

C-GRASS: Coordinated Global Research Assessment of Seagrass Systems

SCOR Working Group 158

2023

1. Brief summary with the main highlights (200-300 words)

Building on momentum from the C-GRASS in-person workshop coordinated with the International Seagrass Biology Workshop 14 (ISBW) and World seagrass Association in Annapolis, August 2023, the group has made substantial progress on a draft MS developing and promoting specifications for the GOOS seagrass cover and composition Essential Ocean Variable (TOR objective 2), and an associated data schema (TOR objective 3). A second manuscript is in progress comparing seagrass dynamics based on remotely sensed data with those based on in situ data (TOR objective 1). Informal gatherings brought several members of the group together to discuss seagrass coordination at the World Conference on Marine Biodiversity in Malaysia in July 2023; and our Community of Practice plans to have a final working group meeting at ISBW 15 in Napoli, Italy, in June 2024 (TOR objective 4).

2. Activities since previous report to SCOR (e.g., virtual or in-person meetings, email discussions, special sessions). Limit 1000 words

- Hosted workshop at International Seagrass Biology Workshop (ISBW, Aug 2022) with 16 participants from 6 countries, focused on operationalizing a model for the GOOS seagrass cover and composition Essential Ocean Variable.
- Continued collaborative work, via email and zoom conversations, after ISBW on a MS focused on operationalizing the seagrass EO, which has now been through several rounds of co-author edits and revisions.
- Developed with OBIS colleagues a seagrass data schema for translating field data into Darwin Core format for upload to OBIS in support of the seagrass EO; the schema will be included in the seagrass, EO, manuscript.
- Held numerous meetings with colleagues from University of Queensland, Smithsonian, UNEP-WCMC, and others toward developing a research proposal for coordinating global mapping of seagrass cover and composition.
- Attended the World Conference on Marine Biodiversity in Penang, Malaysia in 2023, presenting results of global coordination, activities through Smithsonian MarineGEO and the UN decade program Marine Life 2030, which included seagrass coordination and connected with several seagrass colleagues from Malaysia, Japan, Philippines, Indonesia, and elsewhere.

3. Documents published since previous report to SCOR (e.g., peer-reviewed journal articles, reports, Web pages) and should be limited to publications that resulted directly from WG activities and which acknowledge SCOR support

None yet.

4. Progress toward achieving group's terms of reference. List each term of reference separately and describe progress on each one. Limit 1000 words

- **Objective 1:** Produce a scientific synthesis of status and trends in global seagrasses and the systems they support, via a comprehensive review of peer-reviewed and gray literature, and unpublished data, on seagrass occurrence, ecosystem characteristics, and benefits to human well-being.
 - Draft MS comparing remotely sensed vs in situ trends in seagrass dynamics, led by project Postdoc Johannes Krause, distributed to co-authors for comments, in revision.
 - Smithsonian team invested several months of data technician time in curating and updating data (>50,000 observations) from the SeagrassNet program in preparation for a public data release in 2024.
- **Objective 2:** Produce a handbook of standard protocols and best practices for collecting, curating, and sharing data on seagrass ecosystems among scientists and stakeholder groups, building on existing experience of scientists and end-users in management and conservation, and contributed to the Ocean Data Standards and Best Practices Project of IODE.
 - Draft MS focused on operationalizing the GOOS seagrass EOV in progress, with several rounds of co-author input completed. To be submitted for peer-reviewed publication before end of 2023.
- **Objective 3:** Promote development of standardized vocabularies for variables and data schemas specific to seagrass ecosystems, and integration of existing and new data into the Ocean Biodiversity Information System (OBIS) using the EVENT-DATA schema (17).
 - Developed seagrass EOV data schema, with input from OBIS and revision by working group at ISBW 2022, along with Darwin Core-compliant vocabulary for seagrass sampling. These are included in the draft MS in progress for operationalizing the seagrass EOV. A demonstration seagrass dataset has been submitted to OBIS based on this data schema.
- **Objective 4:** Organize an interdisciplinary community of practice to synthesize data on status, trends, and drivers of global change in seagrass ecosystems, building on and integrating existing resources.
 - Interactions and special sessions at the International Seagrass Biology Workshop. (ISBW, 2022) and World Conference on Marine Biodiversity (2023).
 - Member service on Global Ocean Observing System Biology and Ecosystems Panel.
 - Collaborative work on the seagrass EOV MS in progress.
 - Discussions with officers of the World Seagrass Association.
 - Developing plans for sessions at the ISBW 2024 meeting in Italy.
 - Discussion with incoming GOOS Bio Eco panelist Lina Nordlund about integrating C-GRASS working group products with new Horizon Europe project on biological EOVs.

5. WG activities planned for the coming year. Limit 500 words

- Finalize plans for and organize session at the ISBW 2024 meeting in Italy, gathering as many members as possible from the C-GRASS working group
- Submit and publish peer-reviewed MS describing operational model for the GOOS seagrass cover and composition EOY (lead: Duffy).
- Submit and publish peer-reviewed MS comparing remotely sensed vs in situ trends in seagrass dynamics (lead: Krause)

6. Is the group having difficulties expected in achieving terms of reference or meeting original time schedule? If so, why, and what is being done to address the difficulties Limit 200 words

- Our friend and colleague Prof Miguel Fortes (University of Philippines), pioneer in seagrass social-ecological research, passed away in May 2023. This is a loss for the global seagrass community but also to our work on the seagrass Community of Practice since Miguel was leading that work within C-GRASS.
- We still live with the legacy from the covid shutdown and restricted travel during that time. We expect that ISBW in 2024 in Italy will be a good occasion to regroup and plot a course for the future post-SCOR working group.

7. Any special comments or requests to SCOR. Limit 100 words.

Can remaining funds in this award still be used for gathering the group at the ISBW 15 in Napoli, Italy in June 2024?

Additional information can be submitted and may be posted at the SCOR Annual Meeting webpage at the discretion of the SCOR Executive Committee Reporter for the WG and the SCOR Secretariat.