

PAME II-2015 Agenda Item 4.13
AMSA III(D)
United Nations 1st World Ocean Assessment
Chapters on the Arctic Ocean and High Latitude Ice and Dependent Biodiversity

References and Related documents:

Ad Hoc Working Group of the Whole of the [UN] General Assembly on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, *Outline for the First Global Integrated Marine Assessment of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspect*, United Nations, 2012, available at http://www.un.org/depts/los/global_reporting/Outline_of_the_First_Global_Integrated_Marine_Assessment.pdf

U.S. Global Change Research Program, *Review and Comment System, World Ocean Assessment Review*, U.S. Department of State, 2014

Background on the World Ocean Assessment

The United Nations (UN) has embarked on a regular process for global reporting on, and assessment of, the state of the marine environment, including socioeconomic aspects, the product of which is called the World Ocean Assessment (WOA). Subsequent WOAs are expected to be generated every five years in order to document trends in the state of the marine environment and socioeconomic aspects. The aim is to provide a sound, scientific basis for decisions at the global level as well as a framework for national and regional assessments and management decisions.

The WOA includes more than fifty subjects grouped within four main themes: marine environment and understanding of the ocean's role in the global integrated Earth system; food security and food safety; human activities that influence the ocean or are influenced by the ocean; and marine biological diversity. A scientific and technical summary will integrate content to show linkages through interdisciplinary subjects such as human impacts, ecosystem services, and habitats.

In 2010, the UN established a Group of Experts for scientific oversight of the first WOA, and in 2013 the Group of Experts selected WOA authors from a pool of experts comprised of country-nominated experts. All UN Member States were given the opportunity to review the first WOA, submit comments, and, upon receipt of State reviews, the Group of Experts will revise and deliver a final WOA to the UN by late 2015 (reported August/September time frame). The comments from Member States will be published with the report along with answers to those comments by the chapter authors.

Objective

While the 1st World Ocean Assessment has yet to be published by the UN, this paper attempts to summarize the subject matter covered in the 1st World Ocean Assessment relevant to the Arctic Ocean.

1st WOA Parts and Chapters

The WOA is divided into 7 parts each divided into chapters and sections in some cases. They include:

- Parts I and II, SUMMARY and CONTEXT with chapters on the scope and the mandate for the assessment.
- Part III, ASSESSMENT OF MAJOR ECOSYSTEM SERVICES FROM THE MARINE ENVIRONMENT, with chapters on scientific matters, hydrologic cycle, sea/air interface, biologic production, carbonate production, aesthetic and cultural issues and ecosystem services.
- Part IV, ASSESSMENT OF THE CROSS-CUTTING ISSUES: FOOD SECURITY AND FOOD SAFETY, with chapters on oceans as a food source, fisheries, aquaculture, fish propagation, seaweeds, social aspects.
- Part V, ASSESSMENT OF OTHER HUMAN ACTIVITIES AND THE MARINE ENVIRONMENT, with chapters on shipping, ports, cables and pipelines, atmospheric inputs, offshore hydrocarbon industries, marine based energy, offshore mining, solid waste disposal, marine debris, tourism, scientific research, genetic resources, desalinization, conclusions and a chapter on capacity building.
- Part VI, ASSESSMENT OF MARINE BIOLOGICAL DIVERSITY AND HABITATS, with sections and chapters on marine biodiversity by ocean area, including Chapter 36G on the assessment of marine biodiversity in the Arctic Ocean, and Chapter 47, high latitude ice, covering marine biodiversity of both Arctic sea ice and barrier ice in the Antarctic.
- Part VII, OVERALL ASSESSMENT, including assessment of human impacts on oceans and value of oceans to humans.

Chapters on the Arctic Ocean

The individual chapters in each section were written and formatted as peer-reviewed scientific papers, with extensive references and citations of the pertinent scientific literature. The two chapters specific to the Arctic Ocean focus mainly on biodiversity of species and habitats and concentrate on the effects of climate change on the ecosystem services and impacts on species.

- Chapter 36G, the Arctic Ocean chapter, begins with cataloguing known Arctic species from algae and plankton to marine animals and mammals, to land (and ice) mammals. The principle effects of climate change on the various species and how species diversity will be impacted is discussed in detail as well as human impacts and other stressors on the environment and on the diverse ecosystems the Arctic offers. The authors freely admit there are significant gaps in the research while including a 14 page Bibliography.
- Chapter 47, High Latitude Ice and the Biodiversity Dependent on It, is considerably shorter and focuses on high latitude biodiversity and how it is dependent on sea ice (annual

and multi-year ice cover in the Arctic and a separate section on barrier ice in the Antarctic). The effects of climate change on both Arctic and Antarctic ice (including significant loss of seasonal ice) and the impacts on biodiversity) is discussed. Once again, an extensive Bibliography is provided.

Conclusions

- The review process for the 1st World Ocean Assessment is the same process that the United Nations used to produce, review and publish the report(s) of the Intergovernmental Panel on Climate Change (IPCC). Like the IPCC reports, the 1st World Ocean Assessment will identify gaps in our knowledge, identify challenges and provide some solutions. Subsequent reviewers, scientists, governments and intergovernmental bodies, advocacy groups, indigenous groups, and industry groups will agree or disagree with some of its conclusions as they focus through the lens of their individual or group concerns, impacts and needs.
- Like the IPCC reports, the 1st World Ocean Assessment, will, no doubt, be extensively referred to and quoted by diverse groups with diverse interests, and with diverse interpretations of the information and data presented, and they will come to their own conclusions, in spite of the best efforts of the writers and reviewers.
- As noted above in the brief descriptions of the two chapters on the Arctic, and in other chapters on shipping, ports, pollution and the chapters devoted to other specific ocean areas, the research undertaken by the writing teams and the bibliographies provided, and the comments provided by the review teams and the writing team responses (they are to be published along with the report) will be very useful to the scientific community in general and to government and policy makers around the world, and to groups such as PAME.
- The references cited in the extensive bibliographies for each of the chapters related to the Arctic included reports and papers prepared by Arctic Council working groups (e.g. CAFF, AMAP, PAME, SDWG).

Recommendations

The USA recommends that PAME consider establishing a team within one of its existing expert groups, or a new expert group (perhaps in conjunction with other AC Working Groups) to review the 1st World Ocean Assessment after it is published, and prepare a paper for PAME I-2016 or PAME II-2016 on the WOA's overall utility as a reference document for PAME's work with ideas and suggestions for how existing or proposed PAME projects might benefit from and take into account the WOA report information on the Arctic Ocean.
