presented the 2005/2006 UNOLS Goals and Priorities as established by the UNOLS Council. The UNOLS Charter was originally adopted in 1972 and serves as the bylaws and guiding document for operation of the organization. The introduction and objectives underscore the overall purpose of UNOLS. In recent years, the UNOLS Council has adopted a vision and mission statement and over-arching goals. Prior to the fall Council meeting, major issues were suggested by members of the UNOLS Council and Committees and by UNOLS representatives. These issues have been compiled into the list of goals and priorities for 2005/2006 and are contained in ***appendix XX*** and listed below. The appendix also contains a summary of the suggestions and comments that were received regarding the priorities.

UNOLS Vision and Mission Statement

• **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.
• **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.

Goals
• Promote broad, coordinated access to oceanographic research facilities
o Maintain a system and procedures that facilitate and promote broad access to research vessels and other major ocean science facilities.
o Support coordinated, efficient and effective scheduling of research vessels and facilities.
• Support continuous improvement of existing facilities
o 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.
• Plan for and foster support for the oceanographic facilities of the future
o 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.

2005/2006 Important Issues and Objectives
• **Fleet Renewal** - Support the implementation of existing FOFC plan, vessel design efforts and funding for new ship construction.
• **Facilities Improvement Planning** - Update the UNOLS Fleet Improvement Plan with respect to the current and projected status of other major facilities and with respect to the interaction between fleet renewal and fleet midlife refits etc.
• **Scheduling** - Make the best use of existing vessels, in light of financial limitations and prior commitments restricting ship availability in 2006 and beyond and look at the possibility of new scheduling paradigms.
• **Communications** - UNOLS is in a unique position to communicate between the scientific user, support facilities, and funding agencies. UNOLS should strive to improve communications and interactions between these three groups regarding major facility issues
• **Facilities improvement** - Promote and assist with planning for new types of facilities for ocean sciences such as ROVs, AUVs, Aircraft, UAVs and observatories.
• **Permitting** - Support efforts for improving the processes for obtaining permits related to research cruises.
• **Education and Outreach** - Support and promote shipboard capabilities to facilitate public education and outreach by scientific users, educators and facility operators.
• **Balancing the impacts of increasing costs** – work with the community to establish the appropriate balance between available resources and the level of support required to support quality operations.

• **Regulatory Impacts** - the burden in time and money imposed by new regulatory requirements with regard to safety, security, conservation, and environmental impact have affected the cost and capabilities of ships in the UNOLS fleet. Work with the funding agencies to find support, resources and relief with regard to these requirements including the facilitation of cooperative UNOLS-wide solutions wherever possible.
• **Personnel -** Technical and Marine - finding, recruiting and retaining qualified, technically literate personnel to operate our ships and instrumentation is an increasing challenge for the member institutions, which needs to be addressed cooperatively by UNOLS institutions, agencies and the maritime/technical training industry.

Issues Before UNOLS -Various UNOLS activities and issues of interest to UNOLS Members have arisen during the year. Peter Wiebe provided a summary of these issues (***appendix XXI***):

UNOLS Office Review and Competition – Peter Wiebe explained that NSF requested that competition for hosting the UNOLS Office be made about every five years to be consistent with how other similar Cooperative Agreements for facilities and offices are conducted. If the Office was not awarded to another institution then a review of the current Office would be made. This was the first formal review ever made of a UNOLS Office. An ad hoc subcommittee was assembled comprised of Peter Wiebe (Chair), Margo Edwards, and Wilf Gardner. An e-mail message was then sent out to all the UNOLS Institutions asking if anyone was interested in competing to host the UNOLS Office. Only three responses were received, none offering to compete. A review of the Office then followed. All Council members were asked to complete a survey and the results were then compiled. Sixteen (16) out of 18 Council members responded. Peter presented a histogram showing the results. The average score was 1.2 showing the UNOLS Office doing an excellent job. Based on this evaluation, the Council approved a motion to endorse MLML to host the UNOLS Office for a third 3-year term.

Shipboard Over-the-Side Handling Systems – The goal of the workshop was to develop a conceptual design for the “next-generation” over-the-side load handling system (LHS) for the UNOLS Fleet. Committee members included Matt Hawkins, Chair, Tom Althouse, Andy Bowen, Marc Willis, and Jim Holik. It was a one-year effort joint-funded by NSF and ONR. It focused on ship visits and field evaluations of existing systems. They were tasked to address:

• Loading Handling System design standards
• Incorporation of “Next-generation” UNOLS wire
• “Next-generation” science packages
• Motion compensation
• “Hands-free” deployment and recovery
• Size/Weight: “Scale-able” to different vessel classes

The LHS Workshop addressed handling moderately sized, fairly common, science packages over the side and stern (examples - CTDs, AUVs and ROVs, Scanfish and Triaxis, MOCNESS). It does not address, or attempt to replace, the stern A-frame. The LHS also does not address, or attempt to investigate, highly

specialized or large handling systems like long coring.

The report describes the handling apparatus and winch systems. The handling apparatus in general is an articulated crane. There are three different arrangements: “Aft Deck,” “Side,” and “Overhead.” They should be able to reach very near the water surface. The winch may be electric or hydraulic depending on vessel. It may be direct pull or traction depending on vessel and use. The winch should be co-located with the handling apparatus to simplify the cable path.

Preliminary Findings are available on the UNOLS website at:
<http://www.unols.org/publications/reports/lhsworkshop/index.html>

Two LHS systems are currently under detailed design and fabrication at Caley Ocean Systems using the Functional Requirements developed during the LHS Workshop – one for Kilo Moana and one for the Hugh R. Sharp (Cape Henlopen Replacement). The systems have different arrangements for the handling apparatus (to suit each vessel). However, both use all-electric winches having motion-compensation, “slip-mode”, “auto-tension”, and use docking heads for capturing the science package. Both are being built to ABS standards in lieu of Sub-Chapter U. These systems are due to be delivered and installed in early 2006, and both operators will keep the community and LHS Committee informed on how well they perform.

Marine Mammals and Acoustic Permitting Issues - A contractor for NSF is developing an Environmental Impact Statement (EIS) for conducting seismic reflection work primarily for the Marcus Langseth. This process may take up to 18 months with more public meetings after the draft EIS is published. The idea behind the programmatic EIS will be that future permits would focus on the area and season more than on the whole process and ship.

NSF has announced plans to hire an Environmental Specialist to assist with permitting and other related issues.

Frequency Spectrum Management Issue - Otis Brown, a member of the National Academy of Sciences Committee on Radio Frequencies, has asked UNOLS for information about the use of the communication spectrum by the oceanographic community. RVTEC will be tasked to provide input to Dr. Brown.

Status of Bermuda Biological Station for Research (BBSR) plans to acquire Seward Johnson II from HBOI and retire the Weatherbird II - BBSR is moving forward with plans to acquire R/V Seward Johnson II and retire R/V Weatherbird II. A sale closing is anticipated for late October. On October 22, SJII will arrive at Lyon’s Shipyard in Norfolk, VA for a 4.5-month modification and maintenance period. In late January 2006, Weatherbird II arrives at Lyon’s shipyard for cross-decking. In spring 2006, SJII will begin operations and support of BATS.

Gyre Decommissioning - After 32 years of service, the R/V Gyre retired from the UNOLS Fleet in

August 2005. Gyre, a 182-foot research ship, began operations for the Department of Oceanography at Texas A&M in January 1974.

UNOLS Briefing Package – Peter Wiebe reported on plans to develop a UNOLS Briefing Package that could be provided to the National leaders and others. The package would be useful in educating people on what UNOLS is and plans for Fleet renewal. The package would include a brochure that would address:

• What is UNOLS? Short description of what UNOLS is and what it does. Committee structure and tasks. The number of ships, their distribution, and retirement dates.
• Status of the UNOLS fleet today in terms of:
- Current and near-term funding shortfalls and consequences
- Longer term oceanographic scientific community needs: OOI (Orion) and IOOS etc.
• Status of funding
- What is in the budget? (Regional vessels)
- What's in the budget planning stages? (ARRV, OOI (Orion observatories)
- What's proposed? - Longer range outlook (IOOS, Ocean Class vessels)

ADA Guidelines for New Ship Construction/Conversion (Americans with Disabilities Act (ADA) Guidelines for Research Vessels) - NSF has indicated the need for new ship construction and ship conversion efforts to address ADA requirements. Although UNOLS vessels are not passenger vessels and fall under USCG Subchapter U, vessels that support Federally funded academic research should be equipped and arranged as feasible to accommodate persons with disabilities. Procedural guidelines to carry out shipboard operations with persons with disabilities on board are needed.

UNOLS will form an ad hoc committee that will include sea-going scientists (with and without disabilities), a ship captain, marine superintendents, a member of the R/V Safety Committee, and an RVTEC representative. The tasking was reviewed. At the present time, the Regional Class RFP does not include ADA, so it was considered important to quickly draft some preliminary ADA guidelines for the Regional Class Acquisition effort. A two-day community workshop to define shipboard and procedural guidelines could be included as part of this effort. From this, the group could develop general ADA guidelines to be used for new research vessel construction and for refits. They would also draft the procedural guidelines.

Notification and reporting of mooring locations, safety zones, and release code conflicts –The UNOLS Office will investigate ways to collect information regarding installation and locations of moorings.

UNOLS Ship Time Request and Scheduling Database – The database is under development by the UNOLS Office.

New Actions – At the UNOLS Council meetings held this year, two issues arose that will be further

addressed in 2006:
• Gender Climate at Sea - In a survey of current or recently graduated MIT/WHOI Joint Program students, over 50% of the sixty respondents reported having experienced inappropriate gender or sex-related behavior at. Incidents reportedly occurred on a number of different research vessels operated by UNOLS, as well as vessels operated by U.S. government agencies and international organizations. Few, if any, of these incidents were reported, and therefore, they were not formally investigated. Ensuring that going to sea is a positive experience for all is an important goal for the entire UNOLS fleet. The RVOC will take this item as an action item at their April 2006 meeting.
• Codes of Conduct – The impact of Scientific Studies on the Environment - Issues related to the potential adverse the Council discussed impacts of scientific research on deep-sea environments, such as hydrothermal vent communities during their recent meeting. Examples include the likely un-authorized sale of vent invertebrates or their shells on e-Bay and the possible transport of deep-sea organisms from one site to another in submersible ballast waters or sampling devices. This could easily result in the inadvertent introduction of invasive species or diseases from one location to another.

There needs to be greater effort to understand these deep sea ecosystems and to identify impacts that marine scientific research and other activities, such as fishing, have on these ecosystems. There are a couple of examples of actions that can be taken to minimize impacts on research sites. We could ensure that new submersibles have ballast systems or ballasting procedures that eliminate the possibility of bio-contamination. Limiting the real estate used for ongoing research projects would minimize and localize the impacts to smaller areas. Making these issues more widely known in the community is an important step.

UNOLS Dues Accounting - Membership Dues collected this year totaled $1,800.00. Expenditures for the year (reception) totaled $1,953.87, leaving a balance as of 10/14/05 of $1,487.59.

UNOLS Calendar and activities at winter conferences – Peter Wiebe reviewed the Calendar of upcoming meetings. The RVTEC and SCOAR will hold meetings in November. DESSC will hold their annual community meeting on the day before the AGU Fall meeting in San Francisco. UNOLS will have a booth at AGU. UNOLS members are encouraged to stop in.

UNOLS Appointments to Committees - Peter Wiebe announced new appointments to UNOLS standing committees:
• FIC – James Cochran, LDEO - 1st term began 10/04
• RVTEC – Bill Martin, UW - 1st term began 11/04
• SCOAR – Richard Zimmerman, ODU - 1st term began 11/04 and Steven Hartz, UAK (ex-officio) - began 3/05

1505 ***Adjourn***

Last Update: October 8, 2005

Tentative Agenda

UNOLS ANNUAL MEETING

8:30 A.M., Friday, 14 October 2005
National Science Foundation, Room 1235
4201 Wilson Boulevard Arlington, VA

A copy of this agenda can be downloaded at <200510anuag.pdf>.

0800 Coffee and Pastries

0830 Introduction and Welcome - Peter Wiebe, UNOLS Chair, will call the meeting to order and will give a brief summary of the issues of current interest to UNOLS. He will also summarize the major accomplishments within UNOLS over the last year. Participant introductions.

Keynote Panel Address

The U.S. Commission on Ocean Policy's recommendations for a coordinated and comprehensive national ocean policy "An Ocean Blueprint for the 21st Century," were provided to the President and Congress one year ago. In response, the Administration has developed the “U.S. Ocean Action Plan,” which outlines immediate, short-term and additional long-term actions that provide direction for ocean policy. Similarly, the U.S. Congress has conducted various oversight hearings and is acting on important legislation designed to implement many of the Commission's recommendations.

Key participants in these important processes will address the UNOLS annual meeting in a panel comprised of Dr. David Halpern from the the President's Office of Science and Technology Policy (OSTP) and former Ocean Commission staff member Mr. Peter Hill (now with CORE). Also invited and planning to participate if posssible is Ms. Margaret Spring, Senior Minority Counsel, Oceans and Fisheries Subcommittee of the US Senate Committee on Commerce, Science, & Transportation.

An opportunity for questions and discussion with the panel and other representatives of our supporting Federal Agencies will be included as part of the program**.**

Budget Shortfall and Impact on Fleet Operations and Facility Construction Plans: Introduction by Peter Wiebe

- Status of Budget shortfall on Ship Scheduling for 2006 and beyond, as well as its Impact on Facility Construction Plans - Larry Clark
- NSF Response to UNOLS Recommendations regarding Budget Shortfall – Larry Clark
- The impact of budget shortfalls on NOAA and Navy ship time in 2006
    - NOAA – Beth White
    - Navy – John Freitag
- 2006 Fleet Operation Estimated Costs as compared to budget projections
- Future Ship Time Initiatives and Demand
- UNOLS Action Items

UNOLS Fleet Renewal Activities - Reports by Peter Wiebe, Dave Hebert, and agency representatives on implementation of the Fleet Renewal Plan.

- Federal Agency plans for implementation:
    - Regional Class Design, Acquisition Process, and Operator Selection (NSF)
    - Ocean Class Design, Acquisition Plans, and Operator Selection (ONR)
- FOFC Fleet Renewal Plan Update – Bob Winokur, FOFC Chair

UNOLS Membership Votes

Formation of a New Standing Committee – The Membership will be asked to vote on forming a new UNOLS standing committee to oversee science and operations for the R/V *Marcus Langseth* as a National Oceanographic Seismic Facility. The recommended name for the committee is the *Marcus Langseth* Science Oversight Committee (MLSOC). The proposed terms of reference for the committee can be viewed at <MLSOC_proposed_terms_of_reference.pdf> (Marcia McNutt)

UNOLS Elections: Elections for the following UNOLS Council positions will be held

- Operator Representative (3 year term) - from among designated UNOLS Member Operator institutions
- UNOLS Council Member, (3-year term) At-large, affiliated with any Member

Institution.

The slate of nominees can be viewed at:
<http://www.unols.org/meetings/2005/200510anu/slate05.html>.

12:00 - 1:00 PM Lunch Break

1300 COMMITTEE REPORTS – Peter Wiebe will introduce the UNOLS Committee Chairs who will report on their activities.

- **Research Vessel Operators' Committee (RVOC) –** Tim Askew, Chair, will review the activities of RVOC in 2004/2005 and plans for the 2006 Annual RVOC meeting to be hosted by University of Washington. He will report on the status of Fleet compliance with new regulatory requirements and the RVOC Safety Committee membership.

- **Fleet Improvement Committee (FIC) –** David Hebert, Chair, will report on the FIC activities in 2004/2005 and plans for the upcoming year. He will provide a summary of the October FIC meeting. Fleet renewal information on Ocean Class hull recommendations, Regional Class design input and UNOLS representation, and Global Class Science Mission Requirements will be provided. The status of the Fleet Improvement Plan update will be reported.

- **Arctic Icebreaker Coordinating Committee (AICC)** – Margo Edwards, AICC Chair, will report on the activities of the AICC in 2004/2005. She will report on science operations for *Healy* and the Polar Class Icebreakers in 2005 and planned for 2006. Operational funding for *Healy* as well as plans for the future of the the *Polar Star* and *Polar Sea* will be discussed.

- **DEep Submergence Science Committee (DESSC) –** A DESSC member will report on DESSC activities, 2004/2005 *Alvin* and ROV operations, and National Deep Submergence Facility equipment/instrumentation upgrades. The status of the replacement human occupied vehicle (HOV) will be discussed. Major issues such

as establishing criteria for considering new assets to the NDSF and establishing safety standards for HOVs will be addressed.

- **Research Vessel Technical Enhancement Committee (RVTEC) –** Bill Martin, Chair, will report on RVTEC activities in 2004/2005 and plans for the 2005 RVTEC Annual Meeting to be hosted by Oregon State University.

- **Ship Scheduling Committee (SSC) –** Rose Dufour, SSC Co-Chair, will review ship-scheduling issues over the past year including agency budget shortfalls and their impact on ship schedules. The UNOLS ship operation plans for 2006 will be reviewed.

- **Scientific Committee for Oceanographic Aircraft Research (SCOAR)** – John Bane, SCOAR Chair will report on the committee's activities in 2004/05 and major initiatives for the future.

- **Recognition of departing Council and Committee members**

On-going Design and Construction Efforts:

- ARRV Design status and funding
- R/V *Hugh R. Sharp* replacement of *Cape Henlopen*
- R/V *Marcus G. Langseth* Conversion
- Ocean Observatories – Implementation and Timeline

Federal Agency Reports - Information from Federal Agencies (NSF, ONR, NRL, Oceanographer of the Navy including NAVO & CNMOC, NOAA, USCG, USGS, MMS, DOS and DOE) on 2005 activities and forecasts for 2006 and beyond.

Consortium for Oceanographic Research and Education – A report on CORE

activities of interest to UNOLS will be provided.

2005/2006 UNOLS Goals and Priorities

Peter Wiebe will present the 2005/2006 UNOLS Goals and Priorities as established by the UNOLS Council.

Issues Before UNOLS

Various UNOLS activities and issues of interest to UNOLS Members have arisen during the year. The UNOLS Chair will summarize the issues below and introduce them for discussion. [Please note – Fleet Renewal Activities will be addressed during the morning discussions and are not included here.]

- UNOLS Election Results
- UNOLS Office Review and Competition
- Shipboard Over-the-Side Handling Systems - Preliminary Findings
- Marine Mammals and Acoustic Permitting Issues
- Frequency Spectrum Management Issue
- Status of BBSR plans to acquire *Seward Johnson* II from HBOI and retire the *Weatherbird II*
- *Gyre* Decommissioning
- UNOLS Briefing Package
- ADA Guidelines for New Ship Construction/Conversion
- Notification and reporting of mooring locations, safety zones, and release code conflicts
- UNOLS STR/Scheduling Database
- Quality of Service Subcommittee on Post Cruise Assessments
- UNOLS Dues Accounting
- UNOLS Calendar and activities at winter conferences
- UNOLS Members may wish to raise additional issues.

Other Business

UNOLS Appointments to Committees: The UNOLS Chair will announce new appointments to the Executive Committee and standing committees in accordance with the UNOLS Charter.

Adjourn

UNOLS ANNUAL MEETING
October 14, 2005
National Science Foundation
4201 Wilson Boulevard, Room 1235
Arlington, VA 22230

Meeting Attendees

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Van Dover	Cindy Lee	Coll of Wm & Mary	(757) 221-2229	clvand@wm.edu
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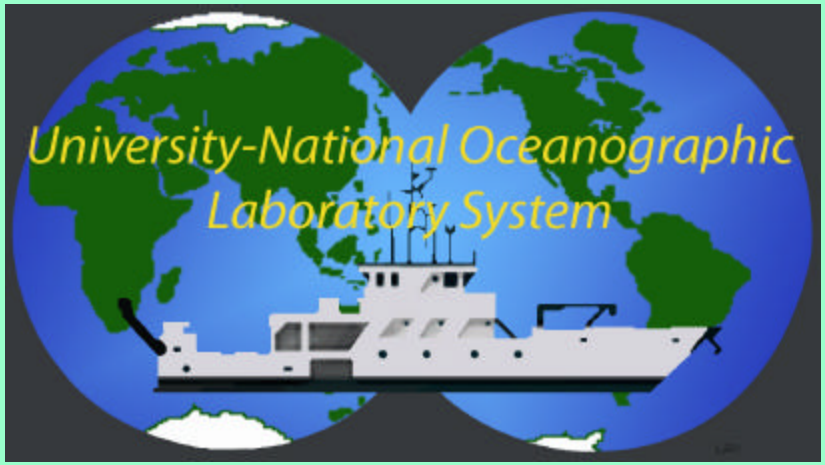
Winokur	Robert	OCEANAV	202-762-0247	Robert.S.Winokur@navy.mil

University-National Oceanographic Laboratory System

UNOLS
Annual Meeting



October 14, 2005

UNOLS 2005 Accomplishments

- **Provided recommendations on budget shortfalls and impact on 2006 ship use**
- **Fleet Renewal Activities**
  - **Ocean Class hull evaluation and recommendation**
  - **Regional Class specifications**
- **Comprehensive review and input to USCG mission analysis for icebreakers by AICC**
- **UNOLS continuing issues will be reported during this meeting**

2005 Annual Meeting Agenda

- Implementation of the Ocean Commission recommendations.
- Budget impacts on Fleet operations
- Fleet Renewal
- Establishing a new UNOLS Standing committee for *Marcus Langseth* Seismic oversight.
- Committee Activities and Agency Reports
- Many other important UNOLS Issues.
- Council Elections

GEOSCIENCES

$709,100,000

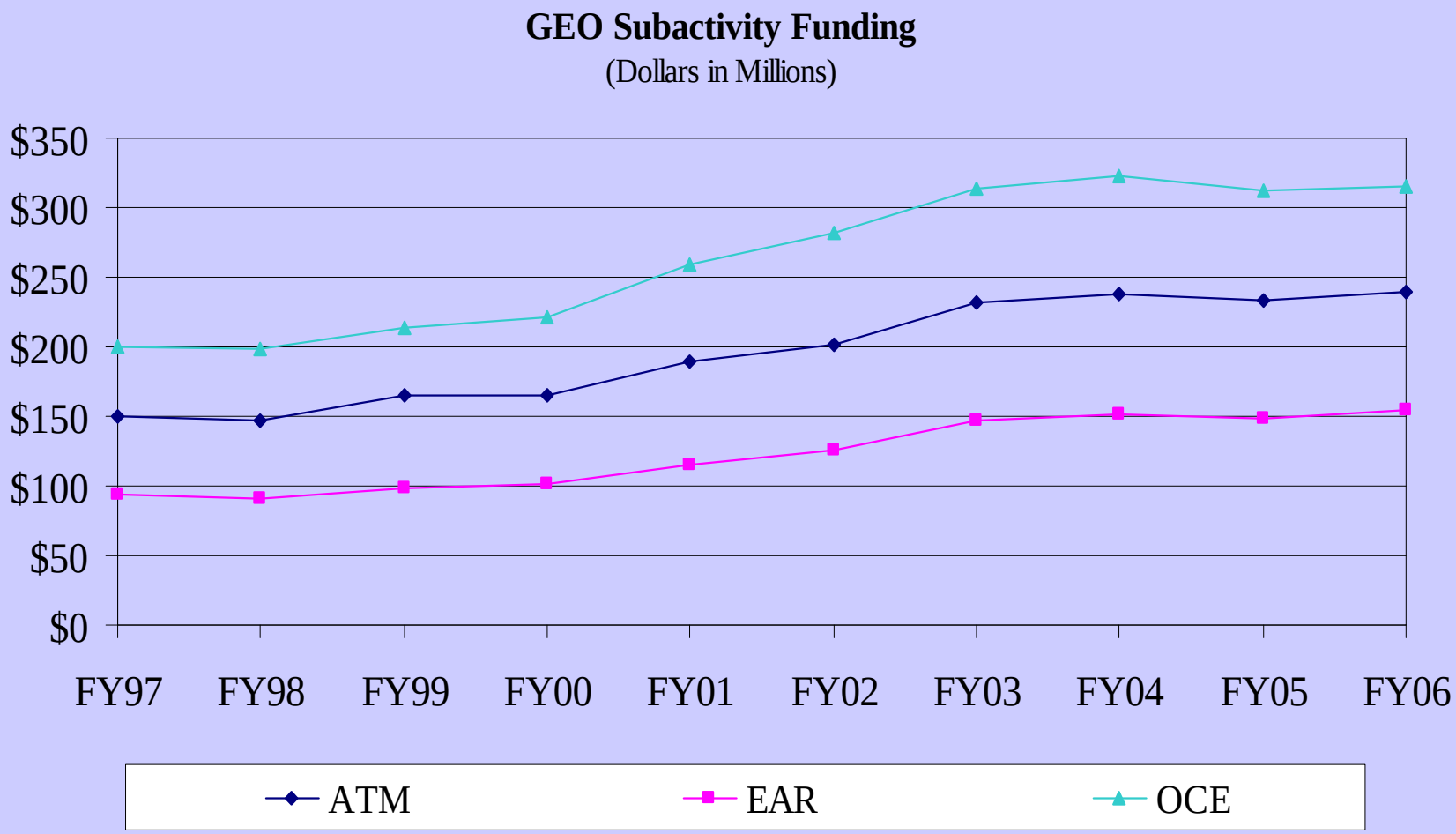
Geosciences Funding

(Dollars in Millions)

	FY 2004 Actual	FY 2005 Current Plan	FY 2006 Request	Change over FY 2005 Amount	Change over FY 2005 Percent
Atmospheric Sciences (ATM)	238.40	233.43	239.79	6.36	2.7%
Earth Sciences (EAR)	152.03	148.96	154.07	5.11	3.4%
Ocean Sciences (OCE)	322.98	311.77	315.24	3.47	1.1%
Total, GEO	$713.41	$694.16	$709.10	$14.94	2.2%

Totals may not add due to rounding.

GEO Divisions



OCEAN SCIENCES

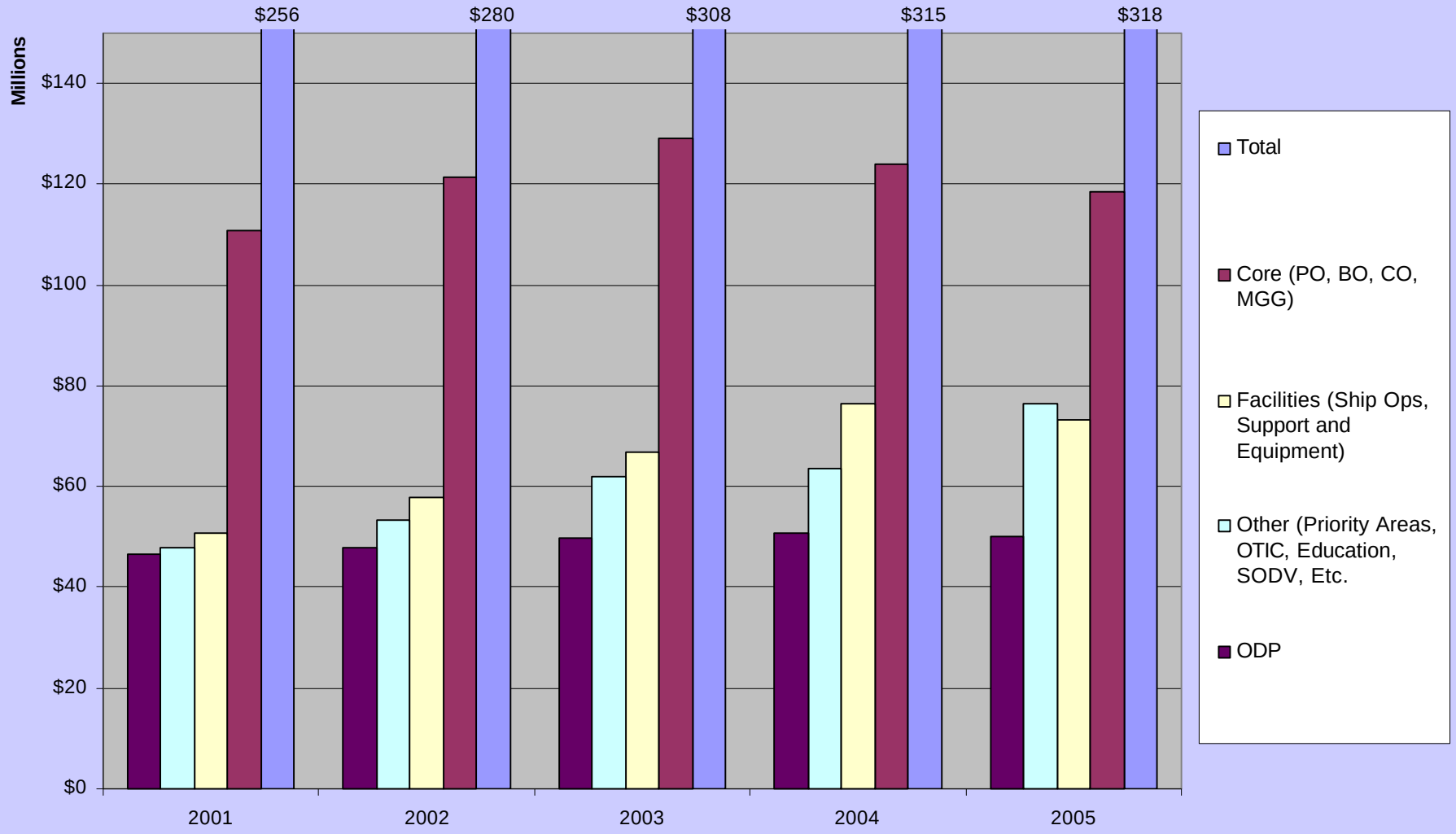
$315,240,000

Ocean Sciences Funding

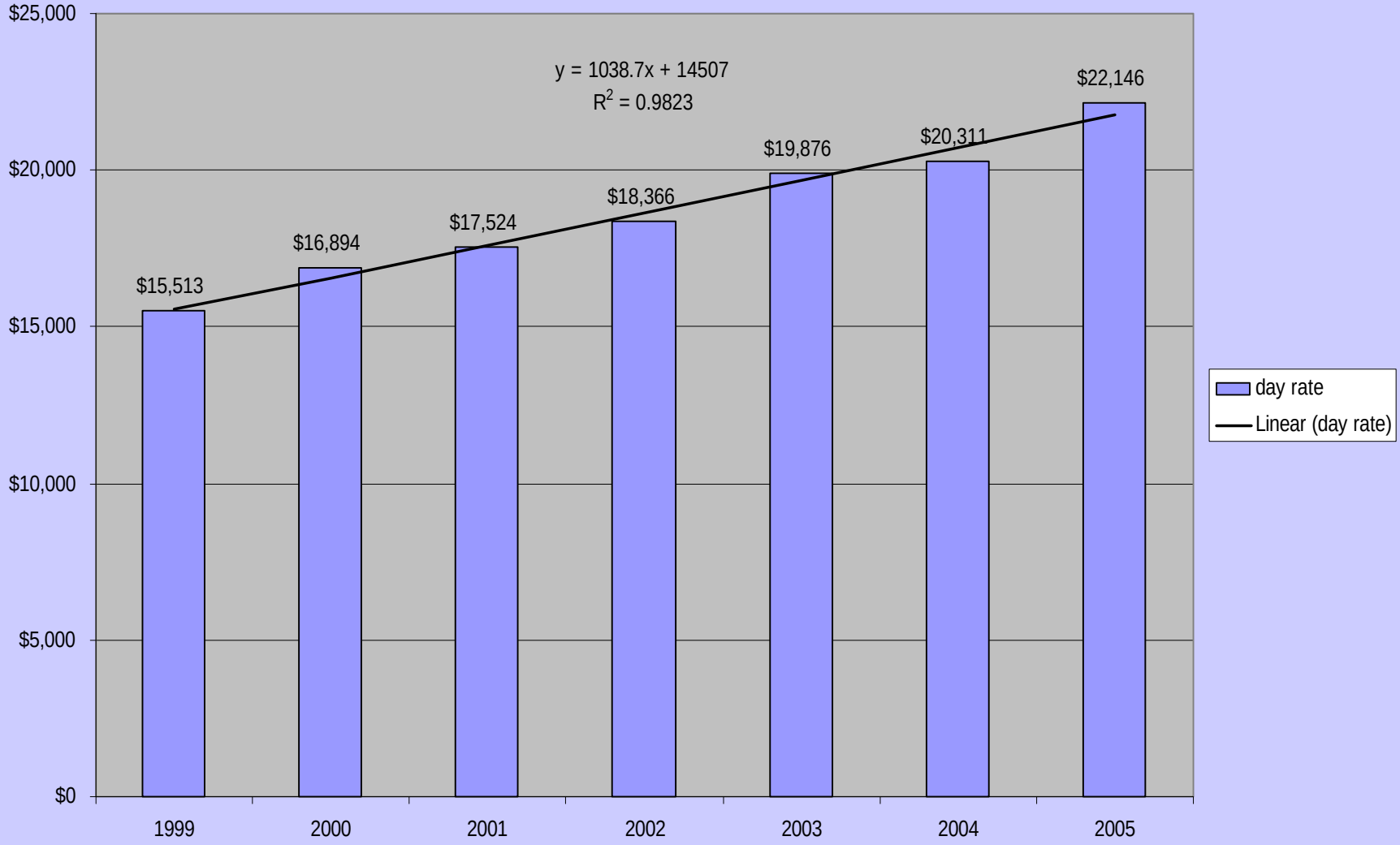
(Dollars in Millions pre- GEO & OCE taxes)

	FY 2004 Actual	FY 2005 Current Plan	FY 2006 Request	Change over FY 2005 Amount	Change over FY 2005 Percent
Ocean Section	120.35	115.98	117.28	1.30	1.1%
Integrative Programs Section	118.40	113.70	114.97	1.27	1.1%
Marine Geosciences Section	84.23	82.09	82.99	0.90	1.1%
Ocean Sciences	**$322.98**	**$311.77**	**$315.24**	**$3.47**	**1.1%**
Major Components:					
Research and Education Grants	194.85	181.64	190.61	8.97	4.9%
Long-term Ecological Research Centers	3.63	3.63	3.63	0.00	0.0%
Facilities					
Academic Research Fleet	*82.50*	*83.20*	*83.20*	*0.00*	*0.0%*
Integrated Ocean Drilling Program (IODP)	*35.10*	*32.10*	*30.00*	*-2.10*	*-6.5%*
Other Ocean Sciences Facilities	*6.90*	*11.20*	*7.80*	*-3.40*	*-30.4%*

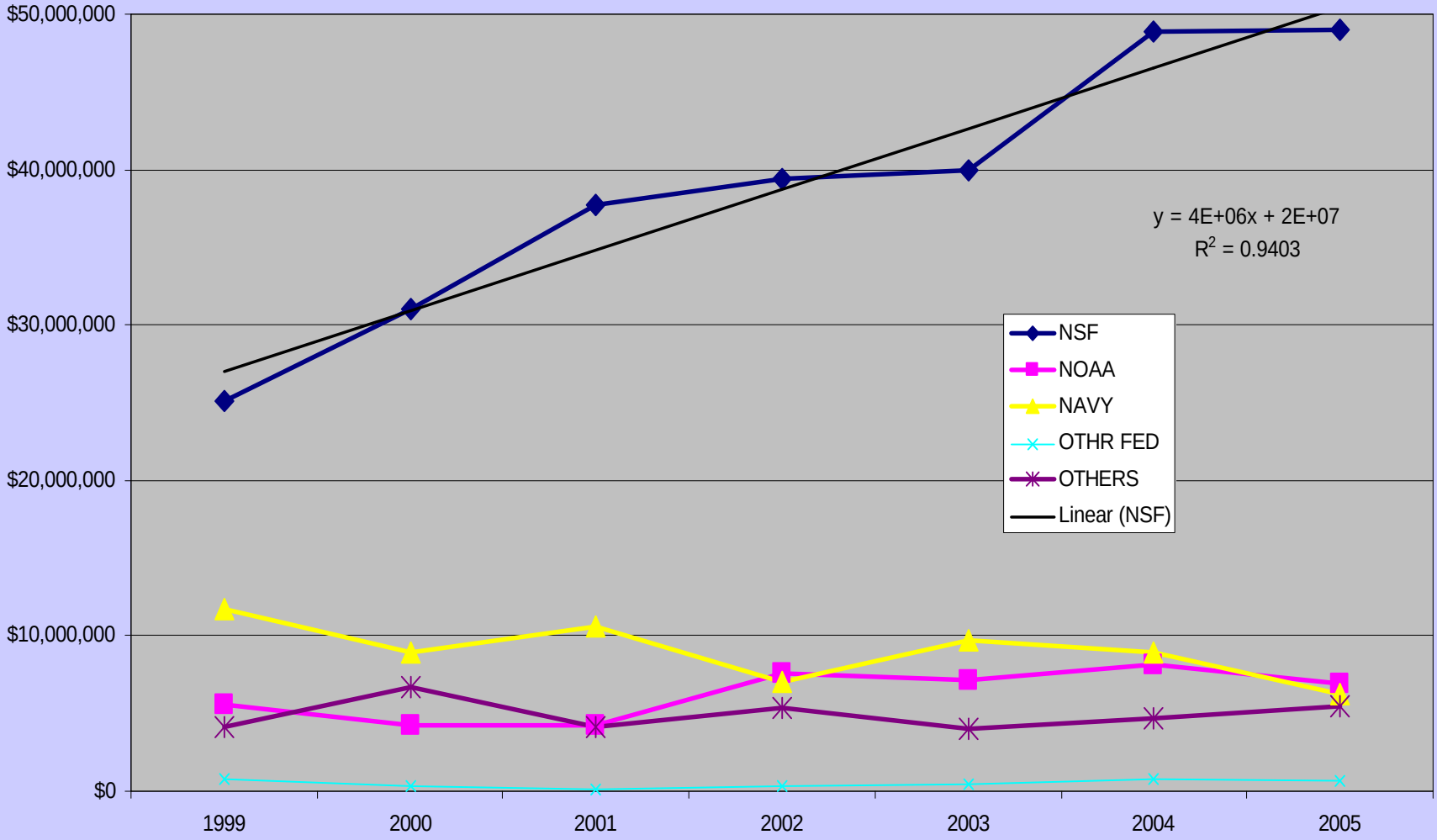
OCE SPENDING 2001 - 2005



Day rates for global class ships (includes km)



SHIP COSTS BY AGENCY- TOTAL FLEET



The Challenge for Today and Tomorrow: (7/05 sked mtg)

	2005	2006
OCE FUNDS	$40.0 M	$37 M
PREPAID	4 M	0
BE	1.5 M	0
OPP	0.2 M	1.0 M
ODP	.05 M	3.3 M
	$46.2 M	$41.3 M

Major Issues and Guiding Principles for: UNOLS/NSF;OCE

- **UNOLS: "**Fleet Renewal - Support the implementation of existing FOFC plan, vessel design efforts and funding for new ship construction. Many of the ships in our fleet are aging and the resources to replace those ships are needed now."

- **OCE**: Infrastructure does not appear instantaneously. The first design for an Alaska Region Research Vessel was completed in 1980 and UNOLS has been planning for the next generation of ships since the mid '90s. Because this infrastructure takes so long to acquire, we have to work proactively to attain it, even at the expense of short-term difficulties with science and operations funding. This is the position of the NSF Director, AD/GEO and it was endorsed by our recent COV.

2006 Budget vs. Cost and Future Ship Time Initiatives

- Projected budgets are fairly close to projected 2006 scheduled operations.
  - Appropriations are not final
  - Fuel costs are big unknown with huge impact
- Ocean Observatories
- NOAA DART buoy support
- Navy budget plus up for FY06
- Etc?

UNOLS Action Items

- Further evaluation of budget impacts on long term utilization projections
- Additional analysis of delayed access to the sea and impact on seagoing science.

National Oceanographic Partnership Program

The Federal Oceanographic Fleet Renewal Plan

Status and Schedule

Robert Winokur

Oceanographer of the Navy

Chair FOFC

14 October 2005

The Federal Oceanographic Fleet Renewal Plan

Timeline for Completion

- ✓ Working Group developed a final draft by 30 March.
- ✓ Technical Writer/Editor/Designer was brought on board to assist.
- ✓ NORLC was briefed on the status of the Plan development at their “last” meeting in July.
- ✓ A final draft for FOFC approval to be briefed in September.

The Federal Oceanographic Fleet Renewal Plan

The Message

- The Federal oceanographic research and survey fleet provides the infrastructure needed to support the nation's science and operational requirements funded through specific federal agency missions.
- These ships are invaluable national capital assets critical to the future success of the broad ocean community.
- To accomplish federal agency missions, at a minimum it is necessary to maintain current fleet capabilities.
- Regardless of the budget environment, ships age and need to be replaced.
- Implementation of this fleet renewal plan maintains current agency mission capabilities and considers the integration of new technologies.

The Federal Oceanographic Fleet Renewal Plan

The Message – cont'

- Types of ships needed for agency missions have been grouped into two categories, Research and Survey, and three classes, Global, Ocean, and Regional
- Based on agency budget projections, the overall fleet size will decrease from 48 ships to 47 by 2015; 18 ships will be retired and 17 new advanced ships are planned during this period.
- Assuming a typical ship has a functional service life of 30 years, by 2025 an additional 14 ships will be retired while only 2 new, advanced ships are planned, decreasing the fleet size to 35 ships.
- If funding for these replacements, and others not yet being planned, is not appropriated, the fleet will decrease from 48 to 21 ships by 2025, seriously compromising the ability to support agency missions.

National Oceanographic Partnership Program

The Federal Oceanographic Fleet Renewal Plan

Projected Fleet Status

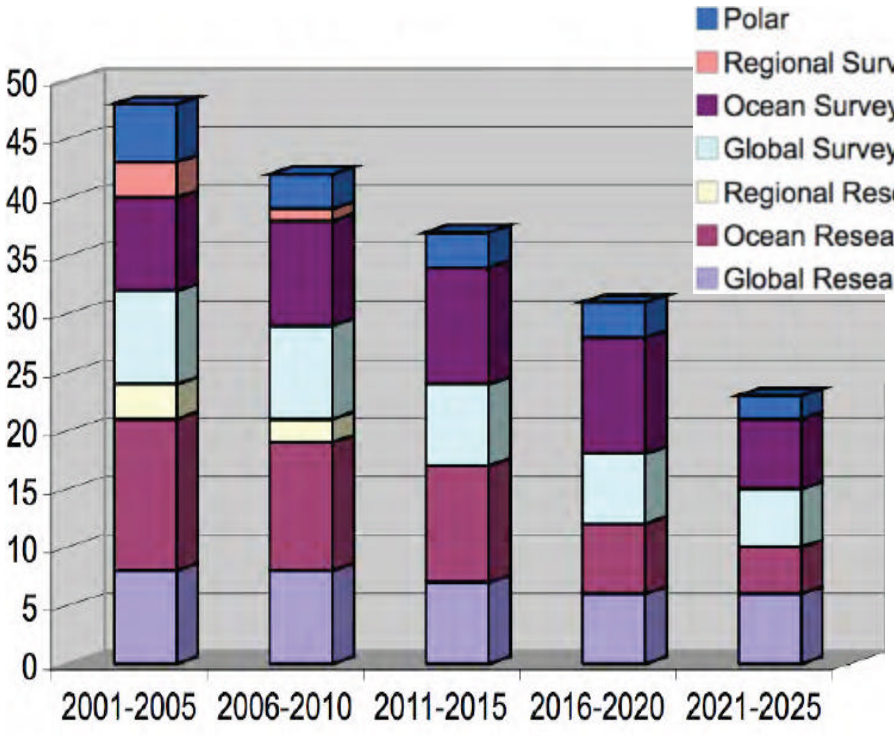


Figure 1: Fleet Composition by Year, with Appropriated Ships. If additional ships are not appropriated, the fleet will decrease from 48 to 35 by 2015 and to 21 ships by 2025

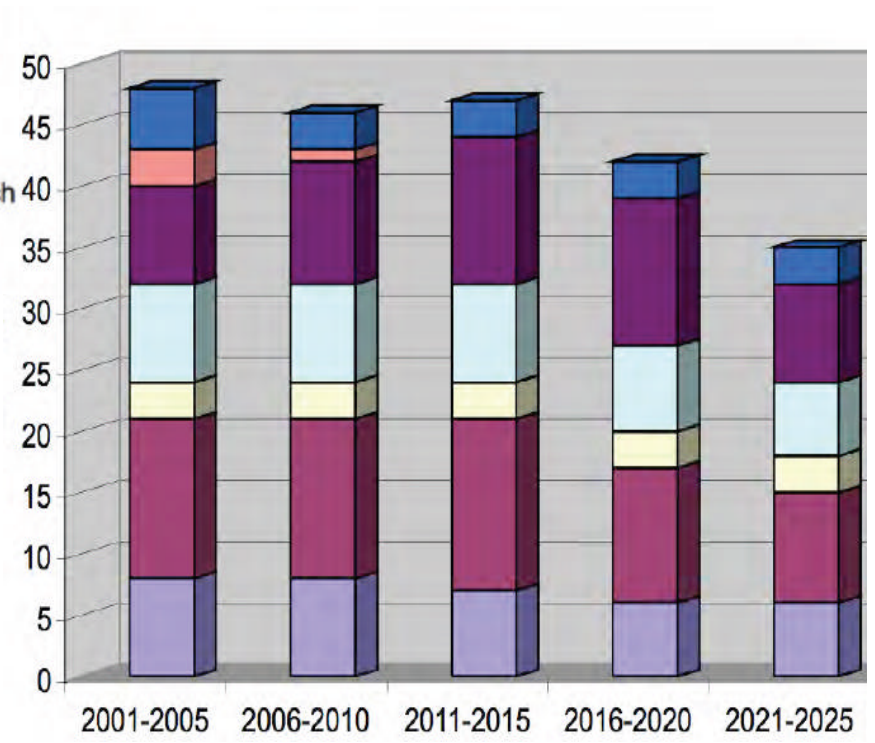
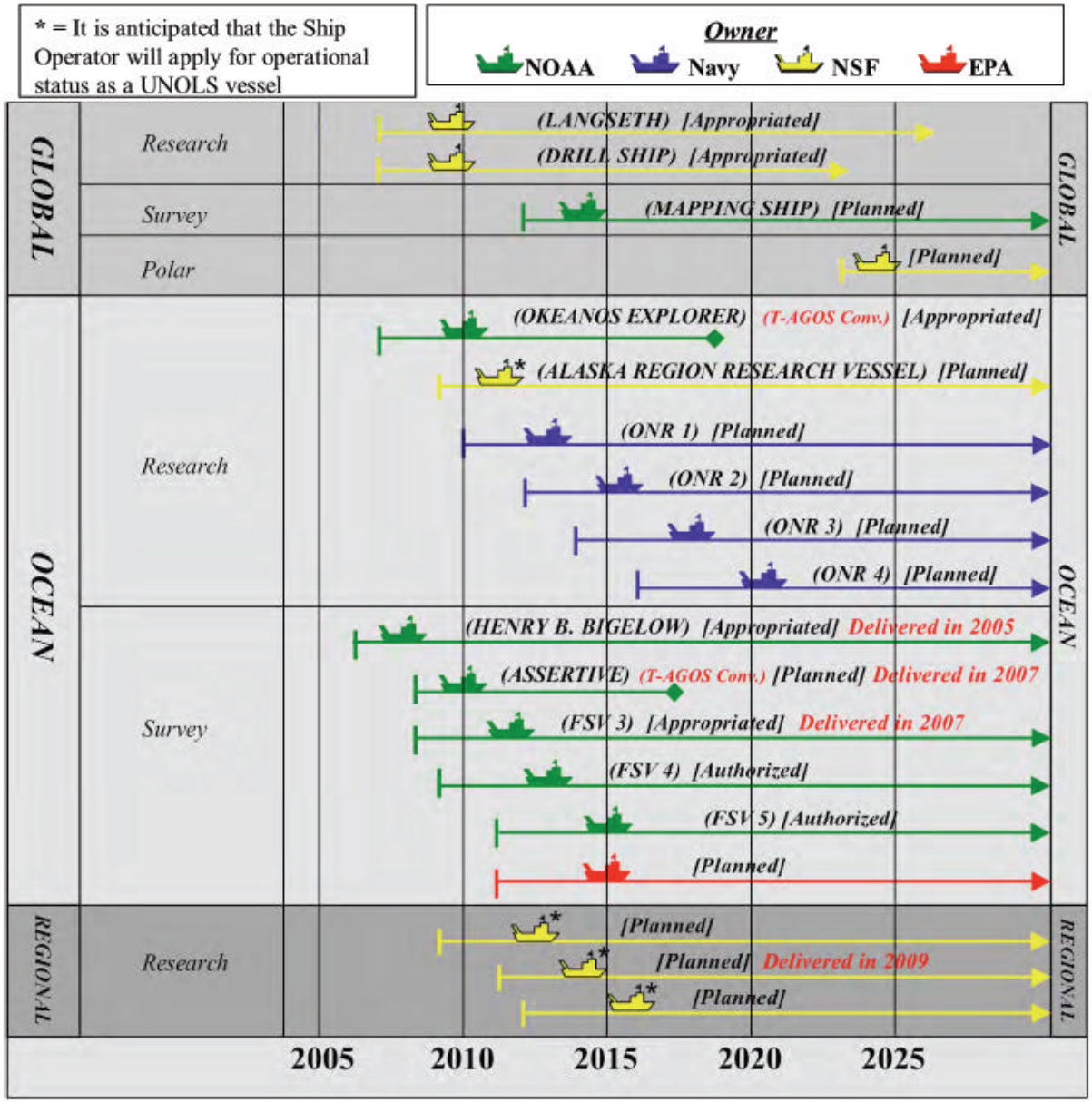


Figure 2: Fleet Composition by Year, with Appropriated, Authorized, and Planned Ships. During the next 10 years, the fleet is projected to decrease from 48 to 47 by 2015 and then to 35 ships by 2025

Agency Plans by Class, Type, and Year



The Federal Oceanographic Fleet Renewal Plan

Report Conclusions

- At a minimum, there is a need to maintain fleet capabilities
  - Must have an on-going process of renewal and upgrades
- The fleet should be sized to balance current and projected requirements with federal agency budgets.
- There is the potential for rapid reductions in the fleet if appropriations for planned and authorized vessels does not materialize, or if ships now being funded are not allowed to continue through to completion.
- Planning suggests that renewal is keeping up with aging fleets.

Issues

- Escalating operating costs coupled to sustained or increasing science requirements
- Changing scene of fleet appropriations
  - Coordinated federal funding mechanisms
- National advocacy of Oceanographic Fleet

The Federal Oceanographic Fleet Renewal Plan

What's Next?

- Incorporate FOFC and Reviewer feedback
- Re-write Abstract. Executive Summary, and Conclusion to strengthen message
- FOFC Review of Revised Draft – 15 Dec 2005
- Agency Review - Dec/Jan
- JSOST Review – Jan/Feb,
  ICOSRMI Approval – Feb/Mar

Marcus Langseth *Science Oversight Committee (MLSOC)*

New UNOLS Committee to oversee Science and Ship Operations for a National Oceanographic Seismic Facility

Report by UNOLS Steering committee:

Marcia McNutt (Chair), Jamie Austin, John Collins, Cindy Van Dover, Graham Kent

October 14, 2005

Background

- LDEO acquired a modern commercial 3D seismic vessel to replace *Ewing*, now renamed the *R/V Marcus Langseth*
- A *Ewing* Replacement Oversight Conversion Committee (EROCC) chaired by Tom Shipley is providing science and operator input to the conversion process.
- The *Langseth* will be operated as a UNOLS Vessel AND as a National Oceanographic Facility
- The science community and NSF desire a “DESSC like” oversight committee that would provide advice to LDEO and the funding agencies regarding the operation of this facility.

Your Approval Required…

- UNOLS standing committees must be approved by a vote of the membership.
- This committee (*MLSOC)* will be formed under Annex II of the UNOLS Charter, which outlines the requirements for National Facilities.
- Ballot Measure asks you to approve the formation of this oversight committee contingent on completing the conversion process and designation as a UNOLS Vessel and National Facility
- The UNOLS Council will approve the UNOLS designation of the vessel and National Facility when appropriate.
- The UNOLS Chair will appoint the initial members of the *MLSOC* in consultation with the UNOLS Council based on our committee's recommendations.

Ballot Measure

Establishment of a new UNOLS Standing Committee

- The UNOLS member institutions hereby authorize the establishment of a *Marcus Langseth* Science Oversight Committee (MLSOC) to be operated according to the attached Terms of Reference (*dated September 8, 2005).* This authorization is contingent on the successful conversion of the vessel to an academic research vessel and designation of the *Marcus Langseth* by the UNOLS Council as a UNOLS vessel and National Oceanographic Facility in accordance with the UNOLS Charter. If approved, the Terms of Reference will be incorporated in the UNOLS Charter as Annex IX. Initial members of the committee will be appointed by the UNOLS Chair in consultation with the UNOLS Council in accordance with the attached Terms of Reference and the UNOLS Charter.
- Approve _____ Disapprove_____

Terms of Reference

- Introduction and Purpose of MLSOC
  - *Langseth unique capabilities for 3D and 2D seismic reflection as well as support for other MG&G and Oceanographic field work.*
  - *Charge to MLSOC*
    - Overseeing the scientific operation of the *Marcus Langseth* as a National Oceanographic Facility.
      - fulfill an ombudsman role for all scientific groups in need of high-quality geophysical images, with the goals of providing
        - » state-of-the-art seismic acquisition capabilities,
        - » lowering the threshold of expertise needed to use the facility,
        - » and increasing the quality and accessibility of archived data.
    - Maintaining and enhancing the *Langseth*'s capabilities for general geophysical and oceanographic research

Introduction (cont.)

- MLSOC will be available to provide advice and input on the annual and long term scheduling of the *Langseth,* but will not do the actual scheduling. They will promote coordination with OBS and PASSCAL facility scheduling.
- Identify and recommend hardware and procedure upgrades to keep the facility at the cutting edge of exploration capability.
- Encourage geophysical research worldwide and encourage the advancement of cooperative international programs.

Authority

- Establish Committee under Annex II of the UNOLS Charter
- MLSOC has the authority to establish subcommittees when needed.

Membership

- 9 voting members
  - 3D and 2D seismic, including industry operations and data acquisition expertise
  - OBS and PASSCAL experience
  - General Oceanography including:
    - Coring, ROV ops, Moorings, Phys/Bio/Chem Oceanography, General Over-the-side ops
    - Mapping, Observatories
- Ex-Officio RVTEC and RVOC reps, probably from LDEO
- Other Ex-Officio representatives from LDEO
- Participation by Federal Agency representatives

Nominations

- Solicited from the community, advertise the need.
- Review CV and letter of interest.
- Voted on by current membership.
- Appointed by UNOLS Chair with Council concurrence.
- Three-year terms, staggered with no more than two consecutive terms.
- Ex-Officio members appointed by LDEO and UNOLS standing committees.

Meetings

- Meet twice a year
  - One meeting should allow for an open forum with the user community to get broad input for long-range planning, user concerns, etc.
  - The second meeting will be generally devoted to scheduling issues, permitting, advising on specific programs, and other near-term issues, and should occur in the late spring or early summer.
  - Might need to meet more often at the beginning or under unusual circumstances.

Charge to Committee

- **Provide advice on scientific programs.**
- **Forecast future operations locations.**
- **Provide advice on scheduling issues.**
- **Address user concerns.**
- **Review technical capabilities.**
- **Monitor issues related to permitting.**
- **Encourage technology expansion and upgrades.**
- **Reporting on activities and recommendations**

Potential Members

- profile of the committee membership

- Those with excellent MCS experience. These folks will provide the leadership for the committee. I suggest that we pick 4 from this category.(We have plenty of these to choose from.)
- Those who are users of MCS information, but not specialists. These people will work with the Category 1 folks to bring down the level of expertise necessary to use the facility successfully. I suggest that we have 2 on the committee from this group.(We have plenty of these to choose from.)
- General ship users, marine mammal specialists, and industry people. We need one person from each group, and I think that we need more names in most of these categories. It is going to be hard for these folks to see that serving on this committee is worth his/her time.

Potential Members

- MG&G user community

Seismic Specialists - Committee leadership

Need ~ 4 including Committee Chair

Top choices

- Mike Enachescu – Memorial University, Newfoundland - 3D, former industry
- Tom Shipley – UTIG – ERROC, 2D, 3D (Chair)
- Graham Kent – SIO - 3D
- Nancy Grindlay (UNC)

Alternate choices

- Steve Holbrook – Wyoming – 2D (alt chair)
- Alan Levander - Rice – EAR, IRIS, CD
- Dan Lizarralde –WHOI
- Nathan Bangs (alt for Shipley) - UTIG - 3D
- Casey Moore (UCSC)
- Kirk McIntosh - UTIG - 2D, 3D
- Greg Moore - SOEST - 3D
- Alistair Harding (alt for Kent) –SIO-3D
- Jim Fowler – NM Tech, IRIS - PASSCAL
- Mark Wiederspahn (UTIG) – seismic data acquisition

Potential Members

- MG&G user community

Non - Seismic Specialists

No particular order, but need institutional balance with previous list (need ~2)

- Mitch Lyle (Boise State)
- Will Sager (TAMU)
- Neil Driscoll – SIO
- Dale Sawyer – Rice
- Gail Christeson - UTIG - OBS
- Colin Zelt – Rice - EAR
- John Collins – WHOI - OBS
- Jeff Babcock – SIO – OBS
- Ralph Stephen – WHOI - downhole imaging

Potential Members

- User community – General Oceanography
  No particular order, but need institutional balance with previous list (need ~1)
  - Ian Macdonald – TAMU – mapping/ROV experience
  - Peter Franks – SIO – Physical and Biological ocean, over-the-side experience.
  - Mark Zumberge – SIO-IGPP
  - Jim Broda – WHOI - Coring
  - Alan Chave – WHOI- observatories/emerging technologies
  - Bob Embley – NOAA/PMEL - observatories, ROV ops
  - Jim Barry – MBARI – ecologist with ROV experience
- User community - Marine Mammal and Permitting (need at least 1)
  - Michael Moore – WHOI- might have recommendations for others
  - Peter Tyack – WHOI – cetacean response to human-generated noise
- Industry (need at least 1)
  - Craig Shipp - Shell - (ODP experience, Site Survey and Safety panels, plans 3D experiments)
  - Phil Fontana – Veritas - (survey design and acquisition parameters)
  - Peter Littlewood – Shell – 3D & current member of ERROC

What's Next…

- If *MLSOC* is approved by your vote, recruit initial members and seek their appointment by the UNOLS Chair.
- Provide opportunity for the committee to formulate their agenda and provide input to LDEO and NSF as soon as possible using correspondence or face-to-face meetings if funding available.
- LDEO request designation as UNOLS vessel and National Facility for action by Council
- LDEO complete conversion and complete inspection.
- Conduct shakedown cruise and begin operations in late 2006.
- Committee conduct regular and special meetings as needed to ensure smooth start up of operations.

MARCUS LANGSETH SCIENCE OVERSIGHT COMMITTEE

Terms of Reference

Revised September 8, 2005 Accepted October 14, 2005

INTRODUCTION

The R/V Marcus Langseth will provide the U.S. academic community with the resources to acquire state-of-the-art, two-dimensional (2-D) and three-dimensional (3-D) marine seismic-reflection data. No other ship in the UNOLS fleet approaches the seismic acquisition capabilities of this vessel, and consequently the Langseth represents a unique national resource. Furthermore, the Langseth provides capabilities in addition to those already available in the UNOLS fleet for marine geophysical data collection and general oceanographic research. The Marcus Langseth Science Oversight Committee (MLSOC) is charged with overseeing the scientific operation of this vessel as a National Oceanographic Facility (NOF). First and foremost, MLSOC fulfills an ombudsman role for all scientific groups in need of high-quality geophysical images, with the goals of providing state-of-the-art seismic acquisition capabilities, lowering the threshold of expertise needed to use the facility, and increasing the quality and accessibility of archived data. Second, the MLSOC is charged with maintaining and enhancing the Langseth's capabilities for general geophysical and oceanographic research, thereby insuring the most cost-effective operation of this unique asset.

The efficient operation of the Langseth in its capacity as the premier UNOLS seismic vessel involves some unique challenges. In overseeing the operations, outfitting and utilization of the Langseth, the MLSOC will need to factor in environmental and regulatory issues on account of concerns over the impact of artificial sound sources on marine mammals. The task of setting the schedule for the Langseth will be more complex than for the typical UNOLS ship. Scheduling challenges arise from the usefulness of the Langseth's airgun array for seismic refraction experiments, which requires coordination with both the marine (OBSIP-Ocean Bottom Seismograph Instrumentation Pool) and land-based (PASSCAL-Program for Array Seismic Studies of the Continental Lithosphere) seismometer facilities. The MLSOC will be capable of providing expertise and advice during the process of coordinating these activities.

The technological capabilities of the seismic exploration industry evolve rapidly. MLSOC will therefore need to identify and recommend hardware and procedure upgrades that will ensure that this national facility remains at the cutting edge of exploration capability. MLSOC will need to be proactive with the user community, federal sponsors and the operator of the national facility, Lamont-Doherty Earth Observatory/Columbia University (LDEO), to encourage geophysical research worldwide. Additionally, MLSOC will also encourage the advancement of cooperative international programs for the enhancement of multidisciplinary geophysics-based science throughout the global academic community.

AUTHORITY

The MLSOC shall operate pursuant to appointment by UNOLS and in accordance withAnnex II to the UNOLS Charter. In addition, each funding agency will be invited to designate an official observer to the committee. The MLSOC is empowered to identifyand establish subcommittees to explore and advise the committee on specific issues relating to the operation and use of the Marcus Langseth. These subcommittees may draw on expertise outside of the committee itself.

MEMBERSHIP

The MLSOC membership shall be comprised of up to nine individuals who can represent the various oceanographic and geologic disciplines required to fulfill the committee tasks as outlined below. For example, in addition to members of the academic geophysical community, the committee shall include individuals with significant technical background in seismic data acquisition and one or more (industry) representative(s) with expertise in the areas of 3-D geophysical surveying (including related permitting and navigation issues), borehole imaging, and related technologies. The MLSOC will also need to include a representative with expertise in marine mammal biology and permitting and at least one non-seismic, general oceanography representative. The Facility Operator, LDEO, may only be represented by non-voting ex-officio representatives. Ex-officio representatives of the UNOLS RVTEC and RVOC committees may serve on the committee and under normal circumstances the LDEO members of these committees can serve in this role.

NOMINATIONS

Nominations to the MLSOC and for the MLSOC Chair will be solicited from the research community and other organizations with relevant expertise, such as the offshore exploration industry. Vacancies will be announced in various weekly journals and other venues as appropriate, and candidates will be asked to submit their vitae and letters of interest. Applications for membership to the MLSOC and the MLSOC Chair will be reviewed by the standing MLSOC and voted on by the membership. The UNOLS Chair shall appoint the MLSOC members and the Chair from the nominations put forward by MLSOC. Members of the MLSOC will be appointed for terms up to three years, staggered so that two or three terms begin each year. Individuals may serve not more than two consecutive terms. The operating institution may designate non-voting ex-officio member(s) in addition to those members appointed by the UNOLS Chair. With the Council's concurrence, other standing committees of UNOLS, such as RVOC and RVTEC may also designate ex-officio members as appropriate to MLSOC.

MEETINGS

It is expected that the MLSOC will typically meet twice per year. One meeting should allow for an open forum with the user community to get broad input for long-range planning, user concerns, etc. The second meeting will be generally devoted to equipment and procedural improvements, advice on scheduling, permitting, or specific programs, and other near-term issues, and should occur in the spring or early summer when plans and schedules for the next year are being formulated.

CHARGE TO THE COMMITTEE

1. Provide advice on scientific programs. The MLSOC will not review proposals, but rather provide advice to the facility operator and supporting federal agencies regarding optimum use of the asset to further marine research in a cost-effective manner.

2. Forecast future operations locations. The MLSOC will work with the user community, federal sponsors and the operator to define general areas of operations approximately two years in advance in order to promote and facilitate geophysical expeditions to remote geographic regions. A preliminary discussion on geographic areas of operations is conducted in an open forum for the user community (e.g., at the December meeting of the American Geophysical Union). At that time, the community is provided with an indication of the potential areas in which the national geophysical asset could feasibly operate with adequate lead time prior to proposal submission deadlines. MLSOC will work with the federal funding agencies to provide timely information regarding funded projects as that information becomes available, so as to enable potential users to cluster proposals for work in geographic areas.

3. Help with short-term scheduling. Ship scheduling is based on funded projects and is done by the UNOLS Ship Scheduling Committee (SSC), including the federal agencies, for projects in the next two fiscal years. The committee will provide feedback and advice to the UNOLS SSC, agency representatives and staff from the operating institution to assist in developing efficient and effective schedules that execute funded seismic imaging field programs in a timely manner.

4. Address user concerns. On a yearly basis, the MLSOC will review and assess comments from scientific users of the national geophysical asset. The MLSOC will identify key areas that warrant attention by the operator and recommend remedial actions as appropriate. As part of this activity, the MLSOC will work with the user community to rethink and redefine the roles of the science party and the technical support group provided by the operator. This task may include reviewing options and recommending solutions for the specialized technical support required for Marcus Langseth operations, e.g., contractor vs. full-time staff for back-deck activities, navigation staff, and marine mammal observers.

5. Review technical capabilities. The technical capabilities of the national geophysical asset will be formally reviewed by the MLSOC, with the assistance of selected outside experts, at least once every two (2) years. The data quality should be compared against some minimum standard set by the MLSOC, taking into account the challenges of working in remote marine environments. The quality, accessibility and preservation of archived data and archival procedures will be included in this review. The results of that review will be provided to the NOF operator, UNOLS and the federal funding agencies.

6. Monitor issues related to permitting. On a yearly basis or more frequently, the MLSOC will review issues relating to permitting of seismic activities and make recommendations to the operator and federal agencies for improving the process.

7. Encourage technology expansion and upgrades. The MLSOC will, on a continuing basis, maintain awareness of new geophysical imaging tools and the needs of the user community for new geophysical equipment to address important scientific questions. Relevant areas for tracking include, but not limited to, sound sources/receivers for through-water/sea-floor - based surveying and on-site (i.e., down hole/observatory-based) imaging. MLSOC will provide this information to the NOF Operator, UNOLS, and the federal agencies. MLSOC will encourage development and promoteacquisition of new geophysical sensors and tools, as warranted by the scientific needs of the user communities and as deemed feasible by the pertinent funding agencies. Some of this new equipment may have multidisciplinary use and could be considered, with appropriate resources, for inclusion into the standard suite of scientific equipment for this NOF. Other types of sensors may be task- or research-specific and should be considered Third Party Tools, as formulated by MLSOC, which have been approved by the federal agencies and UNOLS. In carrying out this task, the MLSOC will need to coordinate its efforts with industry oversight groups TBN (To Be Named) as deemed appropriate, marine mammal permitting organizations like the National Marine Fisheries Service, and may need to organize special workshops.

8. Reporting. Reports of activities shall be made to the UNOLS membership on at least an annual basis and to the UNOLS Council at regularly scheduled Council meetings.

2005 UNOLS Council Slate

Elections will be held at the UNOLS Annual Meeting on 14 October to fill expiring Council terms. UNOLS Nominating Committee members Bruce Corliss (Chair), Eileen Hofmann, and Denis Wiesenburg have assembled a slate of candidates for the UNOLS Council positions to be filled. This election will be held in accordance with the UNOLS Charter as readopted October 2004. The slate is included below. Additional information about the candidates can be found by clicking on his or her name below in the Statement of Interest section.

A copy of the slate can be downloaded as a pdf at <slate05.pdf>

UNOLS COUNCIL SLATE- 2005

OPERATOR REPRESENTATIVE (3 year term) - from among designated UNOLS Member Operator institutions:

Dr John Diebold – Lamont-Doherty Earth Observatory

Dr. Peter Ortner - University of Miami/Atlantic Oceanographic and Meteorological Laboratories

Dr. Brian Taylor – University of Hawaii

AT-LARGE REPRESENTATIVE (3 year term) - individual affiliated with any UNOLS Member Institution:

Dr. John Farrell – University of Rhode Island

Dr. Robert Pinkel– Scripps Institution of Oceanography

Dr. Joseph Torres – University of South Florida

Candidates Statements of Interest and Biographical Sketches

Candidates for the Operator Representative Position

Dr. John Diebold – Lamont-Doherty Earth Observatory

Statement of Interest:
I hope to have the opportunity to help support the UNOLS community during the increasingly difficult but interesting times we are beginning to experience. I am a team player, and have served in many roles aboard many research ships over the past 38 years. Those roles have included technical support, scientific research, data processing and administration. I am sure that this broad range of experience can be put to use as a member of the UNOLS council.

Biographical Sketch:

- 1980 Ph.D. Marine Geophysics, Columbia University, New York, New York
- 1974 B.A., Geophysics, University of Colorado, Boulder, Colorado
- Chief Scientist for Marine Operations Lamont-Doherty Earth Observatory (LDEO), Columbia Univ. - July 1 2005 to present.
- Marine Science Coordinator, *R/V Ewing* LDEO - June 1, 1998 to June 30 2005.
- Alternate COMSEC custodian LDEO - October 1997 to present.
- Research Scientist, LDEO - July 1, 1990 to present.
  - Membership in Professional Societies: Marine Technology Society, American Geophysical Union, Society of Exploration Geophysicists, Sigma Xi, Phi Beta Kappa
  - Memberships on Boards; Activities:
    - August 1, 1998 – July ‘02 Chairman, JOIDES Site Survey Panel
    - June, 1996 – June, ‘98 ODP-Antarctic Drilling Detailed Planning Group
    - May, 1996 – Jan., 2000 Science Oversight Panel; AMNH Hall of Planet Earth
    - July, 1995 – July ‘02 Member JOIDES Site Survey Panel
    - Jan., 1994 - Jan., ’98 Vice Chairman Shipboard Science and Planning Committee
    - 1992 - 1994 Member *GEOLOGY* Editorial Board
    - March 1993 – July '93 Co-Chairman Research Vessel Planning Committee
  - First or co-author of 45 publications in refereed journals, 100+ published abstracts
  - Research Vessel Experience, 1967 - 2005: Technician – 24 Cruises, Scientist – 31 Cruises, Chief or Co-Chief Scientist – 20 Cruises.

Dr. Peter Ortner - University of Miami/Atlantic Oceanographic and Meteorological Laboratories

Statement of Interest:

I have served UNOLS as a Council member these past three years. I was honored to have been elected and have endeavored to serve the Council in every way I could. From this perspective it is apparent to me, that the coming years represent a particularly challenging period for the oceanographic community and the university fleet. We hope to initiate a major and much needed fleet replacement. At the same time, the Navy has compelling and conflicting priorities and the National Science Foundation budget is under tremendous pressures that are already affecting ship scheduling. The icebreakers on which our polar programs depend require expensive refits with new machinery yet the USCG directing all its resources towards homeland security. Seismic and sonar sound sources are being blamed for marine mammal beachings. The radio frequency spectrum reserved required for planned oceanographic applications is rapidly being auctioned off. Ambitious ocean observatory and ocean observing systems are being planned the installation and maintenance of would stress the capacities of even a markedly enlarged research fleet. To these and other issues I bring thirty years of experience as an interdisciplinary seagoing oceanographer and major user of UNOLS and federal government vessels as well as my three prior "learning" years on the Council.

Biographical Sketch:

- Ph.D., 1978, Biological Oceanography, Woods Hole Oceanographic Institution.
- 1992 J.D., 1992, Environmental Law, University of Miami School of Law
- Chief Scientist, Atlantic Oceanographic and Meteorological Laboratory
- Adjunct Full Professor and Member Graduate Faculty, University of Miami, Rosenstiel School of Marine and Atmospheric Science, Marine Biology and Fisheries
- University of Miami, School of Law, Adjunct Faculty 1994-present
- Research Interests - Trophic relationships in marine plankton communities; phytoplankton physiology, nutrient uptake and trace metal interactions; zooplankton biochemistry; fisheries oceanography, marine sources of biogenic volatiles; zooplankton sampling technology particularly optical and acoustic; physical regulation of biological systems; ecosystem restoration science and policy; coastal zone and fisheries management science and policy.
- Special Programs Director, Division of Ocean Sciences, National Science Foundation (1987-1988)
- Present Chair RSMAS Ship Operations Subcommittee, member from 1994
- Sea Going Experience (1971-present) - Participant in over eighty research cruises aboard UNOLS and NOAA vessels. Chief Scientist on more than thirty cruises.
- UNOLS Council Operator Institution Representative (2002-2005)

Dr. Brian Taylor -School of Ocean & Earth Science & Technology, University of Hawaii

Statement of Interest

The infrastructure of US oceanography is undergoing substantial change. The conversion of the *R/V Marcus Langseth* is underway; new regional and ocean class ships are proposed, as is a *DSRV Alvin* replacement. The mix of autonomous vehicles, and access to buoyed and cabled observatories, is growing. ORION is in its formative stages. At the same time as the report of the U.S. Commission on Ocean Policy advocates expansion of the ocean research enterprise, there are immediate pressures on facilities budgets from increasing fuel and security costs, and continuing concerns for maintaining the expertise of marine personnel. UNOLS is an important representative of the ocean science community as we navigate this changing environment and better position ourselves to respond to the needs of the future.

I remain an active sea-going scientist, having averaged one month per year at sea since 1977. I also oversee ship operations and marine technicians at one of UNOLS' founding institutions. UH/SOEST operates both UNOLS (*R/V Kilo Moana* 186'x88' SWATH; HMR1 and IMI-30 towed sonars) and non-UNOLS marine facilities (223' *R/V Ka'imikai-O-Kanaloa*, 2 *Pisces* 2000m submarines, 57' *R/V Klaus Wyrtki*). Therefore I have the perspective of a ship-user as well as of a ship operator within and outside UNOLS. I was also heavily involved in all the science mission aspects of the design, construction and outfitting of *R/V Kilo Moana*. I offer this experience to serve as a member of the UNOLS Council.

Biographical Sketch - Brian Taylor

- Ph.D., 1982, Fulbright Scholar at Lamont-Doherty Geological Observatory of Columbia University in Marine Geology and Geophysics;
- B.Sc.Hons.(1st), 1976, University of Sydney in Geology and Geophysics.
- Acting Associate Dean of Research, SOEST, University of Hawaii
- Professor, Department of Geology and Geophysics, University of Hawaii
- Research foci: geomorphology, structure, stratigraphy, magmatism, and tectonics of rifted margins, trench-forearcs, volcanic arcs and back-arc basins, Hawaii.
- Joint Oceanographic Institutions Board of Governors EXCOM member
- Lead Proponent (2001) for the RIDGE Integrated Studies Site in the Lau backarc basin
- Chairman, MARGINS Program 1997-2000
- JOIDES Planning Committee member 1991-1995.

- American Geophysical Union member since 1977; SEG member 1974-1982.
- Research tools: MCS, multibeam bathymetry, surface- & deep-towed sonars/ROVs, magnetics, gravity, heat flow, *Alvin* & *Shinkai* 6500 dives, drilling, dredging, coring, bottom photography, OBS/H. (Auxiliary tools: ADCP, CTD tow-yo, MAPR, VISA).
- >30 MGG cruises, 26 as chief/co-chief scientist (*Vema, Kana Keoki, Moana Wave, Atlantis II, Fred Moore, JOIDES Resolution, Sonne, Maurice Ewing, Yokosuka, KOK, Kilo Moana*)
- UNOLS rep for SOEST since 1993; oversee SOEST Ship Ops & Marine Techs

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Candidates for the At-Large Representative Position

Dr. John Farrell – University of Rhode Island

Statement of Interest:
My interest in serving on the Council is to assist with fleet renewal and improvement activities and issues. URI/GSO has been a successful UNOLS operator and as Associate Dean of Research and Administration at this institution, my responsibilities include both marine operations as well as oceanographic research. Specifically, I'm interested in representing the US scientific oceanographic community on the many issues before us, which include, but are not limited to, permitting issues (marine mammal and acoustic), ensuring proper infrastructure (logistical and operational support) for major ocean observatory initiatives (e.g., ORION), icebreakers, and fleet renewal in light of limited resources. I'd like to help the Council provide advice and guidance to the sponsors such that they may continue to support a vital program of research and education in the ocean sciences.

The experience I would bring to the committee is rooted in 20 years of professional experience as an oceanographer (marine geologist by training), including a total of 8 months at sea on traditional vessels (*R/V Robert Conrad*) as well as drill ships (*JOIDES Resolution*), and Arctic class icebreakers (diesel electric *Oden*, *Vidar Viking*, and nuclear *Sovietsky Soyuz*).

I also bring program management experience in that I worked for 9 years at Joint Oceanographic Institutions, Inc. as a director in the Ocean Drilling Program and the US Science Support Program. This provided an understanding of the Federal planning and budgetary process as well as an appreciation of domestic and international marine geology research activities and their management.

To be candid, I'm not deeply steeped in UNOLS as I am in other ocean science activities, but I have frequently been on the edges of UNOLS for a long time, such as serving on Lamont's Steering Committee for the *R/V Maurice Ewing* midlife refit, which ultimately led to the

purchase of their replacement vessel. Given my current position and responsibilities, I've been learning a lot from people like Dave Hebert (FIC Chair), marine superintendents Jack Bash and Bill Hahn, former Council members Tom Rossby and Roger Larson and colleagues in UNOLS that were also affiliated with scientific ocean drilling (Patty Fryer, Margo Edwards, John Diebold, and Debbie Kelley, among others) and I would look forward to learning more while providing a perspective that might be considered novel. I understand large science programs, appreciate their cultures, interactions with sponsors, and so on. As such, I think I can make a contribution.

Thanks for your consideration.

Biographical Sketch:

- 1991, Ph.D., Brown University, Geology
- 1986, M.Sc., Brown University, Geology
- 1983, B.A., Franklin & Marshall College, Geology •*Honors*: Geology Award Recipient
- Associate Dean of Research & Admin., Grad. School of Oceanography, URI – 3/05 to present.
- Assistant Dean, Graduate School of Oceanography, University of Rhode Island - 3/04-3/05.
- Director and Co-PI, US Science Support Program (NSF) - 1/98-3/04.
- Associate Program Director, Ocean Drilling Program (NSF & intl' partners) - 1/98-3/04
- JOI Management Representative, Intl' Working Group Support Office - 11/99-3/04
- Research Interests - Quantitative Cenozoic oceanography and climatology, biogeochemistry, Sr, C, O, and N cycling.
- Professional Affiliations: - Geological Society of America, American Geophysical Union, Sigma Xi, Geological Society of Washington, National Press Club, GSO Friends of Oceanography, Marine Technology Society
- Service to the Profession:
  - Alternate Governor on Boards of JOI Inc. and IODP Management International Inc. (2004-)
  - Member, Evaluation Panel to ECORD interim council on European Management Agency (2002-2003)
  - Member, Steering Committee of *R/V Maurice Ewing* midlife refit (Columbia U.) (2002-2003)
  - Member, NSF's Earth System History Steering Committee (2001-2002)
  - Member, Editorial Review Board of Iranian National Center for Oceanography (1998-)
  - Nominated Officer for AGU's Secretary, Marine Geology & Geophysics (1998-

2000)
- Member, Editorial Review Board of *Geology* (1995-1998)
- Member, AGU Paleoceanography & Paleoclimatology Committee (1994-1998)

- Refereed publications (30 peer-reviewed papers 10 representative)
- A total of 8 months at sea over the course of 20 years on traditional vessels (*R/V Robert Conrad*) as well as drill ships (*JOIDES Resolution*), and Arctic class icebreakers (diesel electric *Oden, Vidar Viking*, and nuclear *Sovietsky Soyuz*).

Dr. Robert Pinkel – Scripps Institution of Oceanography

Statement of Interest:
My scientific interest is in the transfer of energy from large to micro (turbulent) scales in the sea. To progress it has been necessary to develop specialized tools, to use specialized platforms, and to use conventional platforms in non-conventional operating modes.

In the course of this effort, I've developed an appreciation of the breadth of capabilities of our research fleet. We are challenged to maintain and expand these capabilities in an era of aging ships and tight funding. This challenge is manifested in the effort to renew the UNOLS Fleet and to recruit and maintain the highest quality seagoing personnel.

There is a parallel challenge, not widely appreciated, to “renew” the national cadre of seagoing scientists. To an increasing extent, it is the senior members of our community who have the motivation and can raise the funds to support research at sea. Younger investigators find it more productive, in the short term, to work with previously collected or synthetic data (model output). Yet seagoing skills, like math and music, are best acquired when one is young. UNOLS must work with the federal sponsors and its member institutions to maximize the exposure of young scientists to state-of-the-art marine research practice.

In terms of experience, I have participated in numerous research cruises on UNOLS vessels, on the R.P. FLIP, and in arctic ice-camps. In 1992-4, I chaired the SOONS (Scientific Opportunities on Nuclear Submarines) sub-committee of the UNOLS Fleet Improvement Committee. The report that was produced contributed, in some measure, to the eventual creation of the SCICEX series of Arctic scientific cruises on 637- Class submarines. From 1999-2004, I served as Chair of the SIO Marine Operations Committee, the group of researchers that oversees Scripps marine operations. Through participation on the UNOLS Council, I hope to continue to contribute to the preservation and expansion of our marine capabilities.

Biographical Sketch:

- Ph.D., 1974, Scripps Institution of Oceanography, Physical Oceanography
- M.S., 1969, Scripps Institution of Oceanography, Physical Oceanography
- B.A., 1968, University of Michigan, Physics
- Professor of Oceanography, Marine Physical Laboratory, 1987-present
- Associate Director, Marine Physical Laboratory, 1993-present
- Research Activities - Physical Oceanography. Observations of internal wave propagation in the upper ocean at low and mid latitudes, and in the Arctic. Observations of surface wave/swell propagation, and the incidence of wave breaking. Observations of small-scale shear and vertical strain in the sea and the incidence of deep-ocean turbulence. Observations of tidally driven internal waves and ocean mixing
- Professional Societies - Phi Beta Kappa, Acoustical Society of America, American Geophysical Union, American Meteorological Society, International Association of Acoustic Remote Sensing, The Oceanography Society.
- Awards & Honors - Fellow, Acoustical Society of America; The Walter Munk Award, The Oceanography Society/ONR
- Committees:
  - Applied Ocean Science Group Curricular Coordinator, SIO
  - Marine Operations Committee, SIO, Chair 1999-2004
  - International Association of Acoustic Remote Sensing, Founding Member
  - U.S. Representative to the Board of Governors of the Association Acoustical Society of America, Committee on Underwater Acoustics
  - Scientific Opportunities of Nuclear Submarines (SOONS); Subcommittee of the UNOLS Fleet Improvement Committee, Chair
  - Hawaii Ocean Mixing Experiment, Program Coordinator 1997-present
  - Global Ocean Mixing, Co-convener, Ocean Sciences Meeting, 2002-4
- Ocean Technology Developments - Repeated profiling CTD systems, Doppler sonars for use in measuring internal wave motions, surface scattering Doppler sonar for measurements of surface wave propagation, sector-scan multibeam Doppler sonar for sea surface and upper-ocean studies (1990-Present), and “Wirewalker” (ocean wave powered) technology as a low cost method of enhancing the versatility of moored array systems.
- Extensive seagoing experience on both conventional research vessels and on FLIP.

Dr. Joseph Torres – University of South Florida

Statement of Interest:
My primary research interests are in elucidating the influences of temperature and oxygen on the ecology and physiology of pelagic fauna. I work with species ranging in size from small copepods to intermediate-sized fishes, that is, the zooplankton, macrozooplankton, and micronekton. Because the creatures I study are found largely in blue water, I have been going to sea regularly (multiple cruises per year) since I began my graduate work in 1972.

As a long-time user of UNOLS vessels, Antarctic research vessels, our local Florida state research vessels, and when particularly fortunate, of submersibles (see list in CV). I've experienced a reasonable cross-section of research vessel types, small and large, good and bad, each of them with its own particular soul. Since I do physiological measurements at sea I also have first-hand experience with the labs on all the vessels I've been to sea on, and more to the point, the quality of the electrical power on them.

The gear types that I deploy are mainly scientific trawls (MOC-10, Tucker trawls) with an occasional balloon trawl for bottom work. However, I also have direct experience in deploying a moored respirometry array and in the design of gear for bringing individuals back alive from mesopelagic depths. I was a pilot and participant in cruises during the 1980's that used the WASP atmospheric diving suit and Deep Rover (Bruce Robison - PI), and in the mid 1990's, Drs. Tom Bailey, Marsh Youngbluth and I used the Sea Link submersibles to examine metabolism in deep-living jellies. For physiological studies on shallower gelatinous species and on ice-associated species, I have used blue water diving for animal collection.

Besides my experience with stand-alone programs I have been active in multi-disciplinary efforts beginning in 1983 (cruises also in 1986 and 1988) with the AMERIEZ program (Antarctic Marine Ecosystem Research in the Ice Edge Zone) and continued more recently with the APIS (Antarctic Pack Ice Seals) program in 1999-2000 and Southern Ocean GLOBEC in 2001 and 2002. The Southern Ocean GLOBEC field program used two vessels working in tandem to sample waters of the Antarctic Peninsula Shelf in a series of four field seasons, two each in the austral fall and winter. The sampling strategy employed was to have one vessel, the 308 foot *Nathaniel B. Palmer*, "mow the lawn" on a survey defined by our SO GLOBEC steering committee (and led by Peter Wiebe), while the other vessel, the 240 foot *Laurence M. Gould*, occupied pre-determined sites within the survey grid for process work. I was chief scientist on both of the fall process cruises, and with Peter Wiebe, and our chair Eileen Hofmann, I serve on the SO GLOBEC steering committee.

I am sure it is a particularly trying time for the UNOLS council in deciding how to allocate resources when facing rising fuel costs and flat-line funding. I think that my seagoing experience gives me a good background for helping in council deliberations on a variety of topics ranging from ship design to the role of ships in 21st century oceanography. For me, a large part of oceanography is embodied in the vessels that allow us sample the oceans and I would welcome the chance to serve and protect our fleet as part of the UNOLS council.

Biographical Sketch:

- 1980, Ph.D. Biology, University of California Santa Barbara, CA
- 1976, M.A. Biology, University of California Santa Barbara, CA
- 1972, B.S. Biology, College of William and Mary Williamsburg, VA
- l990 to Present - Professor, Department of Marine Science, University of South Florida

- Primary research interests are in elucidating the influences of temperature and oxygen on the ecology and physiology of pelagic fauna. Work is with species ranging in size from small copepods to intermediate-sized fishes, that is, the zooplankton, macrozooplankton, and micronekton.
- Peer-Reviewed Publications - 64
- Guest editor: Deep-sea Research II volume 51
- Member: Southern Ocean GLOBEC scientific steering committee. March 2000 - present
- Member: U.S. GLOBEC scientific steering committee Jan 96 - Dec 1998
- Sea-going Experience - *RVIB NB Palmer* (2000, 2001, 2002), *R/V Lawrence M. Gould* (2001, 2002), *R/V Pelican* (1998, 1999), *R/V Tommy Munro* (1999), *R/V Point Sur* (1995), *Polar Duke* (1988, 1993), *R/V Columbus Iselin* (1983, 1993, 1994), *Johnson Sea-Link* submersible (1990, 1991), *R/V Seward Johnson* (1990), *R/V Edwin Link* (1991), *USCGC Glacier* (1986), *R/V Wecoma* (1985), *R/V Thomas G. Thompson* (1984), *R/V New Horizon* (1982), *R/V Melville* (1983, numerous trips on *R/V Bellows* and *R/V Suncoaster* (1980-2005), numerous cruises aboard *R/V Oconostota* (1972-1973), *R/V Velero IV* (1973-1979), *R/V Ellen B. Scripps* (1973-1977),and *R/V Alexander Agassiz* (1975-1976).

RESEARCH VESSEL OPERATORS' COMMITTEE ANNUAL UPDATE:

By: Tim Askew, RVOC Chair

The RVOC would normally be holding the Annual Meeting the month of October; however, at the 2004 Annual Meeting it was decided to change the date to April, 2006. This one time delay will ultimately allow the membership to attend meetings during a less demanding time of the operating year, leaving the September through November window open for maintenance/overhaul planning, and proposal writing.

The 2005 year has been busy on several fronts. Group purchases of radars were handled by Oregon State University (OSU). This purchase provided Furuno radars to seven vessels. Woods Hole Oceanographic Institution (WHOI) has ordered Furuno Doppler Speed logs for eight vessels and due to the long lead time the Speed logs have not yet been received. WHOI also did a group purchase for life rafts. Stability reviews for all UNOLS vessel's that don't have a recent review in place is in the works by Scripps Institution of Oceanography. The plan will be to include eight vessels in 2005 and ten vessels in 2006.

The science van construction is progressing nicely with the East Coast pooled aluminum isotope van being completed along with the aluminum isotope van for a University of Rhode Island scientist, and the steel general purpose van for a University of Delaware Scientist. Construction is in progress on the WHOI aluminum hydro van and scheduled to begin on a 10 foot isotope van for University of Minnesota / Blue Heron.

Regulatory issues still remain high on the RVOC list even thought the deadlines are long past and all the effected vessels over 500 GRT now have Vessel Security Plans (VSP), port facilities have Facility Security Plans (FSP) where required, and Non-Tank Vessel Response Plan (NTVRP) for vessels over 400 GRT. The NTVRP in some cases is still being reviewed by the U.S. Coast Guard but the vessels have a provisional letter in the interim.

The Spring RVOC Meeting Agenda is currently under development with crew retention and soaring fuel costs being hot topics. The meeting will be hosted by the University of Washington in Seattle. The meeting dates are April 25 through 27, 2006.

UNOLS Fleet Improvement Committee Meeting

Report to the UNOLS Membership

October 14, 2005

Summary of October FIC Meeting

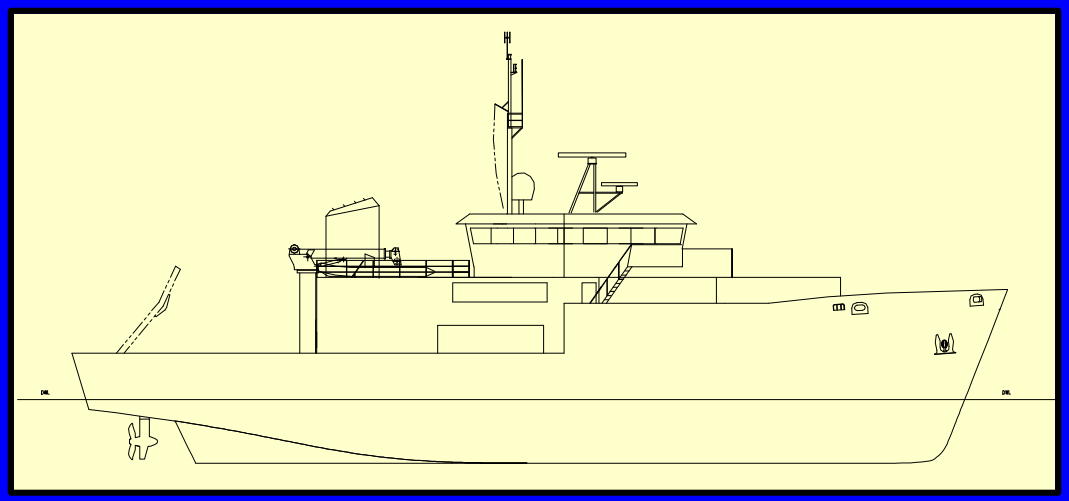
Fleet Renewal Activities

- Regional Class Acquisition.
- Ocean Class Acquisition.
- Global Class SMR Development.
- Ocean Observatory Facility Needs.
- Ship Construction and Conversions

Regional Class

Regional Class:

- Provided feedback to NSF:
  - UNOLS Team representatives
  - Performance Specifications

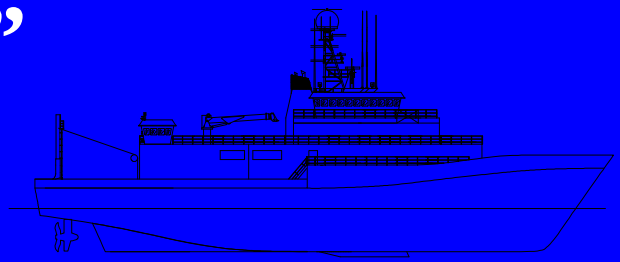


Ocean Class

Ocean Class:

- Provided a recommendation on hull form (Feb 2005)

  "Based on the information developed (See Appendix), UNOLS has reached the conclusion that the next ocean class ships should be monohulls."



- UNOLS poised to provide feedback

General Purpose Global Vessel SMR Mid Life Refit considerations

2006 - *THOMPSON*

Global Class SMR Steering Committee Formed

Chair - Bruce Howe (UW)

2011 – *REVELLE*

2012 – *ATLANTIS*

Global Class SMR Update

- **Tasking:**
  - **Produce Global Class General-Purpose SMR document.**
  - **As a follow-on activity incorporate Heavy Lift considerations, and Seismic Capabilities**

- **Project Website:**
  <http://www.unols.org/committees/fic/global/global_smr.html>

- **Upcoming Activity -** Community Survey:
  - UNOLS On-Line Form - November 2005.
  - Review preliminary response at Fall AGU.
  - ***Community input requested!***

Fleet Renewal Activities

Ship Construction and Conversions:

Alaska Region
Research Vessel

Hugh R. Sharp
Construction

Marcus Langseth
Conversion Effort

UNOLS Fleet Improvement Plan — 2005 Table of Contents(Revised October 5, 2005)

I. Executive Summary

II. Introduction

III. Identify Future Science Initiatives:

A. Introduction (**why we need ships, etc**)

B. Physical – Dave Hebert

C. Biological – Terry Whitledge

D. MG&G – Niall Slowey

E. Chemical – Jim Bauer

F. Education and Public Outreach – Clare Reimers

G. Large Science Program Initiatives: - Toby Garfield

H. Cross cutting initiatives (Observatories (broad)) – Jim Cochran

Table of Contents
UNOLS Fleet Improvement Plan — 2005
(Revised October 5, 2005)

IV. UNOLS, the Current Facility Composition and Utilization

A. The Role of UNOLS in Fleet Planning and Facility Management

B. Current UNOLS Facility Description

1. UNOLS – Academic Research Fleet
2. National Oceanographic Aircraft
3. National Deep Submergence Facility

C. Scheduling and operating modes

1. Facility scheduling process (current)

D. Fleet Utilizations - Annette

1. Past & present utilization
2. Geographical Utilization
3. Seasonal Utilization Trends:
4. Berthing Utilization
5. Fleet Costs
6. Agency Support trends

Table of Contents
UNOLS Fleet Improvement Plan — 2005
(Revised October 5, 2005)

V. Future Fleet Utilization Projections and Future Requirements?

- **A. UNOLS and FOFC Plan Fleet Projections; FOFC plan & basis for it**
- **B. Addition of other facility projections (Ocean observatory, etc)**
- **C. Other Facilities**
- **D. Future scheduling needs – event**
- **E. Updated vessel retirement dates and SLEP costs**
- **F. Ship Construction Plans and realistic timelines**
- **G. Shortfalls:**
  1. Differences between FOFC and UNOLS FIP
  2. Consequences of not carrying out SLEPs
  3. Tradeoffs between various scenarios
- **H. Extensions and expansions beyond the FOFC Plan**

~ Working Draft Exists ~

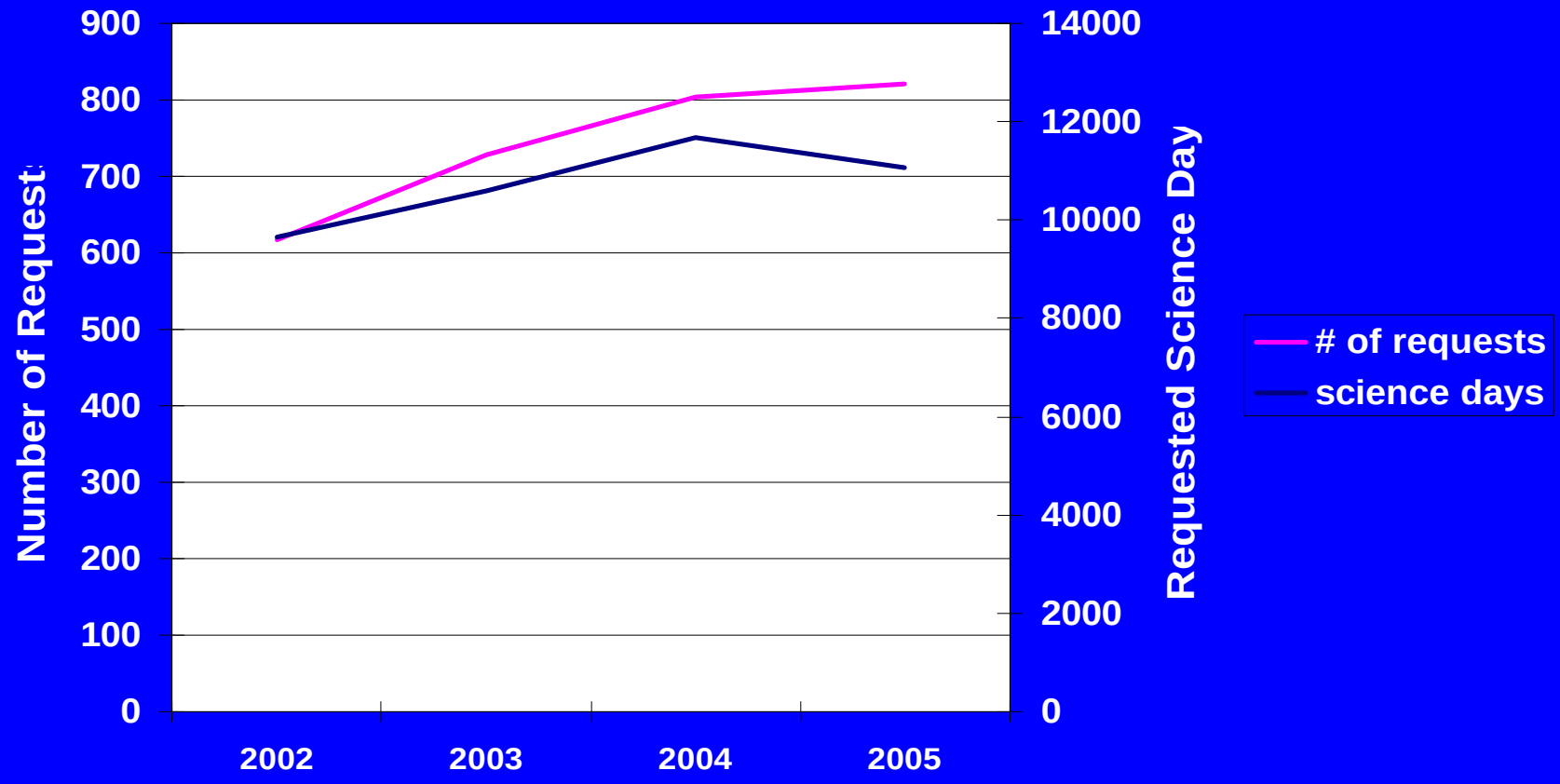
~ Review Draft available in March 2006 ~

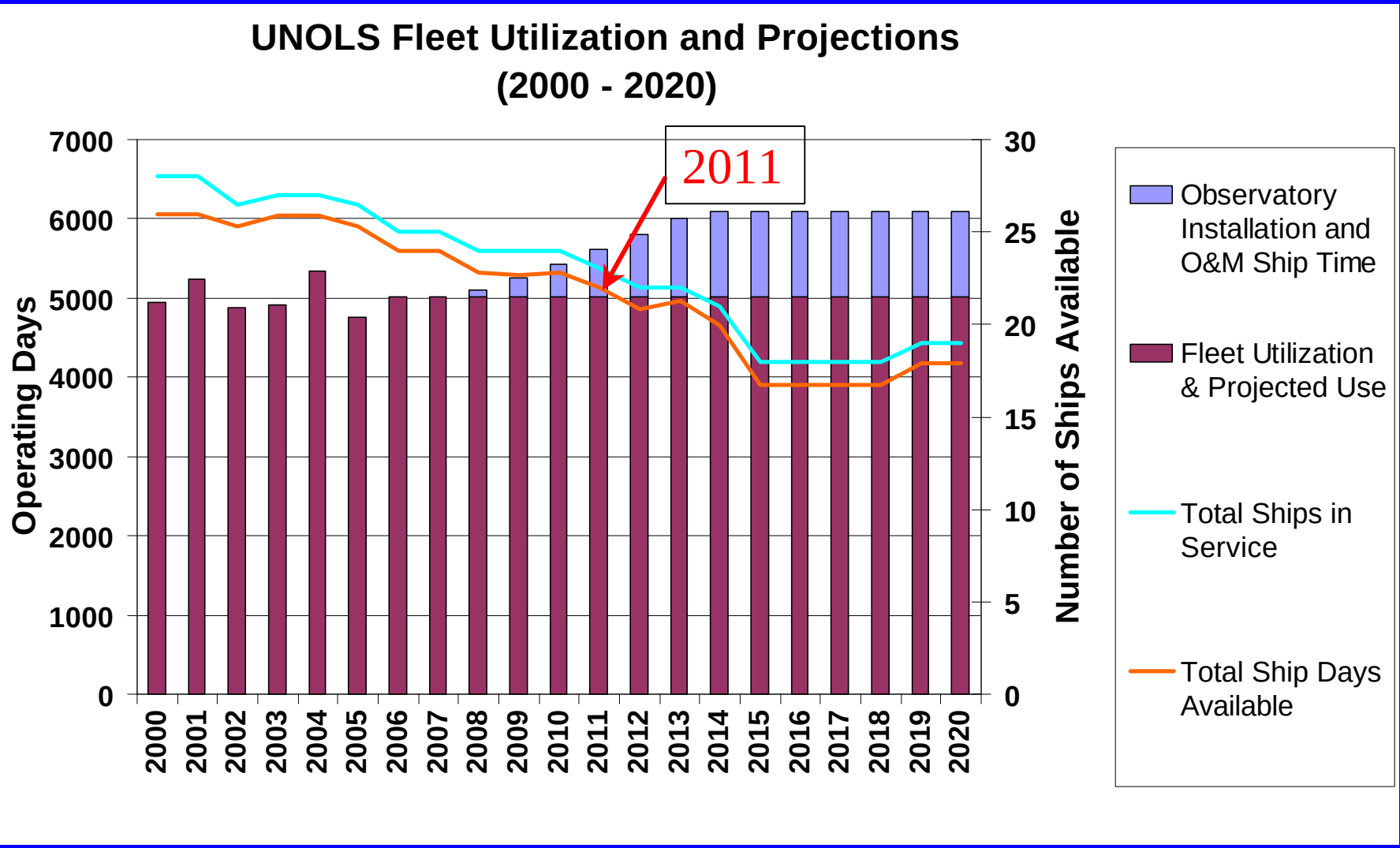
Current Fleet vs. 2020 Fleet

Class	Number of Ships	Total # Science Berths in 2005	Days Available	Avg Op Days Used (03-05)		Number of Ships	Total # Science Berths (1)	Available Days
Global	6	199	1800	1594		4	130	1200
Ocean/ Intermedia	8	177	2200	1708		6	156	1650
Regional	3	39	400	469		3	60	600
NDSF Vehicles								
Fleet Total	17	415	4400	3771		13	346	3450

Notes: 1) Berths: Ocean Class = 25, *Kilo Moana* =30, ARRV = 26, Regional = 20

UNOLS Ship Time Demand




UNOLS Fleet Utilization and Projections
(2000 - 2020)
Operating Days
Number of Ships Available
7000
6000
5000
4000
3000
2000
1000
0
30
25
20
15
10
5
0
2011
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Observatory Installation and O&M Ship Time
Fleet Utilization & Projected Use
Total Ships in Service
Total Ship Days Available

Other FIC Activities

- **Provide input to FOFC Long-Range Fleet Renewal Plan –**
  - UNOLS Input needed on why ships are needed, examples of science accomplishments or discoveries that would not have been possible without ships.
- **Establish ADA Guidelines**
  - Terry Whitledge drafted a White Paper – ADA Guidelines for Research Vessels
  - UNOLS Task – form subcommittee
- **Ocean Observatories** – Keep abreast of ORION Facility Needs
- ***Kilo Moana*** – Follow-up on issues previously identified - FIC Chair and U.Hawaii discussions planned.

FIC Membership Changes

- **One position on FIC will open in January 2006**
- **A call for nominations will be announced. Volunteers are needed.**

2005 Icebreaker and AICC Activities

Carin Ashjian, AICC Co-Vice Chair

AICC

- Margo Edwards, *Chair*
- Carin Ashjian, *Co-Vice Chair*
- Henrietta Edmonds, *Co-Vice Chair*
- Robert Bourke
- Dale Chayes (RVTEC)
- Bernard Coakley
- Rolf Gradinger
- Peter Minnett
- Dan Schwartz (RVOC)
- Rebecca Woodgate

Members in BLUE rotate off at the end of next year.
We will start to work on advertising for new members at our next meeting (we try to have representatives across the scientific disciplines)
We may try to have some overlap at a meeting to ease the transition for the new members

AICC Activities 2004/2005

- November 2004 Meeting at USCG, Seattle
- March 2005 Meeting at NSF (right after UNOLS Council)
- Debriefs of 2004 Cruises and Prioritized Recommendations (NEW!!!)
- Final Review of Booz Allen Hamilton Science Mission Needs Analysis Report, which was accepted by USCG
- Preparing to report to National Academy of Science panel on need for CG Icebreakers
- Developed short-term plan (and working on long-term plan) for getting ice images/information to underway HEALY
- Continued to work with USCG to determine long range solution for science system support including recent improvements to HEALY lab space layouts by LDEO
- Monitor and maintain interest in issues relevant to Arctic icebreakers from the critical to the near mundane

Other “Events”

- Operating funds for icebreakers have been transferred to the NSF, rather than the USCG
- The NSF and USCG signed a Memorandum of Agreement in early August

Healy in 2004

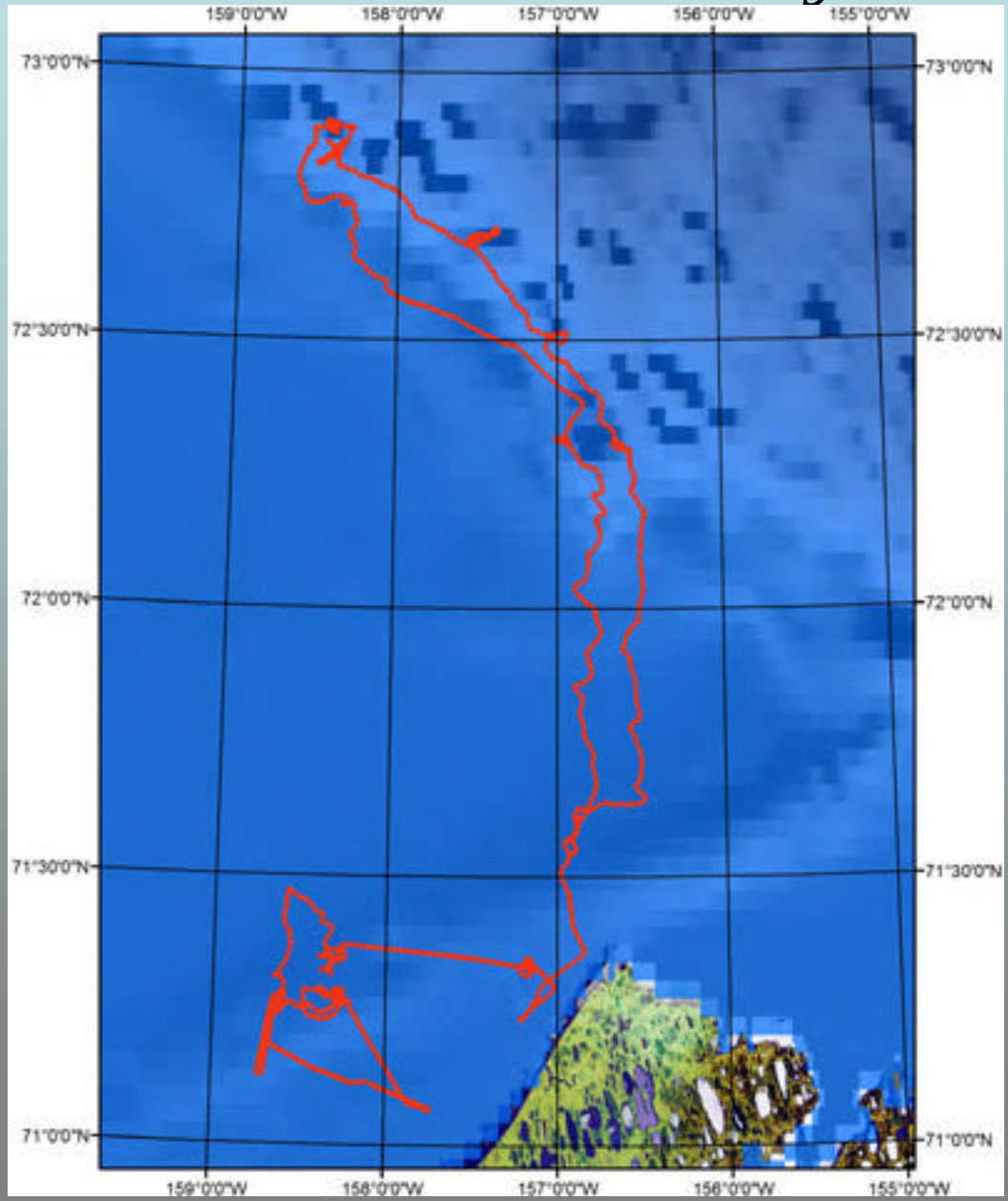
- Three Cruises:
  - Mapping and Coring the Alaska-Beaufort Margin (HOTRAX 01), 13-26 June
  - NOAA Ocean Exploration “Hidden Ocean”, 27 June - 26 July
  - Mapping and Coring across the Arctic Basin (HOTRAX 02) with Swedish icebreak *Oden*, 5 Aug. - 30 Sept.
- Two foreign port calls:

  Tromso, Norway and Dublin, Ireland (post-HOTRAX 02)
- Return to Seattle in early December

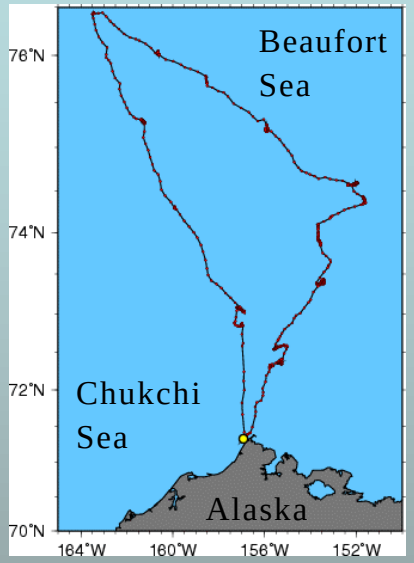
HOTRAX 01 Cruise on *Healy*

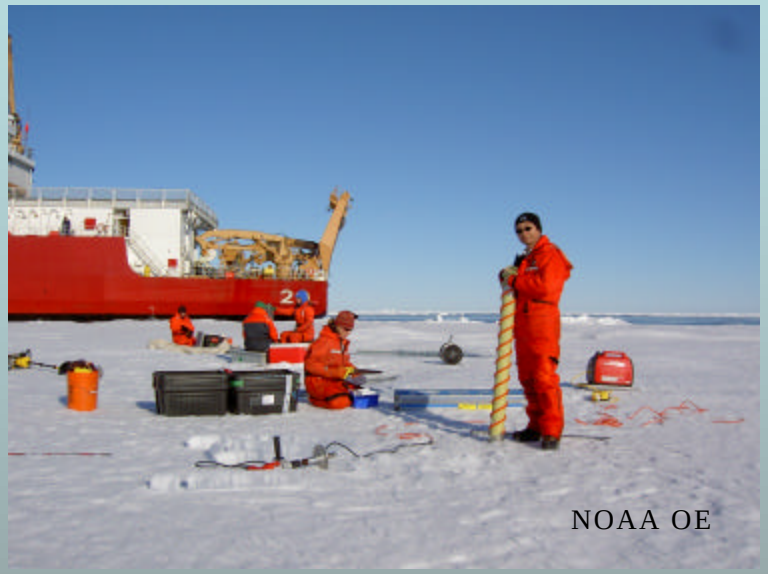
- Heavy ice limited northern extent of survey.
- Unable to launch and tow IMI-30 system.
- Beset for four days.

- Eight Jumbo piston cores.
- Many multicores.
- Useful bathymetry and subbottom from hull-mounted systems when not ramming.

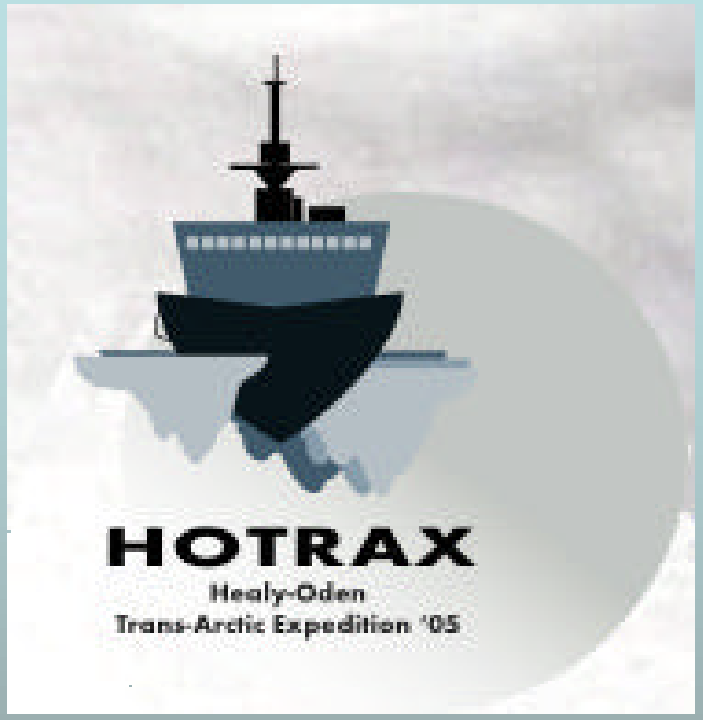


NOAA OE “Hidden Ocean” Cruise

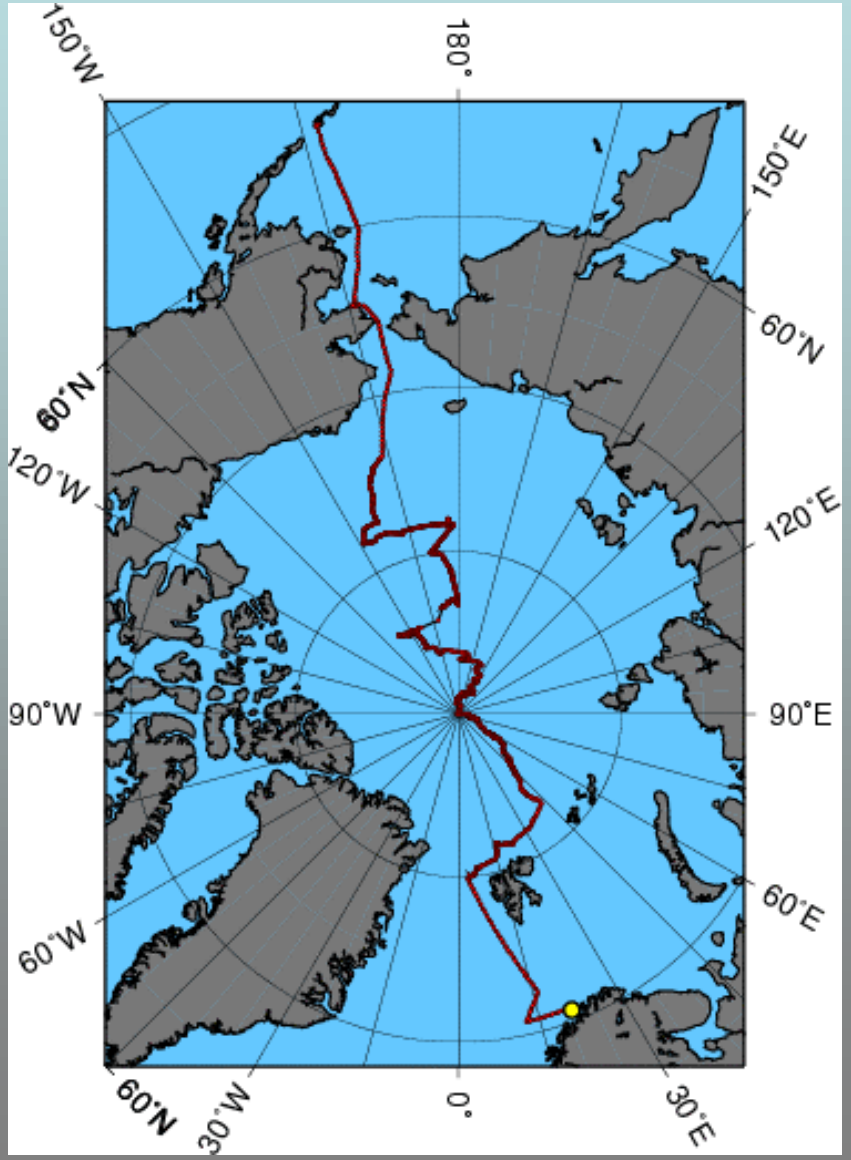




- ROV and diver investigations from just under ice to 3000 m (ROV only) water depth, mostly imaging biota.
- Ice coring, CTD, net tows etc.
- Many new discoveries, widely reported on NPR, CBS, ABC, etc.

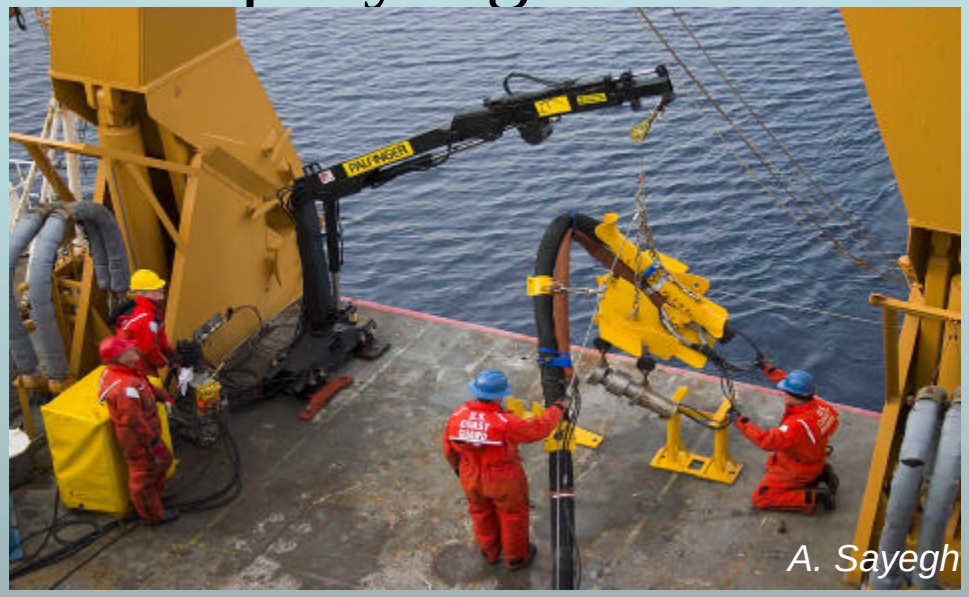


HOTRAX leg 02 (HLY-0503)



- Multibeam, CHIRP, sidebeam sonars
- Multicore and piston core
- Ice sampling
- IHA was obtained for this cruise

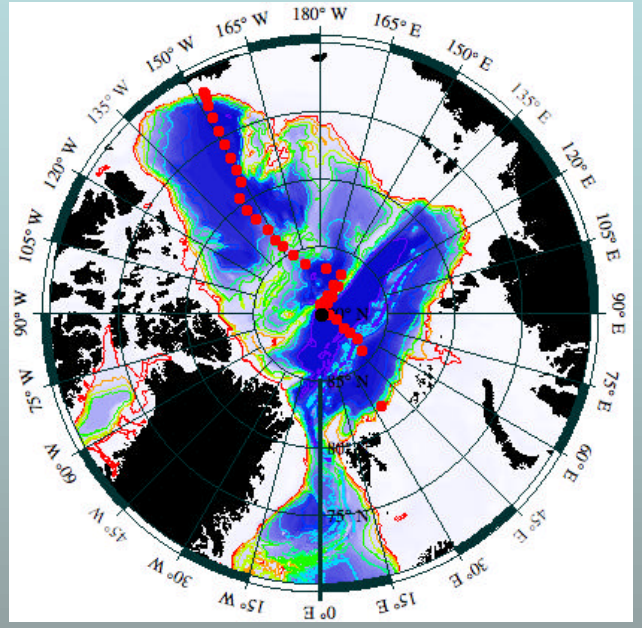
Deploying the Seismic Streamer



A nice core showing layers

Two ships across the Pole

Oden's track



- *Healy* and *Oden* met on September 1
- The two ships reached the Pole on September 12.
- Heavy ice in the eastern Arctic limited science stations

Healy in 2006

Early May-early June: Lovvorn, Grebmeier, Cooper - Biological Oceanography/Benthic Sampling near St. Lawrence Island

Mid-July-end August: Lawver, Avendonk - Geophysical mapping of Chukchi Borderland

Early Sept. - third week Oct. : Mayer, Armstrong - EEZ mapping of Chukchi Borderland *AND* Sohn, Humphries, Singh- Deep ROV testing for future Gakkel Ridge Cruise

Healy in 2007 ?

Sohn, Humphries, Singh - Gakkel Ridge

Polar Sea and *Polar Star*

- *Polar Sea* is laid up, but has received funds for repairs (~$48M)

•*Polar Star* -

– Backup ship for DF06

– Russian *Krasin* will lead the DF06 break-in

– Light Antarctic ice conditions this year.

Photo by Ed Beale

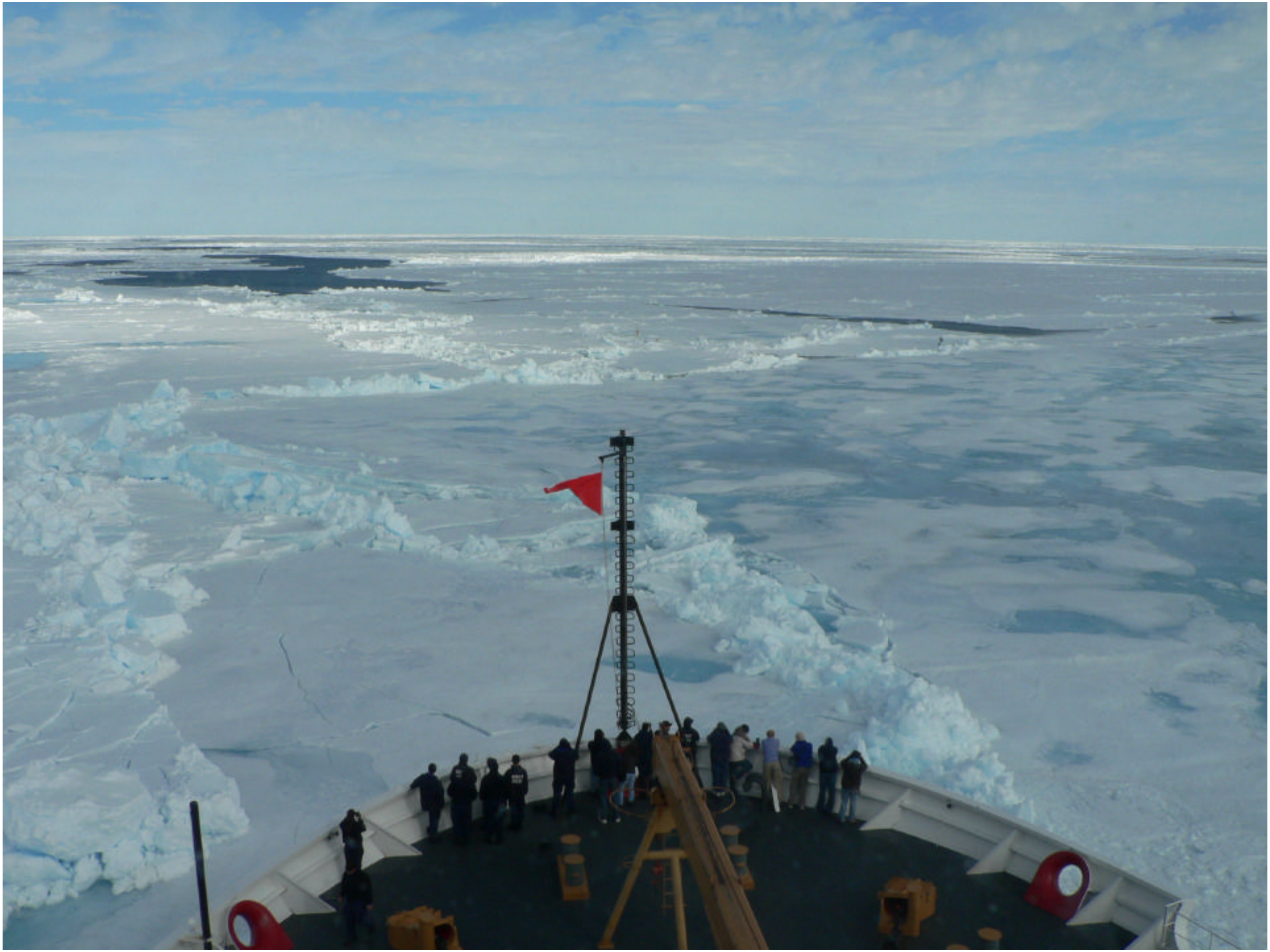
Polar Star

- Repairs completed from damage during 2004 Deep Freeze
- No planned shakedown?
- Departure for Antarctica for Deep Freeze 2005 on November 1, but will return to Seattle if it is reported that Krasin has complete break-in
- The NSF is exploring need for USCG icebreaker operations in Antarctic through National Academy of Sciences panel - fast-track report.

Next for AICC

- Fall Meeting, Seattle, December 12 & 13
- De-briefs for the three science cruises on Healy prior to December meeting.
- Assess how well the prioritization of suggestions worked and continue to perform this analysis
- Continue to advise and assist science community and USCG to facilitate doing science on the icebreakers
- Continue to watch with interest the progress of MOA, NAS panel and the future of icebreakers
- M. Edwards will participate by teleconference at the next meeting of the NAS panel


Mark Rognstad




6529
U.S. COAST GUARD


U.S.
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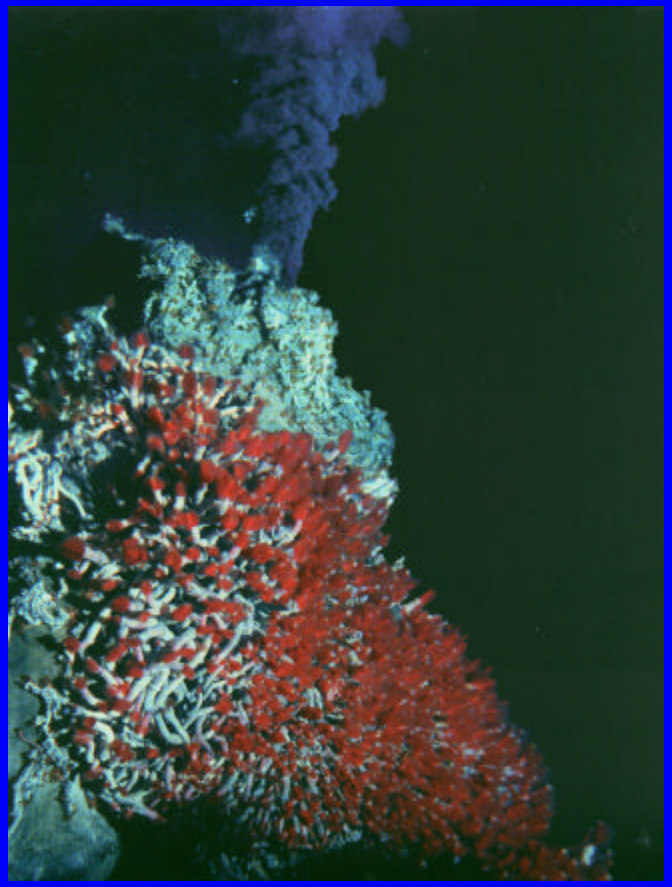
Swedish icebreaker *Oden*
Photo: Alejandro Sayegh

Deep Submergence Science Committee

Photo by Mitch Elend



Report to the UNOLS Membership

October 14, 2005

VISIONS '05 - Expedition to the Underwater Volcanoes of the Northeast Pacific

- **1 September to 4 October 2005**
- Expedition aboard R/V *Thomas G. Thompson* to the underwater volcanoes of the Juan de Fuca Ridge.
- Operations with *ABE* and *Jason II* and a high-definition underwater video camera.
- Co-chief scientists: John R. Delaney and Deborah S. Kelley (UW)
- VISIONS ‘05 featured real-time broadcast of high-definition video from the seafloor.

Issues and Activities – 2004 / 2005

Meetings:

DESSC Annual - San Francisco, December 12, 2004

Spring Meeting - WHOI, June 13-14, 2005

- **Reports from vehicle science users, Agency representatives, and NDSF Operator**
- **Status reports on NDSF Vehicle operations, tools and upgrades**
- **HOV Safety Standards**
- **Establishing Criteria for New Assets**
- **Vehicle Scheduling**
- **Long Range Planning**
- **Facility Renewal**

Photo by Debbie Kelley

Safety Standards for Human Occupied Vehicles (HOVs)

Establish Safety Standards for the use of Human Occupied Vehicles:

- NSF and NOAA have provided a draft task statement to establish safety standards for HOVs.
- The safety standards should address certification of:
  - The vehicle
  - The ship
  - The handing system
  - The operation
  - Training (vehicle and ship crew)
- UNOLS action - form a subcommittee.

Safety Standards for Human Occupied Vehicles (HOVs)

Suggested Membership:

- Science users (including a DESSC rep)
- RVOC Safety Committee representative
- HOV operators from WHOI, HBOI, and HURL
- HOV pilots
- Marine Superintendent
- Ship Captain
- Navy representative (NAVSEA Certification)

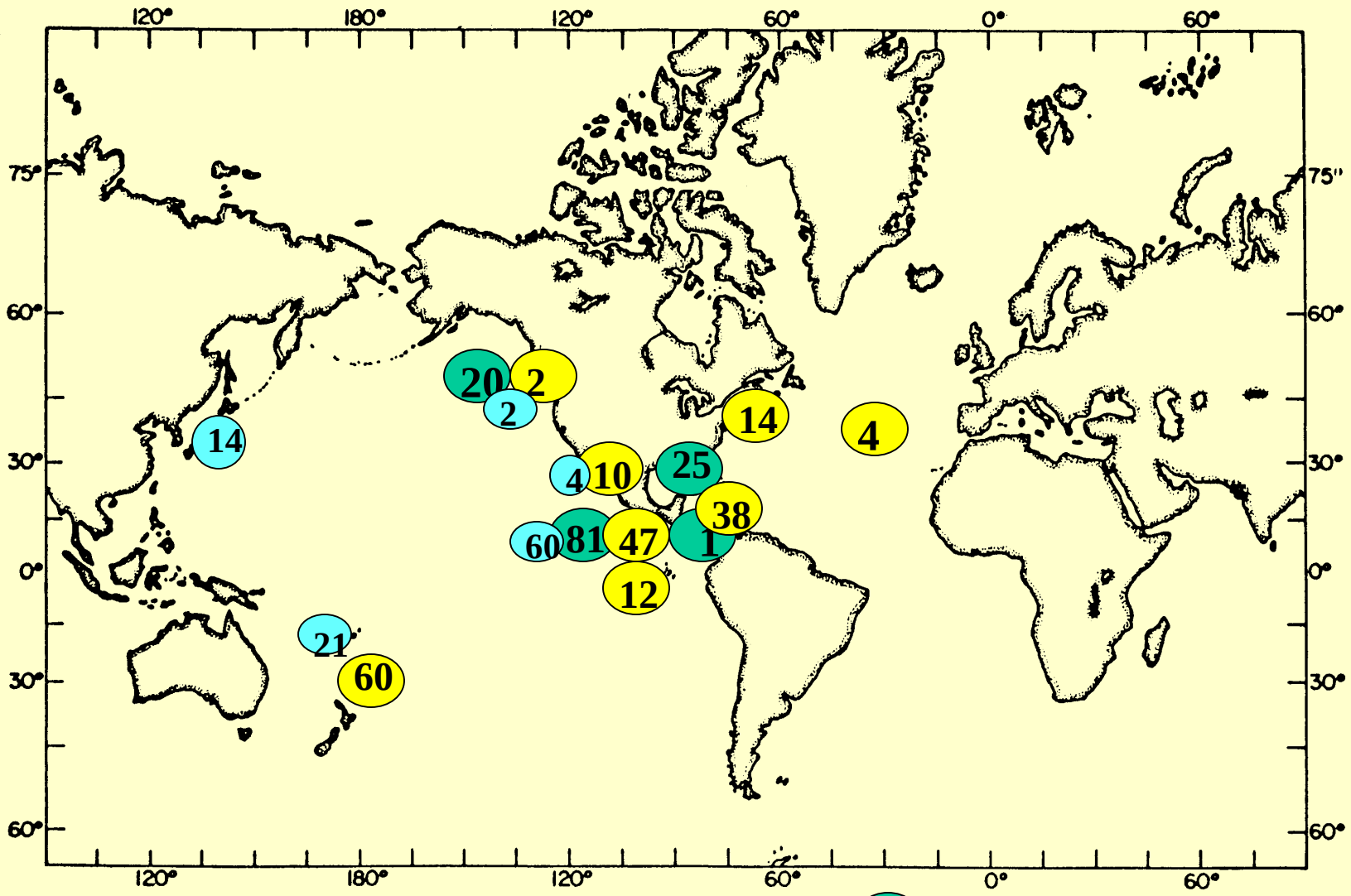
This effort might span 2 years.

Establishing Criteria for Transitioning Assets into the NDSF

- Background – In the coming years significant demand for new suites of deep submergence assets is anticipated. In response, DESSC has drafted criteria for transitioning assets in the NDSF.
- Some considerations:
  - Significant and broad demand for asset
  - Provides a unique capability
  - System is robust
  - Asset operation and support costs are affordable
- Pending revision, the draft criteria will be sent to the UNOLS Council for approval.

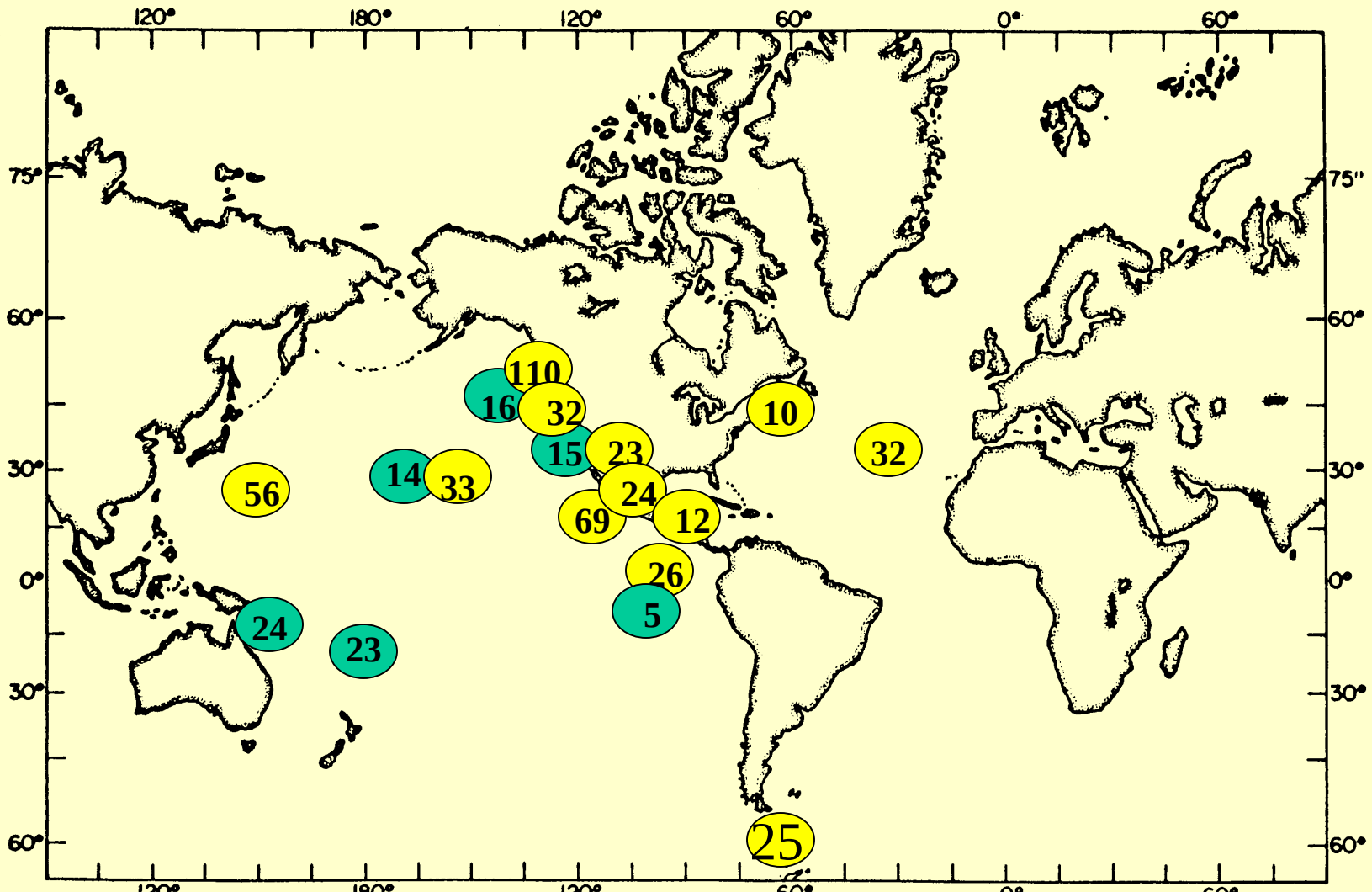
Updated June 2005

ALVIN Requests - 2006



Updated June 2005

JasonII, DSL-120 & Argo II Requests - 2006



Replacement HOV – Design Update

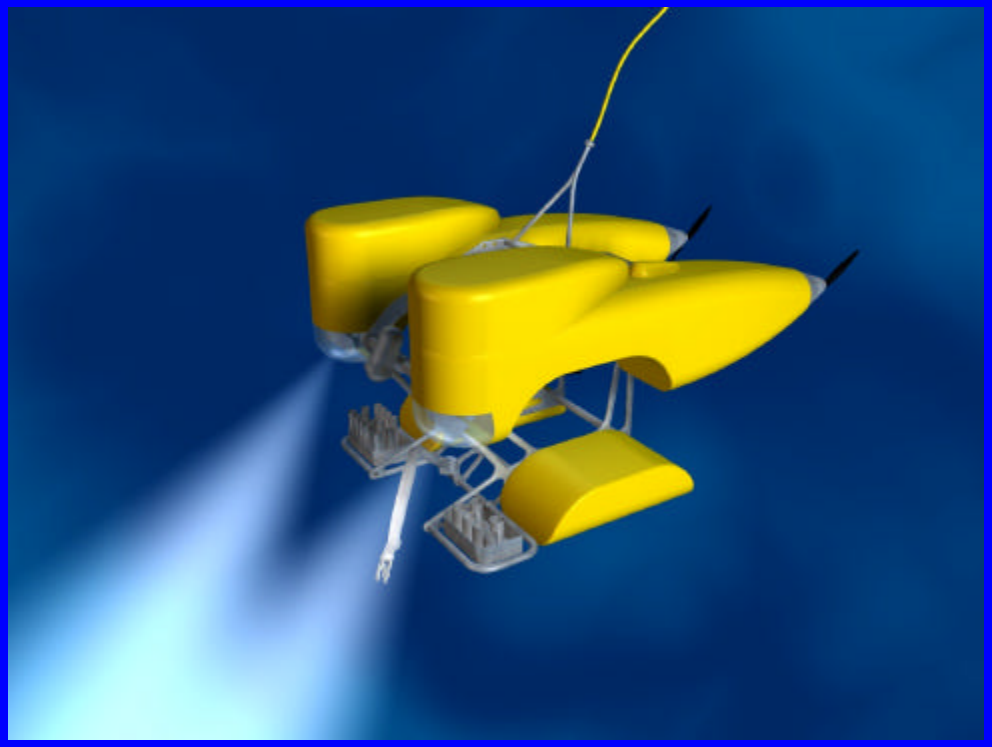
Project underway at WHOI - Anticipated vehicle final assembly and testing/technical support in late 2008.

Science operations begin in 2009

<http://www.unols.org/committees/dessc/replacement_HOV/replacement_hov.html>

HROV Project Update

11,000 meter depth capability



This project is underway at WHOI with expected testing and trials of the vehicle system in late 2006.

DESSC Membership

- Dave Mindell completes his 2nd term in 9/05.
- Nominations are needed to fill his position. Individuals associated with Margins or Archeology research are desired.

Winter DESSC Meetng

MEETING ANNOUNCEMENT
The science community is invited to attend the

DEep Submergence Science Committee - Annual Planning Meeting

Sunday, December 4, 2005
The Marriott Courtyard at San Francisco Downtown
*** Rincon Hill Room***
299 Second Street
San Francisco, CA 94105

RVTEC Report

RVTEC Annual Meeting

November 3-5, 2004

Hosted by Rob Walker of Florida Institute of Oceanography at the University of South Florida campus

Agency Reports

Vessel Replacements and Updates

R/V Maurice Ewing

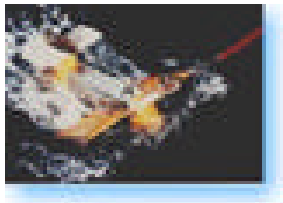
R/V Cape Henlopen

Arctic Region Research Vessel

Technical & Instrumentation

Ocean Surveyor ADCP

HiSeasNet



SeaSoar

Scanfish MKII

Triaxus

Current Issues

INMARTECH 2006

Defined Levels of Service

2002 Subcommittee formed – assess problem and propose solution

2003 Outline presented at RVTEC meeting

2004 Outline groomed and ready for web development

Technical Services Information

	Topic	
The outline of topics can be downloaded by clicking: <Tech_serv_outline.pdf>		Ship Pull-Down List (pdf)
The **full outline of technical services information** can be downloaded (pdf) or viewed on-line (html) by clicking the ship or institutional link in the columns to the right.		Ship Pull-Down List (html)
Outline Index: To advance to a specific Information Topic, click on the title below:		
I	**Vessel Operator Organization Structure & Points of Contact**	
II	**Vessel Characteristics**	
III	**Research Equipment, Instrumentation, and Data Collection**	
IV	**Pre-Cruise Planning and Services**	
V	**Cruise Planning Details**	
VI	**Cruise Loading and Setup**	
VII	**Activities at Sea**	
VIII	**Post-cruise activities**	
I.	**VESSEL OPERATOR ORGANIZATIONAL STRUCTURE & POINTS OF CONTACT**	Ship Pull-Down List
A.	**Organization Description**	Ship Pull-Down List
B.	**Facility Point(s) of Contact and Responsibilities**	Ship Pull-Down List
II.	**VESSEL CHARACTERISTICS**	UNOLS link
III.	**RESEARCH EQUIPMENT, INSTRUMENTATION, AND DATA COLLECTION**	
A.	**Permanently installed science equipment and instrumentation**	UNOLS link
B.	**Equipment available from the shared-use pool**	UNOLS link
C.	**Procedures for requesting equipment**	Ship Pull-Down List
1.	Filing a request	Ship Pull-Down List
2.	Deadlines for requests	Ship Pull-Down List
3.	Equipment Request Response	Ship Pull-Down List
4.	Last minute equipment requests	Ship Pull-Down List
D.	**Computer information**	Ship Pull-Down List
1.	Computing resources	Ship Pull-Down List

Technical Services Information - R/V *Point Sur*

I. Vessel Operator Organizational Structure & Points of Contact

A. Organization Description

The Marine Superintendent, Richard Muller, is responsible for establishing ship's policies, cruise scheduling and foreign clearances. The Marine Superintendent has the overall responsibility for all aspects of marine operations and is under the general supervision of the director of Moss Landing Marine Labs, Kenneth Coale. Pre and post cruise planning as well as scientific and technical aspects of the ship should be addressed to the Sr. Marine Technician, Stewart Lamerdin. The Senior Marine Technician will be able to redirect any specific questions the he cannot answer to the appropriate individuals. The ship's second Marine Technician, Doug Conlin, will be the next point of contact in the event the Sr. Marine Technician is not available. Specific questions regarding all aspects of cruise billing can be addressed to the Operations Analyst, Maria Kaanapu.

B. Facility Point(s) of Contact and Responsibilities

Cruise Scheduling & Policies:

Richard Muller, Marine Superintendent
Tel (831) 771-4131
Fax (831) 633-4580
Email: rmuller@mlml.calstate.edu

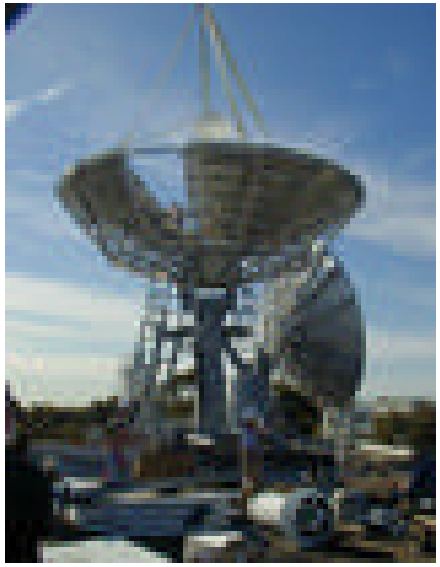
Technical Support:

Stewart Lamerdin, Senior Marine Technician
Tel (831) 771-4134
Fax (831) 633-4580
Email: lamerdin@mlml.calstate.edu

HiSeasNet

C-Band Installations

- R/V Revelle, R/V Melville, R/V Thompson, R/V Atlantis & R/V Kilo Moana operating on Pacific satellite
- R/V Knorr on Atlantic



Ku-Band

- R/V Endeavor

Safe Working Loads

RVTEC believes this issue should be discussed and guidelines determined by the RVOC Safety Committee.

This topic directly impacts other current projects such as new cable specifications and load handling systems.

The importance of this issue and the need for the RVOC Safety Committee to address it was brought to the attention of the UNOLS Council during the Spring 2005 meeting. UNOLS is assisting and RVTEC is confident progress will continue and this issue will be addressed by the RVOC Safety Committee.

Steve Hartz was appointed as the RVTEC representative to the SCOAR committee

2005 RVTEC Meeting November 8-10 - Hosted By Marc Willis, OSU

- **Major Discussion Topics:**
  - INMARTECH 2006 planning
  - Seismic Operations - Permitting, observers, other requirements
  - ADCP Update
  - Defined Levels of Technician / Instrumentation Support Update / Equipment Inventories
  - Wire Terminations, Email and Data Downloading, Vendor Calibrations in PDF Format, Impeller anemometers versus heated sonic anemometers
  - Shipboard Data Acquisition Systems

- **Tours:**
  - WET Labs Facility
  - OSU Marine Facilities and Research Vessels
  - NOAA Facilities in Newport, OR

- **Day 3 (PM) -** RVTEC Manager's Roundtable Discussion

2006 RVTEC Meeting

to be Held at Woods Hole Oceanographic Institution

in Conjunction With INMARTECH 2006

Hosted By Barrie Walden

UNOLS Council/Annual Meeting
October 2005

Ship Scheduling Committee Report-

Rose Dufour

Charts & Graphs-

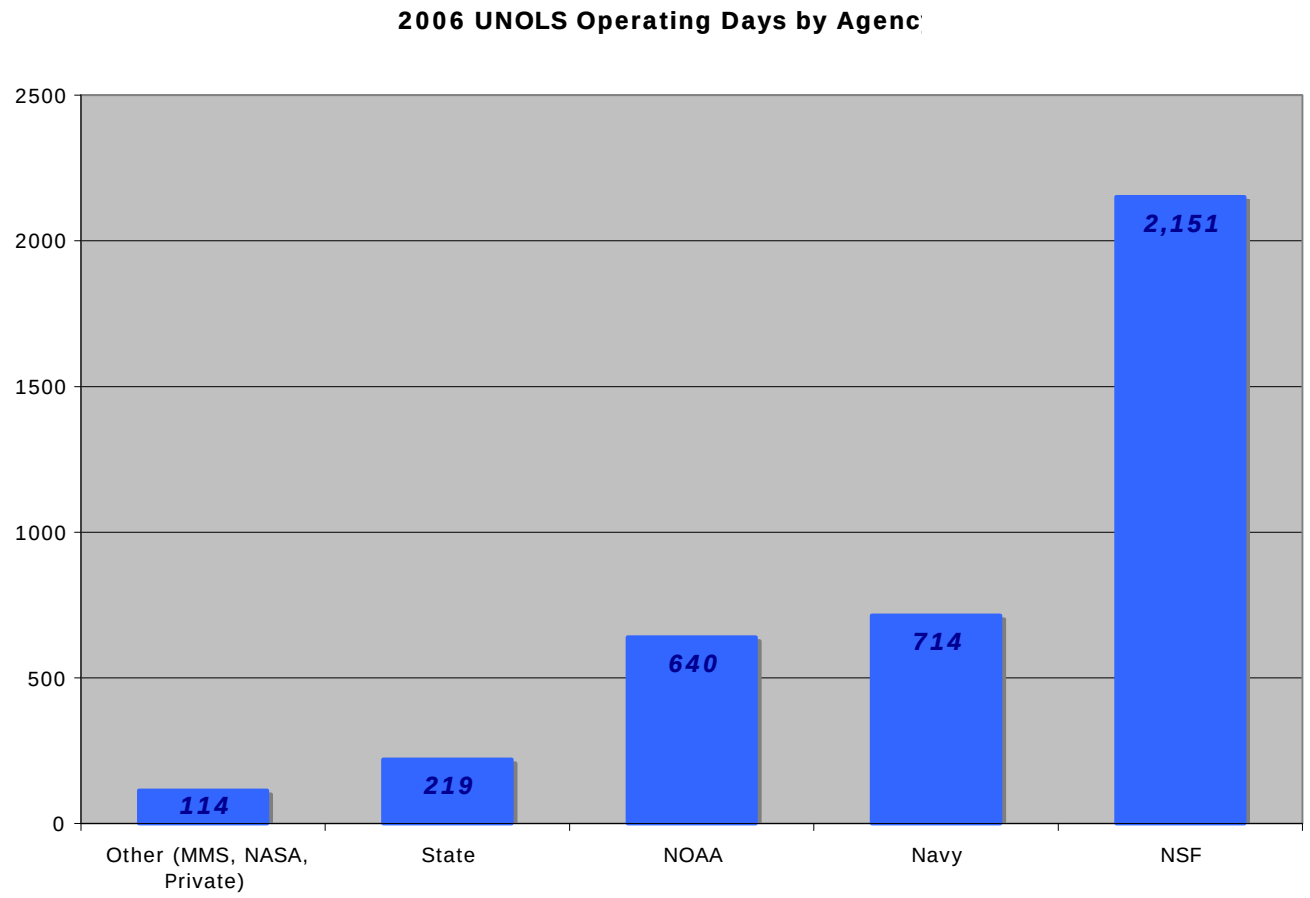
Mike Prince

July/September of 2005

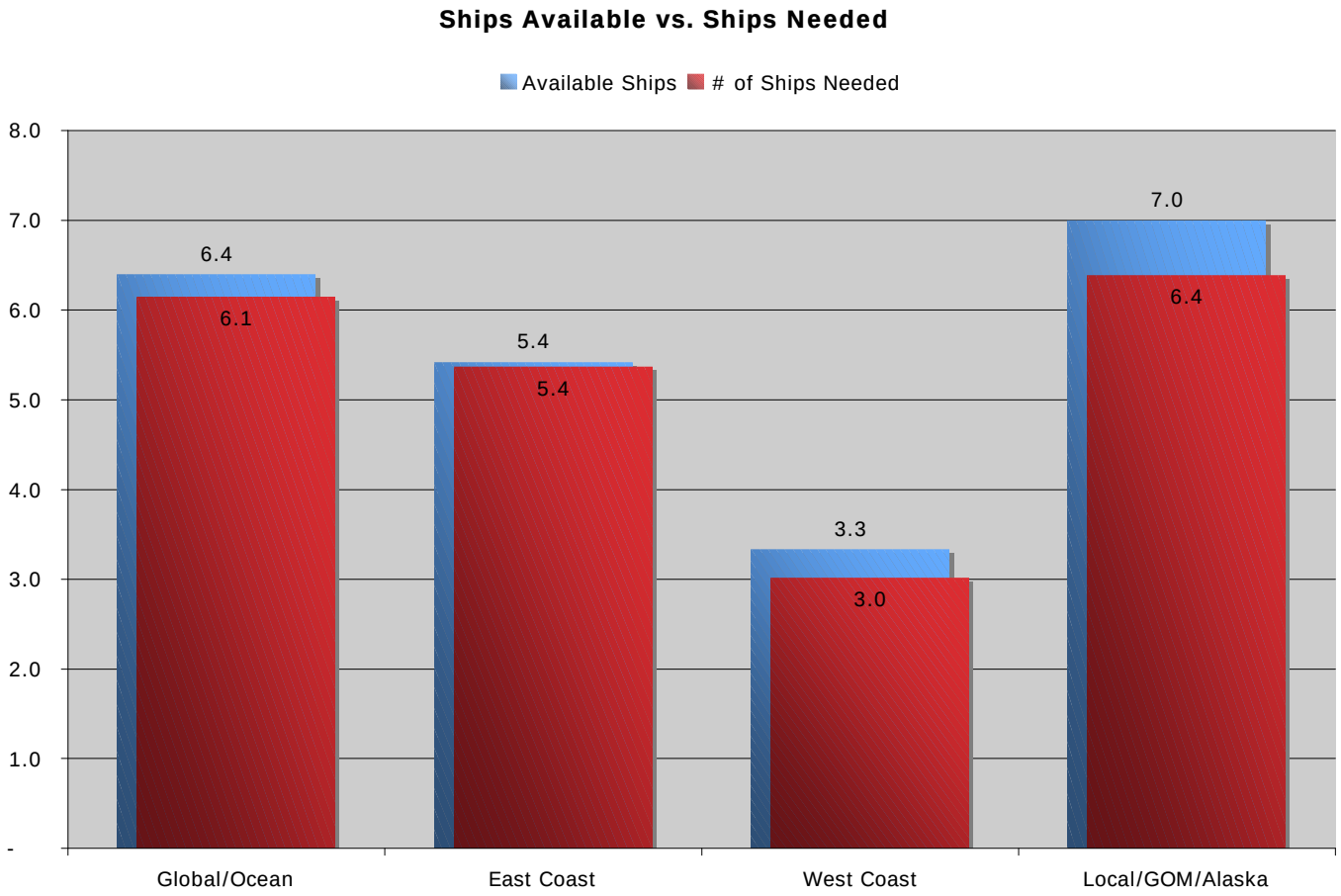
- In our usual manner, the Ship Scheduling Committee held its July and September meetings in order to move towards viable 2006 operating schedules. Just prior to the summer scheduling meeting, ONR advised large ship schedulers that NSF and ONR had come to an agreement to use rotating extended maintenances periods in home port. This would help absorb some of the monetary shortfall in the 2006 ship budgets for Navy owned AGOR ships rather than "laying-up" these vessels. This changed the momentum of efficiently scheduling ships and anticipating full schedules for all but one or two, back towards re-distribution of work on all AGOR class vessels.*
- A large portion of the shortfall in funds and ship days will fall upon intermediates and regional class vessels. Currently Alpha Helix will be in lay-up status, while, Marcus Langseth, Oceanus, Endeavor, New Horizon and Wecoma are working on the premise of partial lay-ups. Many other vessels are operating well below optimal utilization. Some institutions will receive a monetary supplement from NSF to help with crew retention.

* Global/Ocean class schedules would be prepared with approximately 200-225 days. This number was derived by taking the number of days for a 12-14 month lay-up period and dividing by the six ships, then subtracting it from the normal operating schedule of 275-300.

3,829 Operating days



2006 Utilization after lay-ups by Region

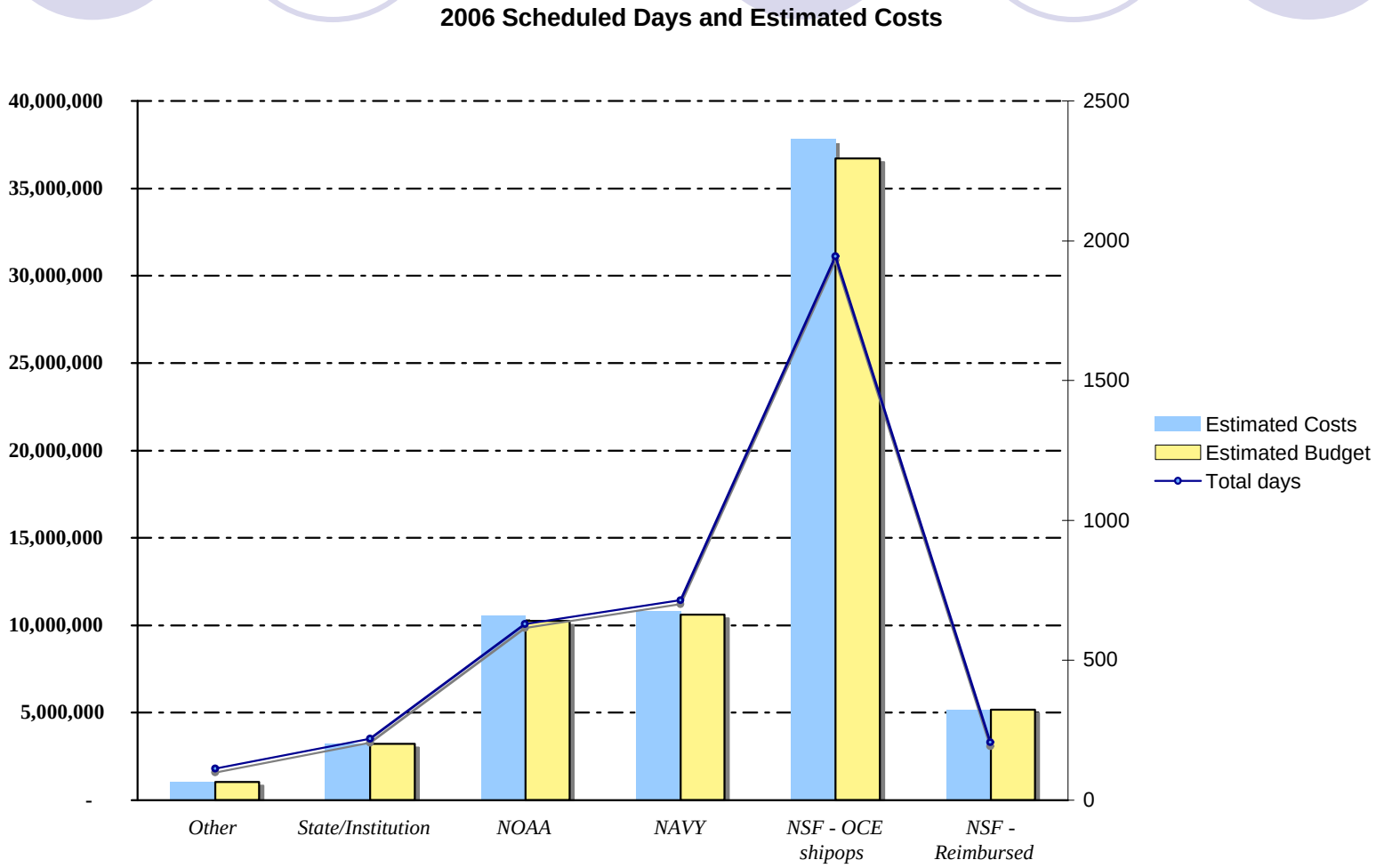


The dichotomy here is the consideration of the prospect of under utilizations on the one hand while not being able to schedule all funded 2006-field work (deferred and newly funded). Some of the funds associated with NSF spending is not going towards accomplishing science, rather for lay-up costs

The number of available ship years is corrected for planned layups and partial layups. (prolonged periods out of service)

Layups include (yrs):
Marcus Langseth - .6
Endeavor - .25
Oceanus - .33
New Horizon - .33
Wecoma - .33
Alpha Helix - 1.0

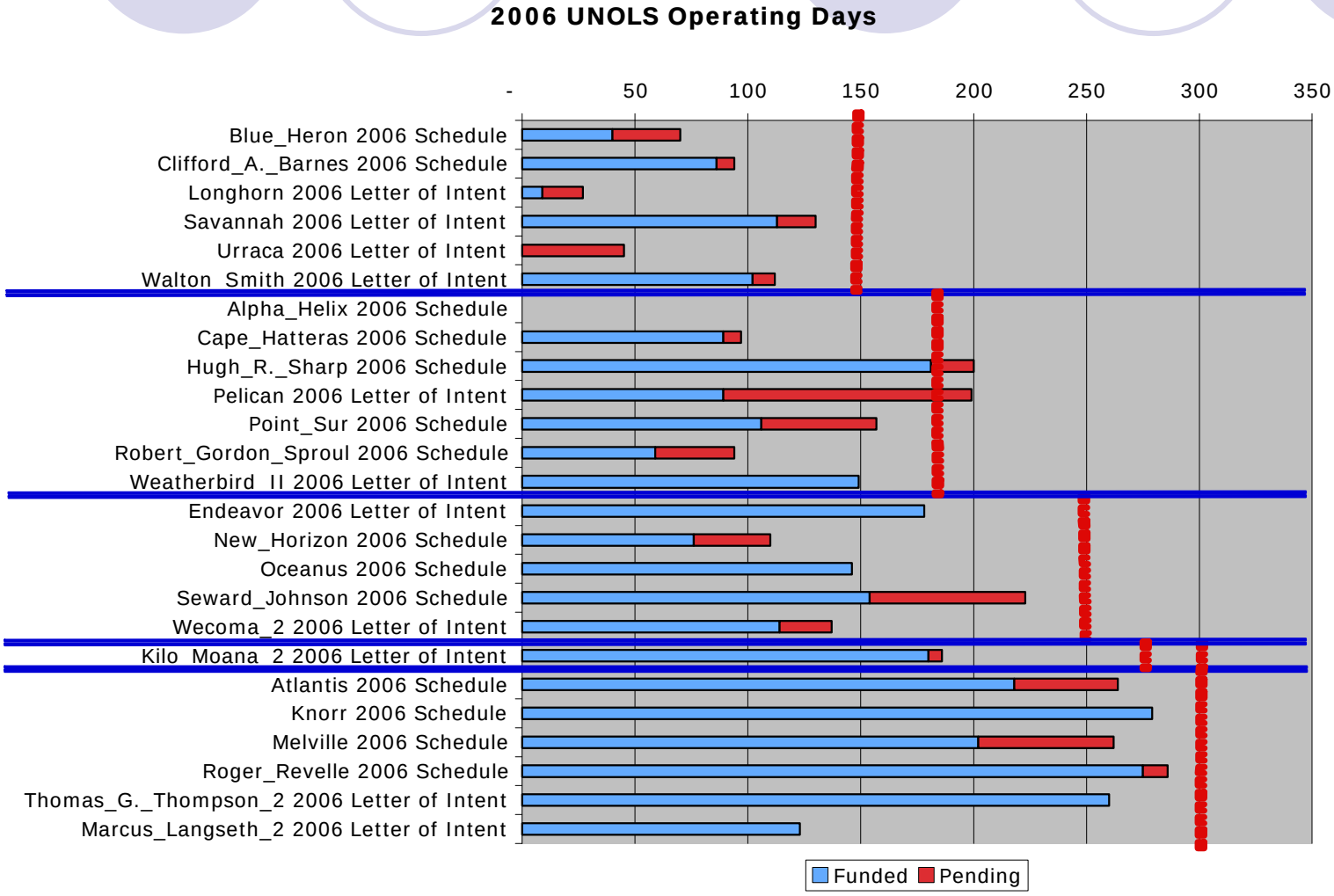
Costs versus Estimated Budgets



Letters of Intent

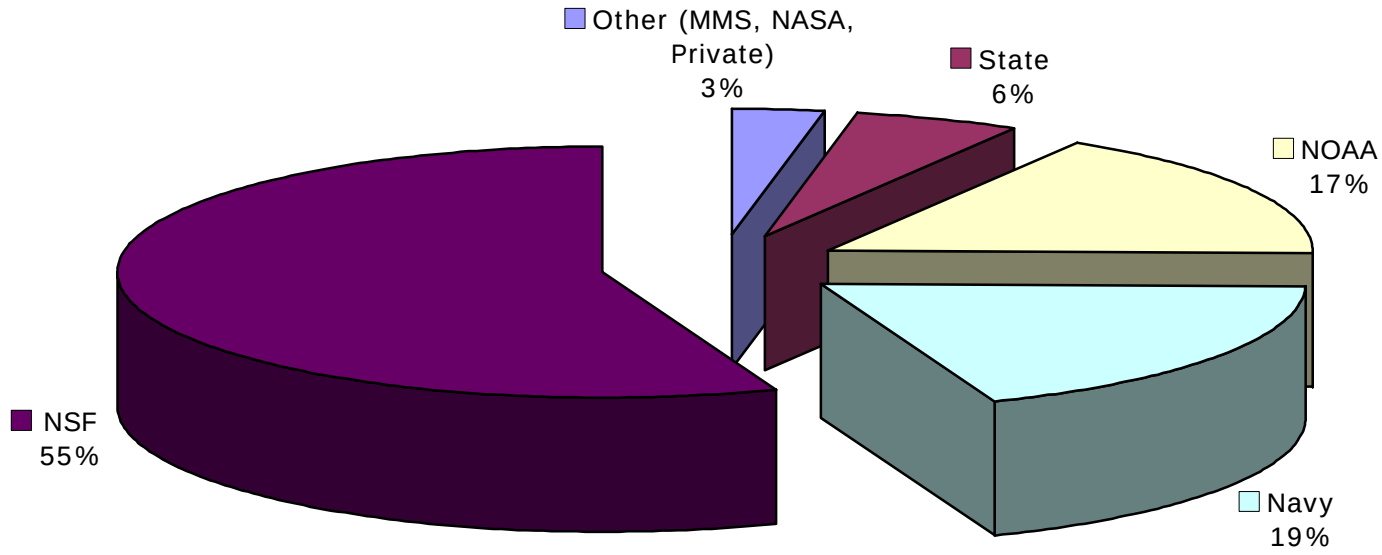
- Large ship schedules still have questions marks, which can only be resolved with the final congressional appropriations for the Navy's plus-up and NOAA ship charters.
- During the September scheduling review, NOAA may have underestimated their ship/ROV costs. The net result will be a reduction of NOAA time to fit within their projected budget.
- Schedules are slowly moving from the Letter of Intent to posted preliminary 2006 schedules for public viewing.

2006 UNOLS Ship Utilization

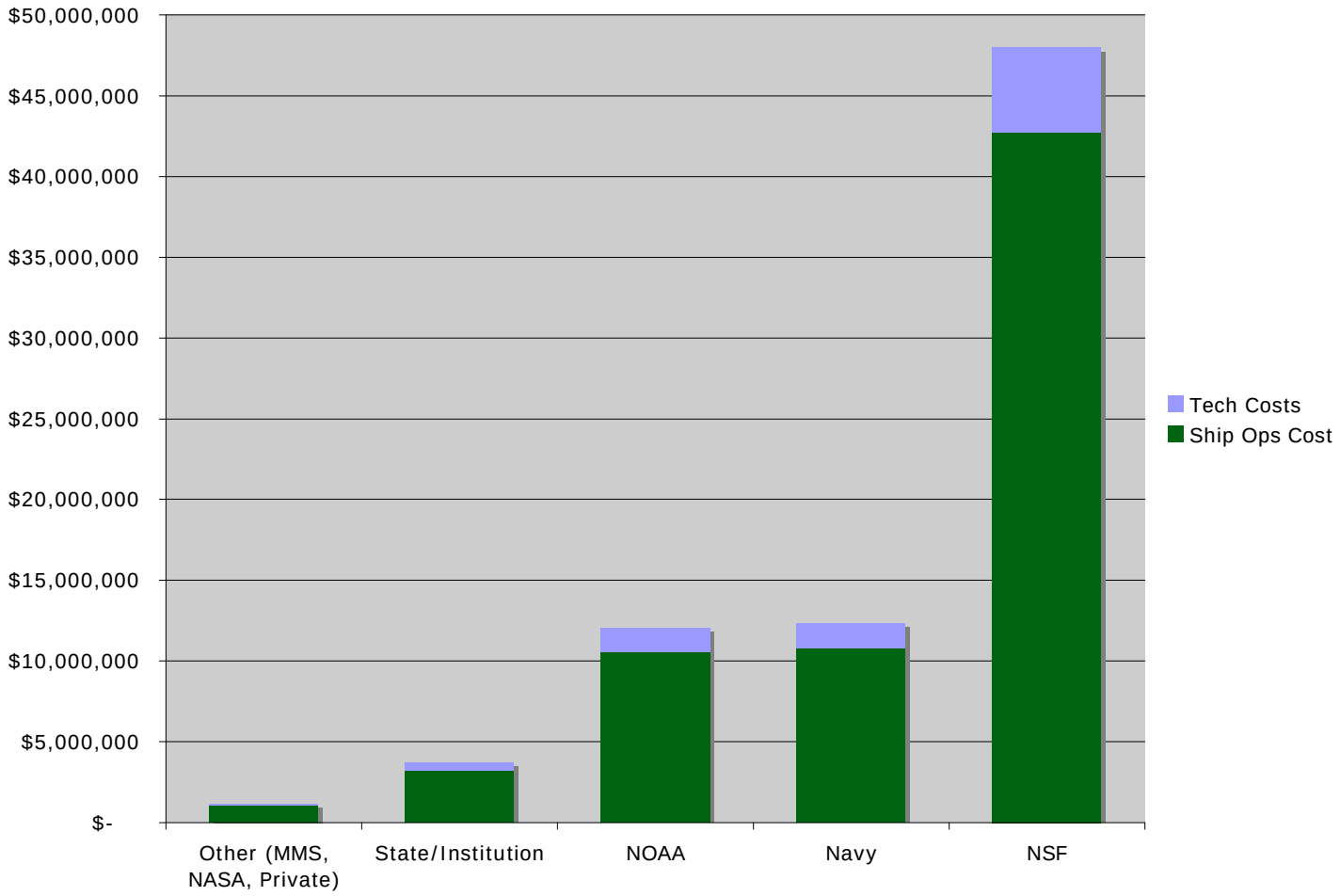


- Note: In the FOFC fleet renewal plan Ocean Class utilization is nominally 275 days, whereas the Global class utilization target is about 300 days. Regional class utilization is 180 - 200 days and local vessels are about 150 days.

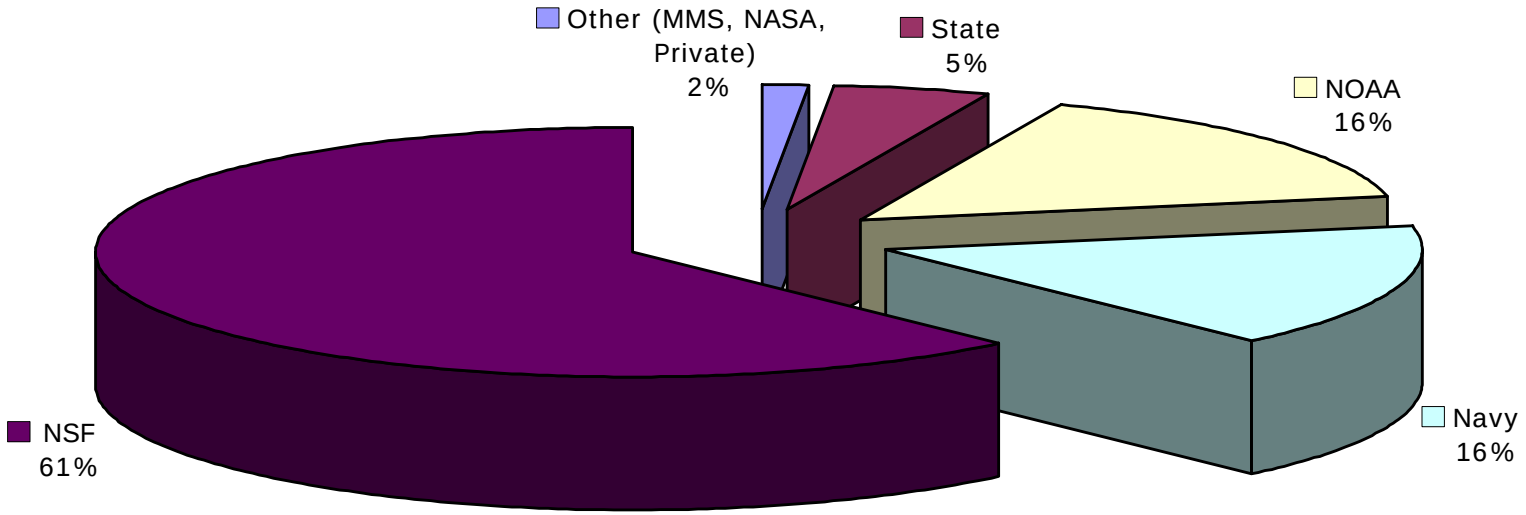
Percent of 2006 Op Days by Agency



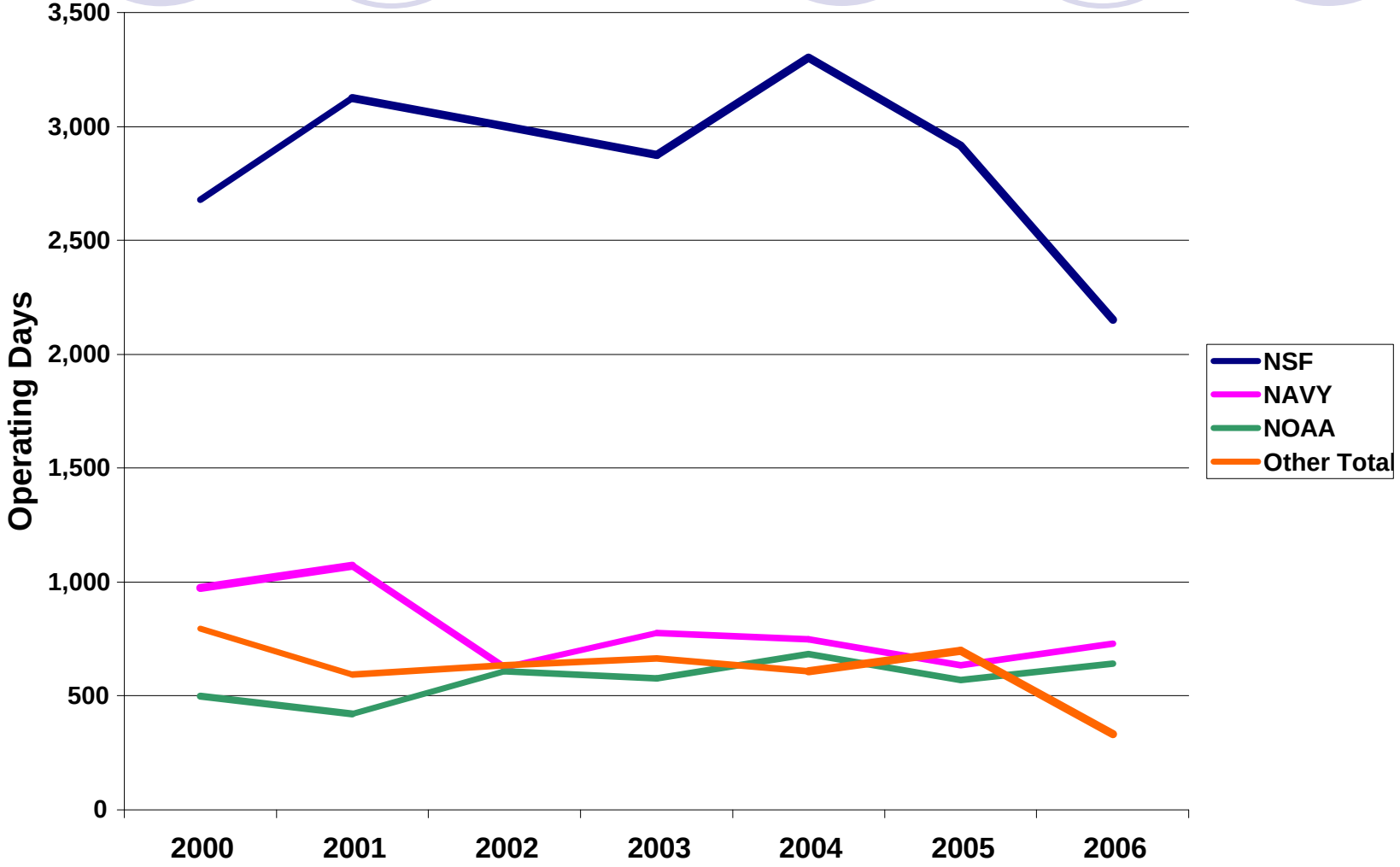
$77M in Ship Ops & Technician Costs

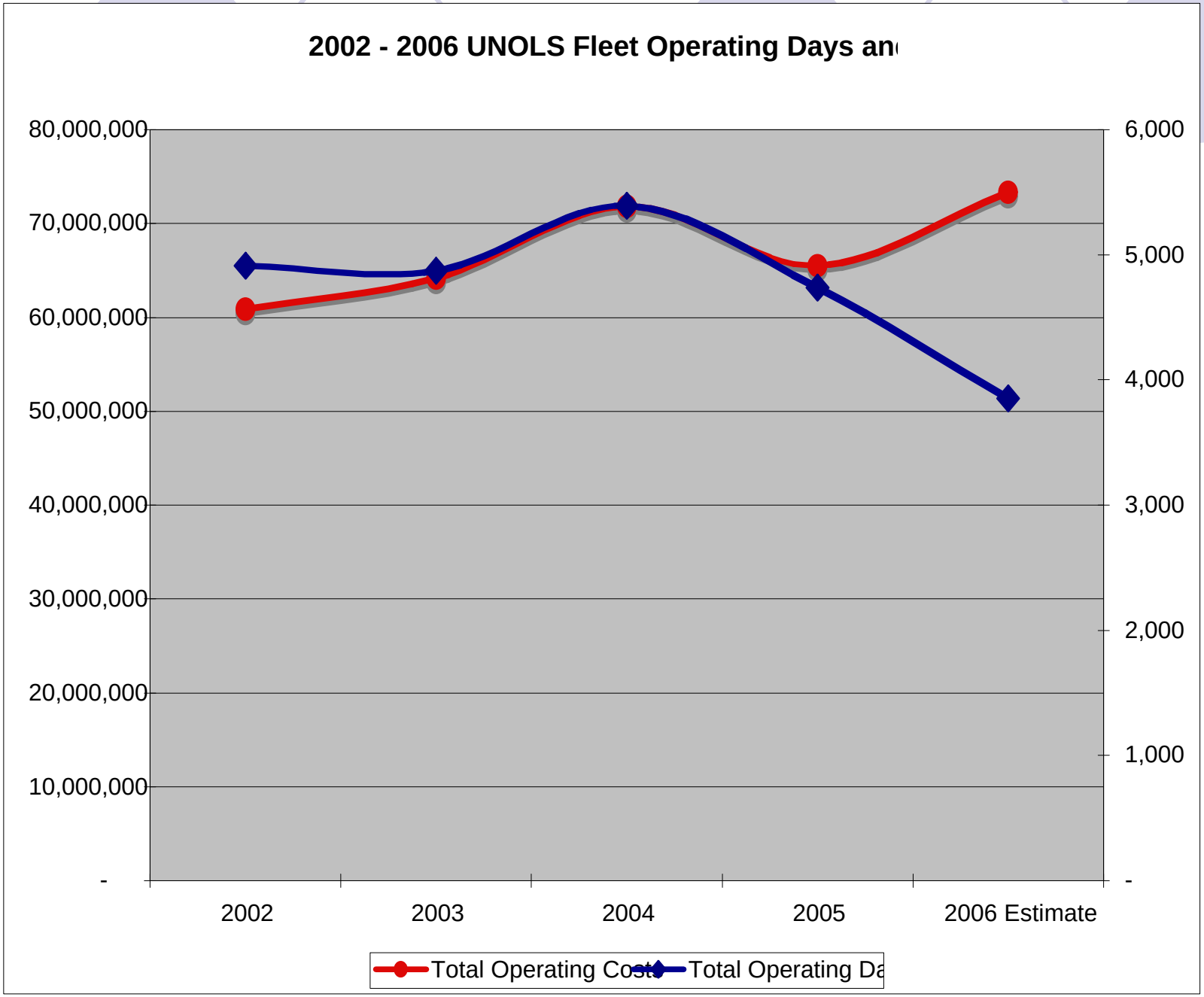


Percent of 2006 Total Ship Operations Costs by Agency



UNOLS Fleet Utilization (2000 - 200

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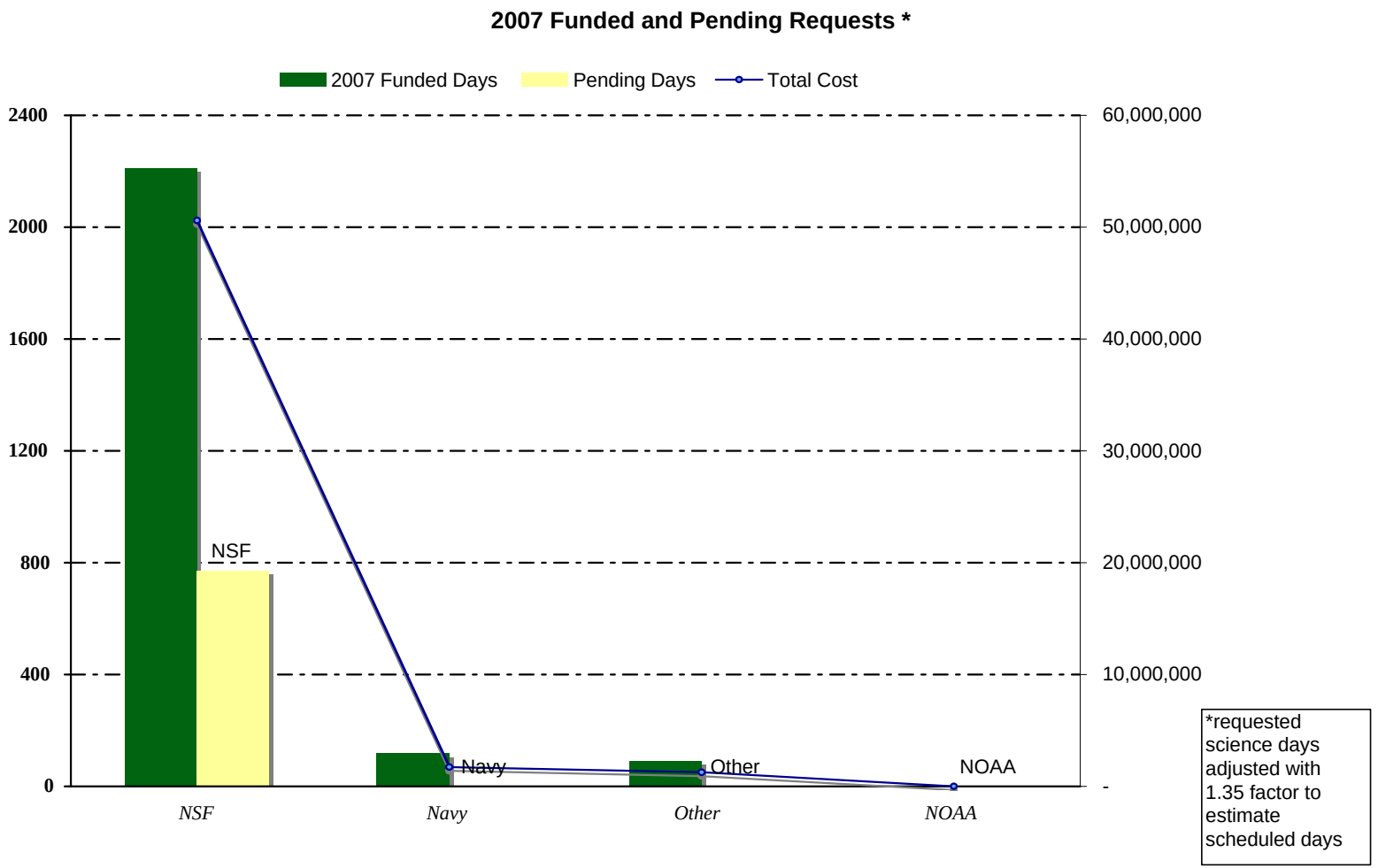
2006 Estimate
Total Operating Cost
Total Operating Da

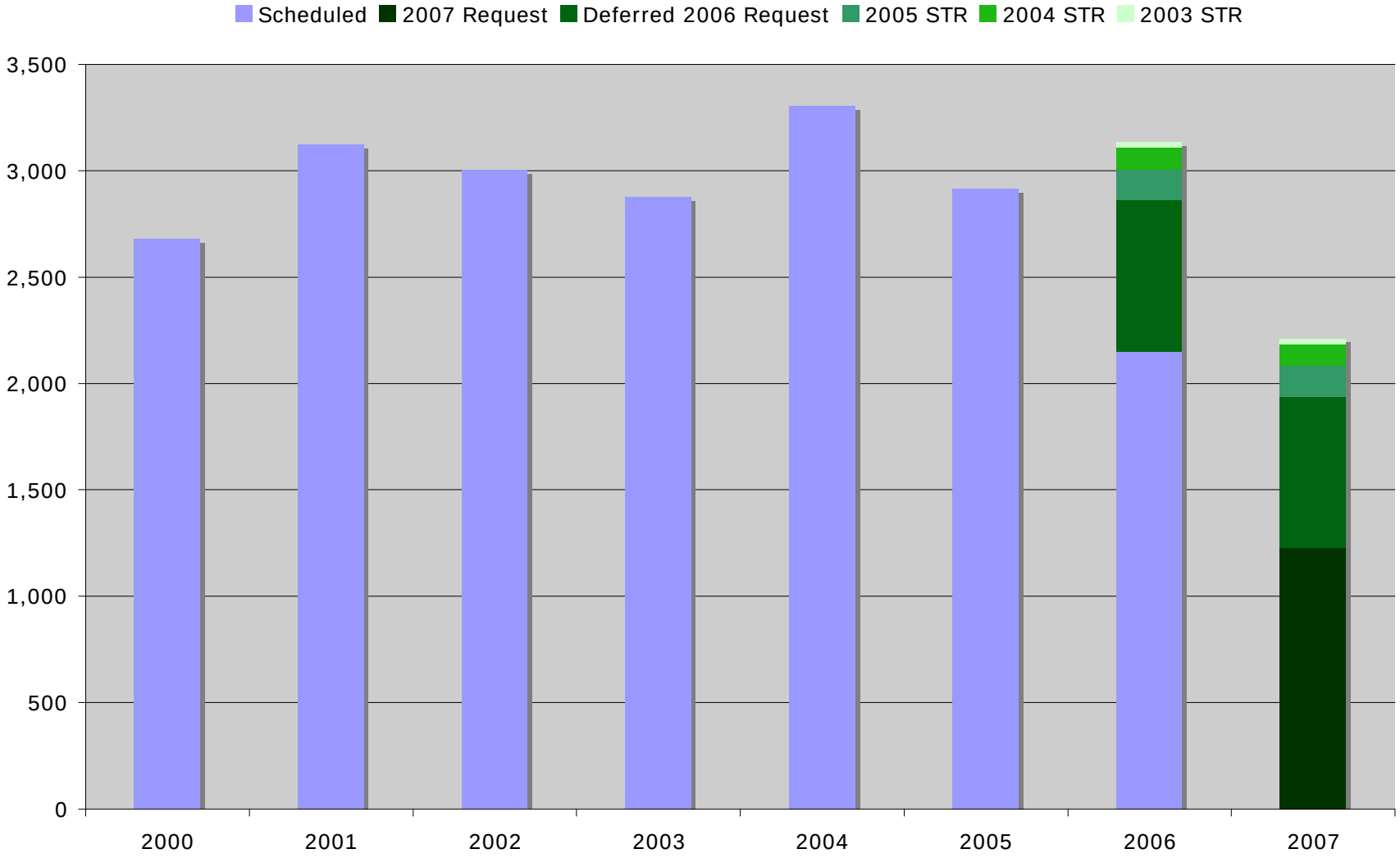
Miscellaneous Items:

- Some activity has occurred for UNOLS to play a small role in DART deployments in 2005/2006. NOAA/NDBC has taken a stance that once schedules have been developed, then they can better decipher opportunities to insert work for deployments, turnarounds, and repairs.
- The status of the Navy UNOLS $5M remains in the House bill. Thus at conference it is likely, though not guaranteed to survive.
- The NSF director provided OCE with approximately $3M to cover increases in fuel costs, which will help prevent deferring even more field programs into 2007.
- Despite large ship availability, some NSF programs have been moved to non-UNOLS ships in order to capitalize on savings realized by using regional assets.

2007 Scheduling



Funded and Deferred NSF Requests



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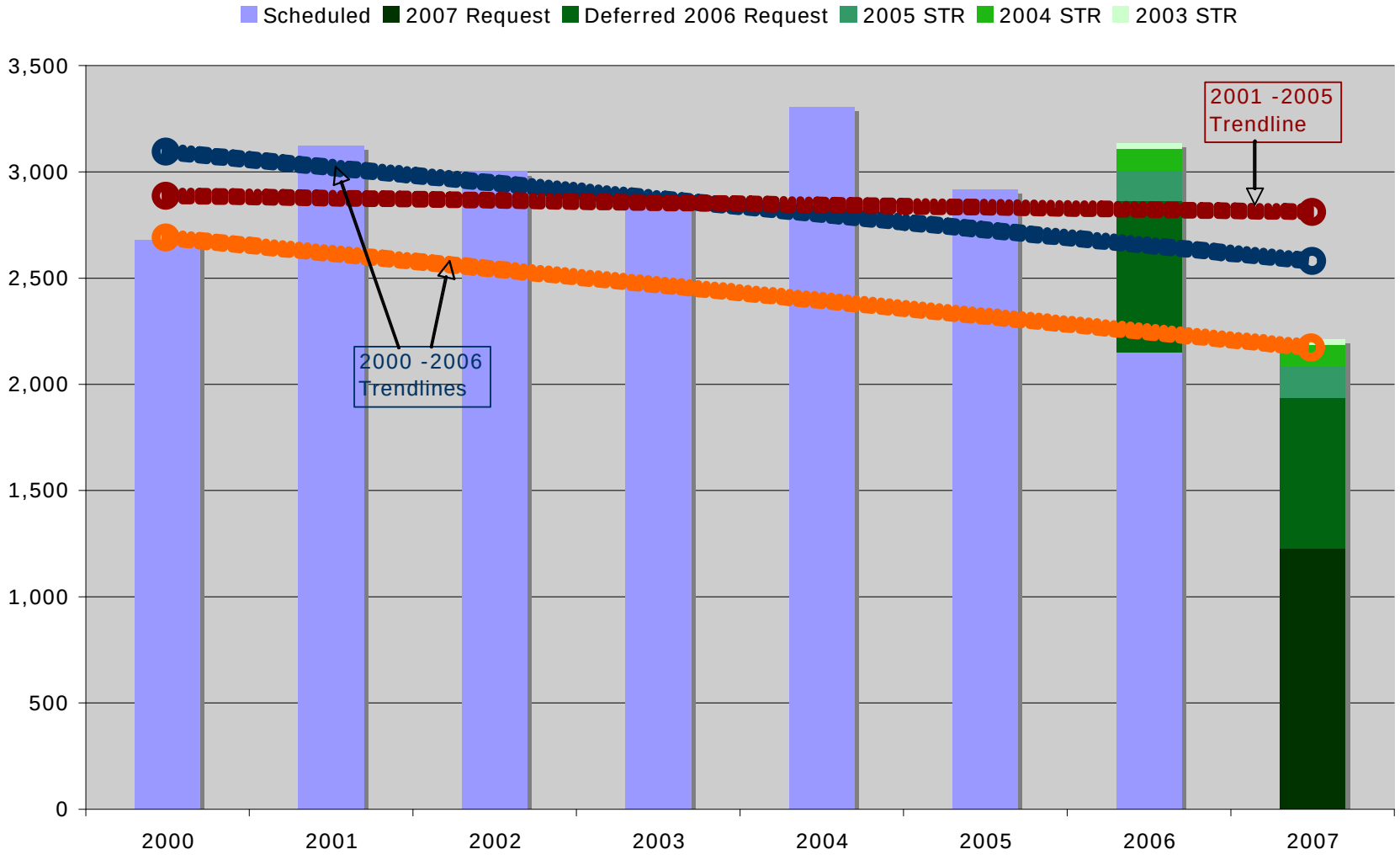


SCOAR

- John Bane, UNC, Physical Oceanography
- Charlie Flagg, SUNY-Stony Brook, Physical Ocn
- Ken Melville, Scripps, Physical Oceanography
- Dan Riemer, UMiami-RSMAS, Atmospheric Chemistry
- Dick Zimmerman, ODU, Marine Ecology

  NEW MEMBER – APPOINTED FEBRUARY 2005
- Mike Prince, UNOLS
- Bob Bluth, NPS-CIRPAS
- Haf Jonsson, NPS-CIRPAS
- Steve Hartz, UAF, UNOLS-RVTEC

  NEW EX-OFFICIO MEMBER – APPOINTED FEBRUARY 2005

Article published in *Oceanography*, December 2004

UNOLS Establishes SCOAR to Promote

Research Aircraft Facilities for U. S. Ocean Sciences

BY JOHN M. BANE, ROBERT BLUTH, CHARLES FLAGG, CARL A. FRIEHE, HAFLIDI JONSSON, W. KENDALL MELVILLE, MIKE PRINCE, AND DANIEL RIEMER

The ocean sciences community is currently engaged in the process of defining new facilities that will support oceanographic research, education, and monitoring efforts for the next several decades. New research vessels, drilling ships, coastal and deep-ocean observing systems, satellites, and submersibles will be designed to increase ocean access in terms of geographical coverage, depth, temporal continuity, and resolution of events. Aircraft may be largely overlooked facilities that are capable of providing observations and data in ways that satisfy many research goals, and they should be considered an important component in the future mix of oceanographic facilities.

Aircraft are capable of greater speed, and therefore greater range and spatial coverage during a short time period when compared to surface and subsurface ocean research platforms. Such speed and range attributes lead to better synoptic coverage of oceanic and atmospheric variability. Aircraft-mounted sensors provide data with much of the appeal of the aerial view provided by satellites, but with much greater specificity, spatial and temporal resolution, and scheduling flexibility, and they can provide resolution adaptable to phenomena of interest. Aircraft are ideal for both fast-response investigations and routine, long-term measurements, and they naturally combine atmospheric measurements with oceanographic measurements on similar temporal and spatial scales. Aircraft surveys reach across a wide range of environmental and geographic conditions. For example, an aircraft can survey and collect remote-sensing data over shallow estuaries, the coastline, and offshore with one deployment and can do so in weather that might preclude a surface vessel from covering the same areas. Using smaller, less-expensive aircraft for near-coastal work can result in more coverage for certain types of data at lower cost than using research vessels.

Aircraft have a particular advantage for coastal observing that comes from the combination of speed and range they make available for remote measurements and expendable instrument deployment. The issue of aliasing in space and time is especially significant in the coastal environment where scales of air-sea-land interaction can vary too rapidly to be adequately covered by any affordable combination of ships, moorings, or autonomous underwater vehicles. Satellite remote sensing is valuable, but coverage is sometimes limited by satellite orbit parameters or by cloud cover, especially in coastal marine layers. Using phased-array technology, high-frequency radars can provide excellent coverage of surface currents (except very close to the coast) and surface waves, but they offer very limited subsurface measurements. Airborne remote and expendable measurements of sea surface temperature, subsurface salinity and temperature, surface waves and currents, ocean color, coastal morphology, coastal bathymetry, and important atmospheric and terrestrial variables can significantly enhance data

This article has been published in Oceanography, Volume 17, Number 4, a quarterly journal of The Oceanography Society.

Send all correspondence to: info@tos.org or 5912 LeMay Road, Rockville, MD 20851-2326, USA.

Aircraft are ideal for both fast-response investigations and routine, long-term measurements, and they naturally combine atmospheric measurements with oceanographic measurements on similar temporal and spatial scales.

Eos, Transactions, American Geophysical Union, Vol. 85, No. 41, 12 October 2004, Pages 402, 405

SECTION NEWS

OCEAN SCIENCES

UNOLS Now Oversees Research Aircraft Facilities for Ocean Science

In recognition of the increasing importance and value of aircraft as observational platforms in oceanographic research, the University National Oceanographic Laboratory System (UNOLS) has established the Scientific Committee for Oceanographic Aircraft Research (SCOAR). SCOAR aims to establish procedures for research aircraft that follow the present UNOLS practices for research vessel use, with the goal of making it understandable, and easy, and thus desirable, for oceanographic scientists to utilize research aircraft more.

For consistency with the operation of UNOLS ships, this will require UNOLS to designate appropriate research aircraft operating organizations to be National Oceanographic Aircraft Facilities (NOAFs), essentially like institutions that operate one or more UNOLS ships. UNOLS presently has one designated NOAF, the Center for Interdisciplinary Remotely Piloted Aircraft Studies (CIRPAS) at the Naval Postgraduate School, in Monterey, California.

SCOAR also will develop and disseminate knowledge about aircraft platforms, unpiloted aerial vehicles (UAVs), and airborne instruments that are presently in use in ocean science. It will also attempt to stimulate the development of new instrumentation that exploits airborne capabilities. For example, a synergistic evolution of UAVs and small, lightweight, low-power instrumentation is expected.

Motivation for the establishment of SCOAR came in part from the recognition that, at present, research aircraft in the United States are operated by a range of agencies, universities, and public corporations. The federal fleet includes some 40 aircraft operated by or for the Federal Aviation Administration (FAA), the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), the Department of Energy (DOE), the Office of Naval Research (ONR), and the U.S. Coast Guard (USCG).

Most of these aircraft are used for specialized research and development, but several are available for oceanic or atmospheric research. An interagency committee, the Interagency Coordinating Committee for Airborne Geosciences Research and Applications (ICCAGRA), is charged with facilitating interagency cooperation and being a resource to senior-level management on airborne geosciences issues. The university research aircraft fleet is much smaller; however, information about these aircraft and how a new potential user might gain access to them has been neither centralized nor uniform across institutions.

SCOAR Activities and Goals

The four principal activities and goals for SCOAR are as follows:

- Provide recommendations and advice to the operators and funding agencies of the UNOLS-designated National Oceanographic Aircraft Facilities regarding operations, sensor development, fleet composition, fleet utilization, and data services.
- Inform and advise the ocean science user community about research aircraft facilities, including experiment design, facility usage, scheduling, and platform and instrumentation capabilities.
- Promote collaboration and cooperation among facility operators, funding agencies, and the scientific community to improve the availability, capabilities, and quality of research aircraft facilities.
- By promoting collaboration among the ocean science, atmospheric science, and other science communities using research aircraft, strive to improve utilization and capabilities for all of these communities.

ONR established CIRPAS as a research center at the Naval Postgraduate School in 1996 to operate a variety of manned aircraft and UAVs. CIRPAS provides measurements using an array of airborne and ground-based meteorological, aerosol, cloud particle, radiation, and remote sensors. It also conducts payload integration, reviews flight safety issues, and provides logistical planning and support around the world. In addition, CIRPAS assists in developing new airborne instrumentation. The CIRPAS Twin Otter has been widely used in oceanographic projects for the past 8 years (Figure 1).

Fig. 1. The CIRPAS UV-18A Twin Otter turboprop research aircraft. This twin turboprop Short Take-off and Landing (STOL) aircraft can cruise at low speeds for long durations over the ocean with a maximum endurance of 8 hours, maximum altitude of 7600 m, 35–80 m/s operational speed range, 200 amps of payload power, and an approximately 2400 kg useful load.

0096/3941/8320/217/$03.00.

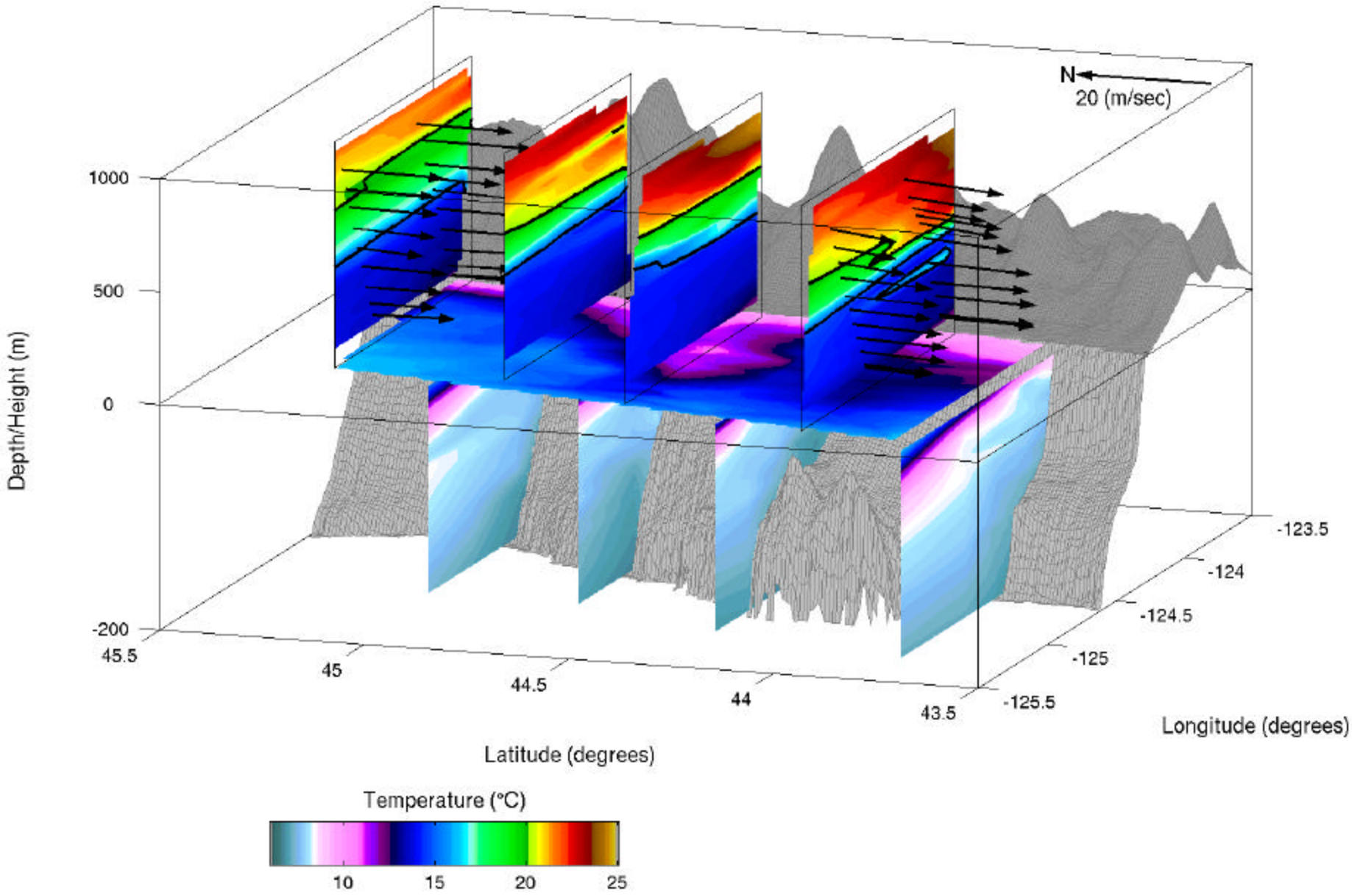
News report published in *EOS* in October 2004

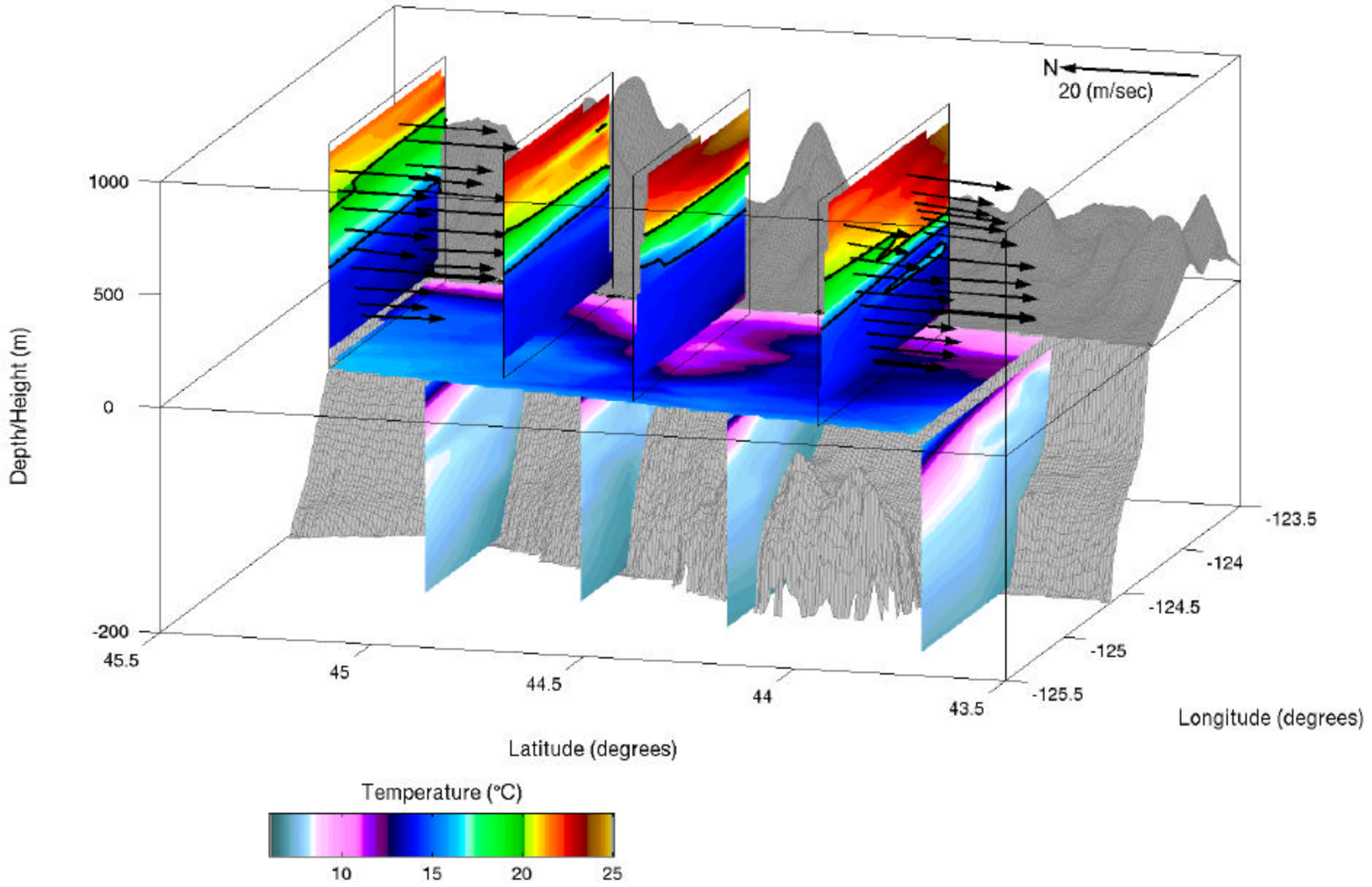
Current SCOAR Activities

- Drafted a white paper on how aircraft can and should support ocean sciences.

Visualizing The Coastal Ocean and Atmosphere

John Bane, Univ North Carolina (support: NSF)

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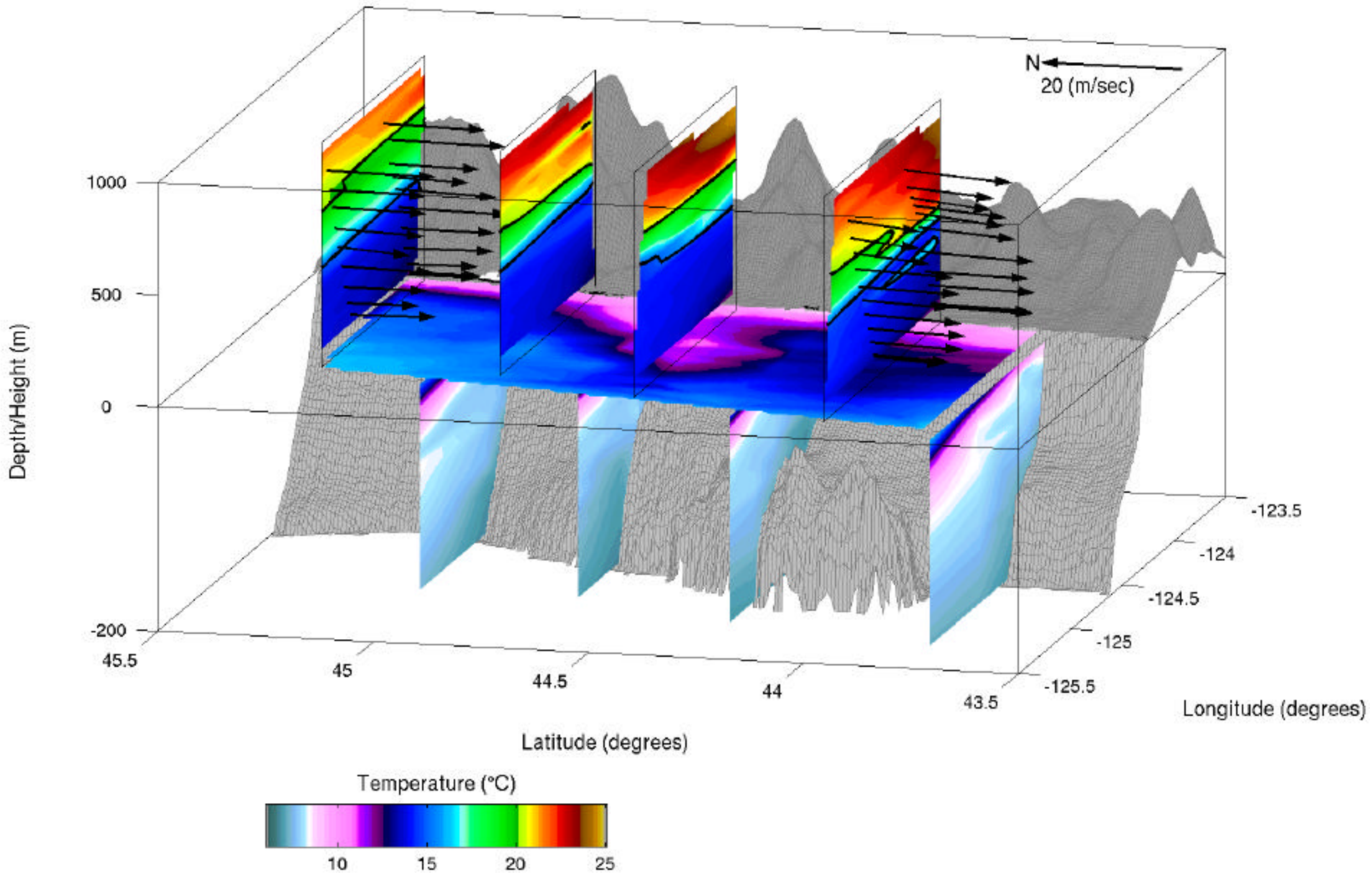
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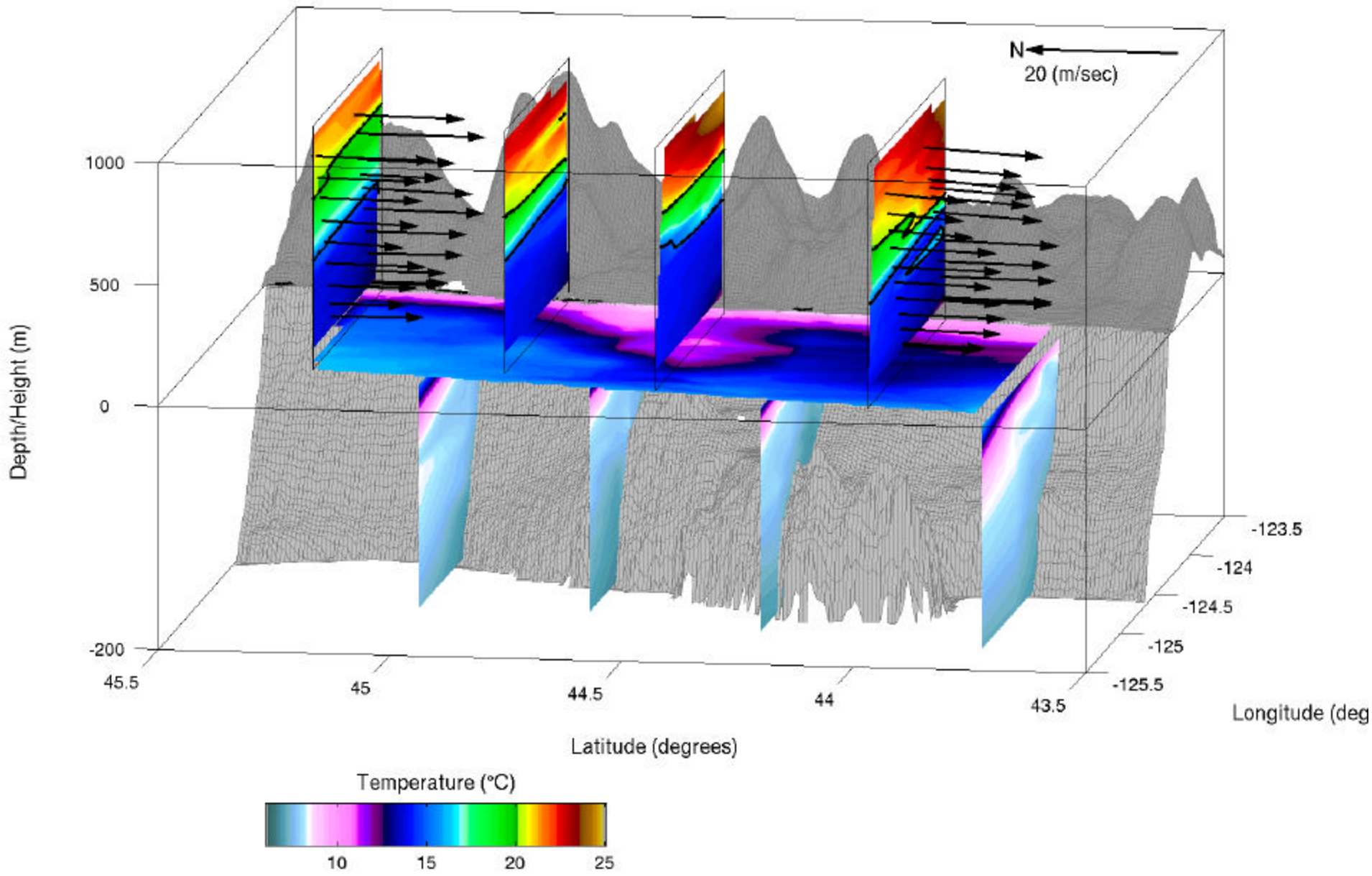
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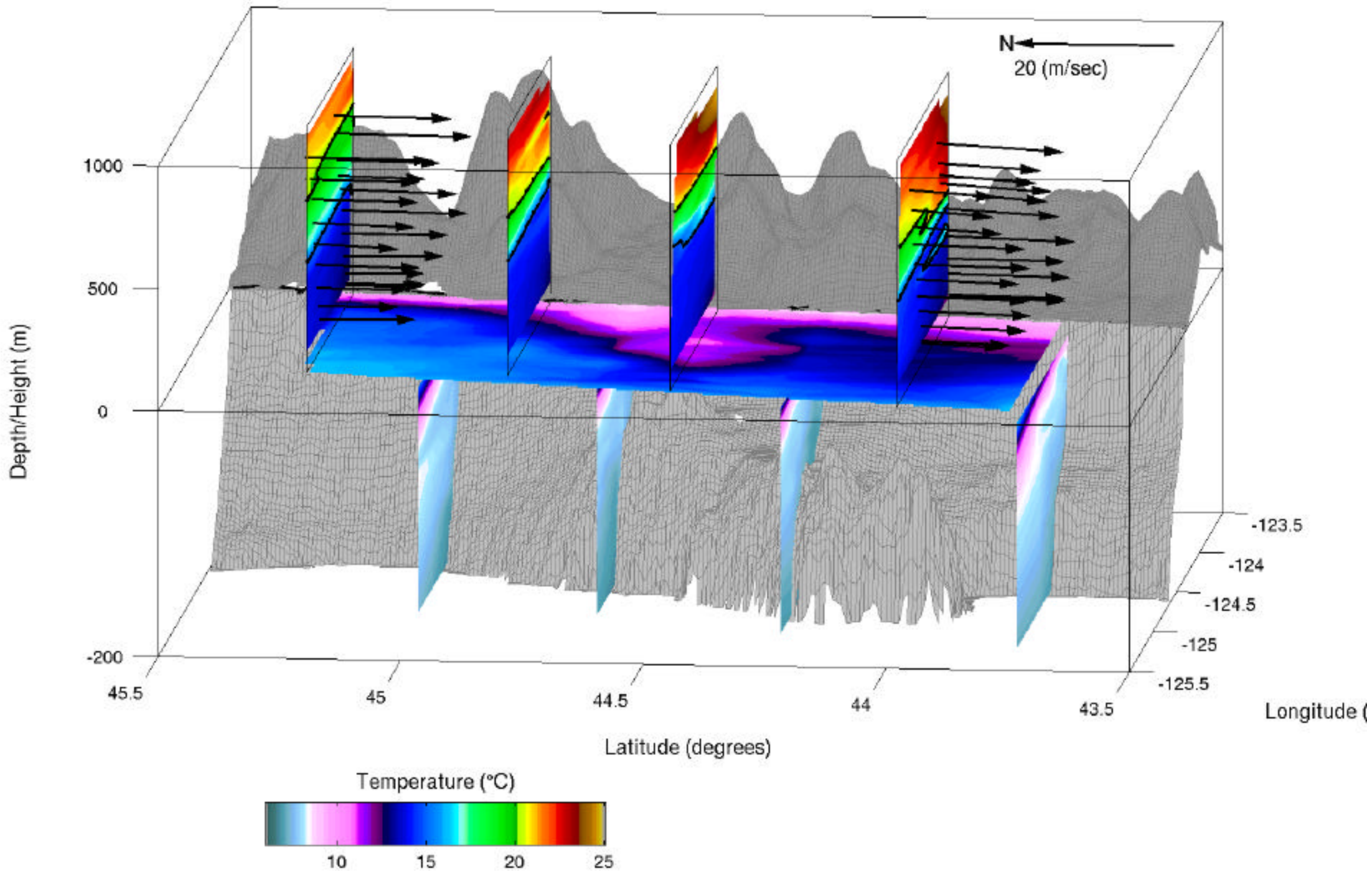
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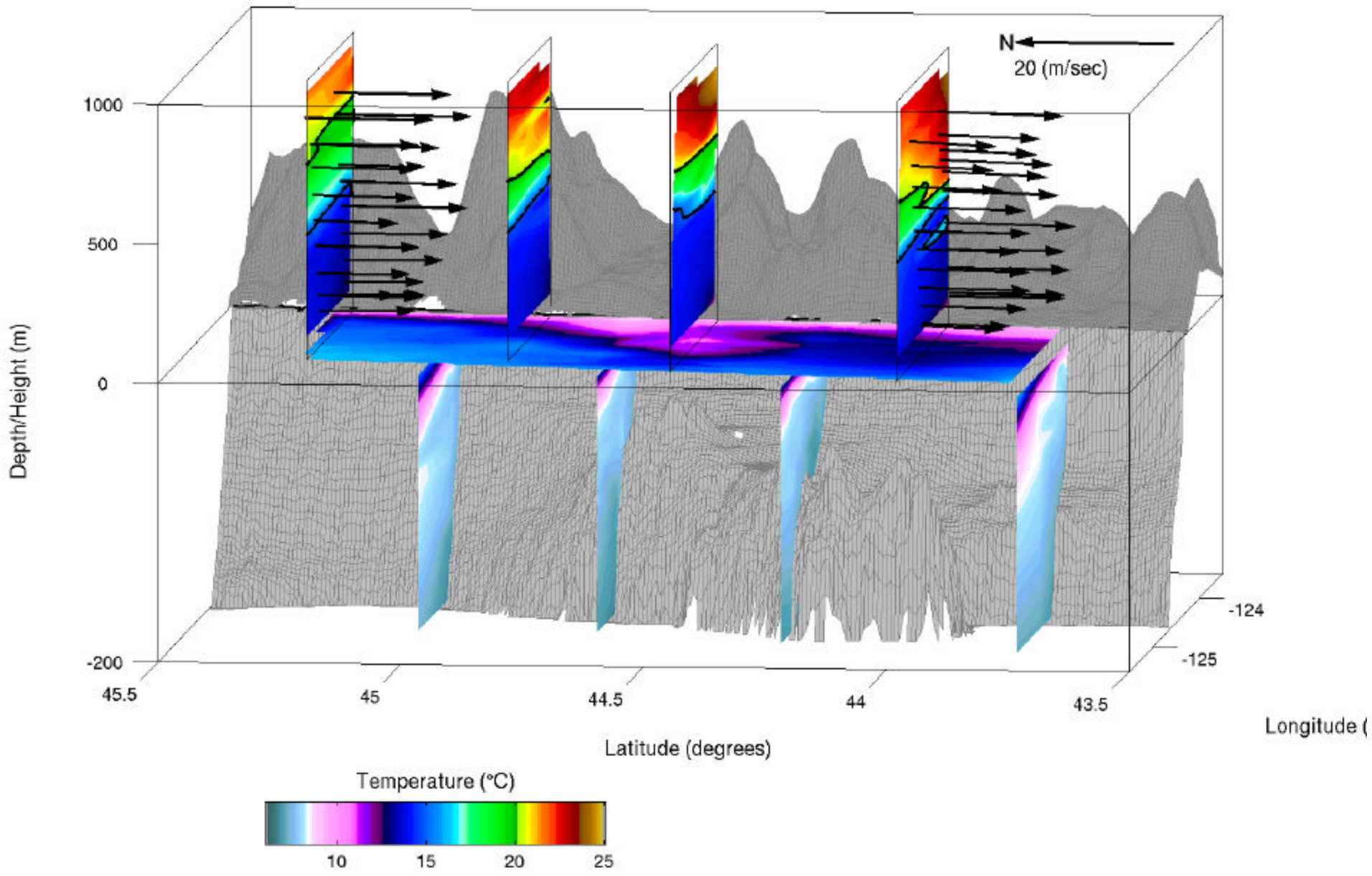
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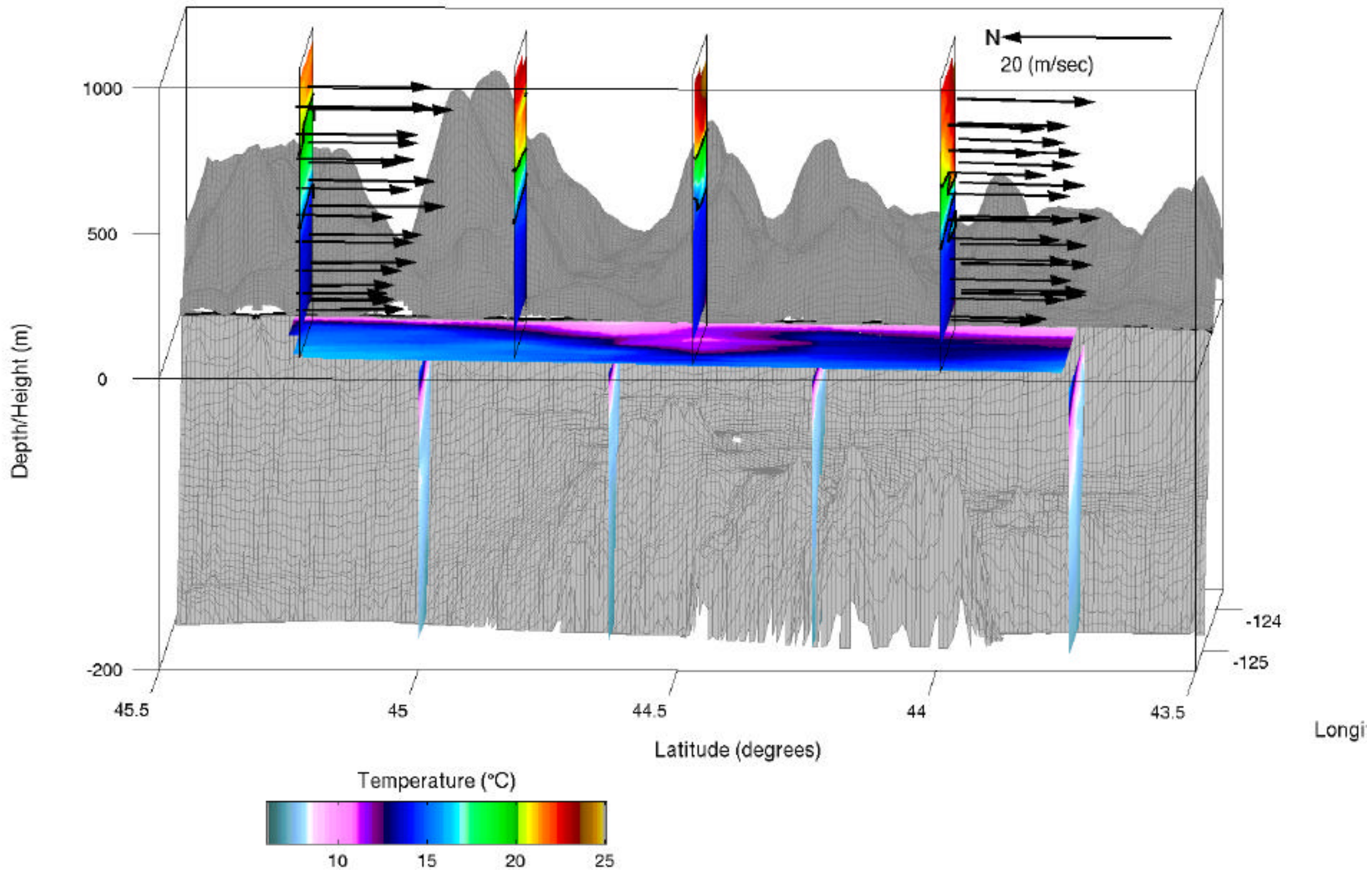
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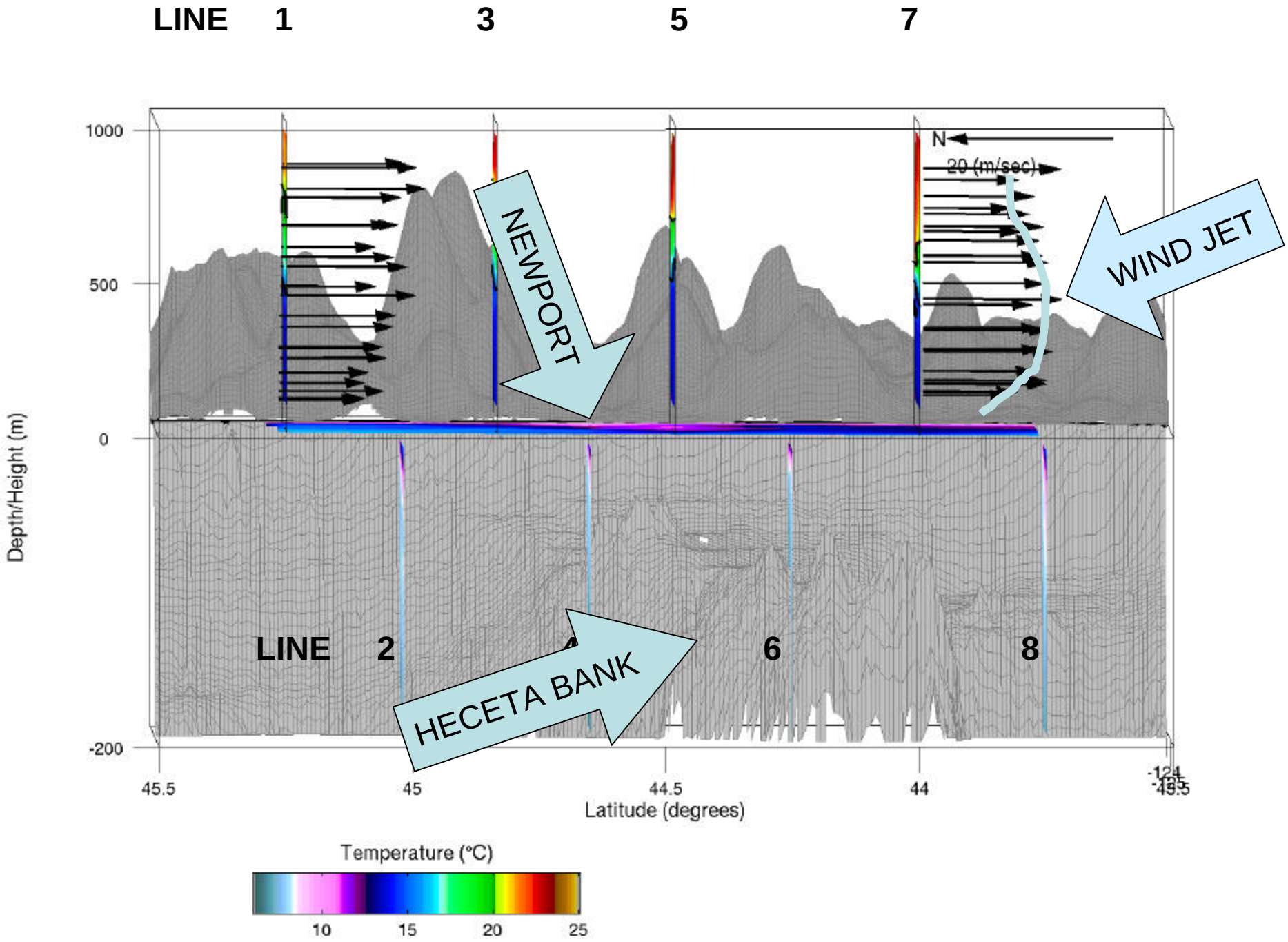
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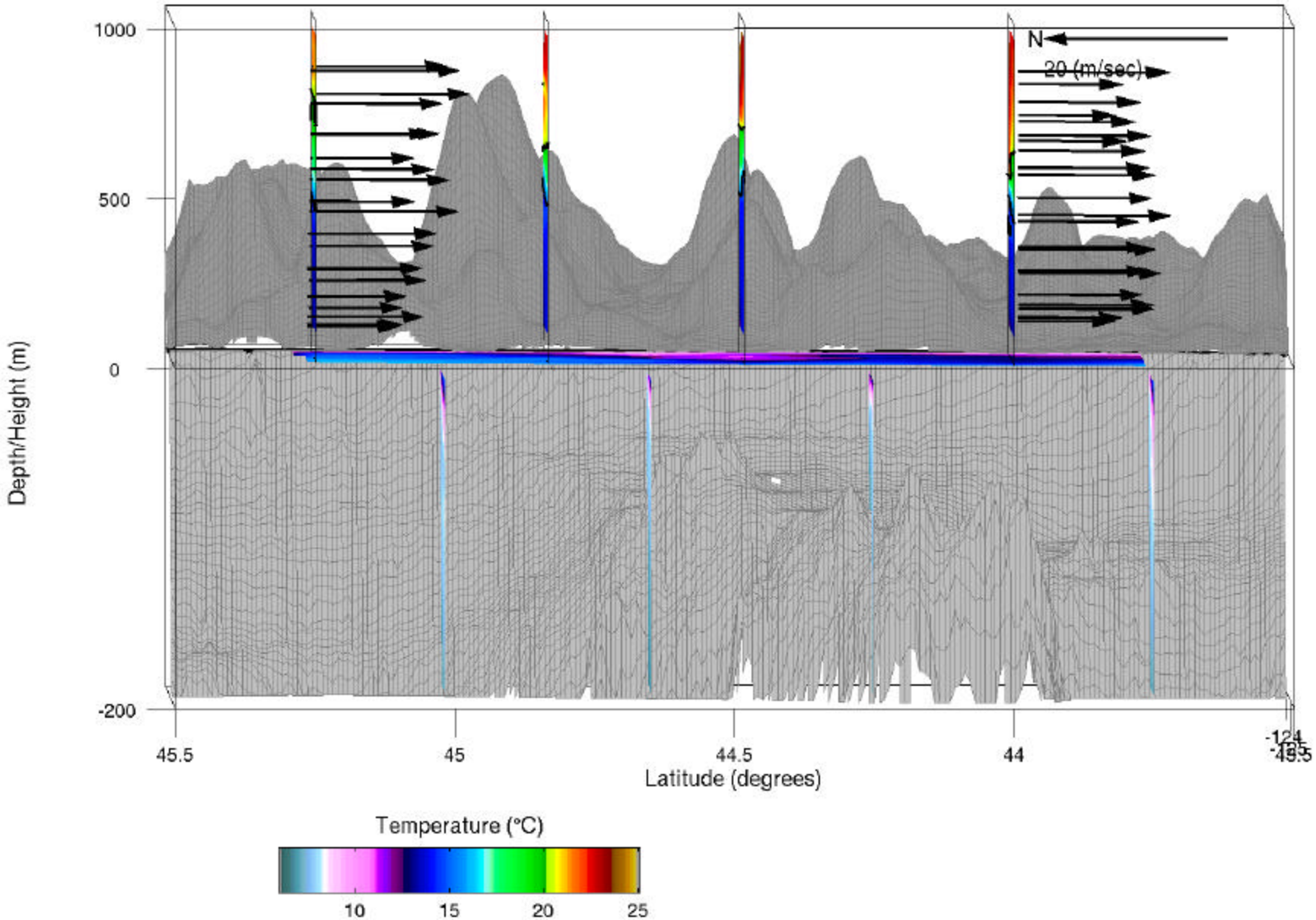
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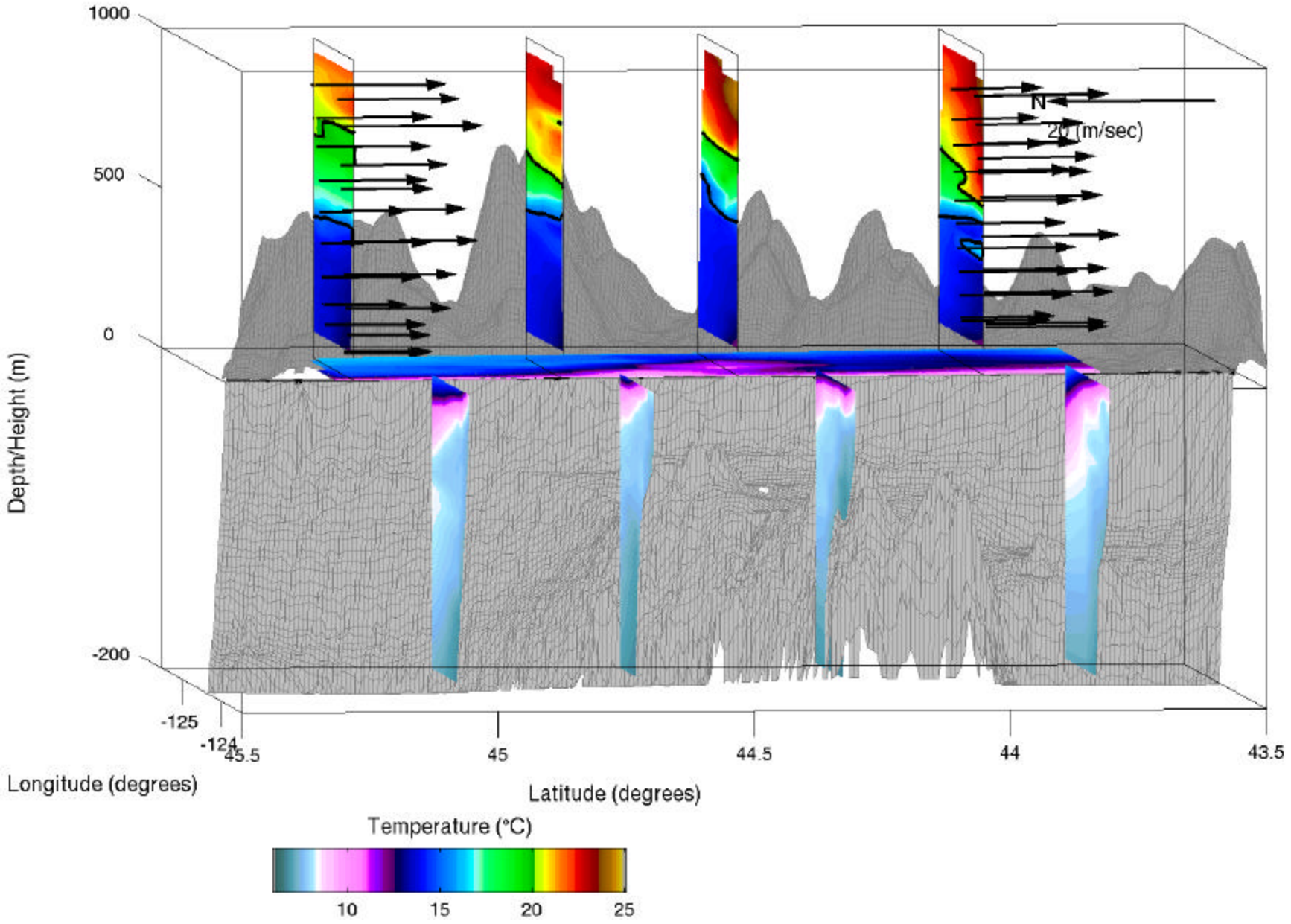
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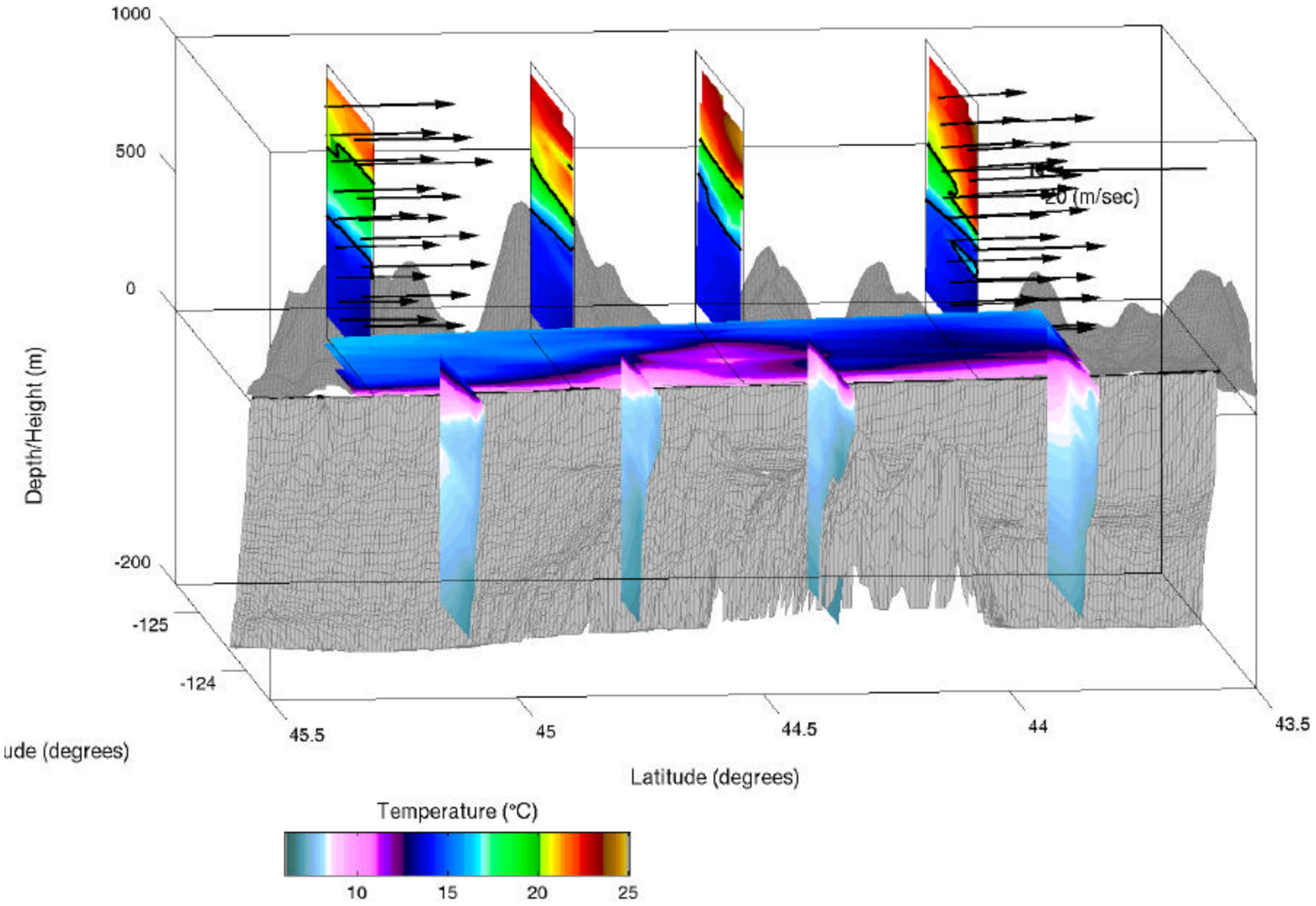
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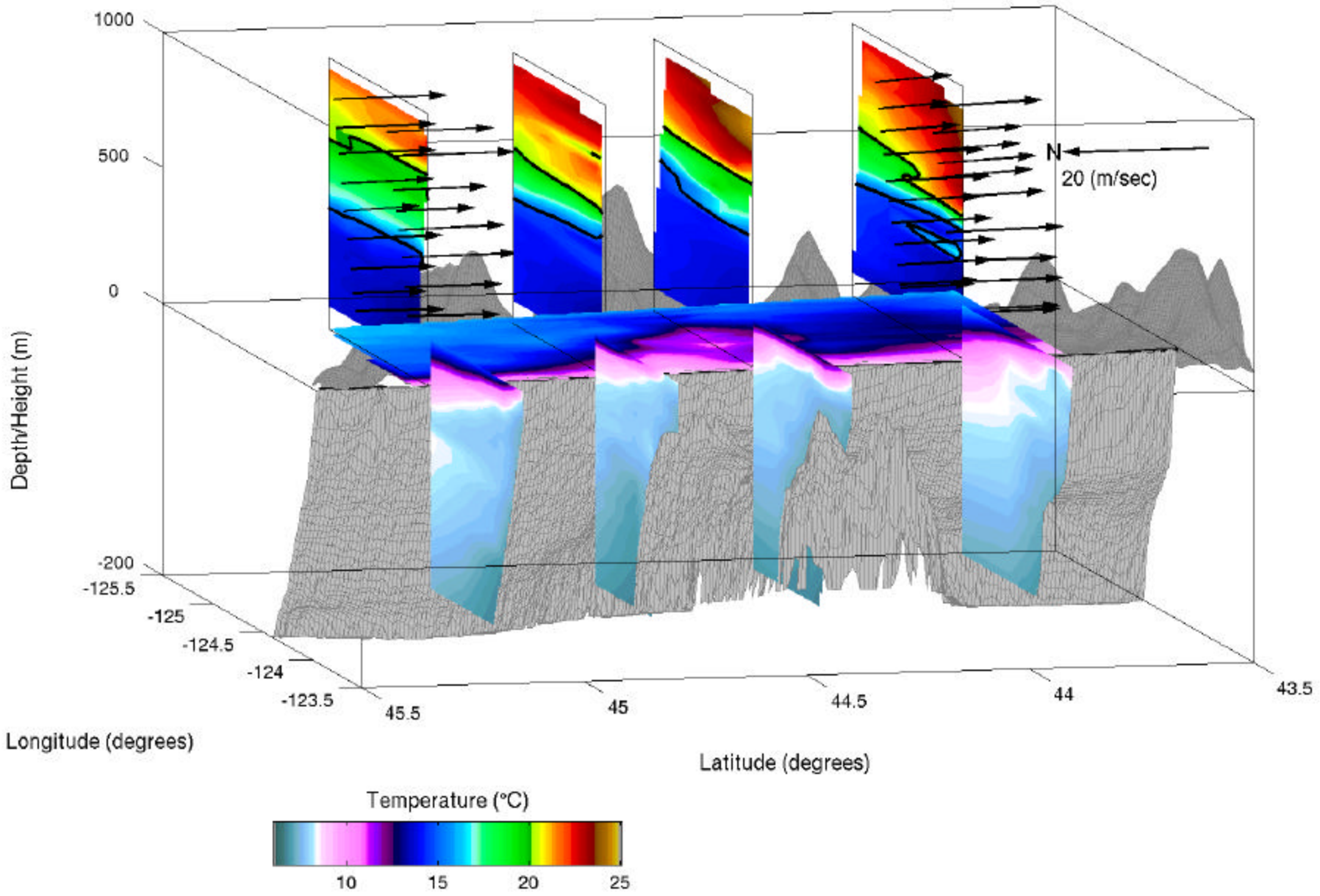
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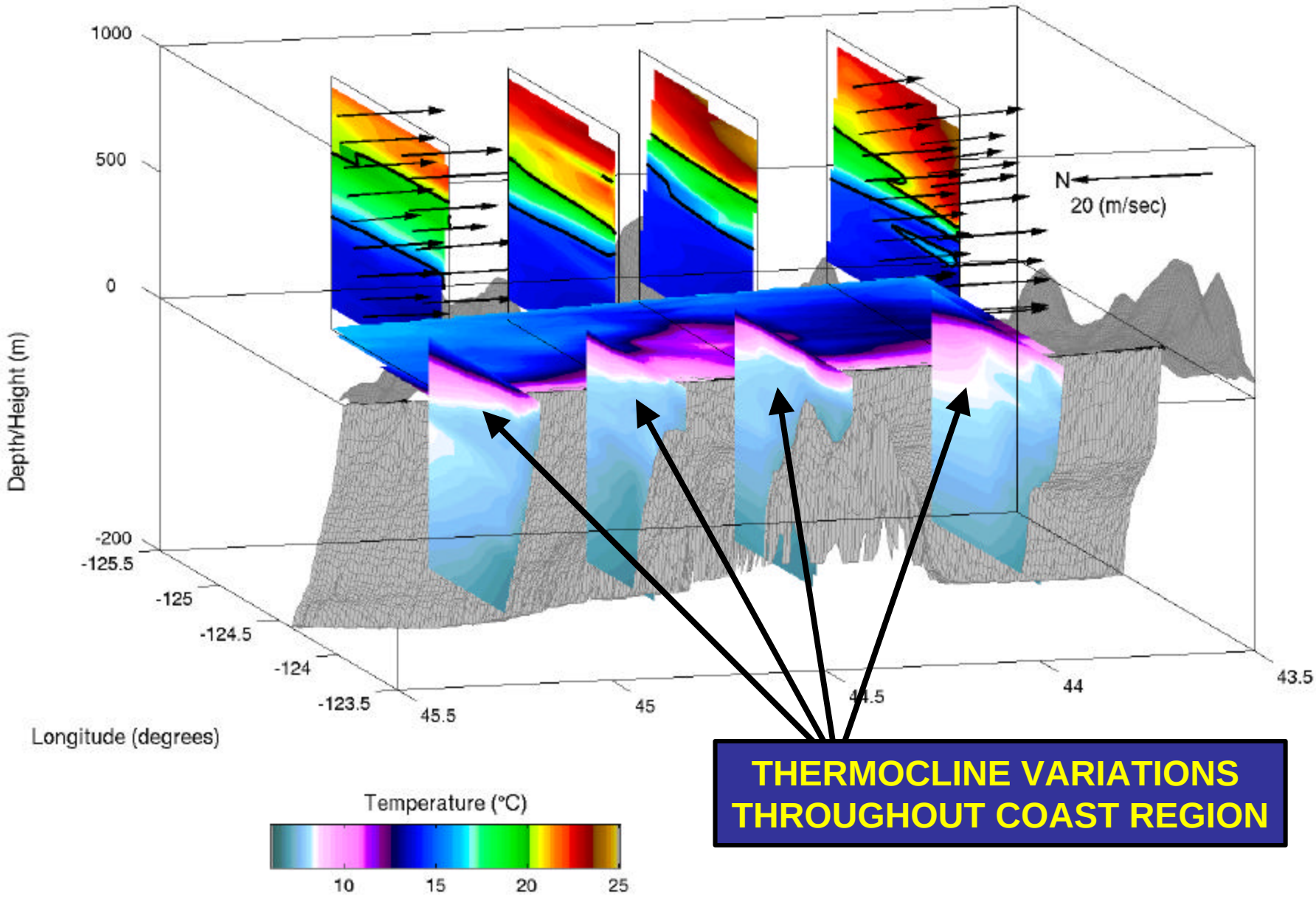
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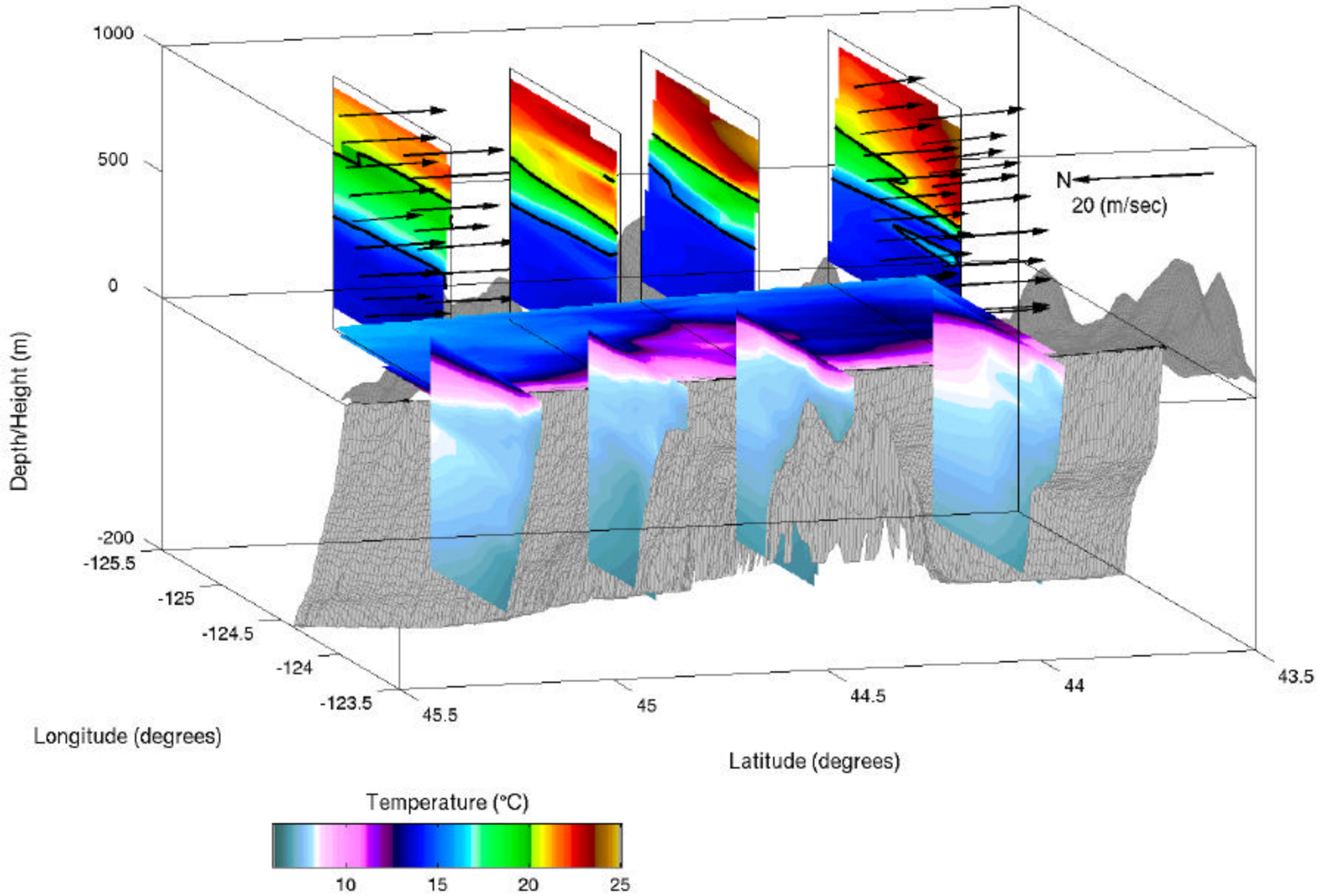
THERMOCLINE VARIATIONS
THROUGHOUT COAST REGION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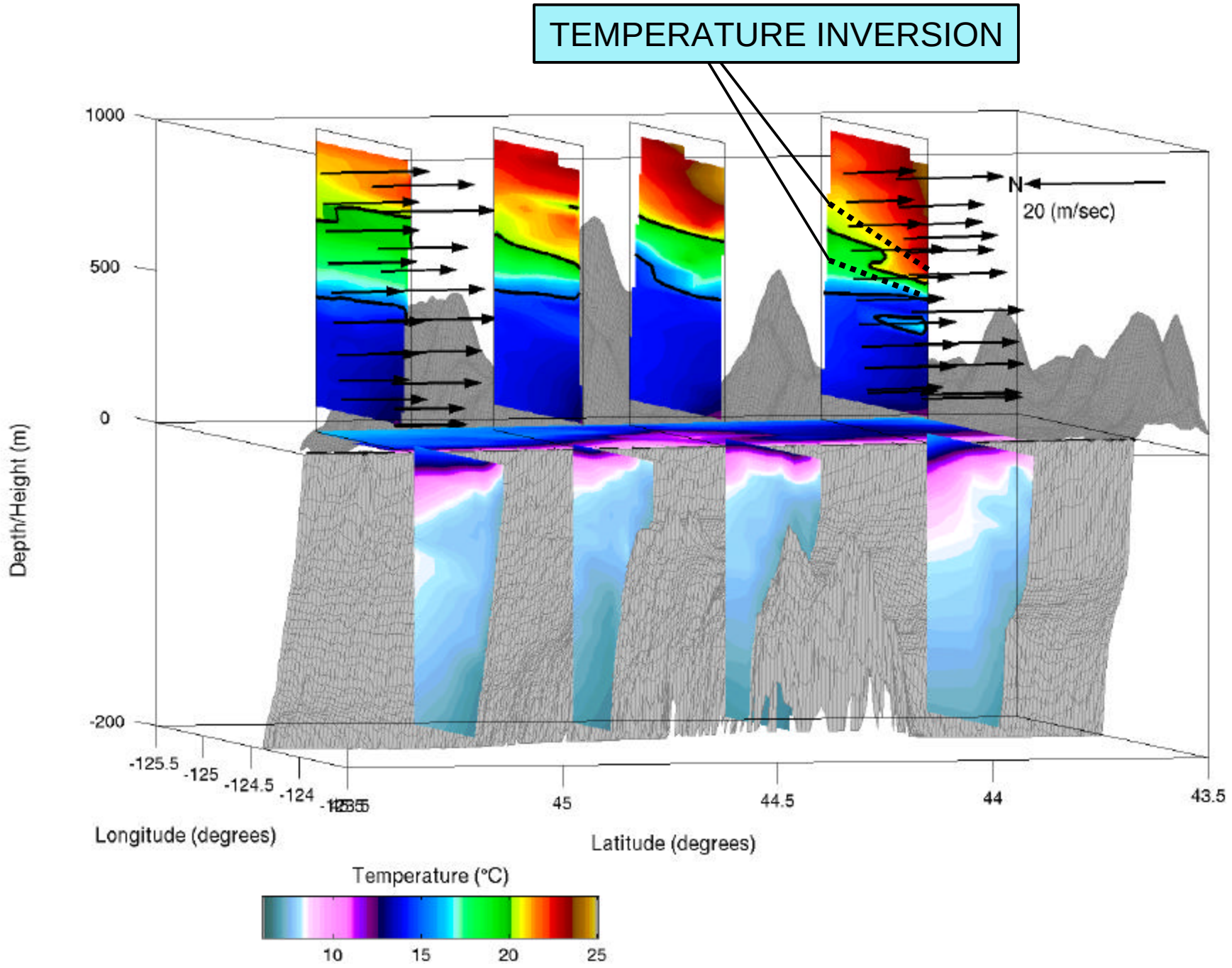
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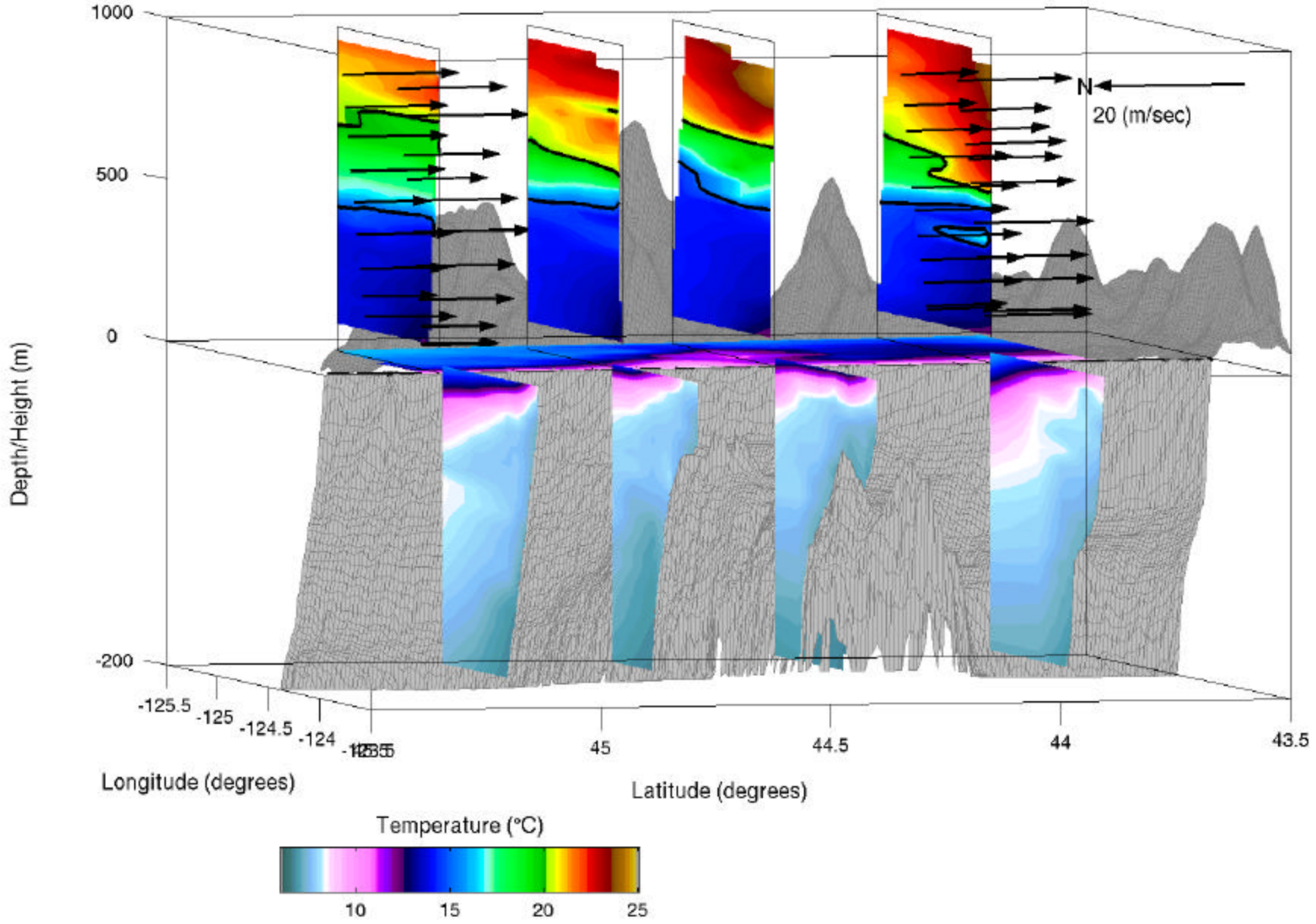
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Temperature (°C)
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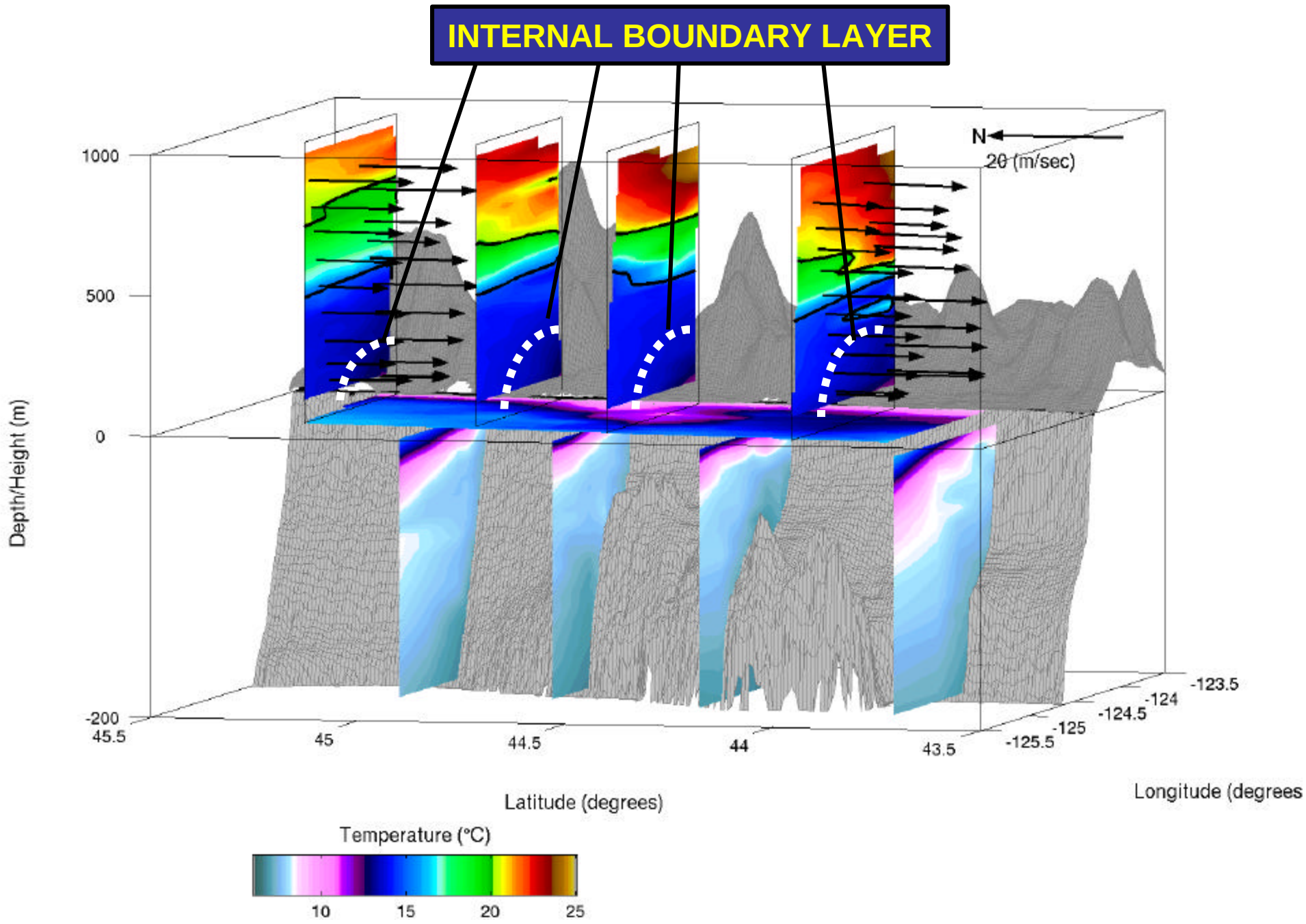
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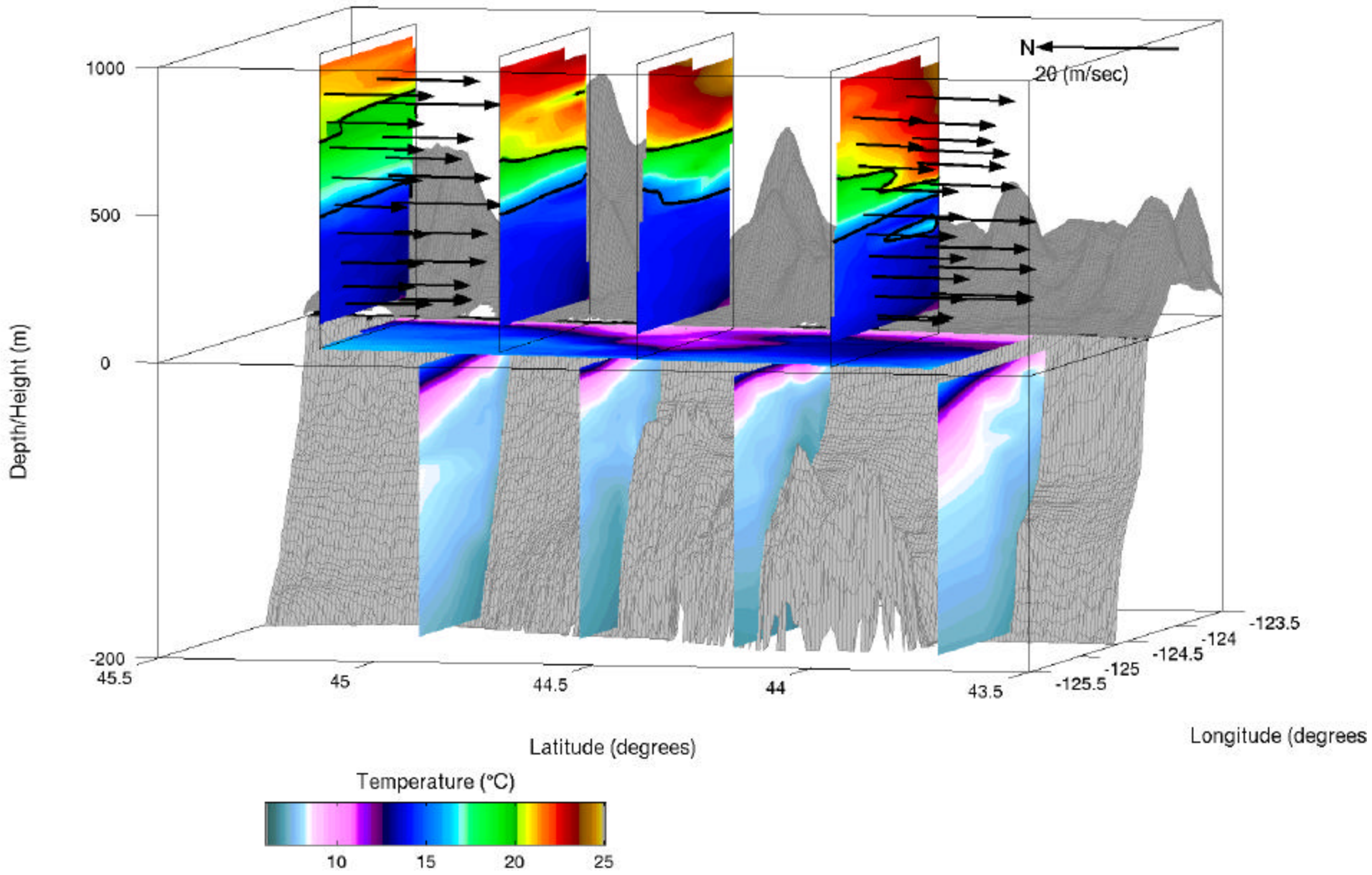
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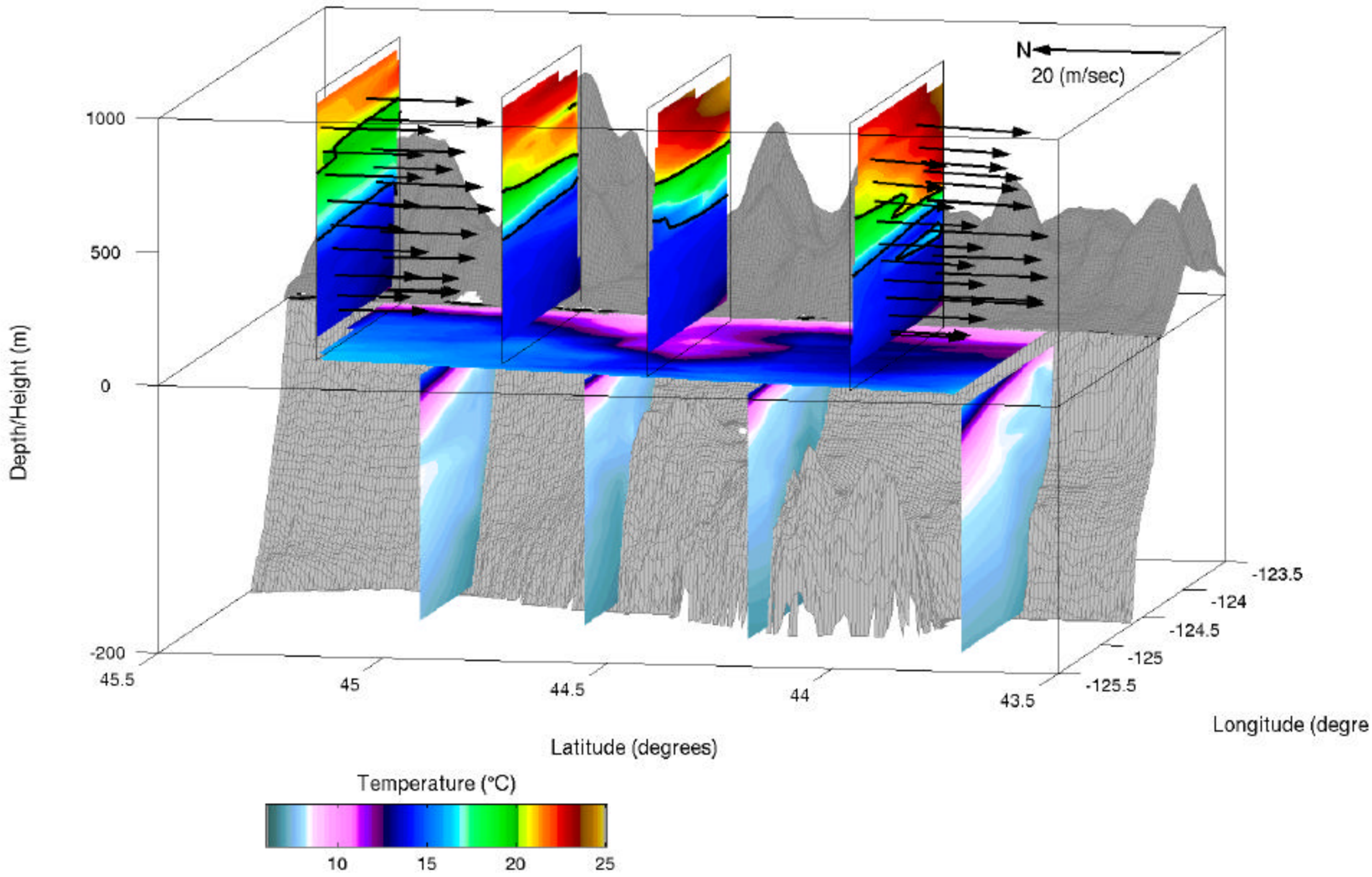
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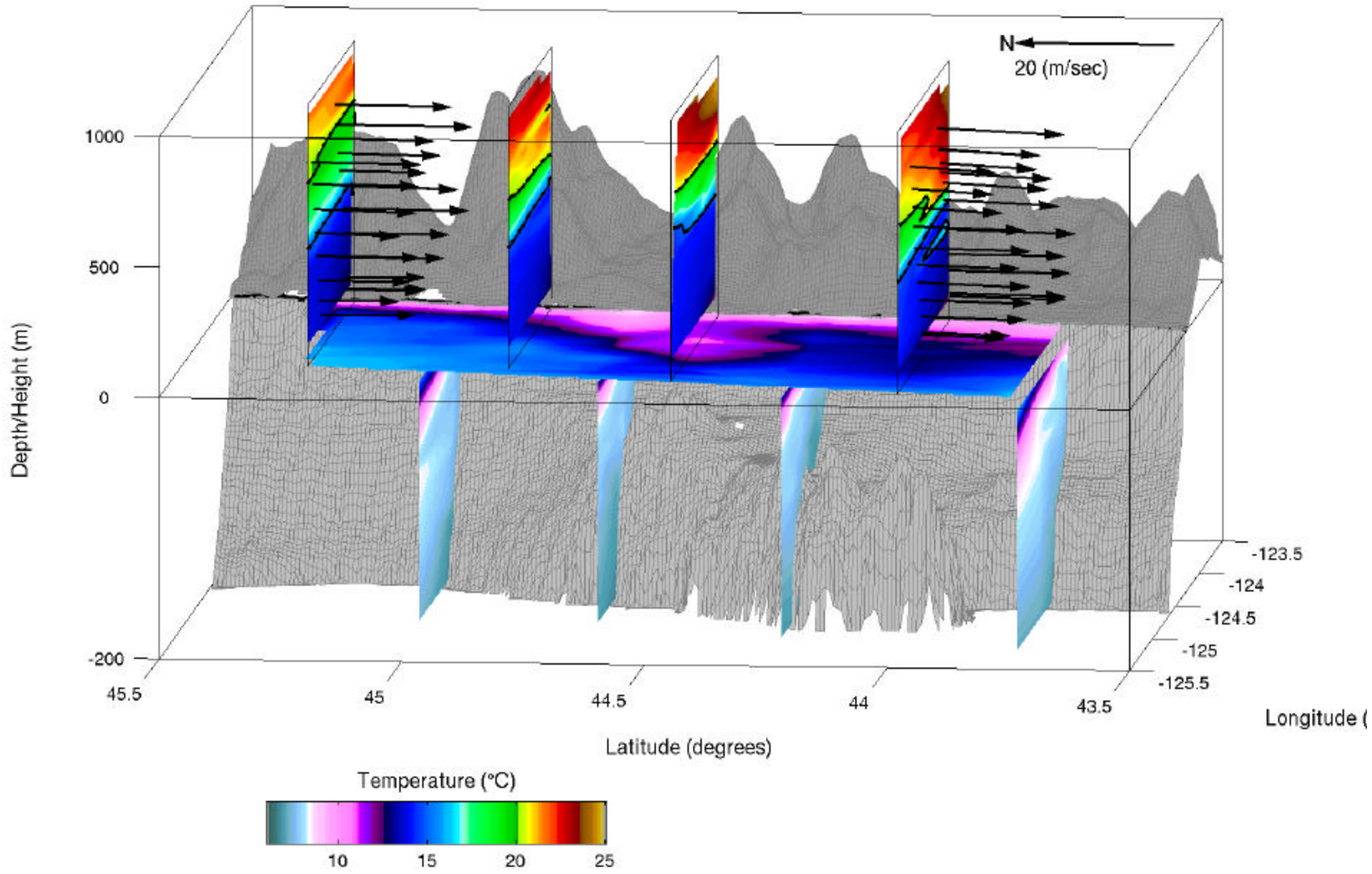
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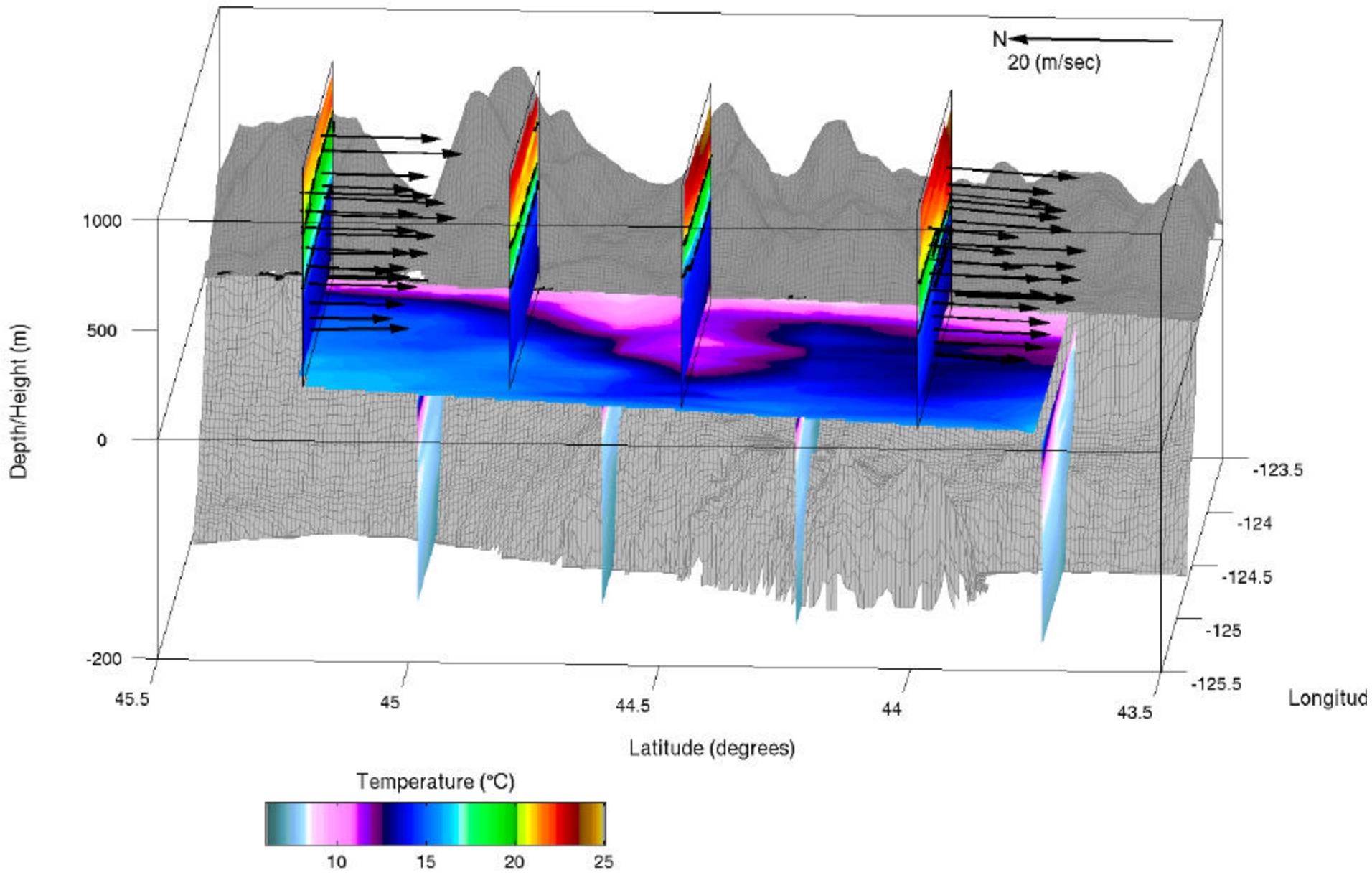
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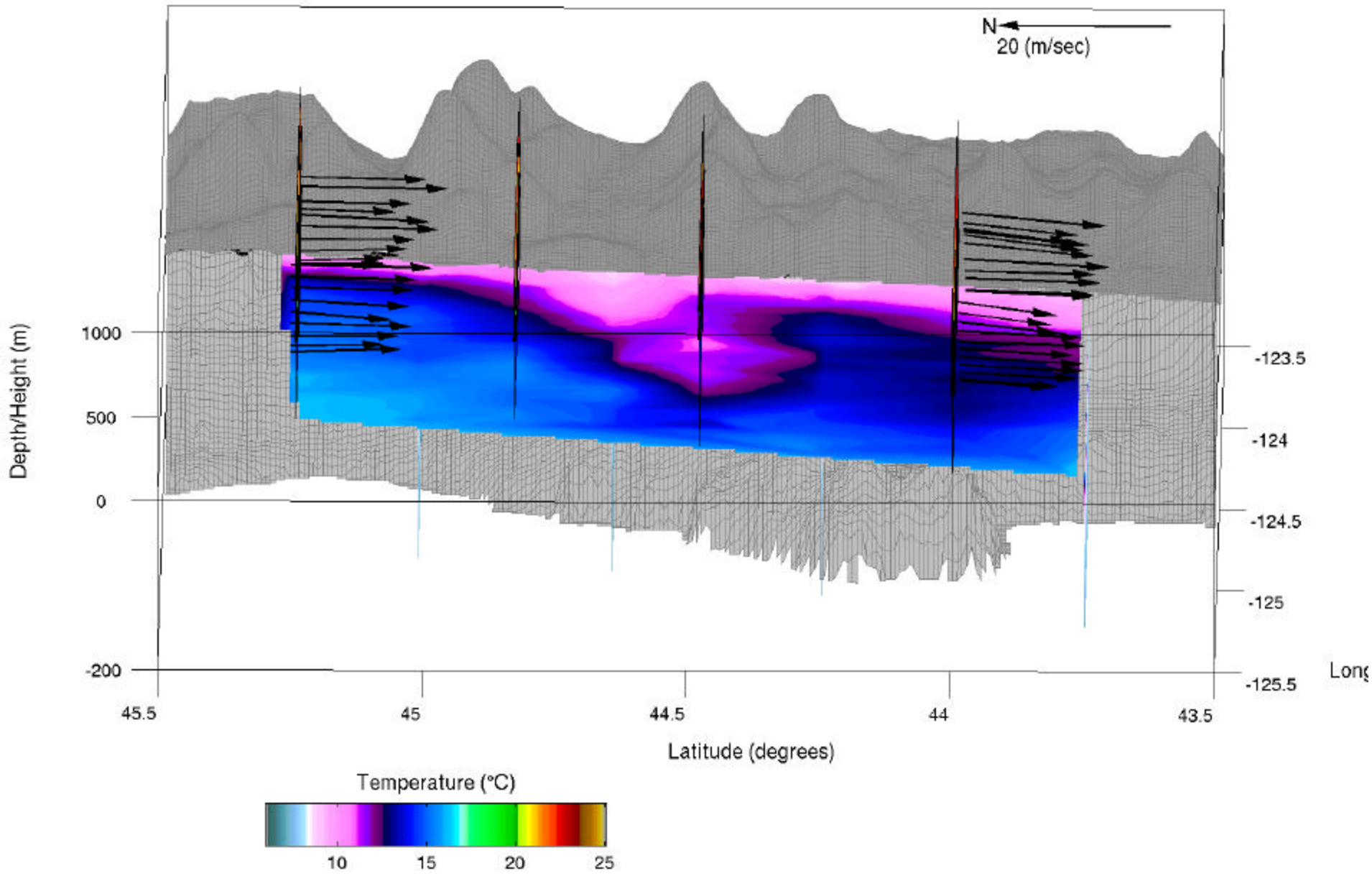
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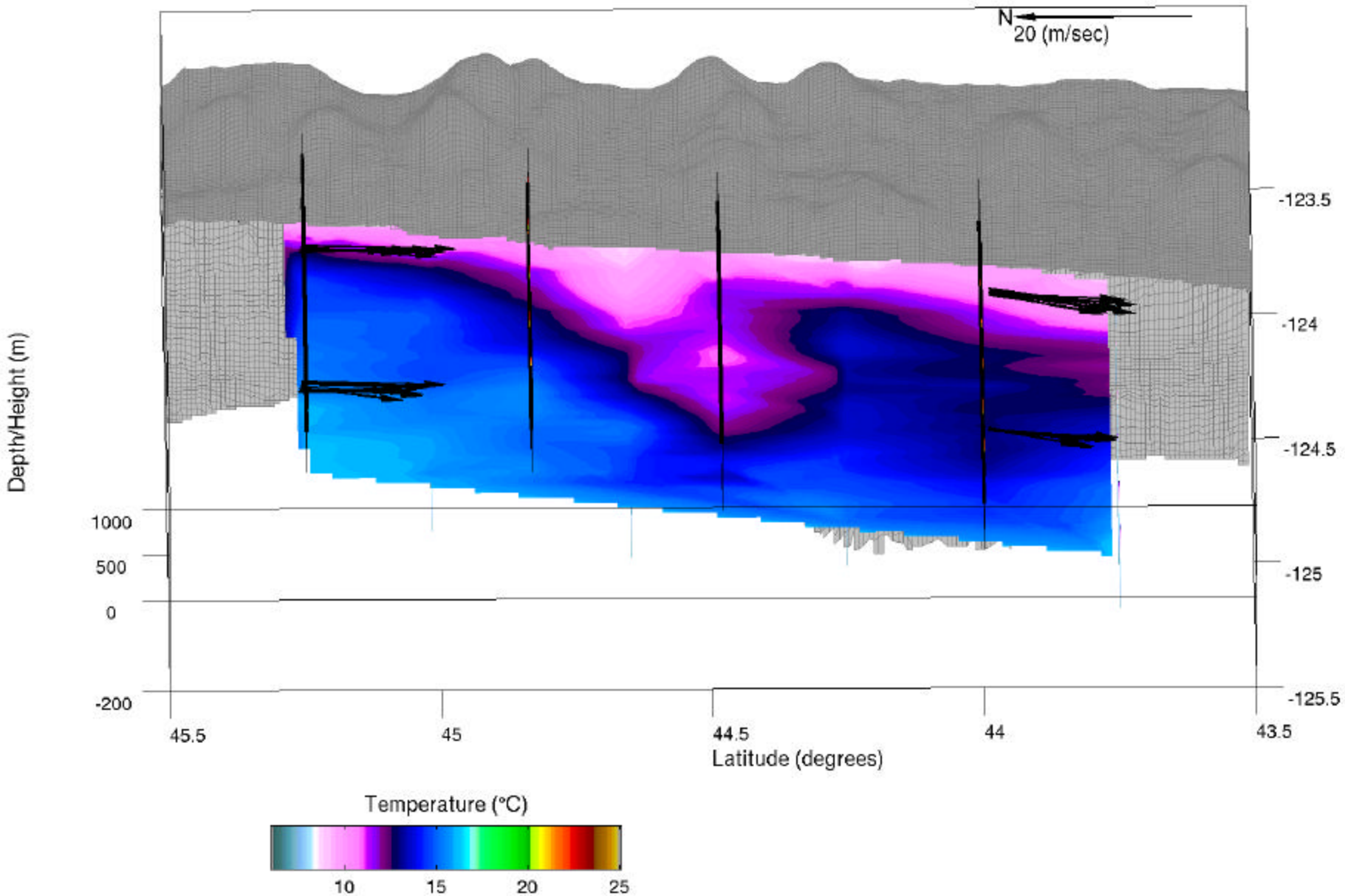
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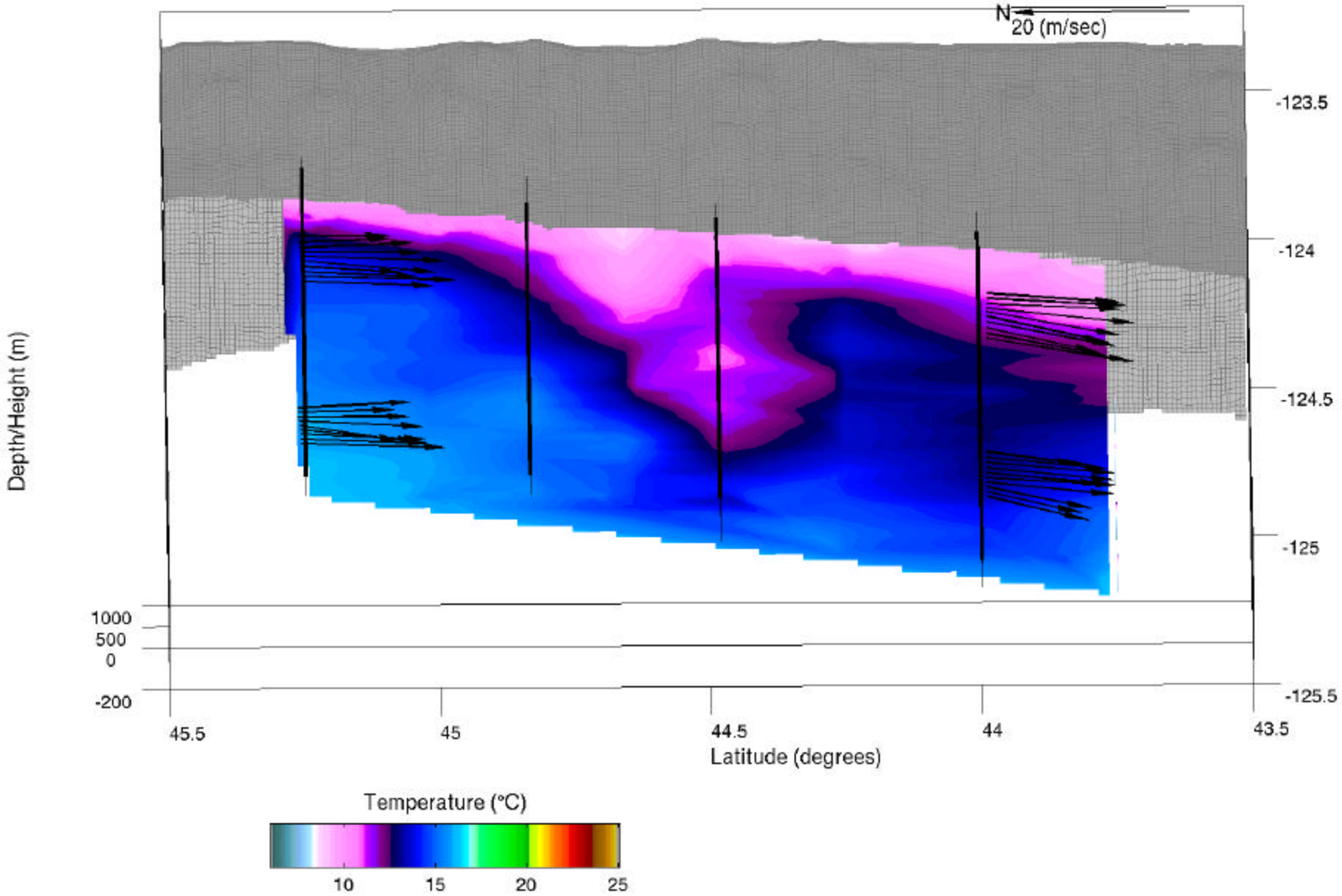
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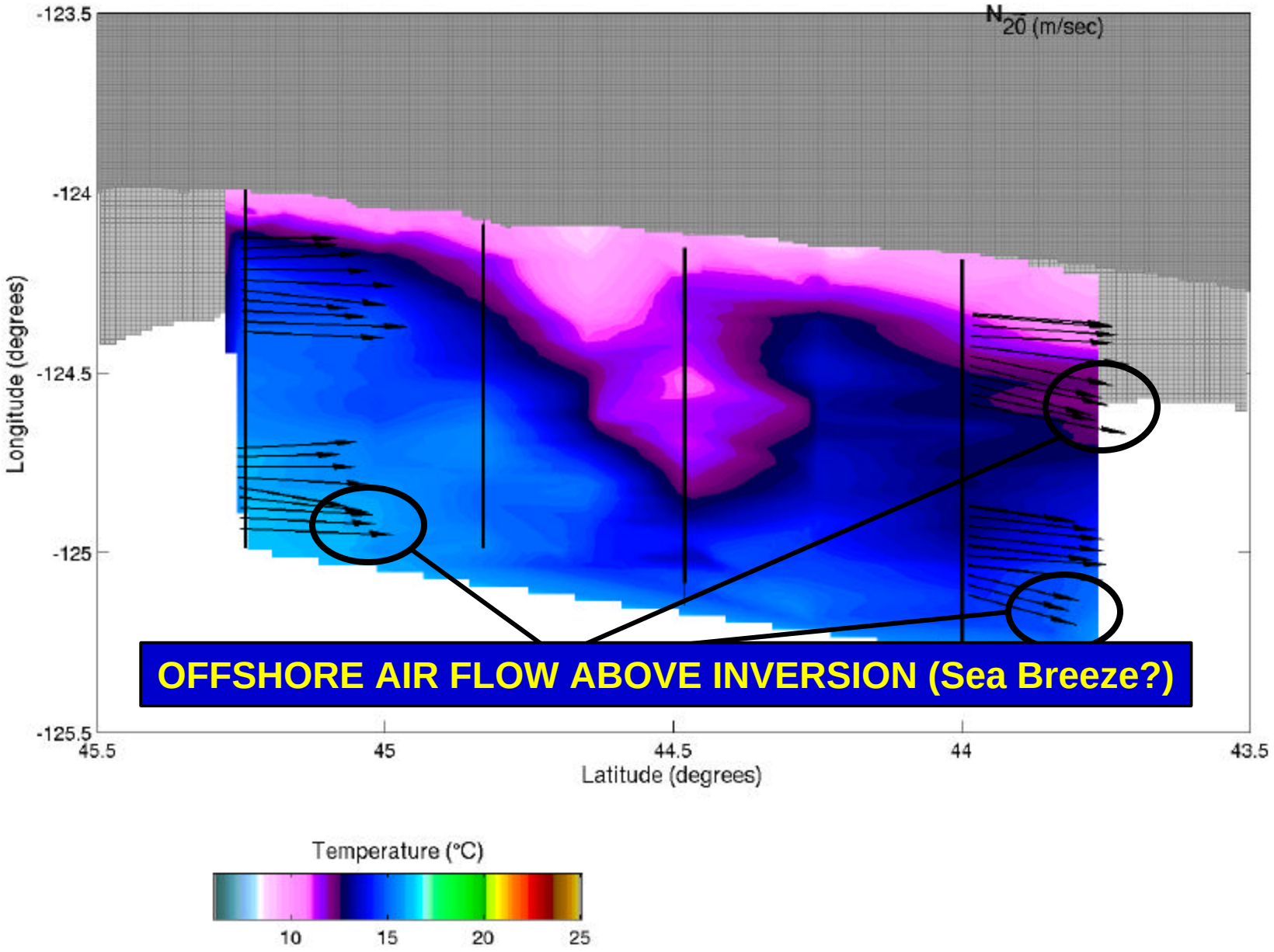
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OFFSHORE AIR FLOW ABOVE INVERSION (Sea Breeze?)
Temperature (°C)
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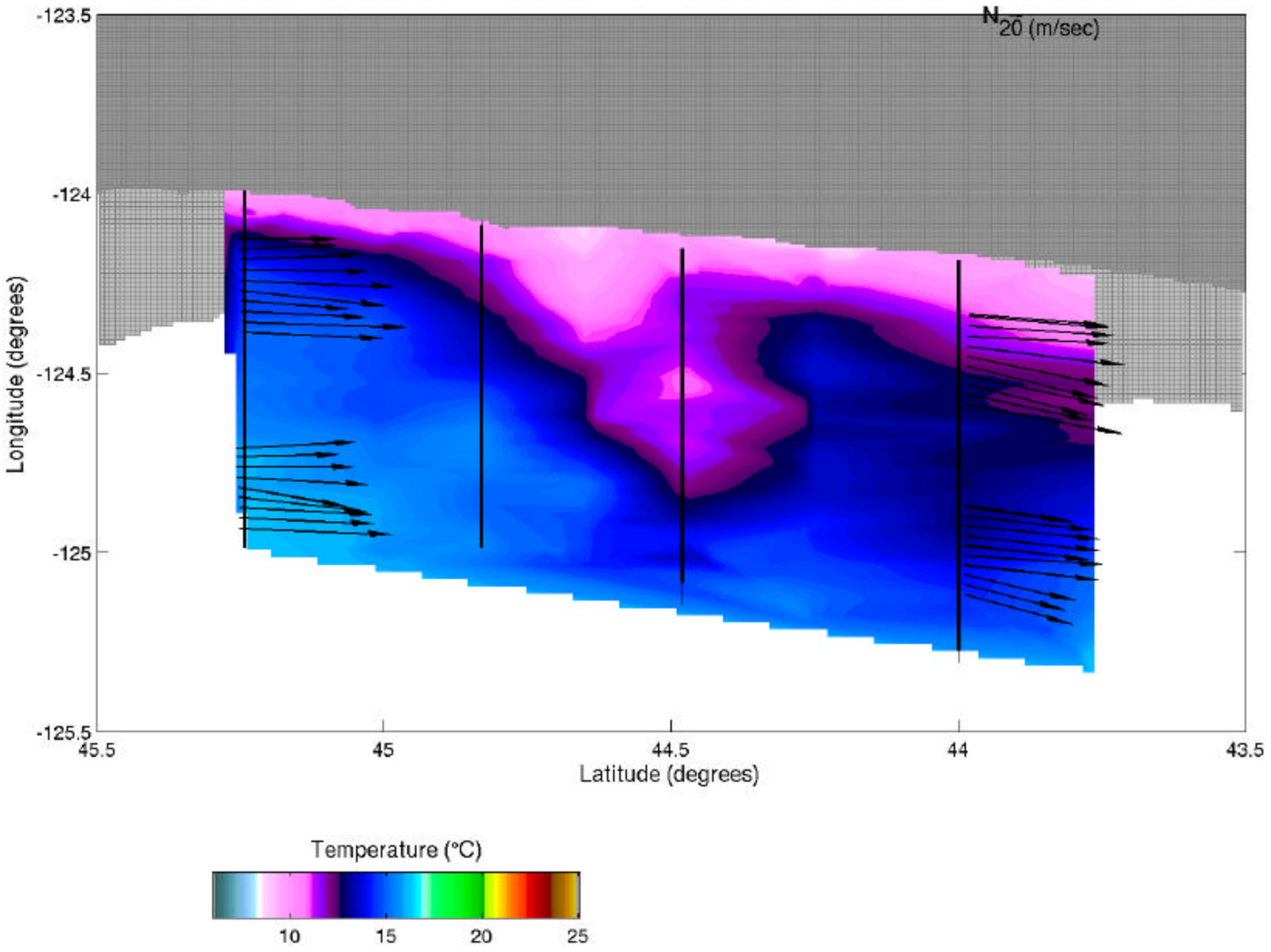
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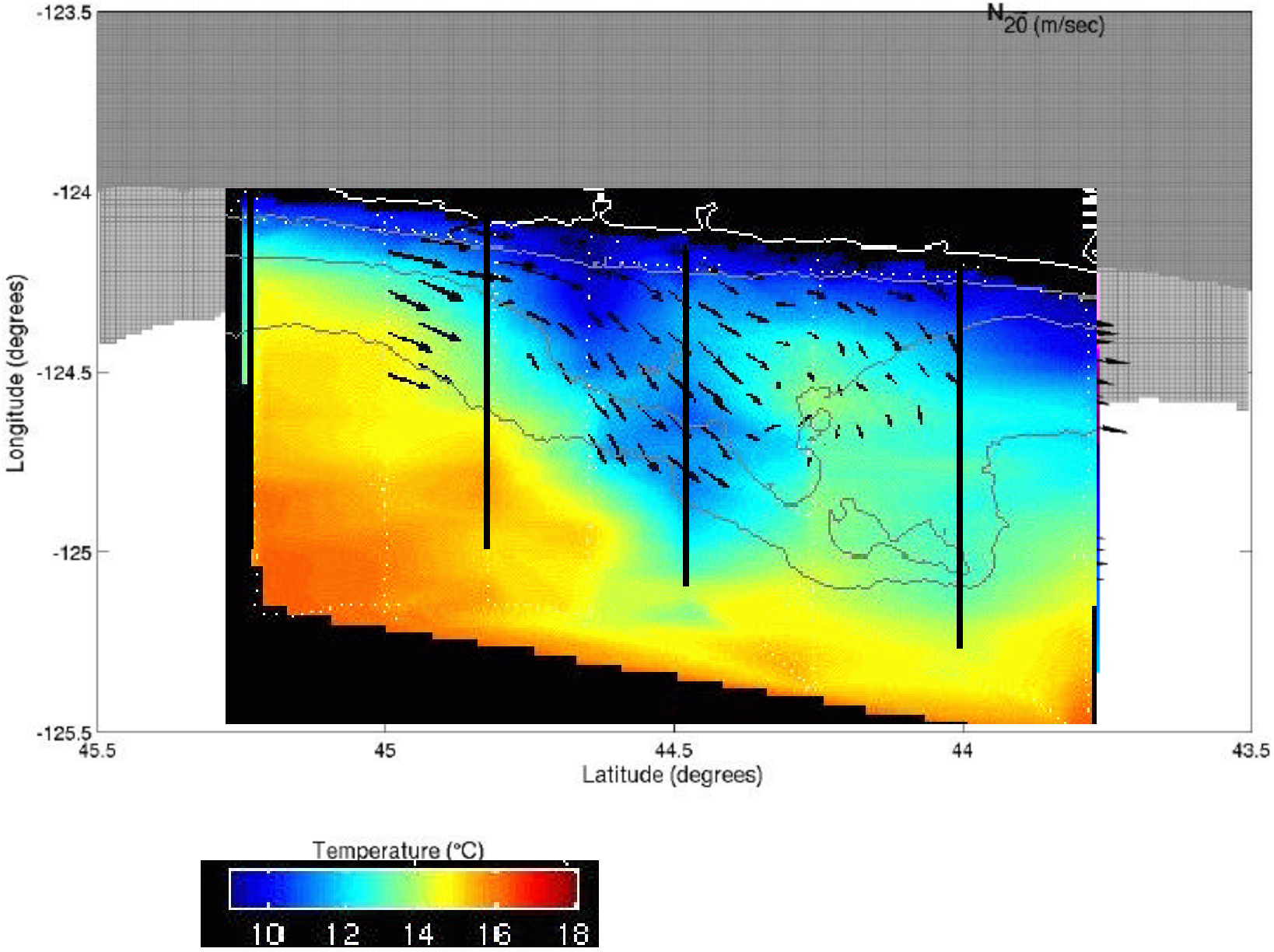
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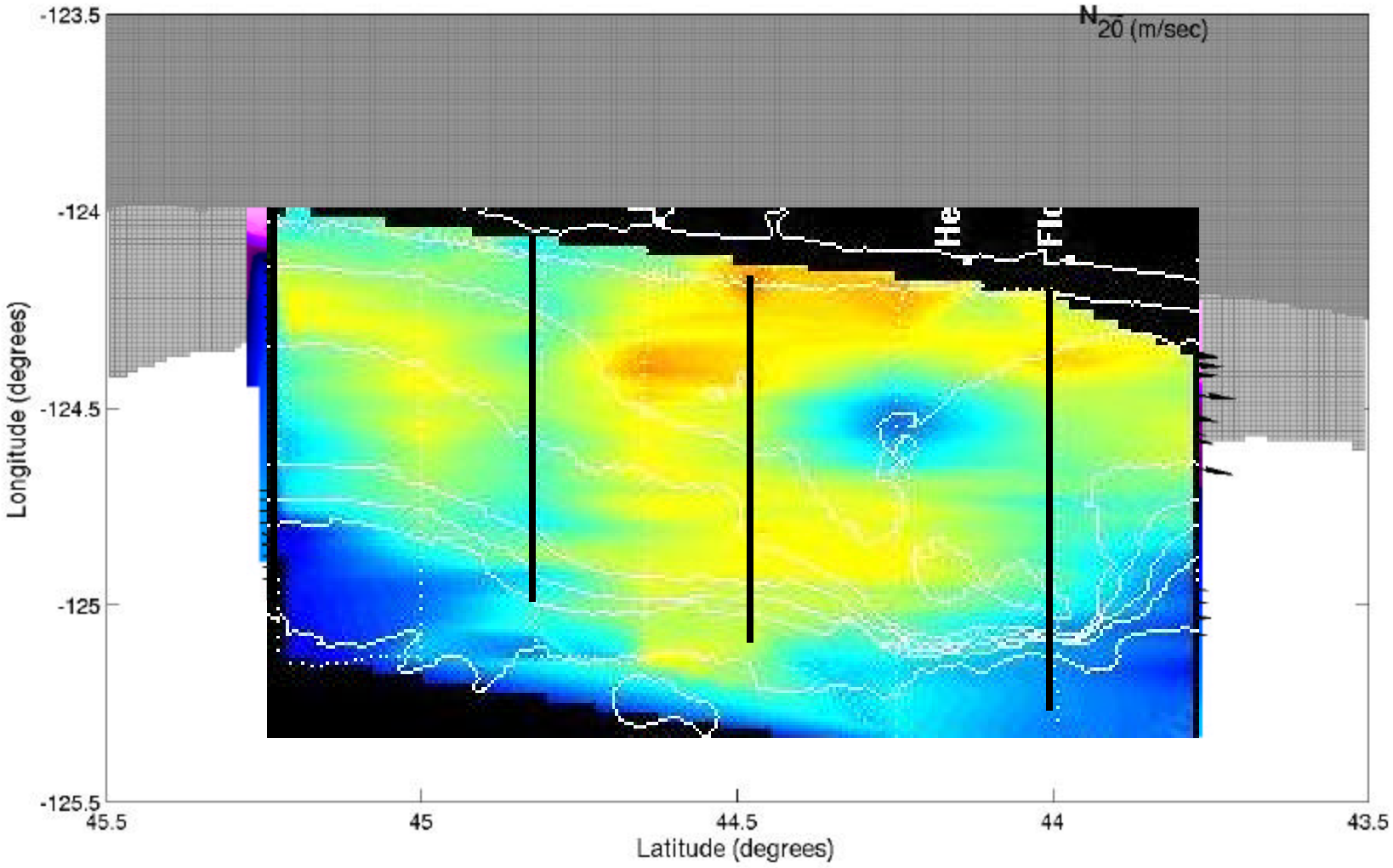
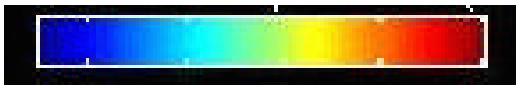
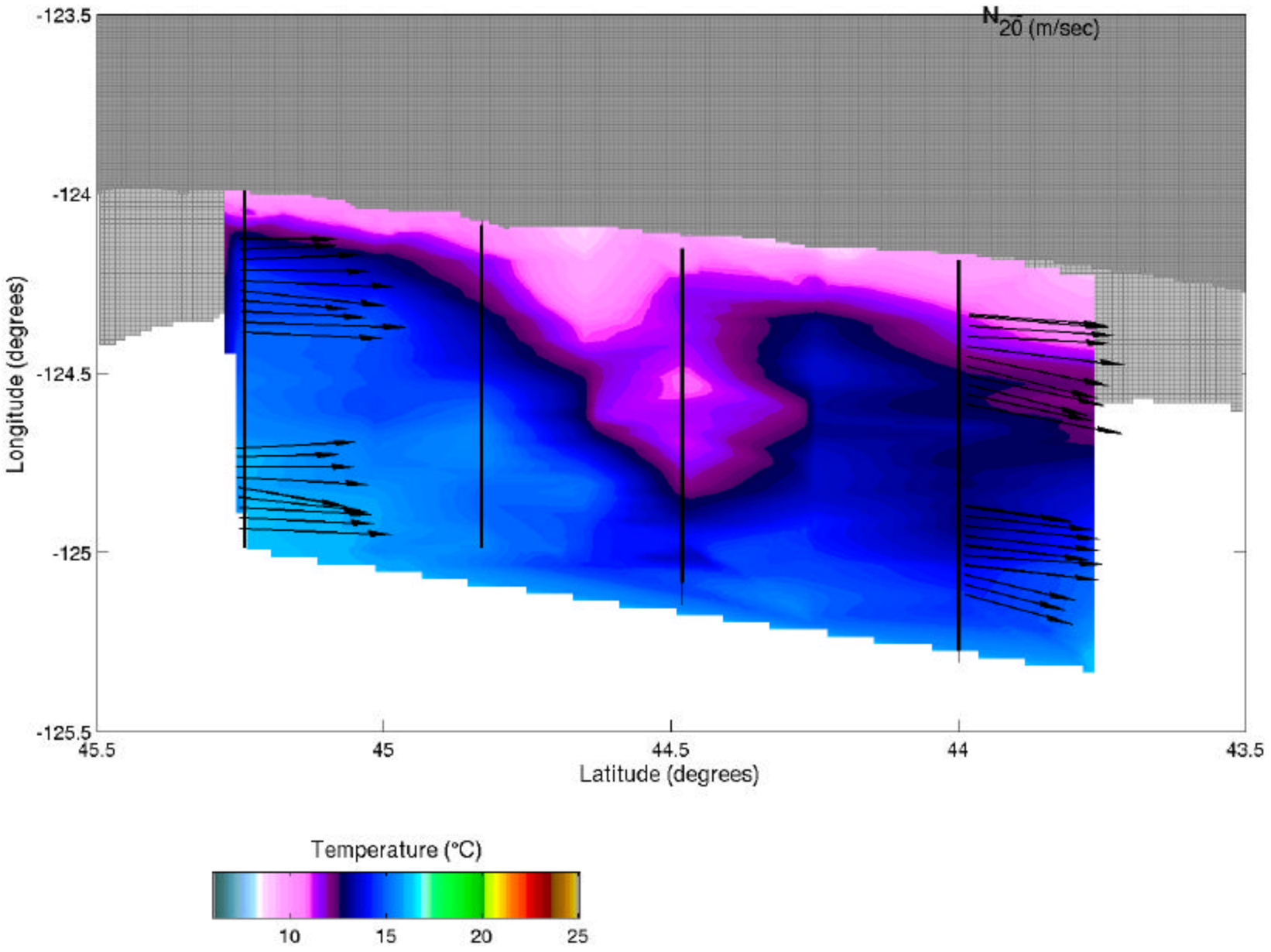


Chlorophyll (relative scale)

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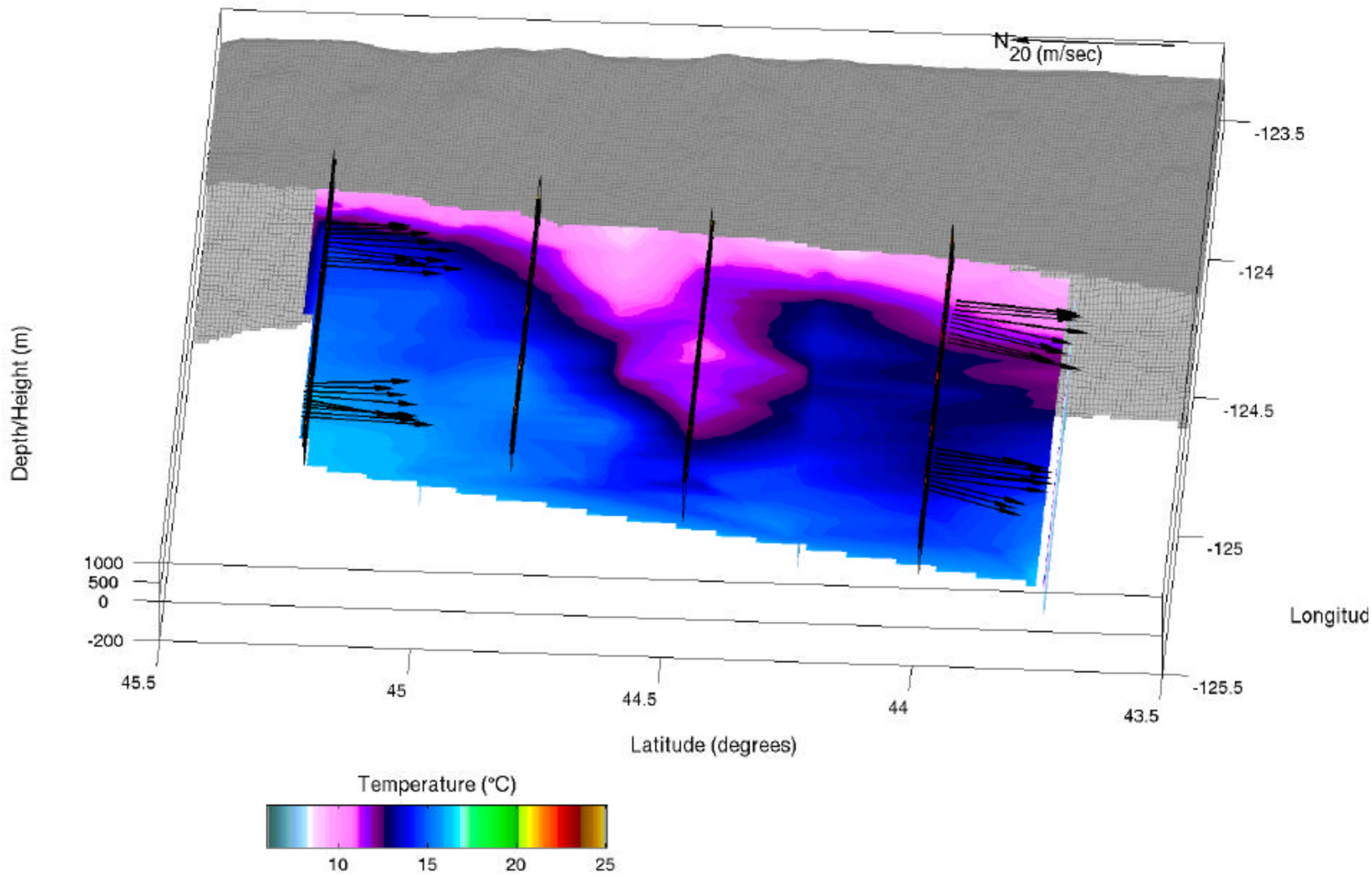
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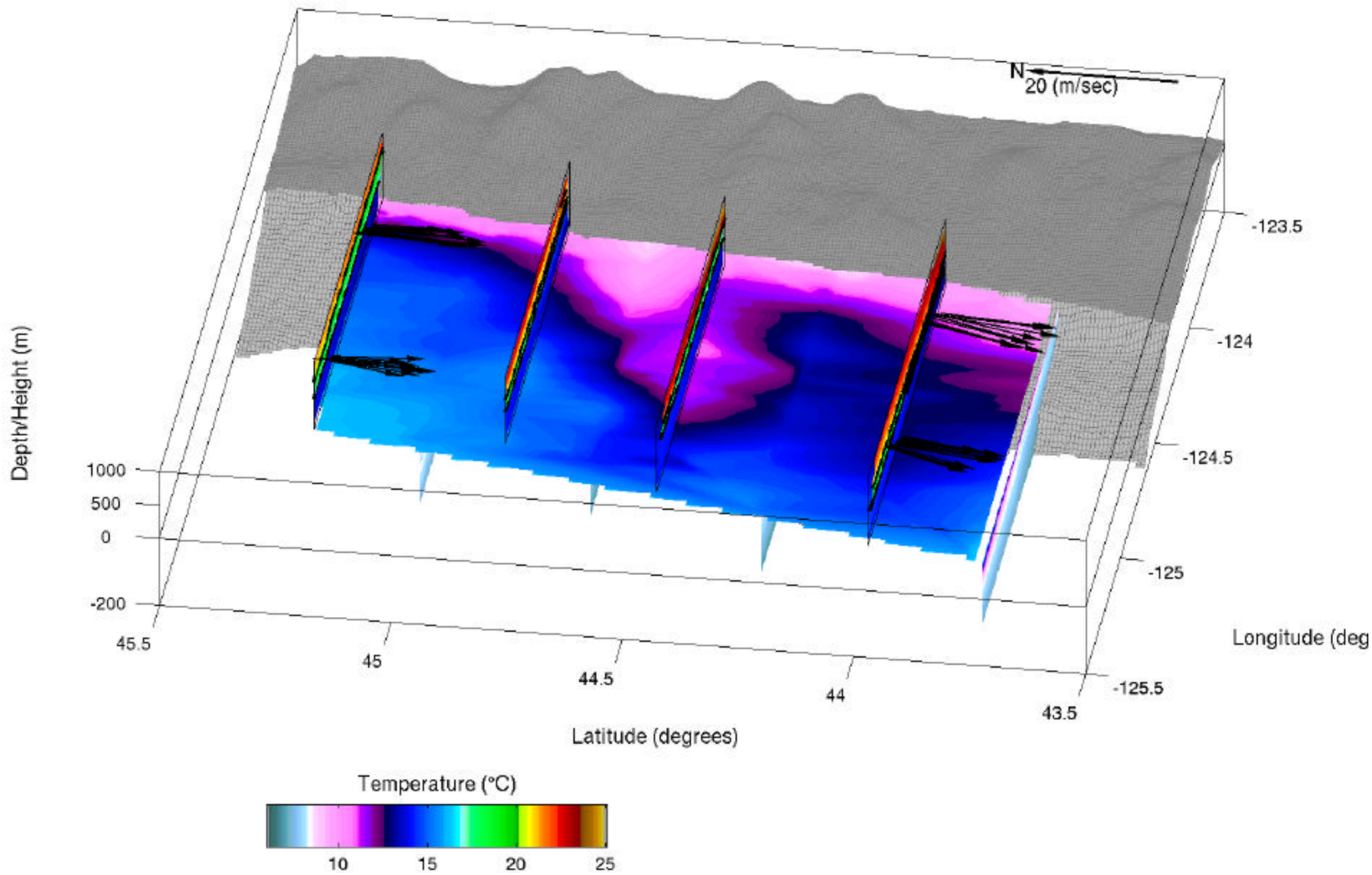
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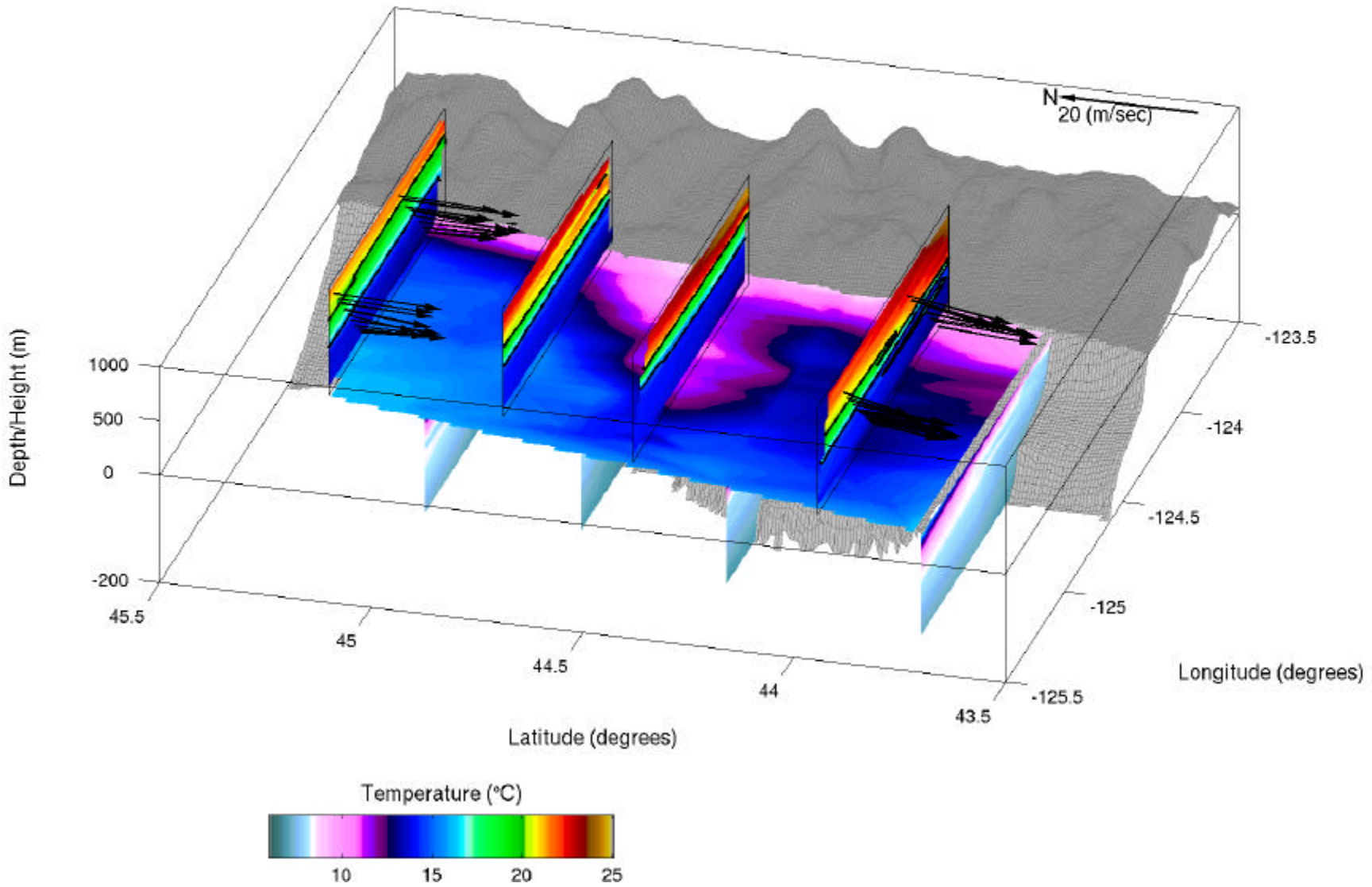
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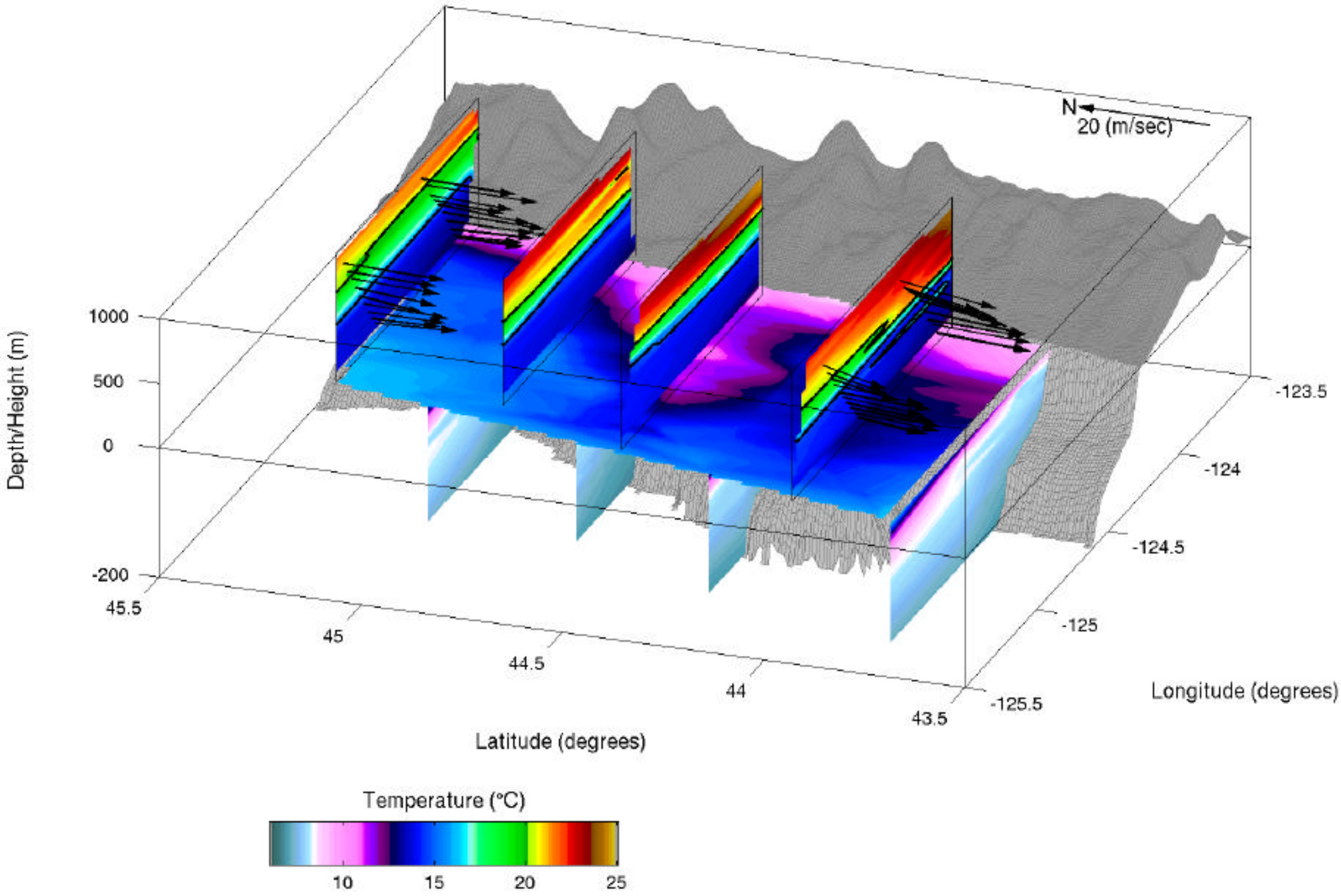
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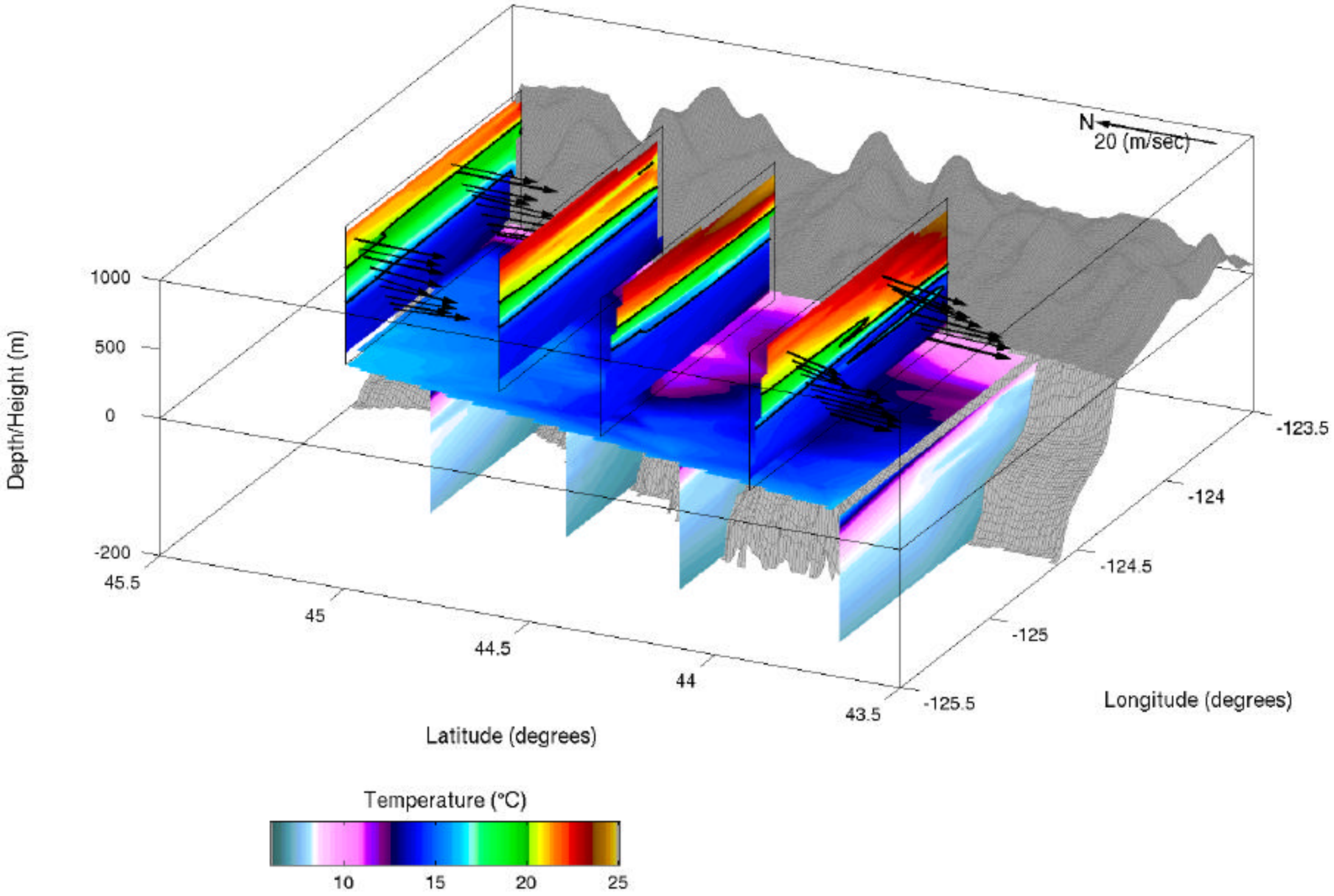
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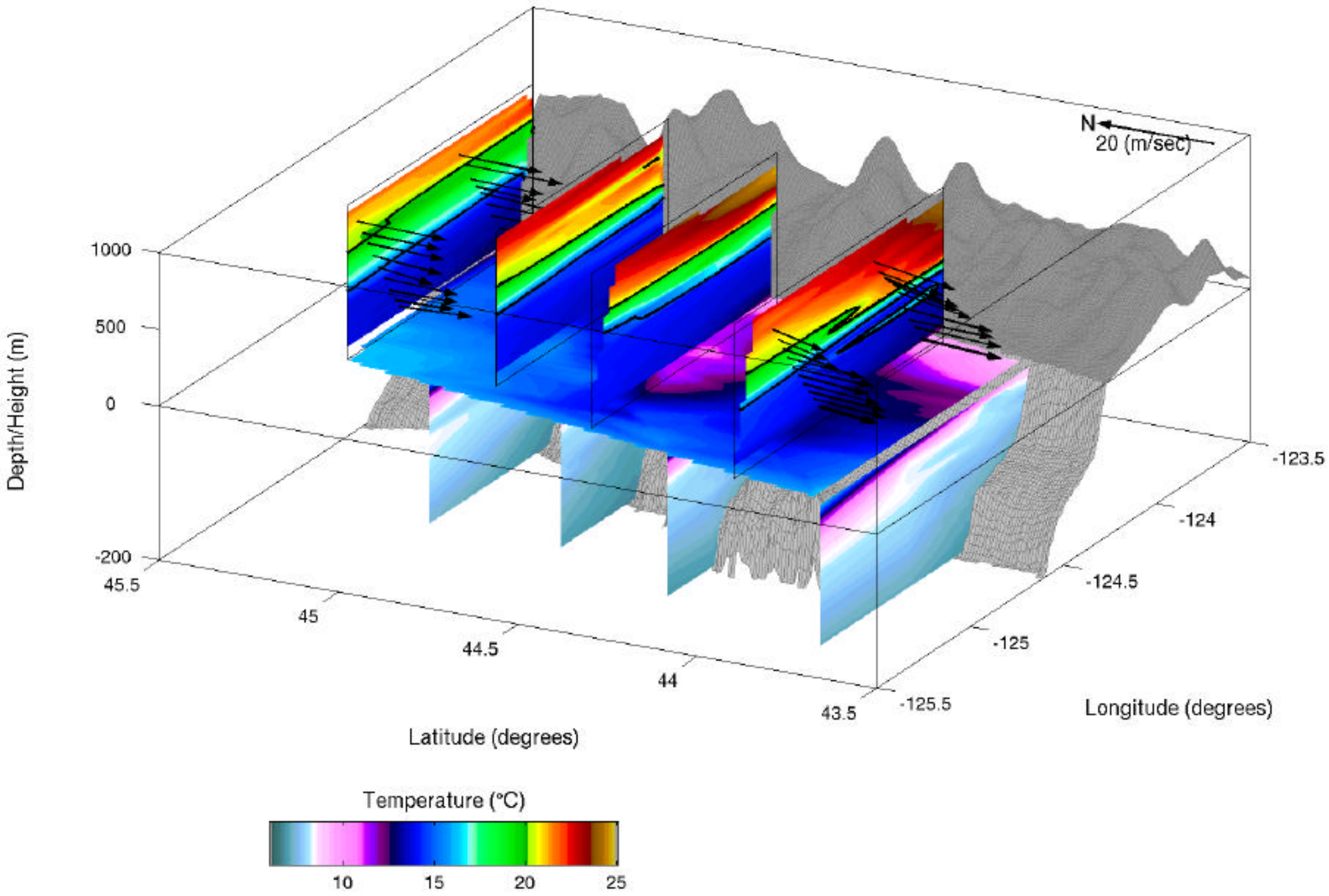
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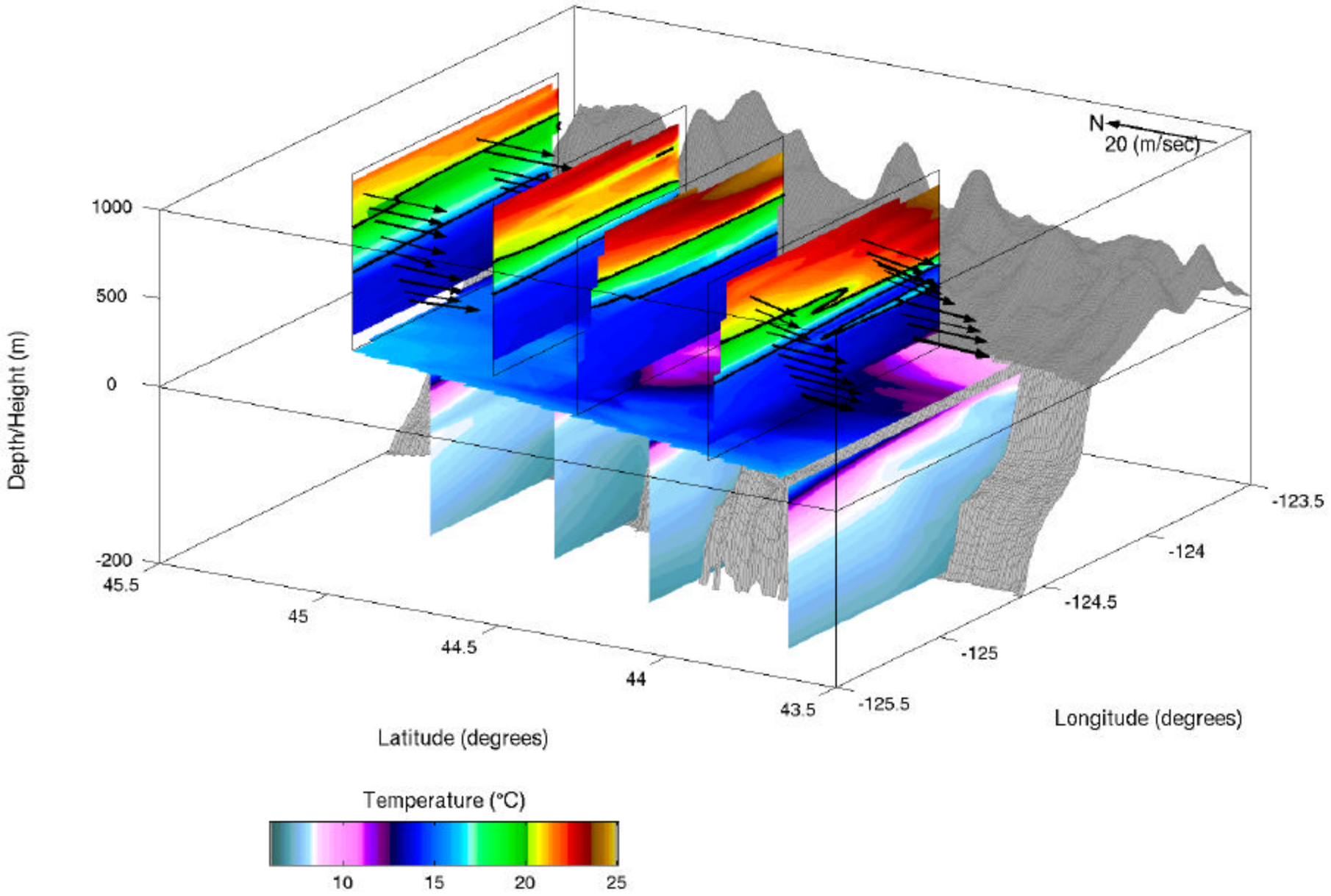
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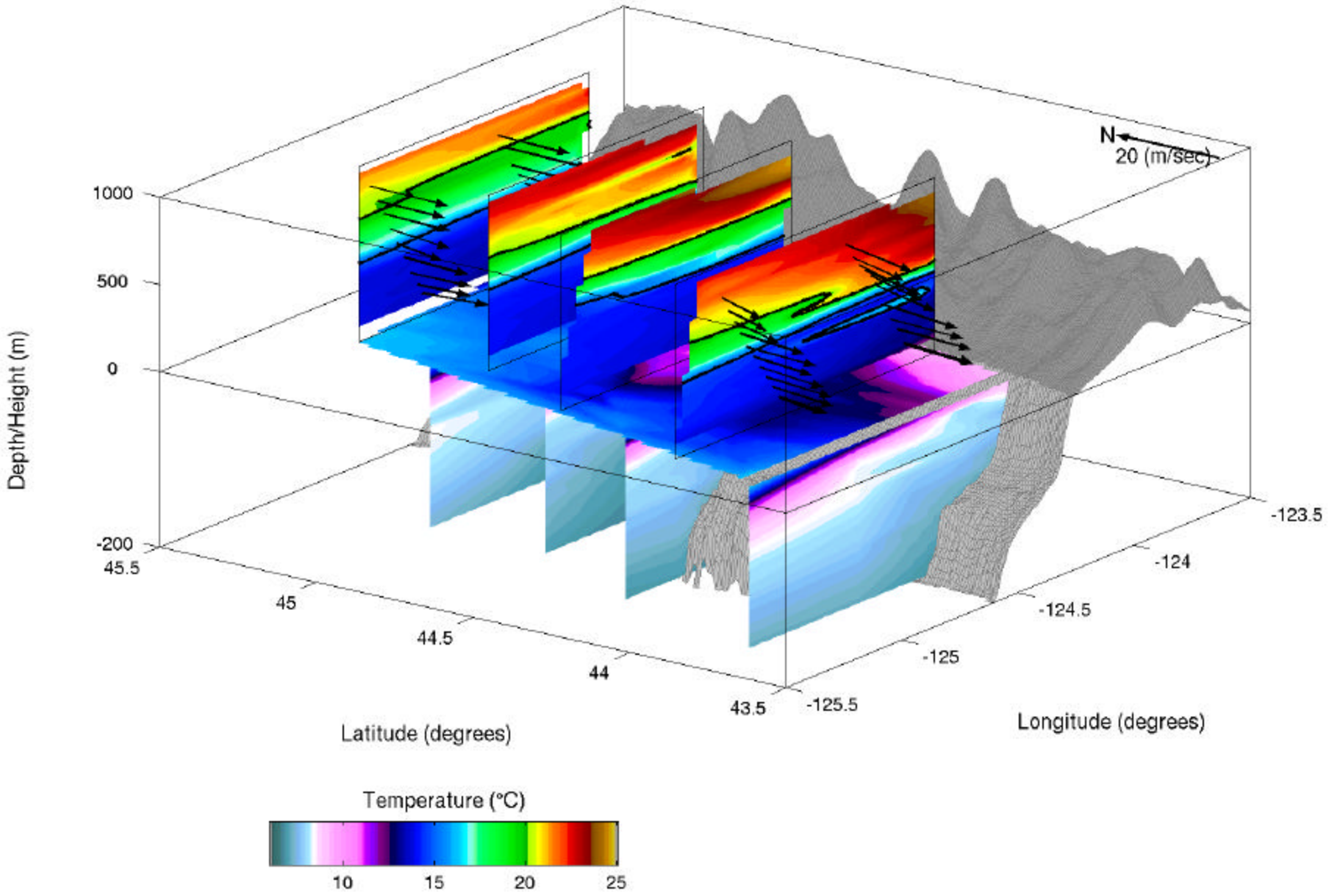
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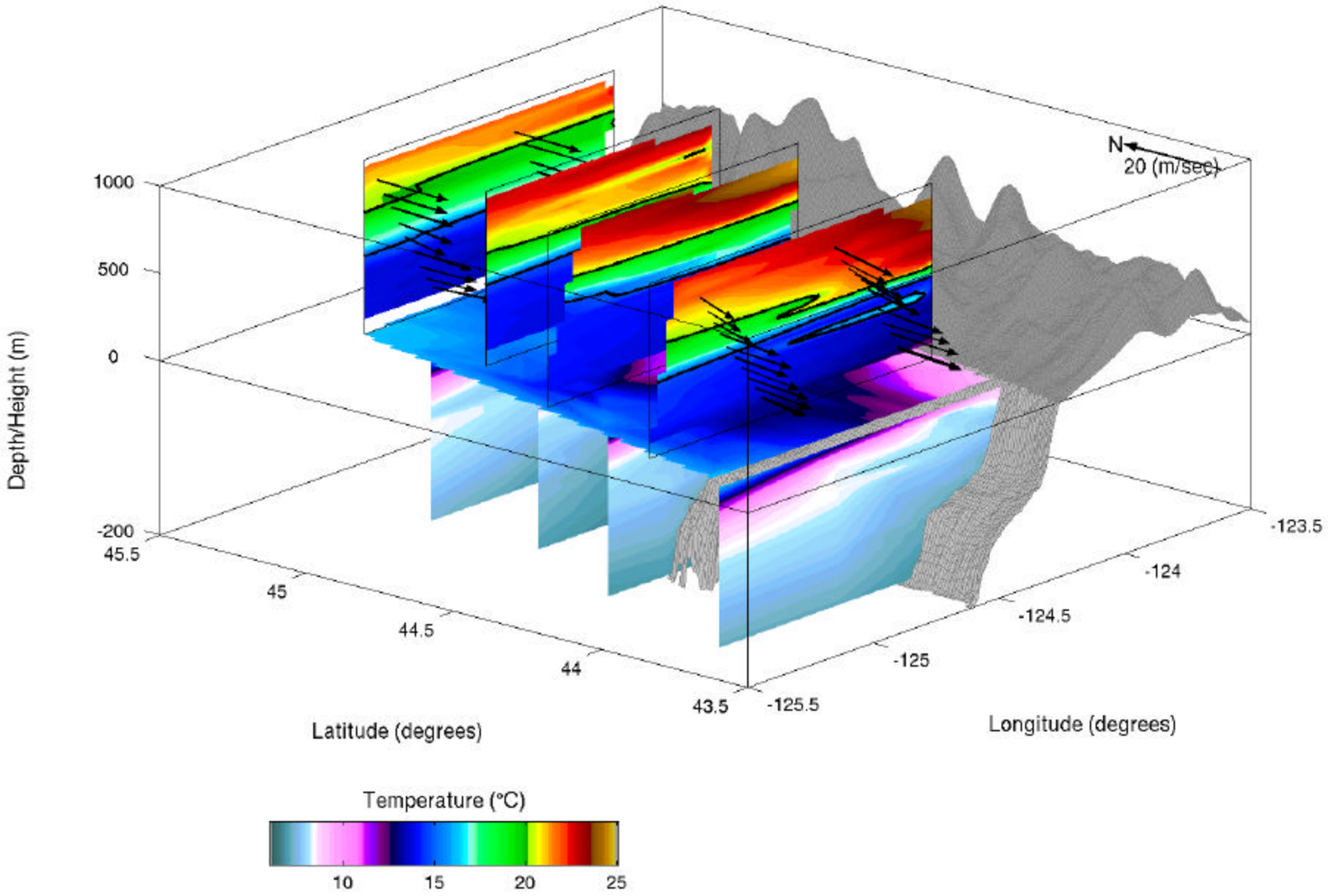
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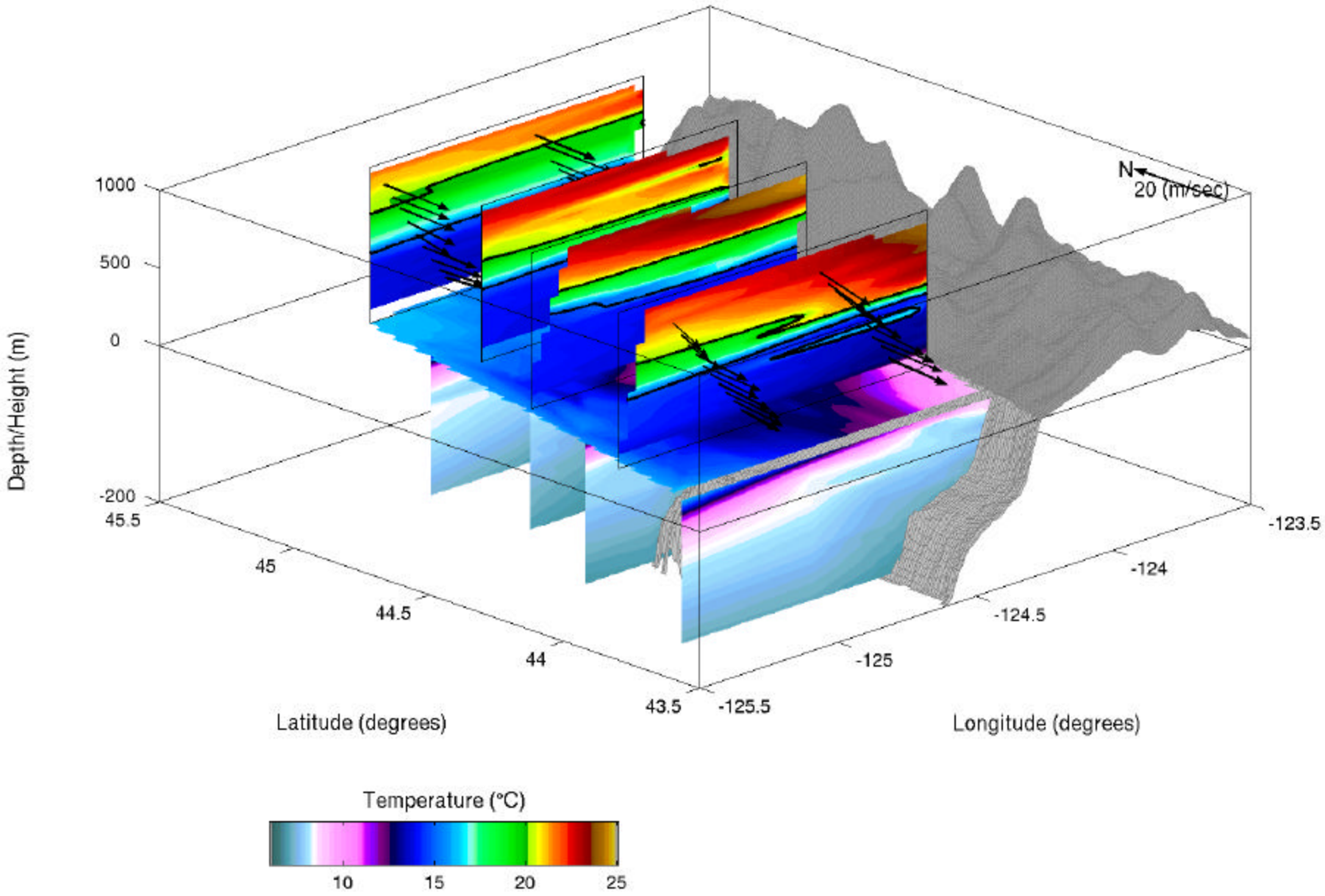
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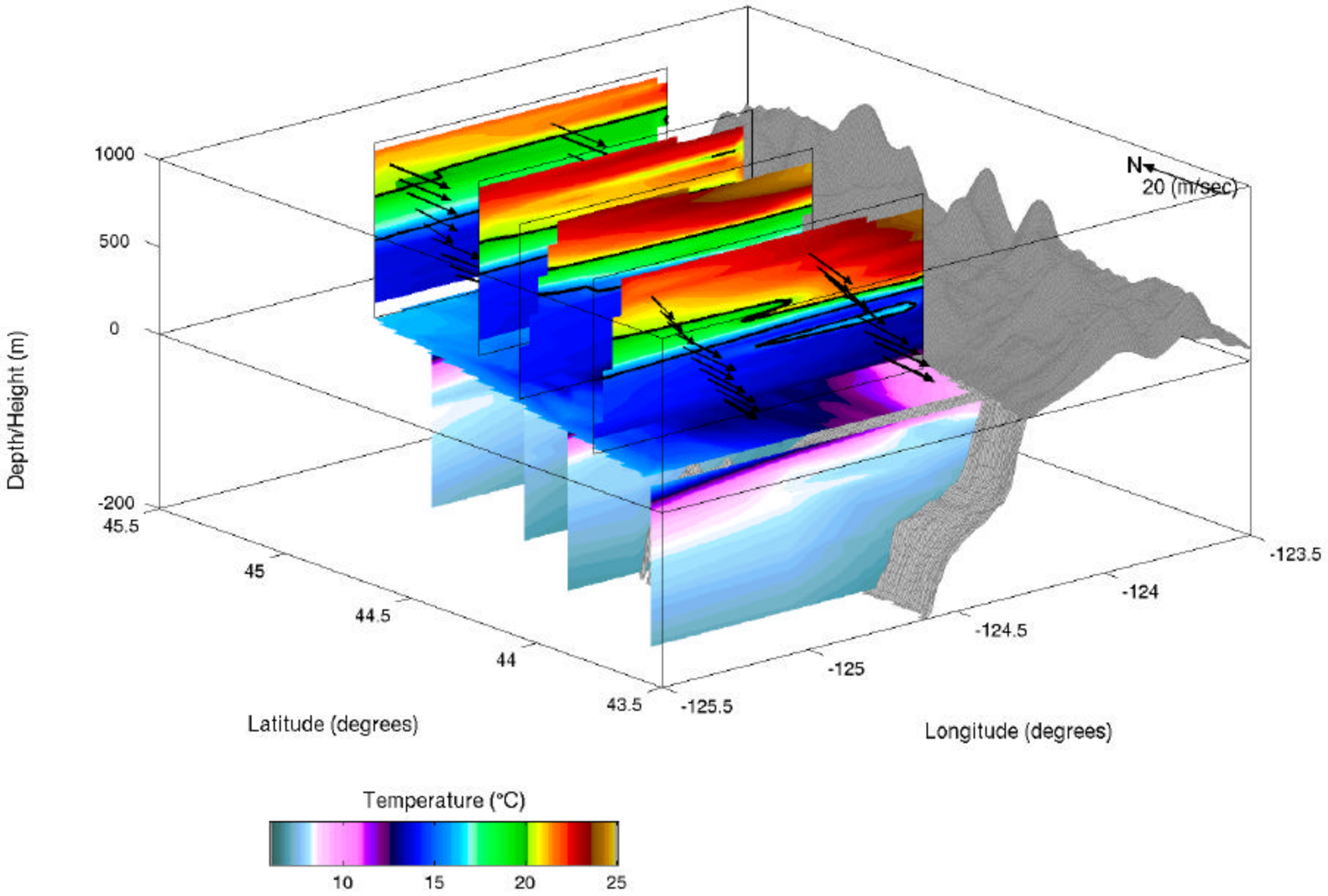
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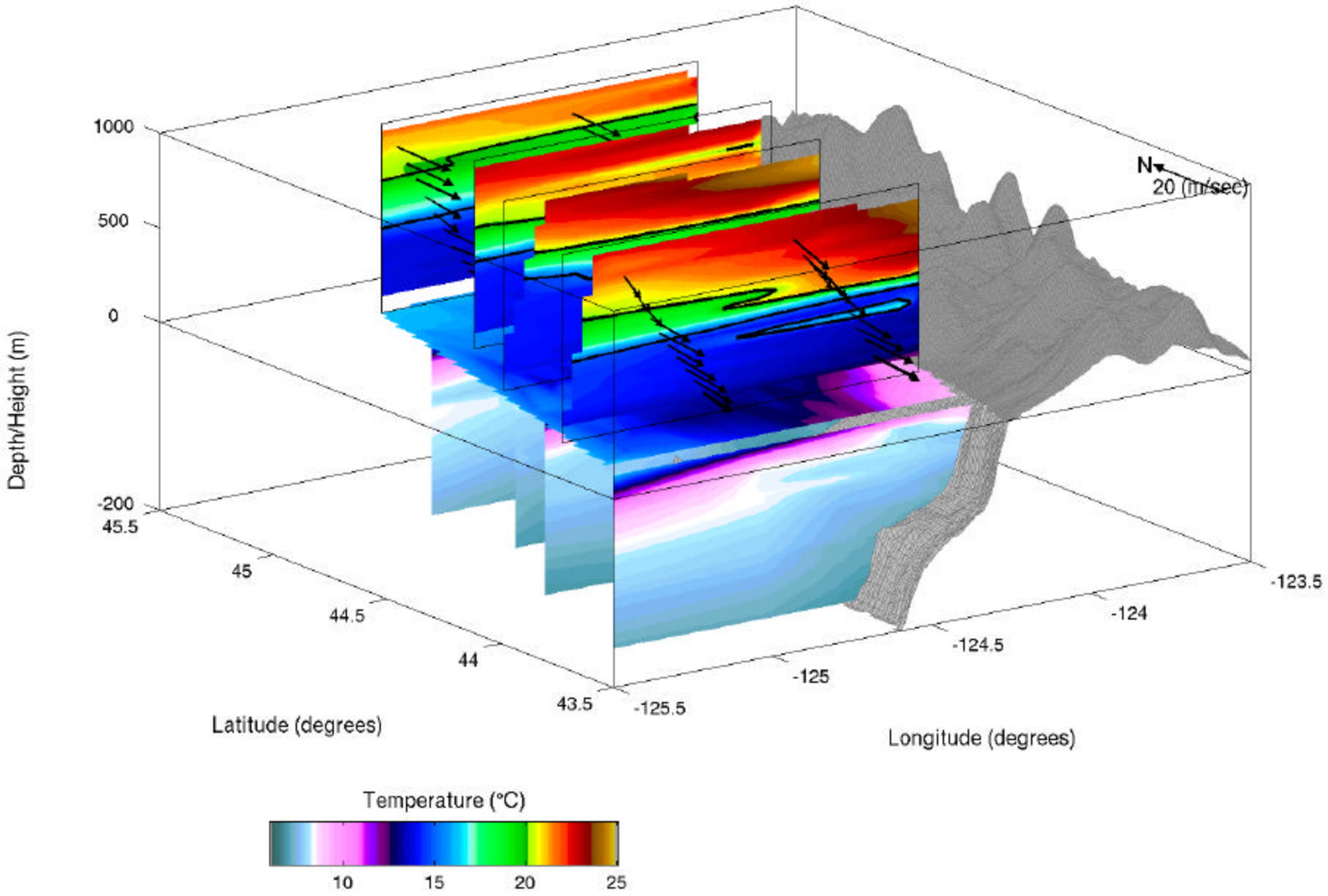
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Temperature (°C)
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Thank You

SCOAR

Departing Council and Committee Members

- Council:
  - Denis Wiesenburg, UAK
- DESSC:
  - David Mindell, MIT
- RVTEC:
  - Steve Poulos (Vice Chair), UHI - 2nd term ends 11/05

Thank you for your service to UNOLS!

Status of Alaska Region Research Vessel (ARRV) Design

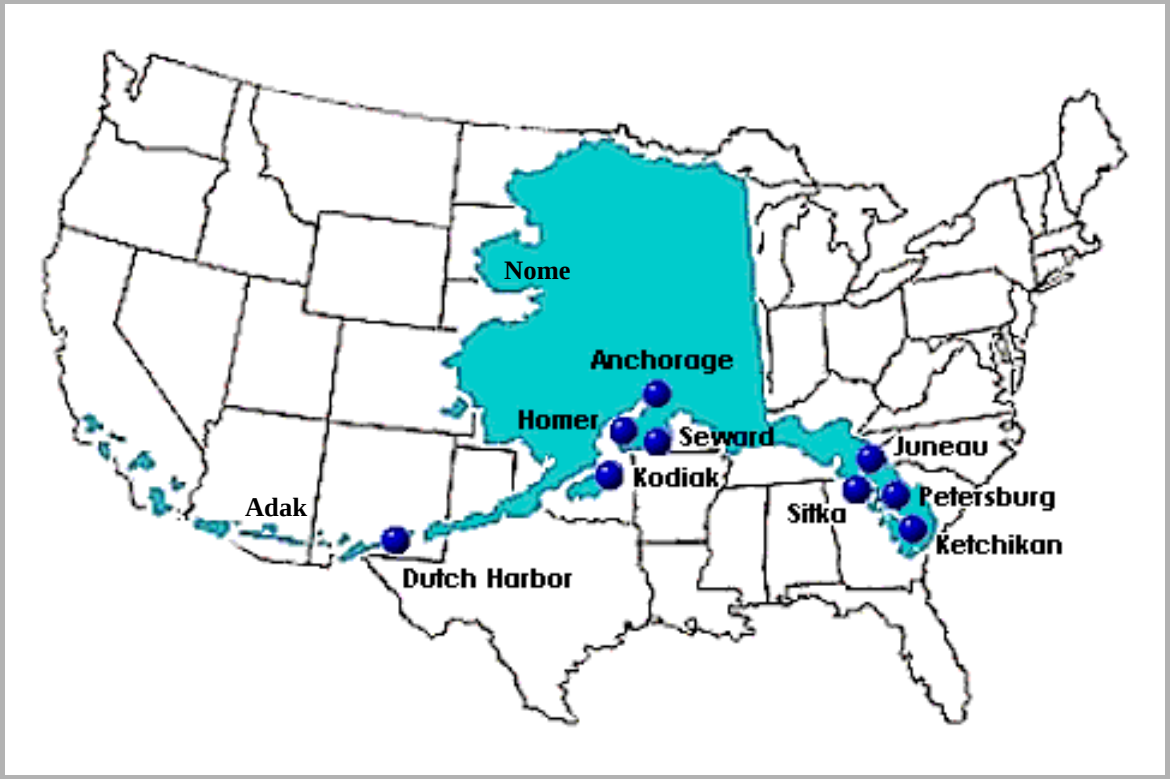
UNOLS Meeting
Washington, DC

October 13, 2005

Alaska In Perspective

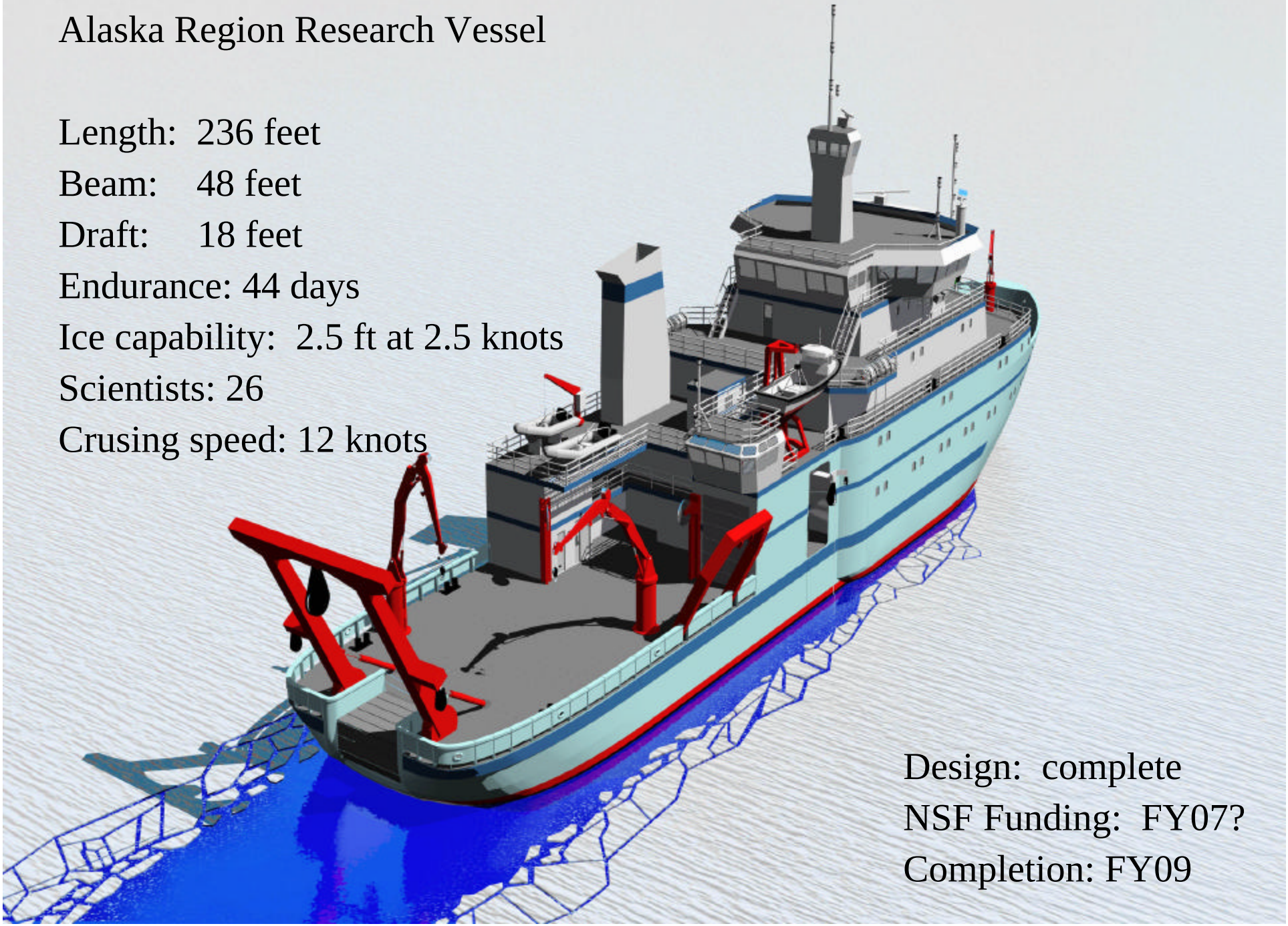
Huge Coastline Long Distances

Nasty Weather



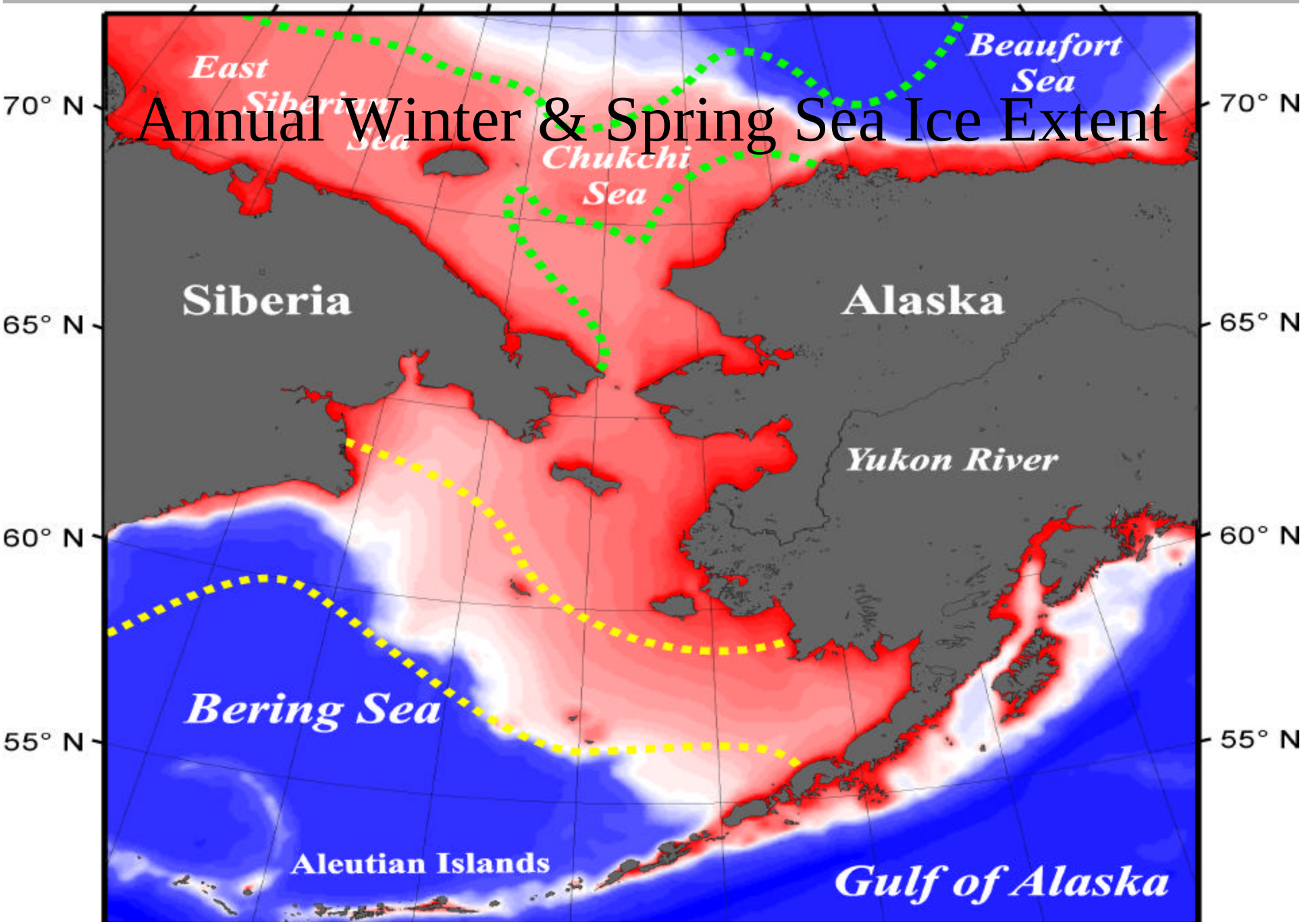
Alaska Region Research Vessel

Length: 236 feet
Beam: 48 feet
Draft: 18 feet
Endurance: 44 days
Ice capability: 2.5 ft at 2.5 knots
Scientists: 26
Crusing speed: 12 knots



Design: complete
NSF Funding: FY07?
Completion: FY09

Annual Winter & Spring Sea Ice Extent



Where Are We Now

- **Scientific Mission Requirements April 2001**
- **Concept Design – Aug 2001**
- **Model Testing – April 2002**
- **Preliminary Design – Jan 2003**
- **Construction Design – July 2004**
- **Design Submitted to NSF – December 2004**

Tasks Remaining before Construction

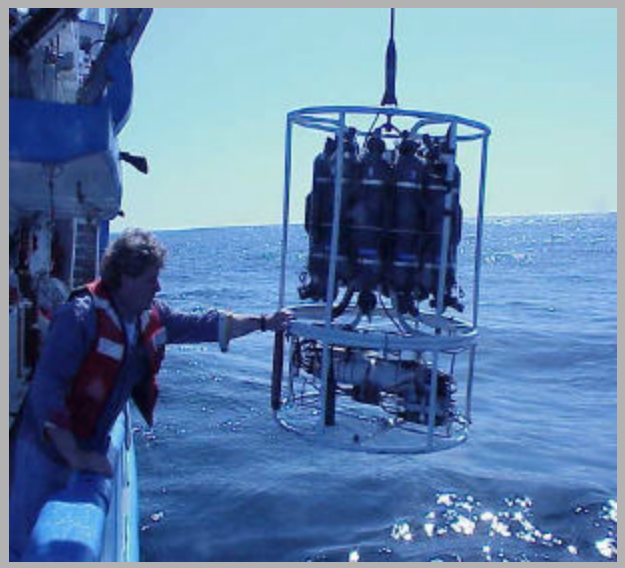
Final Design Spiral

Updated Science Instrumentation

Enhance ADA configuration

Update Science Justification

Encourage Community Support

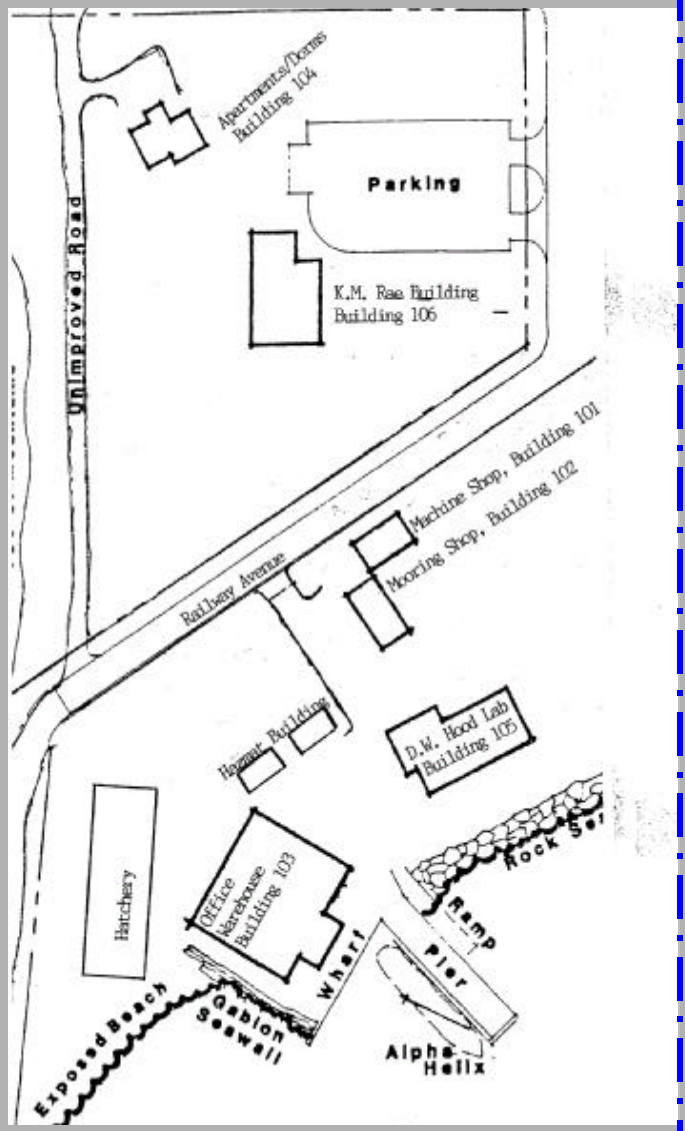


Seward Marine Center

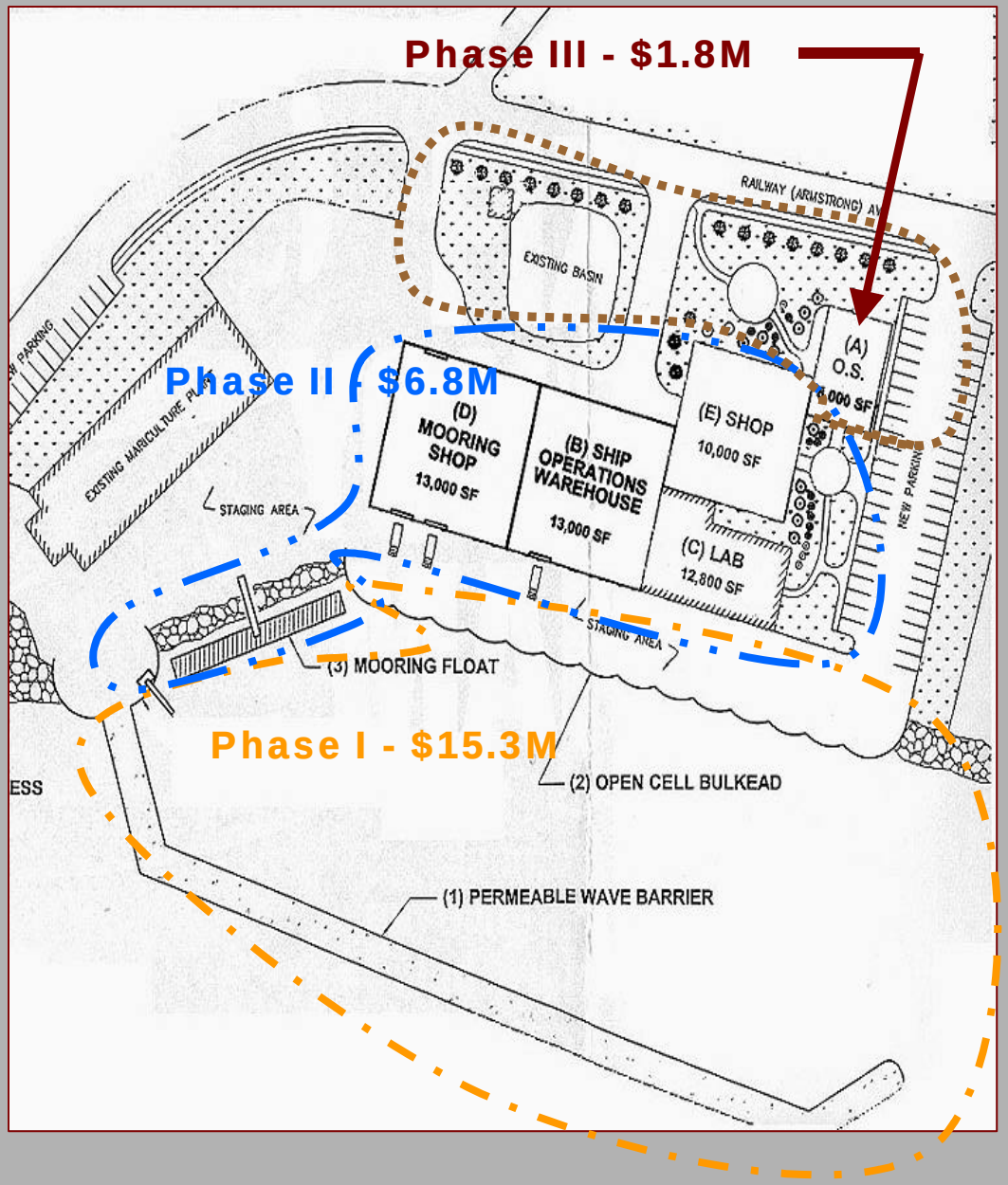
ARRV Support Needs

- All Weather Dock
- Dedicated Warehouse
- Shops
- Administrative Offices

Current Facility

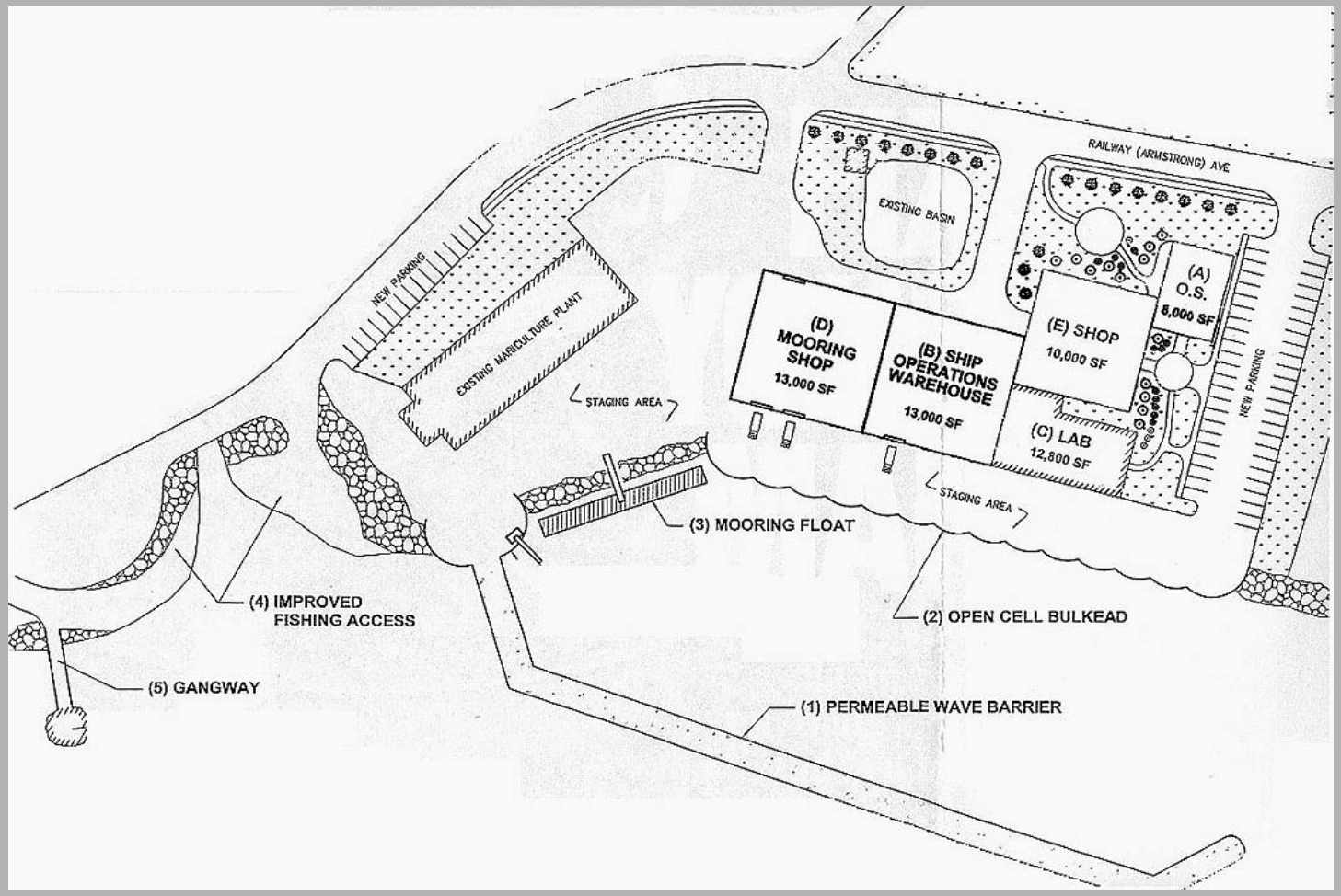


Proposed Facility



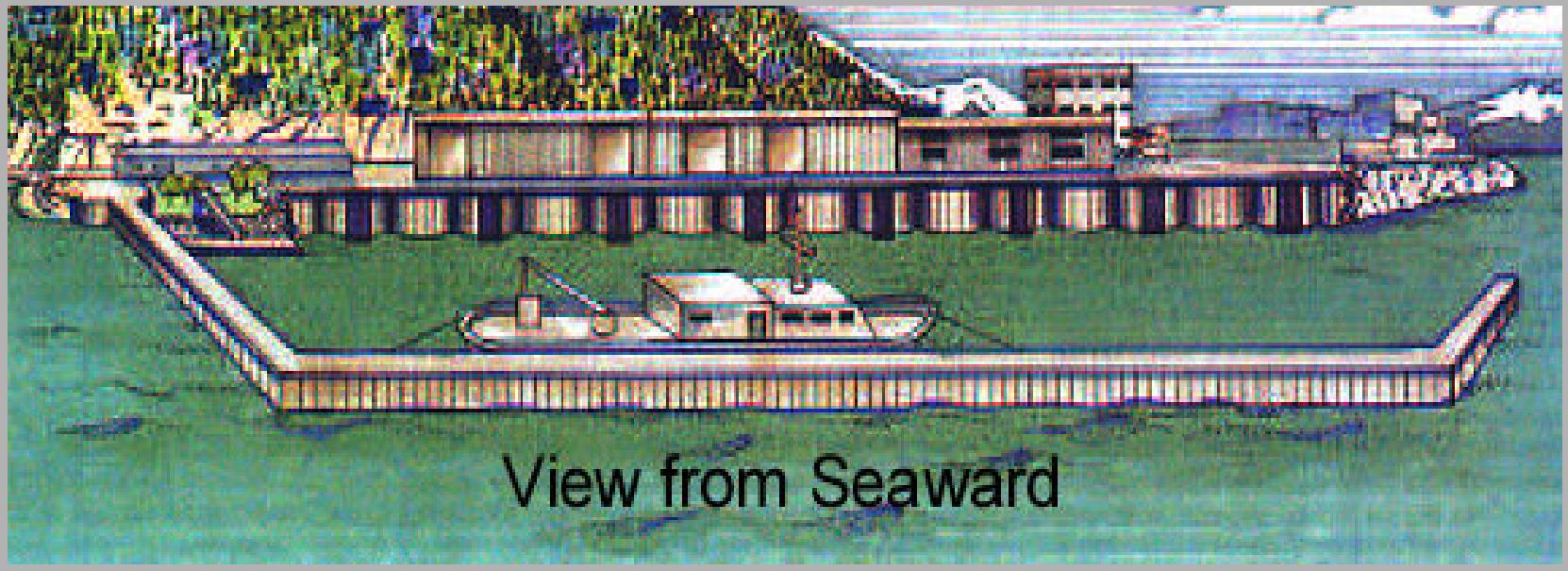
Seward Marine Center

Conceptual Plan



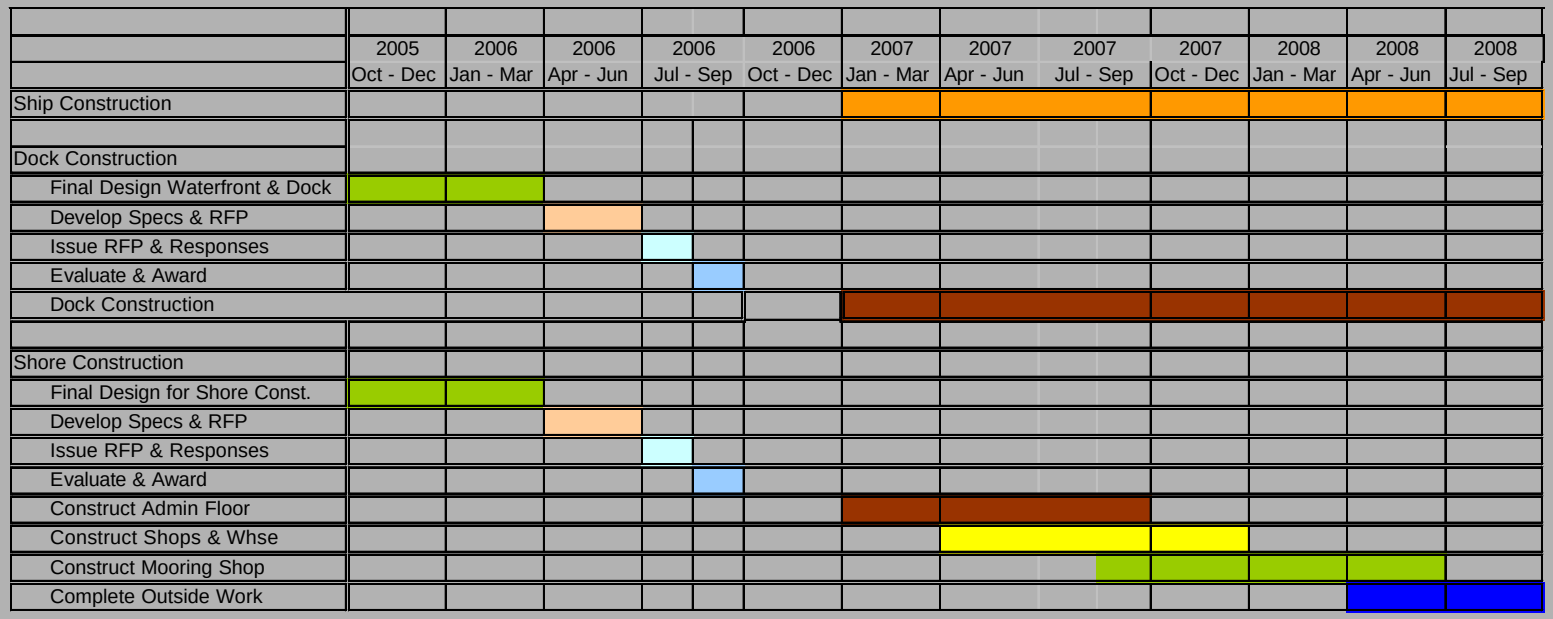
Seward Marine Center

Conceptual Plan



Seward Marine Center

Ship & Dock Construction Timeline



R/V Alpha Helix

R/V HUGH R. SHARP
(UNOLS Annual Meeting – October 2005)

CURRENT SCHEDULE

- CAPE HENLOPEN retired from service October, 2005
- New Vessel delivered to east coast early December, 2005
- Cross-deck/final outfitting period December '05 – February '06
- New Vessel to begin operations in late March 2006 following NSF Inspection and final test & trials in Lewes.

Preliminary Acoustic Trials
(September 2005 in Puget Sound)

- NCE conducted extensive airborne, vibration, and underwater radiated noise measurements while vessel was underway.

  Underwater radiated noise goal:

  Below the ICES curve at 8.0 knots

- Preliminary results appear to be excellent.

  - Significant propeller cavitation does not appear until ~10.0 knots.
  - 60 dB reduction in gen-set noise transmission to hull from double-stage raft.

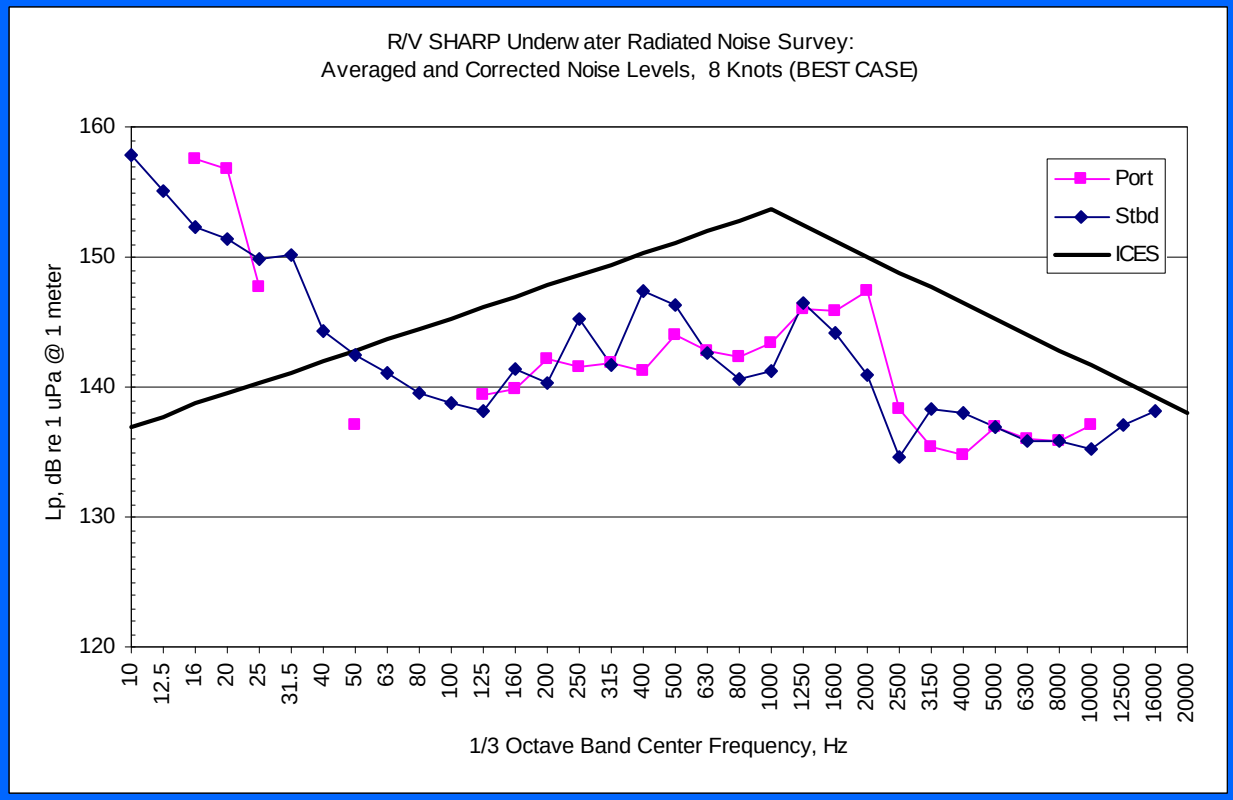
- Only machinery excess is “gear mesh” tone from Z-drives.

  - To be remedied by adding additional noise treatments to hull in motor room.
  - Working with Schottel to ensure not a mechanical problem.

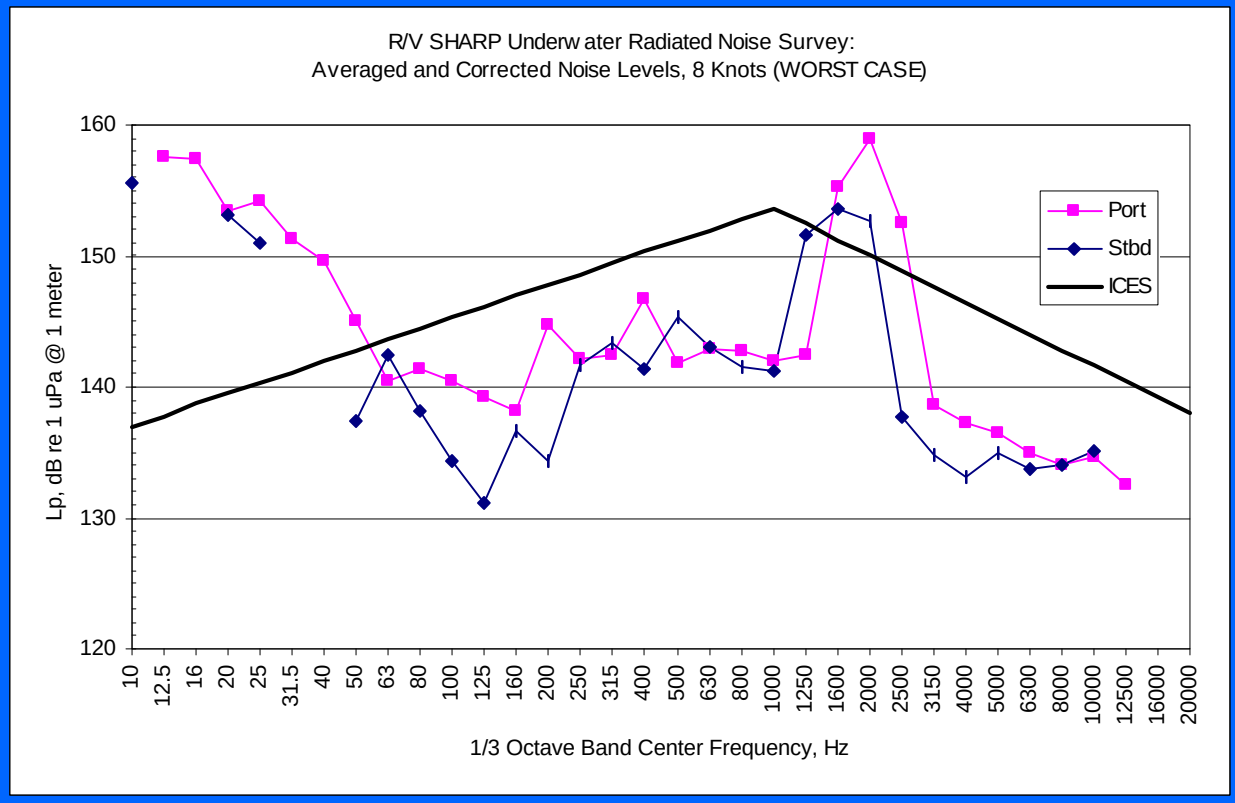
- Formal acoustic trials planned for late October at Dabob Bay.

  (Submarine/torpedo test range near Seattle).

Comparison to ICES Curve
(Best run at 8.0 knots)



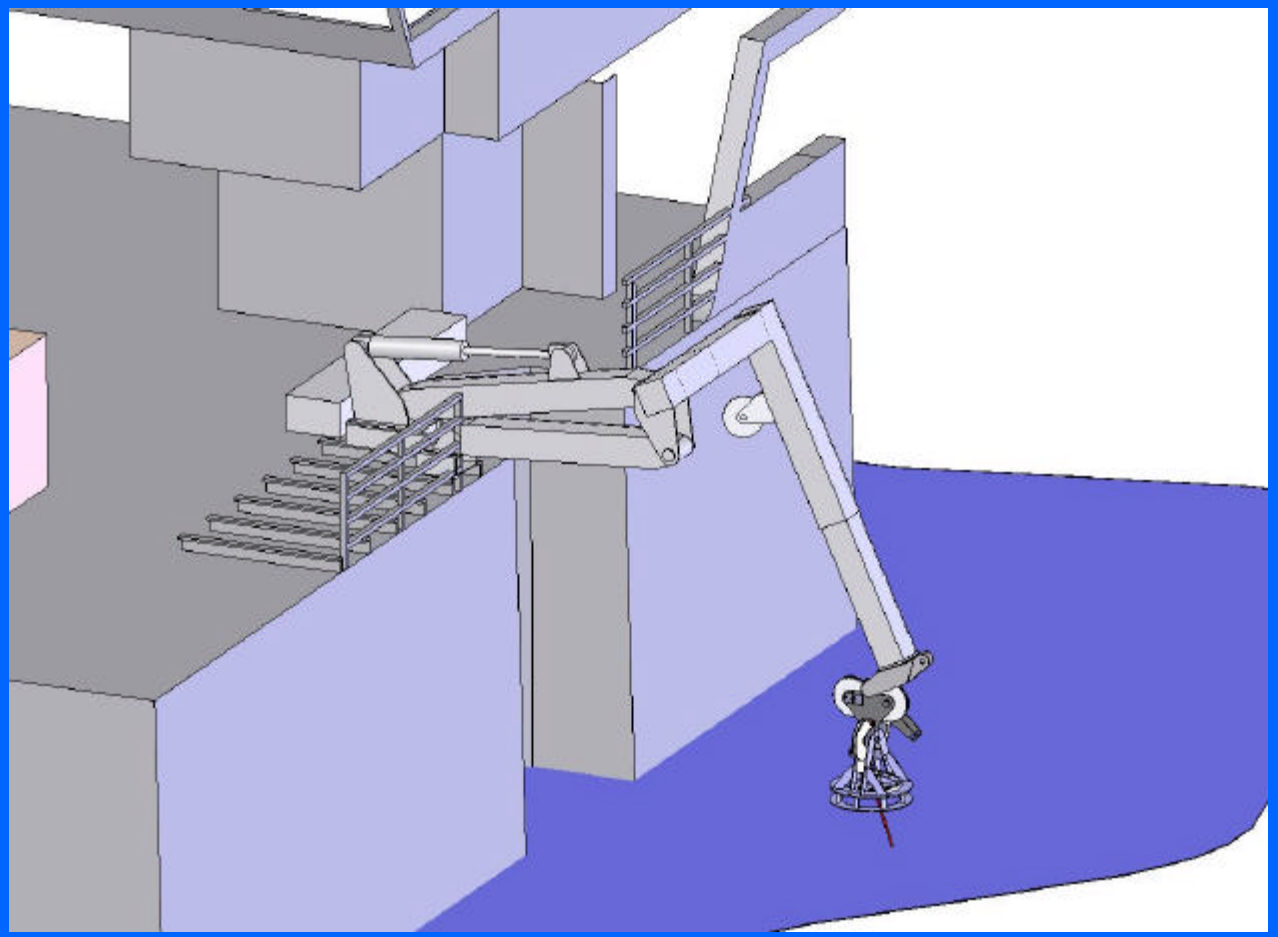
Comparison to ICES Curve
(Worst run at 8.0 knots)



CTD Handling System
(Caley Ocean Systems)

- "Next Generation" system based on results of UNOLS Load Handling System Study.
- All-electric AC winch.
- Motion Compensation by winch pay-in/pay-out and MRU.
- Docking Head with "Auto-Tension" capability to capture the science package.
- "Slip Mode" – pay out under tension when towing.
- Delivered in January 2006.

CTD Handling System
(Caley Ocean Systems)

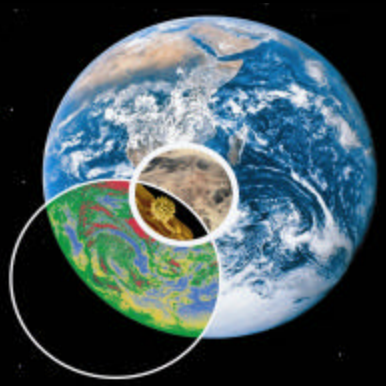


Launch - July 16th

Preliminary Acoustic Trials

Preliminary Acoustic Trails

More to follow…



R/V Marcus G. Langseth Conversion

UNOLS report, 14 October 2005

Quonset Pt, RI

R/V Marcus G. Langseth, 2006

R/V Marcus G. LANGSETH

Principal mission is multichannel seismics in support of NSF-funded science.

What's new?

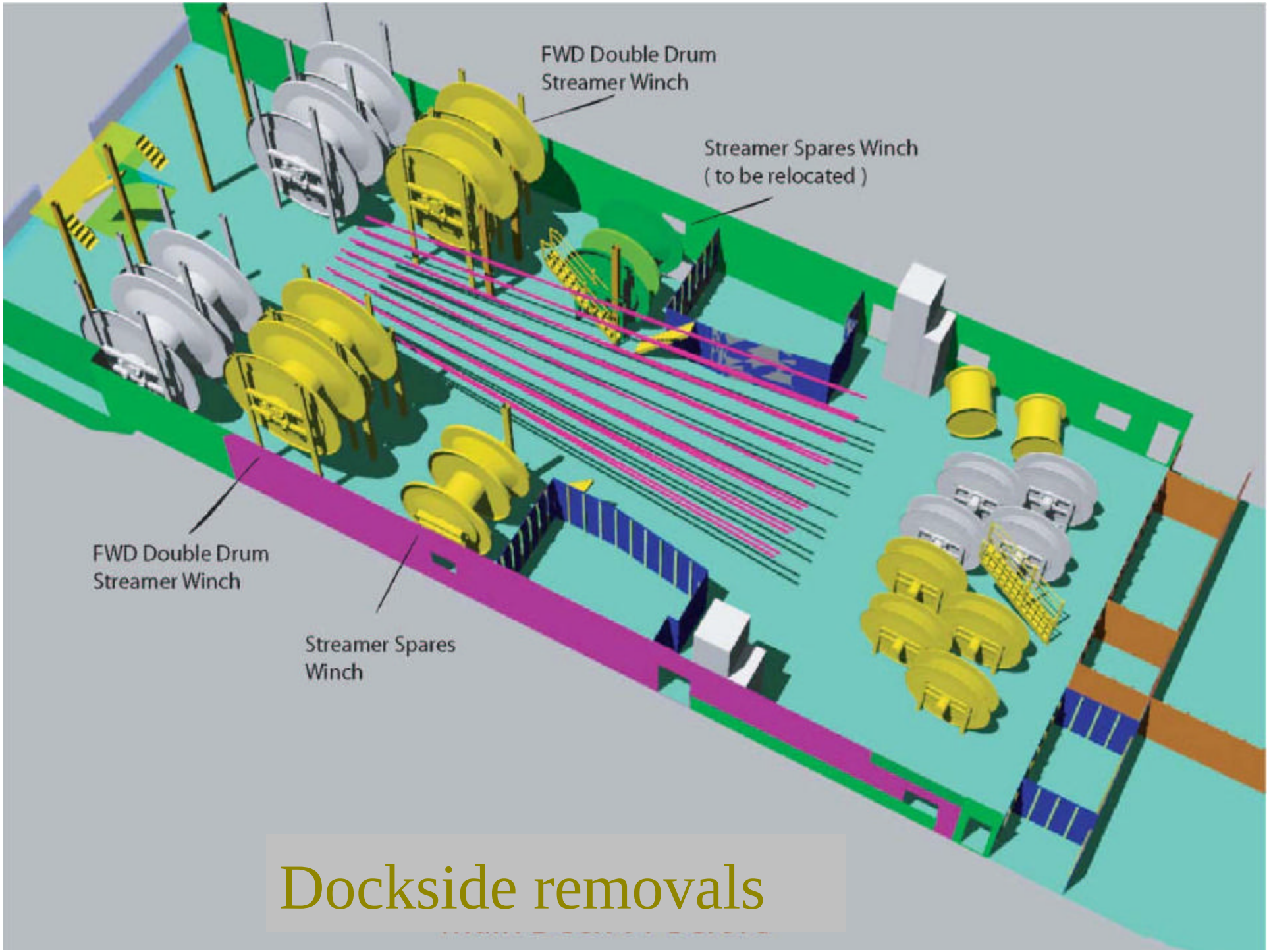
- National Facility Status
- Multistreamer 3D Capability
- Linear Source Arrays

Management & National Oversight

Ewing **R**eplacement **O**versight **C**onversion **C**ommittee

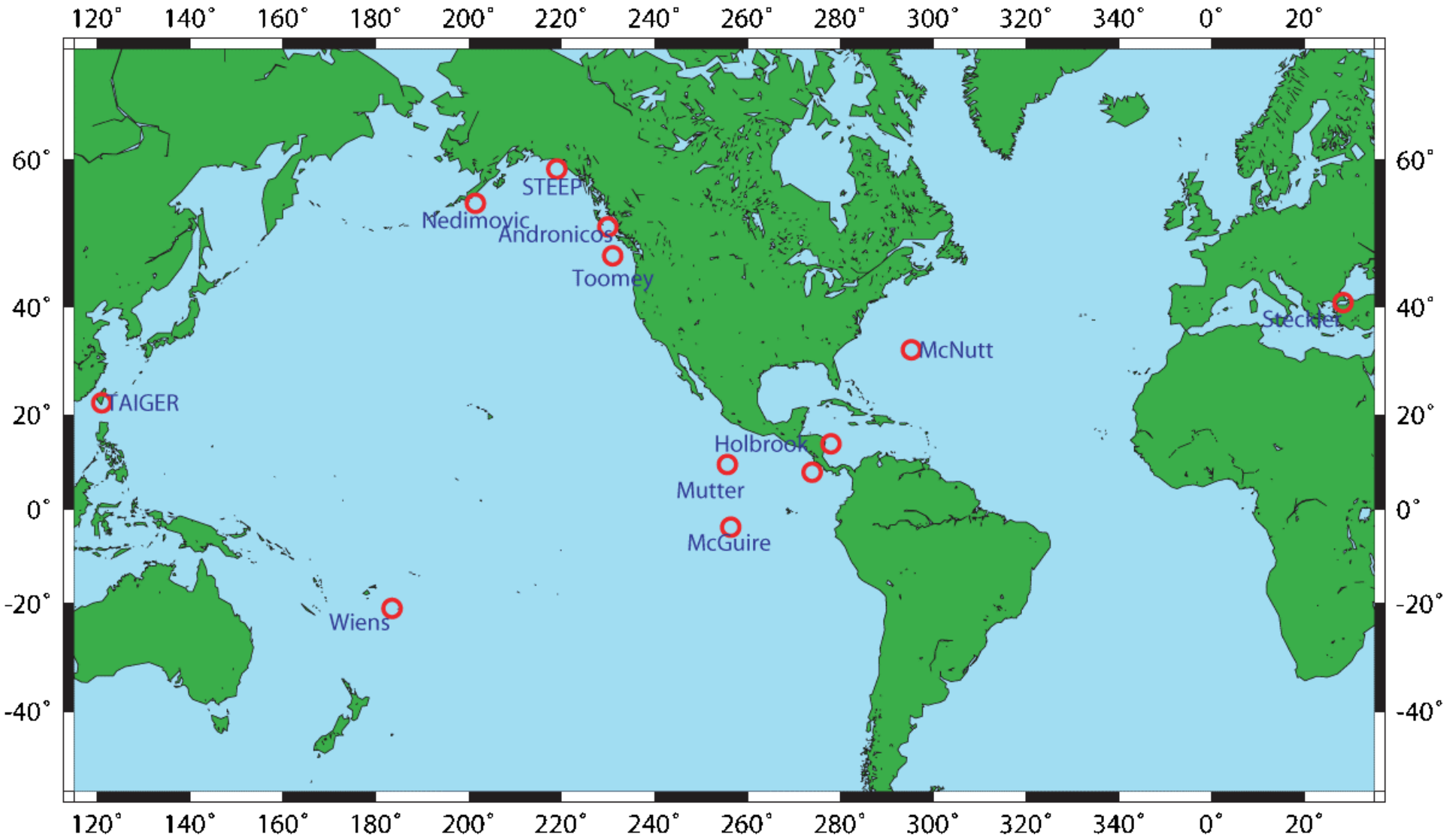
Marine **O**perations **W**orking **G**roup

Marcus **L**angseth **S**cience **O**versight **C**ommittee

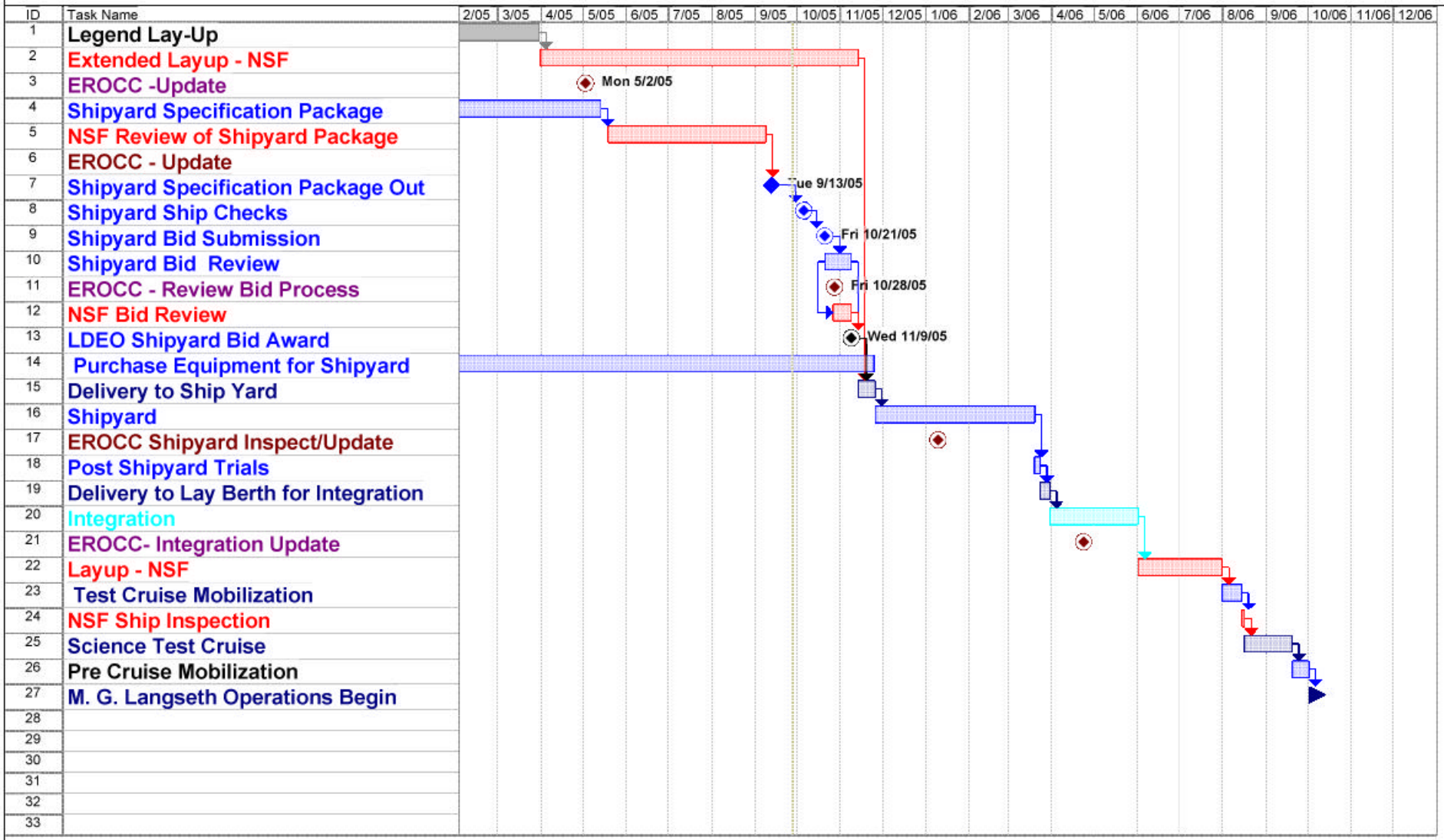


Dockside removals

R/V Langseth - pending projects



Marcus G. Langseth Timeline



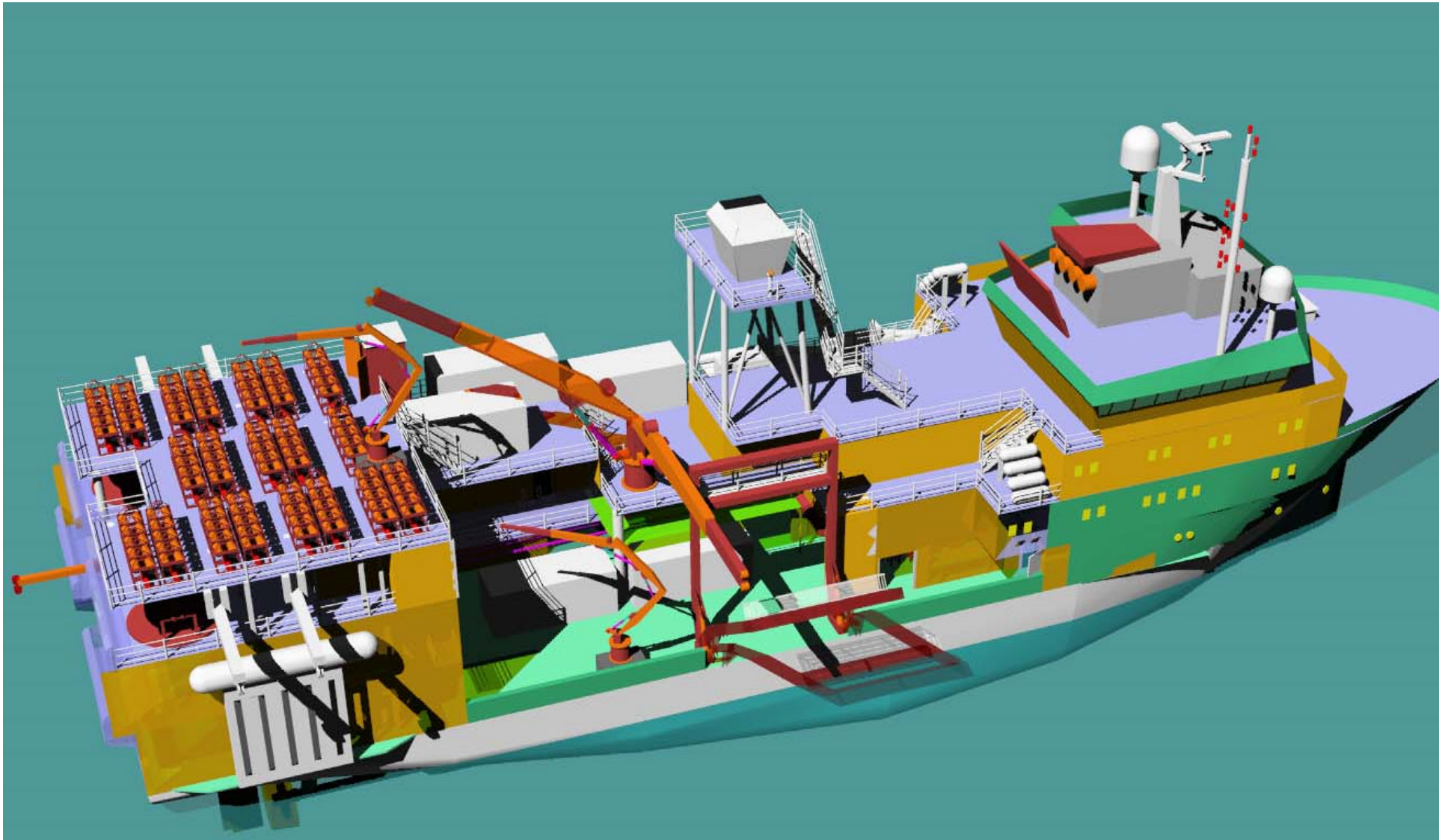
Project: legend_time5
Date: Tue 9/27/05

Task
Progress
Summary
Rolled Up Task
Rolled Up Progress
Split
Project Summary
Group By Summary

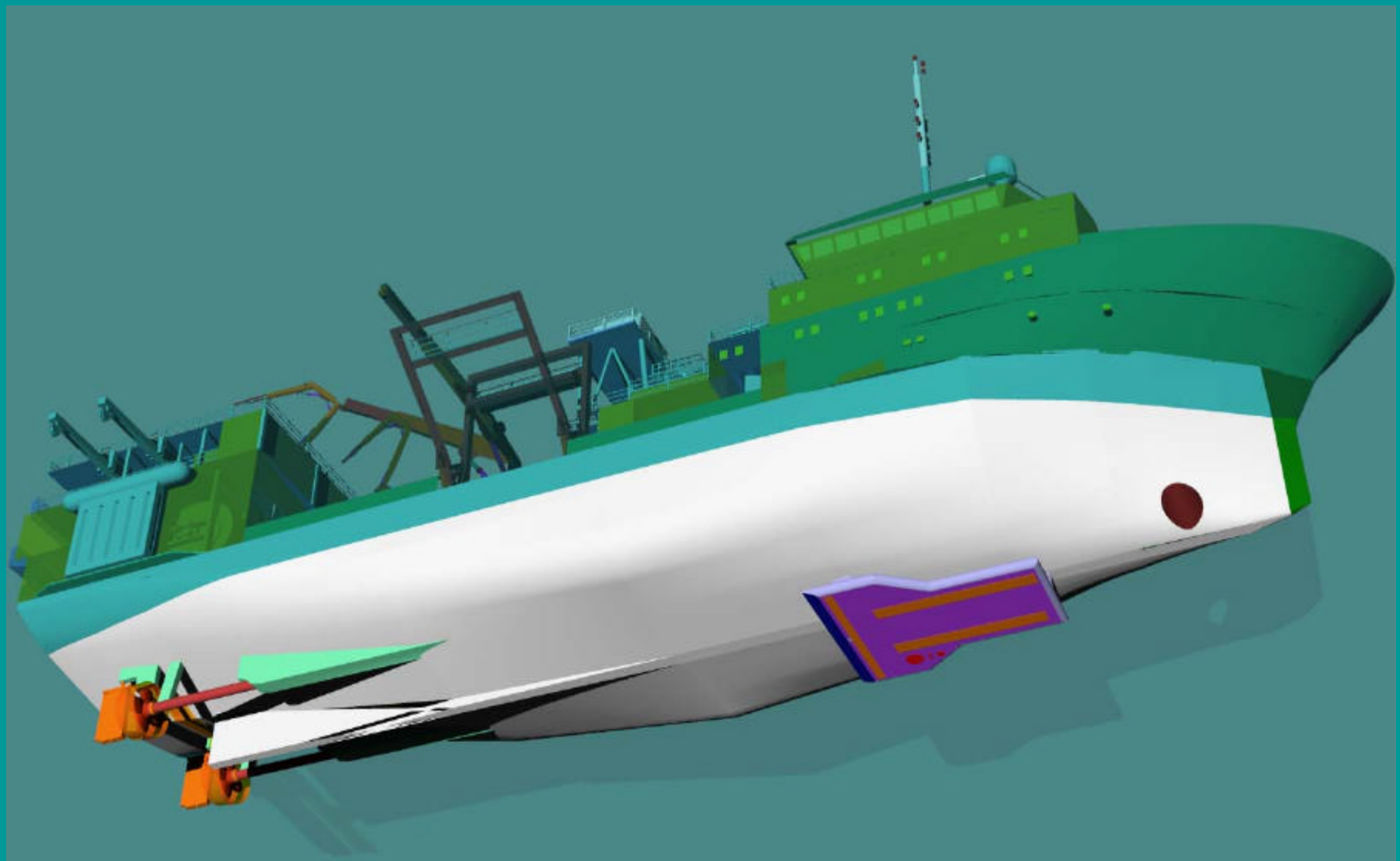
Added Personnel for 3D surveys

Senior Science Officer/Party Chief

Contract Navigators



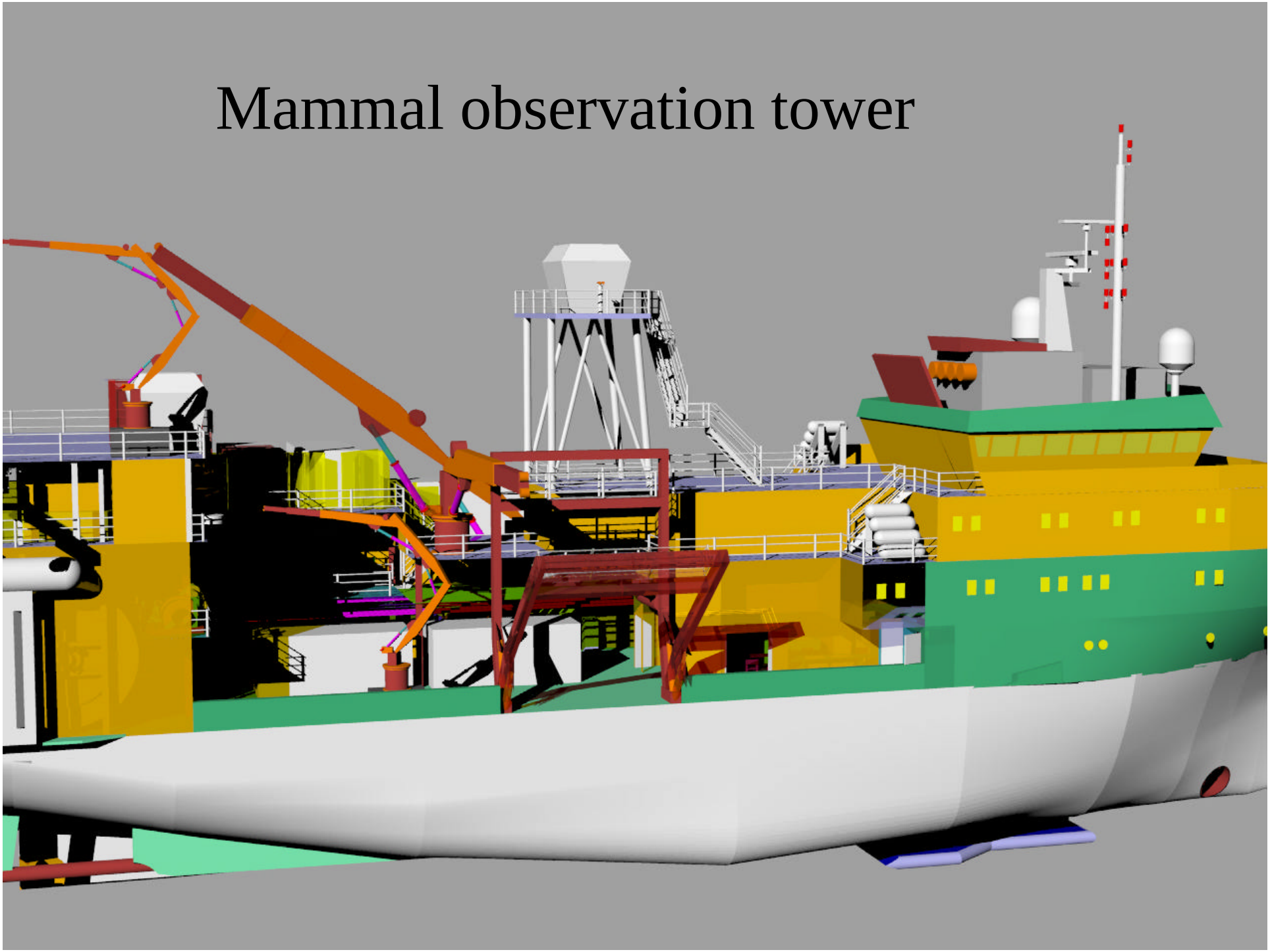
100 OBS storage & handling

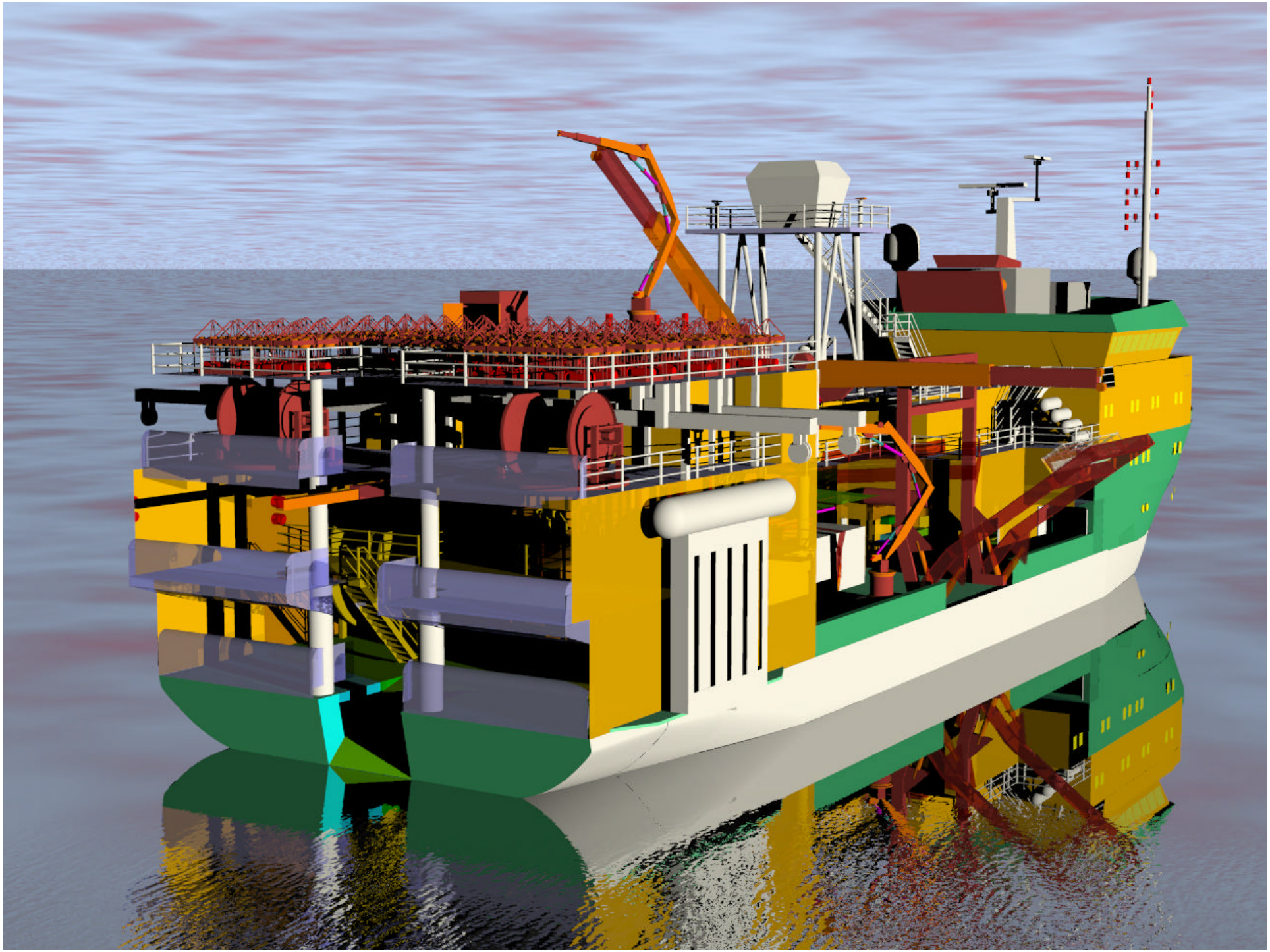


1^{o} x 1^{o} Kongsberg Multibeam

Marine Mammal Observation

Mammal observation tower





Major Issues and Guiding Principles for UNOLS 2005-2006

- Vision
- Mission
- Charter
- Goals
- Important issues and objectives

UNOLS Vision and Mission Statements

- ***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.
- ***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.

What the UNOLS Charter says

- The UNOLS Charter was originally adopted in 1972 and serves as the bylaws and guiding document for operation of the organization. The introduction and objectives underscore the overall purpose of UNOLS

1. INTRODUCTION

Recognizing the need for coordinated use of federally supported oceanographic facilities, the community of academic oceanographic institutions, which use and operate those facilities, by virtue of this Charter, do hereby establish an organization of academic oceanographic institutions. The organization shall be named the University-National Oceanographic Laboratory System (UNOLS). UNOLS is solely an advisory body. Execution and enforcement of its recommendations are matters for member institutions and for agencies, which fund the construction and operation of UNOLS facilities.

2. OBJECTIVES

- *An objective of UNOLS is to coordinate and review the access to and utilization of facilities for academic oceanographic research, and the current match of facilities to the needs of academic oceanographic programs. UNOLS makes appropriate recommendations of priorities for replacing, modifying or improving the numbers and mix of facilities for the community of users. Another objective is to foster federal and other support for academic oceanography, thereby continuing and enhancing the excellence of this nation's oceanographic program. Emphasis is placed on ships and other seagoing facilities.*

Goals

- ***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.
- ***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.
- ***Plan for and foster support for the oceanographic facilities of the future (planning)***
  - Provide leadership and facilitate 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.

2005/2006 Important Issues and Objectives

- **Fleet Renewal** - Support the implementation of existing FOFC plan, vessel design efforts and funding for new ship construction.
- **Facilities Improvement Planning** - Update the UNOLS Fleet Improvement Plan with respect to the current and projected status of other major facilities and with respect to the interaction between fleet renewal and fleet midlife refits etc..
- **Scheduling** - Make the best use of existing vessels, in light of financial limitations and prior commitments restricting ship availability in 2006 and beyond and look at the possibility of new scheduling paradigms.
- **Communications** - UNOLS is in a unique position to communicate between the scientific user, support facilities, and funding agencies. UNOLS should strive to improve communications and interactions between these three groups regarding major facility issues
- **Facilities improvement** - Promote and assist with planning for new types of facilities for ocean sciences such as ROVs, AUVs, Aircraft, UAVs and observatories.
- **Permitting** - Support efforts for improving the processes for obtaining permits related to research cruises.

2005/2006 Important Issues and Objectives

- **Education and Outreach** - Support and promote shipboard capabilities to facilitate public education and outreach by scientific users, educators and facility operators.
- **Balancing the impacts of increasing costs** – work with the community to establish the appropriate balance between available resources and the level of support required to support quality operations.
- **Regulatory Impacts** - the burden in time and money imposed by new regulatory requirements with regard to safety, security, conservation, and environmental impact have affected the cost and capabilities of ships in the UNOLS fleet. Work with the funding agencies to find support, resources and relief with regard to these requirements including the facilitation of cooperative UNOLS-wide solutions wherever possible.
- **Personnel - Technical and Marine** - finding, recruiting and retaining qualified, technically literate personnel to operate our ships and instrumentation is an increasing challenge for the member institutions, which needs to be addressed cooperatively by UNOLS institutions, agencies and the maritime/technical training industry.


End

Set the agenda for the coming year

- These guiding principles will help us keep on track for the coming year.

Fleet Renewal

- Support the implementation of existing FOFC plan, vessel design efforts and funding for new ship construction. Many of the ships in our fleet are aging and the resources to replace those ships are needed now.

Facilities Improvement Planning

- Update the UNOLS Fleet Improvement Plan in order to assess the current and projected status of the Academic Research Fleet and other major facilities, detail the scientific facility requirements of the future based on recently published documents and make recommendations in support of the review and update of the FOFC renewal plan and for additional research vessels and facilities that may be required including icebreakers, aircraft, submergence vehicles and seismic vessels.

Scheduling

- Make the best use of existing vessels, particularly in light of the cutback in ship availability in 2006 (and likely to continue in 2007) due to increasing costs and decreasing ship operations support budgets.

Communications

- RVTEC believes that UNOLS is in a unique position to communicate to the scientific user, support facilities, and funding agencies. UNOLS should strive to improve the communications and interactive support between these three groups. Issues such as funding levels, regulatory measures, understanding of ship and technician capabilities and how these issues affect each of the three groups and ultimately the overall science missions should be better disseminated between the three groups.

Facilities improvement

- The UNOLS community is going to need more high-tech access to the sea. Assess the need and start the planning necessary to bring additional ROVs and AUVs into the suite of facilities available to support new research initiatives such as observatories.

Permitting

- support efforts for improving the processes for obtaining permits and clearances related to cruises.

Education

- Support and promote the capabilities on our ships to facilitate public education and outreach efforts by scientists, educators and facility operators. The public feels part of NASA missions in a way that is not currently the case for oceanographic expeditions. The recent attempts to bring real time oceanography to the public are laudable, but too expensive to be done on a routine basis. Can UNOLS change that?

Increasing Costs

- One trend over the last 10 years, but accelerating in the last 2-5 years, is an expectation for ships and shipboard technician groups to provide more and more services and support for increasingly expensive and complex instrumentation. This is not necessarily a bad thing, but increased mission requirements generate higher costs. Other factors such as increased fuel prices and increasing regulatory and training requirements have greatly escalated the cost of ship operations. With the current budget difficulties in the federal agencies, the financial resources are not as readily available for continually escalating service levels. Maintaining safe and high quality operations costs money and trying to do more with less can lead to problems in the long-run. Finding the right balance between available resources and the level of support that can be provided should be a UNOLS focus along with promoting the allocation of sufficient resources to support quality operations.

Regulatory Impacts

- The increasing burden in time and money being imposed under new regulatory requirements for safety management, security, and pollution response are impacting the cost and capabilities of more and more ships in the UNOLS fleet. Advocating for support, resources and relief for these requirements as well as facilitating cooperative solutions is an important role for UNOLS.

Personnel-Technical and Marine

- Finding, recruiting and retaining qualified, technically literate personnel to operate our platforms and instrumentation is increasingly a challenge for the member institutions. Technicians with the skills required to operate and maintain data acquisition networks, multi-beam sonars, seismic profiling equipment, remote-sensing suites, chemical analyzers and the plethora of other essential components of these facilities have numerous well-paying opportunities that can be pursued ashore. Similarly, a 'perfect storm' has formed in the area of maritime personnel recruitment: The current population of merchant mariners is graying with an average age in the low fifties, the U.S. flag merchant marine has shrunk to relative insignificance on the world ocean (meaning that the job opportunities are few and far between), and the new STCW regulations--while arguably improving professionalism and safety--have had the unintended side effect of choking off the entry level for new seafarers who, in the past could sample the lifestyle and work before deciding whether or not to invest in thousands of dollars worth of training. The ability of the UNOLS operators to field and support future expeditions could be impacted by these serious industry-wide challenges.

Flexibility in scheduling

- Allow responses to episodic events through some amount of excess capacity and flexible scheduling procedures. The overall contribution by such storm or seismic events to long term signals requires both continuous (Ocean Observing) and responsive (Fleet) observations. The already scaled back nature of the UNOLS fleet has hampered the scientific community's ability to properly study these events. Providing this capability should be considered as part of scheduling and fleet renewal discussions.

UNOLS Overview

- UNOLS is an organization of 61 U. S. institutions that have academic research and education programs in the ocean sciences and an interest in promoting the best possible national shared use facilities to support these programs. Twenty-one of the UNOLS institutions are operators of these major shared use facilities, including research vessels, submersibles, aircraft and major instrumentation. Facilities are owned either by one of the Federal agencies or by individual institutions. UNOLS serves in an advisory role to the facility operators and to the supporting Federal agencies, and as a coordinator or facilitator of community-wide efforts directed toward scheduling, access, and improvement of existing facilities, and planning for future facilities.

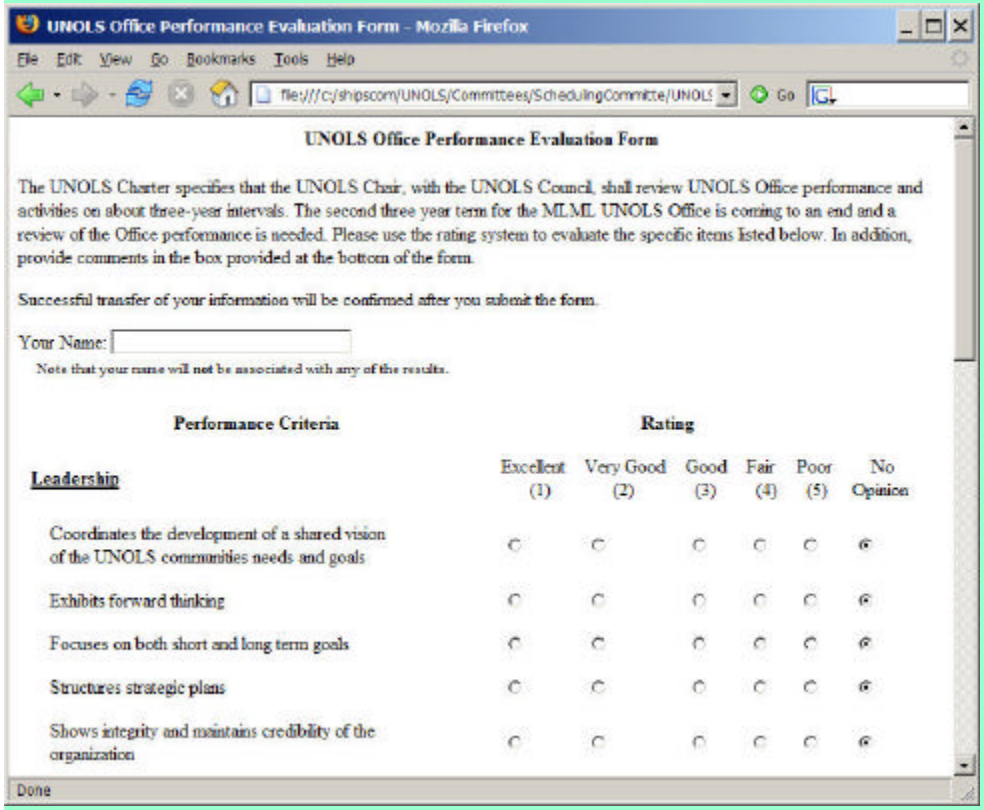
Issues before UNOLS

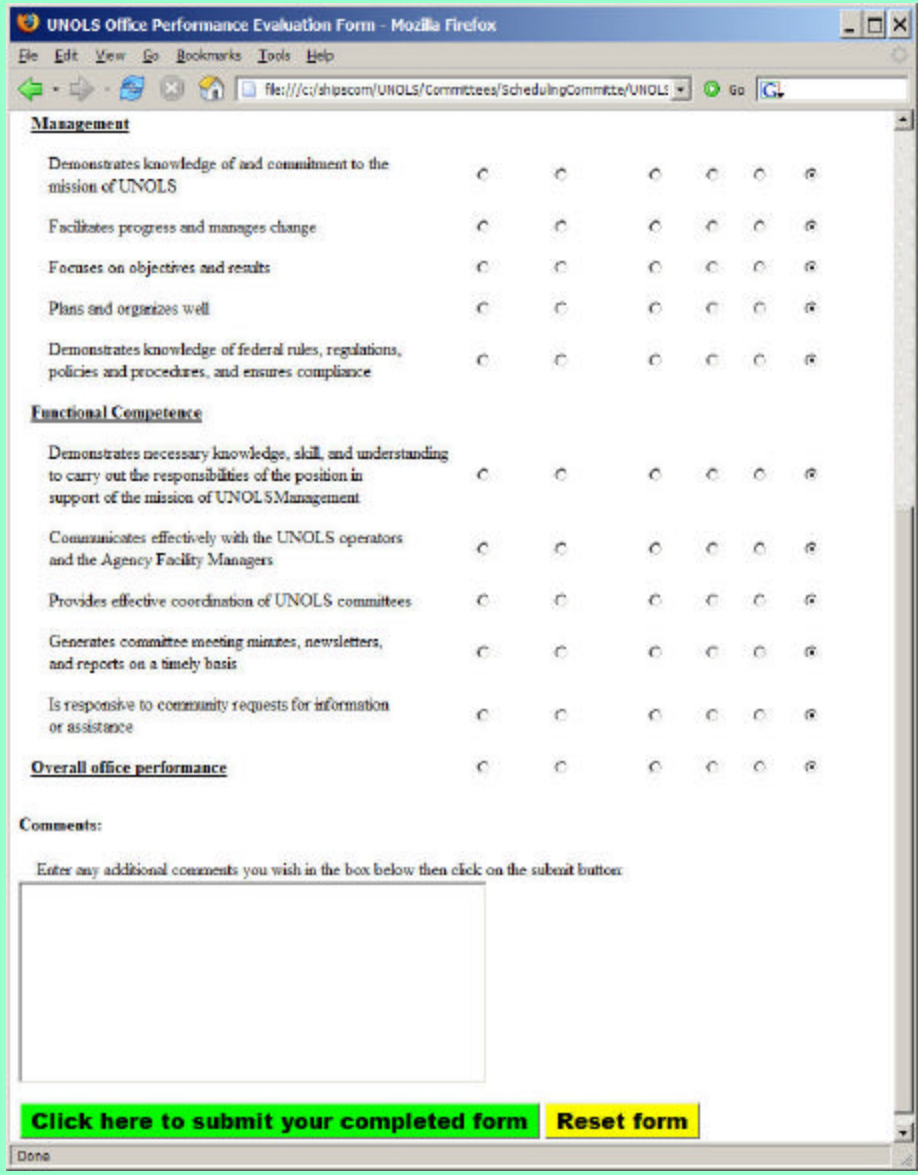
2005 / 2006

UNOLS Council Election Results

- **OPERATOR REPRESENTATIVE (3 year term) - from among designated UNOLS Member Operator institutions:**
- **AT-LARGE REPRESENTATIVE (3 year term) - individual affiliated with any UNOLS Member Institution:**

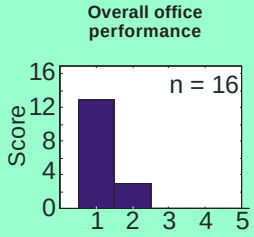
The UNOLS Office Performance Evaluation Form



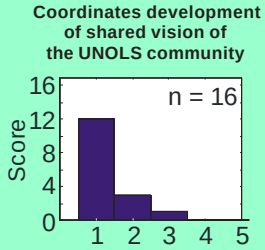


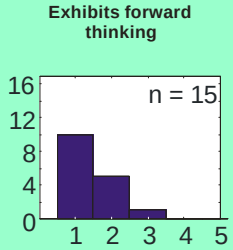
UNOLS Office performance Review Results - October 2005

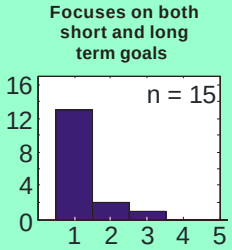
Overall Score = 1.2

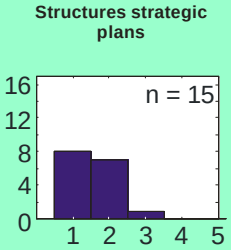


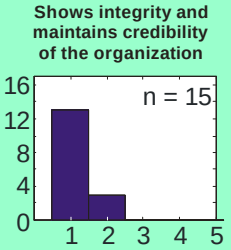
Leadership



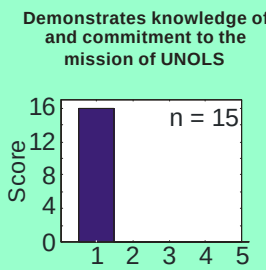


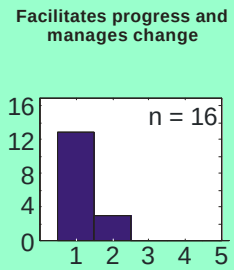


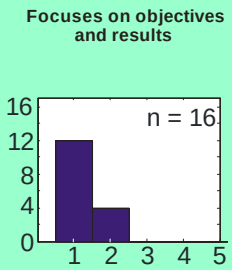


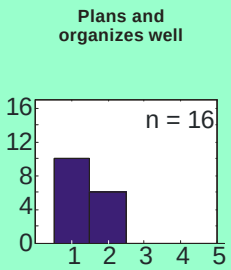


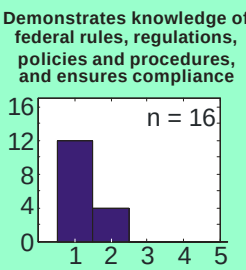
Management



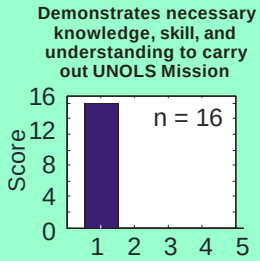


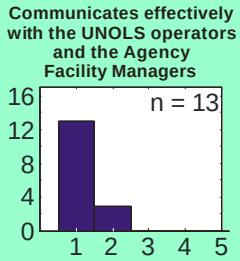


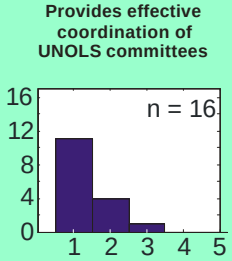


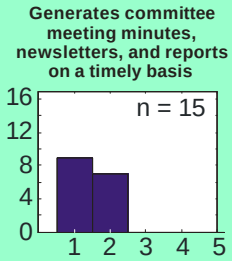


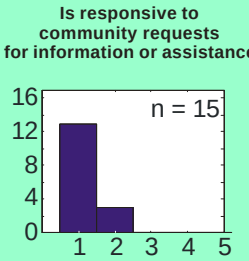
Functional Competence











Rating (1-Excellent 2-Very Good 3-Good 4-Fair 5-Poor)

Conclusion and Recommendation

- Based on this evaluation, the Ad Hoc committee finds the performance of the UNOLS office to be excellent.
- The Council passed a resolution endorsing MLML to host the UNOLS office for a third three year term.

Load Handling System Workshop

GOAL

" *Develop a conceptual design for the "next-generation" over-the-side load handling system for the UNOLS fleet."*

Committee Members:

Matt Hawkins, Chair

Tom Althouse

Andy Bowen

Marc Willis

Jim Holik

Load Handling System Workshop

- One year effort.
- Joint-funded by NSF and ONR.
- Focused on ship visits and field evaluations of existing systems.
- Addressed:
  - Loading Handling System design standards
  - Incorporation of “Next-generation” UNOLS wire
  - “Next-generation” science packages
  - Motion compensation
  - “Hands-free” deployment and recovery
  - Size/Weight: “Scale-able” to different vessel classes

Load Handling System Workshop

- LHS Workshop addressed handling moderately-sized, fairly common, science packages over the side and stern:
  - CTD's
  - AUV's and ROV's
  - Scanfish and Triaxis
  - Mocness
- Does not address, or attempt to replace, the stern A-frame.
- Does not address, or attempt to investigate, highly specialized or large handling systems like long-coring.

Preliminary Findings are available on the UNOLS website at:
<**http://www.unols.org/publications/reports/lhsworkshop/index.html**>

Load Handling System Workshop (Status as of September 2005)

- Two systems are currently under detailed design and fabrication at Caley Ocean Systems using the Functional Requirements developed during the LHS Workshop – one for *KILO MOANA* and one for the *HUGH R. SHARP* (CAPE HENLOPEN Replacement).

- The systems have different arrangements for the handling apparatus (to suit each vessel). However, both use all-electric winches having motion-compensation, “slip-mode”, “auto-tension”, and use docking heads for capturing the science package.

- Both are being built to ABS standards in lieu of Sub-Chapter U.

- These system are due to be delivered and installed in early 2006, and both operators will keep the community and LHS Committee informed on how well they perform.

Marine Mammals and Acoustic Permitting

- Contractor for NSF is developing an EIS primarily for the *Marcus Langseth*
- Environmental Specialist to be hired by NSF to assist with permitting and other related issues.

Frequency Spectrum Management Issues

- Otis Brown, member of the NAS Committee on Radio Frequencies, has asked UNOLS for information about the use of the communication spectrum by the oceanographic community.
- RVTEC will be tasked.

R/V Seward Johnson II
Transfer

BBSR is moving forward with plans to acquire *R/V Seward Johnson II* and retire *R/V Weatherbird II*.

- September 29 - *SJII* sea trials completed.
- September 30 - ABS certified the ship classification.
- October (Imminent) - Sale closing.
- October 22 – *SJII* arrives at Lyon's Shipyard in Norfolk, VA for a 4.5 month modification and maintenance period.
- January 25, 2006 – *Weatherbird II* arrives at Lyon's shipyard for cross-decking. (*Cape Hatteras* will support BATS during this period.)
- February 28 – *SJII* arrives at BBSR. New Name TBD.
- March 2006 – *SJII* begins operations and support of BATS.

R/V Gyre Decommissioning

- After 32 years of service, the R/V *Gyre* retired from the UNOLS Fleet in August 2005.
- *Gyre*, a 182-foot research ship, began operations for the Department of Oceanography at Texas A&M in January 1974.

UNOLS Briefing Package Outline

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 retirement dates.
2) Status of the UNOLS fleet today in terms of:
    1) Current and near-term funding shortfalls and consequences
    2) Longer term oceanographic scientific community needs: OOI (Orion) and IOOS etc.
3) Status of funding
    1) What is in the budget? (Regional vessels)
    2) What's in the budget planning stages? (ARRV, OOI (Orion observatories)
    3) What's proposed? - longer range outlook (IOOS, Ocean Class vessels)
4) Discussion topics:
    1) How to stay on top of the planning process

Americans with Disabilities Act (ADA) Guidelines for Research Vessels

Background:

- NSF has indicated the need for new ship construction and ship conversion efforts to address ADA requirements.
- Vessels that support Federally funded academic research should be equipped and arranged as feasible to accommodate persons with disabilities.
- In turn, procedural guidelines to carry out shipboard operations by persons with disabilities are needed.

ADA Guidelines for Research Vessels

Tasks:

- Draft Preliminary ADA Guidelines for the Regional Class Acquisition effort.
- Convene a 2-day Community Workshop to define shipboard and procedural guidelines required to accommodate sea-going scientists with disabilities.
- Establish General ADA Guidelines for new ship construction/conversion.
- Draft procedural guidelines for at-sea research operations by seagoing scientists with disabilities.

Notification and reporting of mooring locations, safety zones, and release code conflicts – UNOLS Office will investigate ways to collect information regarding installation and locations of moorings.

UNOLS Ship Time Request and Scheduling Database – under development

New Actions:

- Gender Climate at Sea
- Codes of Conduct – The impact of Scientific Studies on the Environment

UNOLS Dues Accounting

- Membership Dues collected this year:
  $1,800.00
- Spent this year (reception):
  $1,953.87
- Balance (10/14/05):
  $1,487.59

UNOLS 2005 Calendar

November				
SCOAR	Fall Meeting	4-Nov		Phone/Web meeting
RVTEC	Annual Meeting	8-Nov	10-Nov	OSU, Corvallis, OR
December				
DESSC	Winter Meeting	4-Dec		San Francisco, CA
UNOLS	UNOLS Booth #228 - Fall AGU	6-Dec	9-Dec	San Francisco, CA
AICC	Winter Meeting	12-Dec	13-Dec	Seattle, WA

UNOLS Booth at Fall AGU

Volunteers Needed!

Appointments to Committees

- FIC:
  - James Cochran, LDEO - 1st term began 10/04
- RVTEC:
  - Bill Martin, UW - 1st term began Chair 11/04
- SCOAR:
  - Richard Zimmerman, ODU - 1st term began 11/04
  - Steven Hartz, UAK (ex-officio) - began 3/05

End