

2019 Fleet Improvement Plan

Executive Summary

- Determine course for Global Class Research Vessels
 - Timeline
 - Assessment of Globals vs. Ocean
 - Global SMRs
- Support Coastal/Local
 - \$ needed from states and/or new science funding
 - Green ships initiatives + testing of green capabilities
- Support Acquisition of New Icebreaking Capabilities
 - Replace aging icebreaking fleet

1. INTRODUCTION

- 1A. WHY IS MAINTAINING A MODERN ACADEMIC RESEARCH FLEET IMPORTANT?
- 1B. THE CURRENT US ACADEMIC RESEARCH FLEET
- 1C. THE FEDERAL AGENCIES SUPPORTING SCIENCE AT SEA
- 1D. PRIVATE AND NON-FEDERAL ENTITIES SUPPORTING SCIENCE AT SEA
- 1E. SCIENTISTS AT SEA - THE IMPORTANCE OF BEING THERE
- 1F. TRAINING AND OUTREACH ABOARD THE ACADEMIC RESEARCH FLEET
- 1G. EXPANDING THE REACH OF THE RESEARCH VESSELS WITH TELEPRESENCE
- 1H. THE PROCESS OF IMPROVEMENT AND RENEWAL OF A FLEET DESIGNED FOR ACADEMIC RESEARCH

2. THE ACADEMIC RESEARCH FLEET OF THE NEXT DECADE

- 2A. DECADAL CORE RESEARCH QUESTIONS AND MAJOR SCIENCE PROGRAMS (OVERVIEW)
- 2B. ACADEMIC RESEARCH FLEET-WIDE VESSEL SPECIFICATIONS
- 2C. FLEET SUPPORT, UTILIZATION, AND OPERATIONAL COSTS
- 2D. MAINTENANCE OF FACILITIES: NEAR FUTURE UPGRADES TO THE FLEET

3. FLEET RENEWAL CONSIDERATIONS FOR 2025-2034

- 3A. FACILITIES PROJECTED TO RETIRE 2025-2034
- 3B. PROJECTIONS OF FLEET OPERATIONS COSTS
- 3C. PROJECTIONS FOR POLAR PROGRAMS
- 3D. A DECADE FOR GREEN TECHNOLOGIES
- 3E. FUTURE SUPPORT OPTIONS FOR SHIP ACQUISITION AND OPERATIONAL REQUIREMENTS

4. CONCLUSIONS AND RECOMMENDATIONS

- 4A. RECOMMENDATIONS FOR FLEET RENEWAL ACTIVITIES
- 4B. RECOMMENDATIONS FOR FLEET IMPROVEMENTS APART FROM FLEET RENEWAL

1. INTRODUCTION

1A. Why Is Maintaining a Modern Academic Research Fleet Important?

1B. The Current US Academic Research Fleet

1C. The Federal Agencies Supporting Science at Sea

1D. Private and Non-Federal Entities Supporting Science at Sea

1E. Scientists at Sea - The Importance of Being There

1F. Training and Outreach aboard the Academic Research Fleet

1G. Expanding the Reach of the Research Vessels with Telepresence

1H. The Process of Improvement and Renewal of a Fleet Designed for Academic Research

This chapter is mostly informational. It needs updating but no major changes.

2. THE ACADEMIC RESEARCH FLEET OF THE NEXT DECADE

2A. Decadal Core Research Questions and Major Science Programs (Overview)

2B. Academic Research Fleet-Wide Vessel Specifications

2C. Fleet Support, Utilization, and Operational Costs

2D. Maintenance of Facilities: Near Future Upgrades to the Fleet

The questions that remain for the UNOLS community are:

1. If the refit and construction plans contained in present fleet projections are realized, will the fleet be fully capable of meeting the next decade's science requirements?
2. Can the fleet's operational costs be met without increases to research and related activities funding?
3. Are other changes in the fleet make-up recommended? Fleet viability requires ships with near optimal schedules to minimize day rates and retain crew who move to other jobs during layups. Fleet viability also requires continuing investment in new science equipment and maintenance of equipment by skilled technicians.
4. How will the need for the marine seismic capability that is currently provided by RV *Marcus G. Langseth* be supported?

Address these questions?

Should we delay publication and incorporate DSOS results in Section 2A?

Should we add a section on autonomous platforms?

3. FLEET RENEWAL CONSIDERATIONS FOR 2025-2034

3A. Facilities Projected to Retire 2025-2034

3B. Projections of Fleet Operations Costs

3C. Projections for Polar Programs

3D. A Decade for Green Technologies

3E. Future Support Options for Ship Acquisition and Operational Requirements

Major information updates required

Include consideration for autonomous platforms

4. Conclusions and Recommendations

What are OUR new recommendations?

4A. Recommendations for Fleet Renewal Activities

1. Timeline for fleet renewal plan - DO THIS NOW?
2. Midlife refits for Global AGORs DONE
3. 3 RCRVs DONE
4. RV Langseth MAJOR UPDATES REQUIRED
5. Determine a course for building future federally-owned global research vessels
6. Maintain the capability of coastal/local class vessels
7. Support the acquisition of new icebreaking capabilities

4B. Recommendations for Fleet Improvements apart from Fleet Renewal

1. Provide strong support for the electronic technicians,
2. Strongly support fleet-wide coordination and communications in major technical areas of ship operation and research support
3. Promote active participation by users and operators in reduction of the environmental impact of ship and research operations - "going green"