

Annex 1

Ramsar wetland classification system

Request from Standing Committee 62

1. The Standing Committee requested the Scientific and Technical Review Panel to discuss the application of the current Ramsar wetland classification system at its 26th meeting and to report back to the 63rd meeting of the Standing Committee, including, if required, the outline of a proposed approach for a technical review in consultation with Contracting Parties, International Organization Partners and other multilateral environmental agreements and requested the STRP to consider the use of a survey of STRP National Focal Points to collate technical feedback on the classification system from different regions (Decision SC62-50).

STRP26 process

2. A discussion document relating to SC62-50 was presented for consideration at STRP26. Feedback from STRP members, STRP NFPs and STRP Observers was consolidated and informed the advice from STRP presented in this report.

Context

3. The Convention defines wetlands as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 m”.
4. Finlayson (2018) provides a summary of the Ramsar wetland typology, and notes:
 - a. it was adopted in c.1990 and is based, generally, on the classification of Wetlands and Deepwater Habitats of the United States;
 - b. there are three broad groups of wetlands: marine and coastal, inland, and human-made; and 42 wetland ‘types’ overall;
 - c. wetland types have been determined based on settings (e.g., palustrine or riverine), water permanence (e.g., permanent, seasonal or intermittent), soils, substrates and vegetation. The typology contains 12 marine and coastal, 20 inland, and 10 human-made wetland types; and
 - d. it provides a broad framework to identify/describe wetland habitats.
5. The current Ramsar wetland typology is detailed in the Strategic Framework and guidelines for the future development of the List. Refer to [Appendix B of the Framework](#).
6. Finlayson (2018) observed:
 - a. The Ramsar typology was purposefully broad to embrace all the ‘wetland’ habitats of migratory water birds given the emphasis on such species in the negotiations.
 - b. Hence, it includes marine water less than 6 m deep at low tide, which, in northern latitudes, are often important wintering habitats for loons (divers), grebes, and sea ducks. It also includes artificial wetlands, such as reservoirs and seasonally flooded agricultural land, which are often important habitats for ducks, geese, cranes, and shorebirds. Similarly, many of the world’s coral reefs and seagrass meadows qualify as wetlands.
 - c. On several subsequent occasions, the coverage of wetland types was extended, for example, to incorporate karst wetlands and caves.

- d. Semeniuk and Semeniuk (1997), in a review of the inland wetland component of the typology, noted that mixed criteria were used to separate the wetlands and that not all natural inland wetlands had been unambiguously addressed. For instance, there was a repetition of types named 'marshes', and some types were ill-defined in that they encompassed several types (e.g., Alpine/tundra wetlands encompass bogs, meadows, and other mires).
 - e. "Despite the inconsistencies, the typology has served the purpose it was designed for – to provide a simple listing of the wetland types that the Convention considered."
7. Gerbeaux et al. (2018) in an overview of wetland classification systems noted that:
- a. A key issue when choosing or developing a classification is clearly identifying the purpose for classifying the wetlands and ensuring the chosen approach can be readily used with available information.
 - b. Also, future classifications will likely be influenced by the technology available, such as ready access to remotely sensed images, which may affect how the classification is constructed.
 - c. The number of classification schemes has increased over the past decades with the hierarchical, hydrological, and geomorphic approaches being widely used, often linked with information about the land cover or vegetation.
 - d. At the same time, simpler typologies, such as that used by the Ramsar Convention, serve a useful and ongoing purpose.
8. Gerbeaux et al. (2018) commented on the Ramsar typology and observed that:
- a. attempts to replace the Ramsar typology with a more systematic classification have failed, given a reluctance to move away from the current listing of wetland types and the protracted nature of discussions about a replacement; and
 - b. at the national and international levels, it can be extremely difficult to develop a classification acceptable to all wetland scientists and experts, even with the advantages of reducing the confusion with commonly used terms, such as swamps, marshes, or lagoons.

Expectations and view of Contracting Parties and practitioners

9. Contracting Parties have been applying the current Ramsar wetland typology since the 1990s and are familiar with its use in various wetland environments. The typology has been applied to Ramsar Site designation, although specific data on the extent of different wetland types across the Ramsar Site network is limited.
10. Standing Committee members at SC62 commented that:
- a. there are some inconsistencies in wetland typology, which can be difficult to apply to Wetlands of International Importance. Further guidance on the interpretation of the wetland-type definitions may be useful;
 - b. establishing a working group to explore difficulties that Contracting Parties experience with the current wetland classification system should be considered; others suggested consultation with STRP NFPs; and
 - c. some SC members offered to share national experiences from preparing wetland inventories and encouraged considering national inventories in other fora, including ensuring consistent use of wetland typology.
11. Given the historical application of the Ramsar wetland typology, it is anticipated that many Contracting Parties would require a clear justification to introduce an alternative classification of wetland types.

12. There may be opportunities for hierarchical elements to be introduced to Ramsar Wetland typology that may enable 1) improved reporting on the extent of broad, functional wetland types, 2) alignment with other global ecosystem systems, and 3) retaining the integrity and application of the 42 wetland types. This may be of interest to Contracting Parties if it is technically feasible.

Current application of the Ramsar wetland typology

13. The current Ramsar wetland typology has a broad range of applications, including:
 - a. Ramsar Site designation.
 - b. Ramsar Site ecological character assessment and reporting (RISs).
 - c. Some national inventories.
 - d. SDG reporting under 6.6.1 – marine/coastal, inland, human-made.
 - e. Reporting on state/trend of wetlands at global (e.g. GWO 2018), regional and national scales.
14. Given the use of the Ramsar wetland typology for many decades by all regions and globally, carefully considering the risks and opportunities of recommending potential amendments to the typology is necessary.

Future application

15. The primary future application of the Convention on Wetlands wetland typology will continue to be for the designation and monitoring of Wetlands of International Importance.
16. However, applications in other global processes are becoming increasingly important. The KM GBF was recently adopted with the corresponding development of the indicator framework specifying Headline, Component and Complementary indicators. Contracting Parties to CBD will be requested to report on the extent of natural ecosystems as part of national reporting and continue to report on the extent of wetlands under SDG 6.6.1. Further, the STRP submission to AHTEG (February 2024) on the KM GBF indicator framework noted the opportunity for the alignment of the Ramsar wetland typology to other global ecosystem typologies to promote the consistent use of ecosystem typologies for reporting.
17. In essence, any review of the Ramsar wetland typology needs to determine whether the classification system is generally fit for purpose while recognising there are always some adjustments that can be proposed. Alternatively, determine that the classification is no longer suitable in its current formats because of the broad range of applications and uses for which the Convention on Wetlands wetland typologies are inadequate.
18. Gerbeaux et al. (2018) noted that types of applications of a wetland classification might include:
 - a. inventory, mapping, evaluating, and ranking sites consistently (whether at a national, regional, or local scale);
 - b. conservation or restoration planning (e.g., producing broad-/fine-scale sets of representative areas upon which to focus protection or restoration efforts);
 - c. providing a framework that can easily describe the natural values, functions, and ecosystem services attached to the different categories and tailor management needs and practices;
 - d. assessing and monitoring environmental trends (health) with indicators adapted to each type (or all types);

- e. fulfilling National and International State of the Environment reporting requirements consistently;
 - f. enhancing and simplifying information contained in geospatial databases and frameworks used in water resource planning and management, thus aiding decisions about resource/catchment management;
 - g. raising public awareness of diversity, value uses, and anthropogenic effects on wetland types; and
 - h. providing uniformity in concepts and terminology.
19. An STRP review may consider which of these applications is adequately served by the current Ramsar wetland typology and which may be enhanced or reduced if amendments were proposed.

Other wetland and ecosystem typologies

20. Several other global ecosystem classification systems have been developed to encapsulate wetlands. For example, the Global Ecosystem Typology (GET) has introduced a classification system encompassing the world's marine, coastal, freshwater and terrestrial biomes and defining transitional systems.
21. The GET has developed a hierarchical classification framework.
22. The GET has also developed a [web-based map app](#) (2020) with peer-reviewed published maps for all 110 Level 3 units (functional types). Data is open access, with a data archive and spatial metadata). Following an online call in January 2024, the Secretariat and STRP Chair requested a cross-walk between the Ramsar Wetland Typology and GET. A preliminary assessment highlighted a relatively good alignment although some Ramsar wetland types went across multiple functional types. It would be advised to undertake similar cross-walk exercises with other global classification frameworks.
23. Gaining the perspective of STRP Observers, including UNEP-WCMC, on the suitability of the Convention on Wetlands wetland typology and other systems for reporting on the state and trend of wetlands is also recommended.

Potential opportunities and risks of proceeding with a technical review

24. To inform the STRP recommendation on whether or not to propose a technical review to SC63, an initial assessment of the opportunities and risks of reviewing the Ramsar wetland typology was shared with STRP26 participants, taking into account Contracting Party expectations.

Strengths of Ramsar wetland typology

- Covers a wide variety of wetland types and is the system applied to Wetlands of International Importance globally.
- Provides a unified framework for wetland assessment and management, across marine and coastal, inland, and human-made wetlands.
- Alignment with national wetland inventories (NWIs) can aid in comprehensive wetland mapping and data collection.
- Convention on Wetlands system could be leveraged against other less known systems.

Weaknesses of Ramsar wetland typology

- Some categories may be too broad or overlapping, leading to classification challenges.

- It does not apply a hierarchical framework to enable mapping, reporting and assessment at different spatial scales.
- May not adequately address local/national or rapidly changing wetland conditions and reporting requirements, e.g., due to climate change or human activities.
- Lack detailed mechanisms for integrating carbon sequestration data.
- Varied standards and approaches in NWIs across countries lead to inconsistencies in wetland data interpretation and classification.
- Compared to some other global classifications, the Convention on Wetlands might not integrate as seamlessly with certain specific ecological or geographical criteria.
- Weak linkage at present to KM GBF indicator framework.

Opportunities

- Using advanced mapping and monitoring technologies (e.g., GEO spatial monitoring) for more accurate classification.
- Recognising wetlands as critical carbon sinks could strengthen the system's role in climate change mitigation strategies. A review of the 'types' is needed to ensure they are readily translated into different IPCC emissions factors.
- Enhanced global collaboration for shared knowledge and conservation strategies.
- Integrating more focused carbon accounting could position the system as a key tool in climate change research.
- Collaborating more closely with NWIs can lead to a more standardised approach to global wetland data collection and analysis.
- Opportunity to align more closely with other global systems, leading to a more unified approach to wetland classification.

Risks

- Review of Ramsar wetland typology will increase burden on STRP, Secretariat, and Parties to transition to a modified system. Noting any amendments may be minor.
- The increased workload on STRP may come at expense of other urgent tasks.
- Limited resources and capacity in some regions could prevent the implementation of a new classification system effectively.

STRP26 key messages

25. Participants at STRP26 supported a review of the Ramsar wetland typology as outlined in paragraph 28 below.
26. Feedback from STRP members, STRP NFPs and STRP Observers included:
 - Opportunity to harmonise the Ramsar wetland typology with systems and reporting streams used by other MEAs and international processes.
 - Need to be aware of consequences of revising the wetland typology on users, e.g. national applications.
 - Review of the typology may enable a hierarchical approach to be incorporated that can be applied at different geographical scales and may support alignment with the Global Ecosystem Typology (GET).
 - An opportunity to review the function of the typology in supporting enhanced inventory, including for NWIs, and for assessment of new mapping tools, including AI methodologies.
 - Important to clearly outline the purpose of current and future wetland typology, and its suitability for wetland conservation, restoration, accounting, and other uses.

- The existing wetland typology was not developed in an ecosystem framework and may benefit from refinement; further consideration of the landscape context may also enhance integrated catchment management.
 - There is movement in other international processes, and review may be useful to ensure the Ramsar wetland typology remains current and enhances synergies.
 - Important to liaise with Contracting Parties, users of the wetland typology, other MEAs involved in reporting on wetland extent.
27. While some risks were identified if deciding to undertake a review of the Ramsar wetland typology, including the potential for reduced STRP capacity in 2026-2028 to deliver other high-priority work and the potential consequences for implementation by Contracting Parties, the benefits of the review outweighed these concerns. In particular, STRP26 concluded that there was a significant potential for the classification of wetlands to be improved, potentially via minor amendments, to enhance 1) harmonisation with other MEAs, 2) global and national reporting on wetland extent and condition, 3) assessment of carbon emissions from wetlands, and 4) application of remote sensing technologies.

STRP recommendation for Standing Committee

28. The STRP propose a 2-stage review of the Ramsar wetland type classification system (typology) be undertaken as a high-priority STRP task, predominantly in the 2026-2028 triennium, as outlined below:

Scoping [2024-25]

- a. Form a STRP sub-group to develop a Terms of Reference to outline the purpose and proposed approach for the review, considering advice received during STRP26 and SC63.
- b. Complete a cross-walk of the Ramsar wetland typology with the GET (Global Ecosystem Typology).

Phase 1. Initial assessment

- a. Establish a working group, including STRP panel members, STRP NFPs, and STRP Observers.
- b. Request the Secretariat to provide a summary of feedback on the Ramsar Classification from a recent review of NWI.
- c. Survey Contracting Parties and practitioners on the application of the Ramsar classification.
- d. Liaise with other MEAs, including AHTEG and the CBD's Subsidiary Body on Scientific, Technical and Technological Advice (SBBSTA).
- e. Review recent scientific literature and assessment reports.
- f. Synthesise findings from steps ii to v and determine whether there is sufficient evidence to justify a comprehensive review.
- g. Submit a Phase 1 report to the Standing Committee.

Phase 2. Comprehensive assessment/recommendations

- a. Prepare terms of reference outlining an approach for a comprehensive assessment.
- b. Undertake a comprehensive assessment to address the issues and opportunities detailed in Phase 1.
- c. If necessary, prepare a report with recommended amendments to the Ramsar wetland typology to the Standing Committee for consideration.