

Global Wetland Outlook: Enhancing the Network of Ramsar Sites

Royal C. Gardner

Professor of Law and Director, Institute for Biodiversity Law and Policy
Stetson University College of Law

Congratulations to everyone involved with the designation of the Niagara River Corridor as a Wetland of International Importance under the Ramsar Convention! This Ramsar Site designation is particularly meaningful to me as I have personal connections to the area.

As the 40th Ramsar Site in the United States, the Niagara River Corridor joins other iconic American wetlands, including Everglades National Park and the Okefenokee National Wildlife Refuge, on the Ramsar List. The Niagara River Corridor is now part of an international network of Ramsar Sites, one of the largest protected area networks in the world. The network, with nearly 2,400 sites, includes the Great Barrier Reef in Australia, the Sundarbans in India and Bangladesh, and the Pantanal in Brazil.

There are 170 countries that are parties to the Ramsar Convention. When a country joins the Convention, its primary obligations are to designate and conserve Wetlands of International Importance; wisely or sustainably use all wetlands on its territory; and engage in international cooperation over shared resources, including transboundary water resources. Science is critical to meeting these obligations and to achieving the objectives of the Ramsar Convention.

The Scientific and Technical Review Panel (STRP) is the Ramsar Convention's scientific advisory body. One of the STRP's primary accomplishments last triennium was the production of the *Global Wetland Outlook*. This report on the state of the world's wetlands, which was released at Ramsar's 13th Conference of the Parties in Dubai in October 2018, is the Convention's flagship publication. The executive summary of the *Global Wetland Outlook* is attached, and I encourage you to read the entire *Global Wetland Outlook*, along with its accompanying technical reports, at <https://www.global-wetland-outlook.ramsar.org>.

The *Global Wetland Outlook* tells a sobering story: we are losing wetlands at an alarming rate—approximately 35% from 1970 to 2015, where data are available. Consequently, we see corresponding declines in wetland-dependent species. The destruction and degradation of wetlands lead to a decline in ecosystem services, benefits that people derive from wetlands. Humans are a wetland-dependent species too, and thus it is in our own self-interest to protect wetlands.

The *Global Wetland Outlook* is more than grim statistics, however. It also offers a range of response actions that can be taken at the local, regional, national, and international levels. One key response action is to enhance the network of Ramsar Sites, which is what you are doing by designating the Niagara River Corridor. If sites are properly managed, Ramsar designations can lead to multiple benefits, including raising awareness about the importance of wetlands; increasing support for wetland protection and management; influencing land-use decisions, land acquisition, and environmental assessments; increasing funding opportunities; and fostering eco-tourism and research. Site designation can also enhance international cooperation, which is clearly resonates here.

Thank you for your outstanding work in designating the Niagara River Corridor as a Ramsar Site and for all your efforts to protect and conserve wetlands.



GLOBAL WETLAND OUTLOOK

State of the world's
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Coordinating Lead Authors: Royal C. Gardner and C. Max Finlayson

Section 1: Lead Authors: Royal C. Gardner and C. Max Finlayson

Section 2: Lead Authors: C. Max Finlayson, Nick Davidson, Siobhan Fennessy, David Coates, and Royal C. Gardner. Contributing Authors: Will Darwall, Michael Dema, Mark Everard, Louise McRae, Christian Perennou and David Stroud

Section 3: Lead Author: Anne van Dam. Contributing Authors: Channa Bambaradeniya, Peter Davies, Wei-Ta Fang, Vincent Hilomen, Kassim Kulindwa, Laura Martinez, Christian Perennou, Luisa Ricarte, Michael Scoullou, Sanjiv de Silva, and Gert Michael Steiner

Section 4: Lead Authors: Royal C. Gardner, Chris Baker, Nick Davidson, Ritesh Kumar and David Stroud. Contributing Authors: Stefano Barchiesi, C. Max Finlayson, Erin Okuno, Christian Perennou

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PREFACE

We all interact with and depend on wetlands for our livelihoods, sustenance and well-being.



Wetlands, such as lakes, rivers, swamps, marshes, peatlands, mangroves and coral reefs provide essential ecosystem services and contributions to people's livelihoods. Wetlands act as a source and purifier of water, they protect us from floods, droughts

and other disasters, they provide food and livelihoods to millions of people, they support rich biodiversity, and they store more carbon than any other ecosystem. Yet, the value of wetlands remains largely unrecognized by policy and decision-makers. The result is that 35% of wetlands, where data is available, have been lost since 1970, at a rate three times greater than that of forests.

This is not good news. The loss of wetlands continues today, with direct and measurable negative impacts on nature and people. The purpose of the Global Wetland Outlook is to increase understanding of the value of wetlands and provide recommendations to ensure that wetlands are conserved, wisely used and their benefits recognized and valued by all.

The Ramsar Convention plays a unique role in championing this change. As the only international treaty focused on wetlands, it provides a platform of 170 Contracting Parties working together for wetland conservation and wise use, and to develop the best available data, advice and policy recommendations to realize the benefits of fully functional wetlands to nature and society.

In the context of climate change, increasing water demands and increased risks of floods and droughts, wetlands are more critical than ever to achieve sustainable development. In fact, wetlands contribute directly or indirectly to 75 Sustainable Development Goal (SDG) indicators. Of critical importance is the Convention's leadership role in reporting on wetland extent as a co-custodian with the United Nations Environment Programme of SDG indicator 6.6.1. The Convention provides a platform like no other to foster collaboration and partnership to achieve other international policy objectives including the Aichi Biodiversity Targets, the Paris Agreement on Climate Change and the Sendai Framework on Disaster Risk Reduction to promote co-benefits and scale up the needed action to conserve and wisely use wetlands.

These ambitious plans assume that we have a baseline against which to measure successes and failures in wetland management. The Global Wetland Outlook provides a snapshot of wetland status, trends and pressures, along with an overview of ways in which countries are working to reverse the historical decline in wetland area and quality. I am pleased to introduce this first edition and hope that you find it both useful and stimulating, and that it will empower you to take action in implementing the recommended responses.

Martha Rojas Urrego, Secretary General

KEY MESSAGES

- Healthy, functioning natural wetlands are critical to human livelihoods and sustainable development.
- Although still covering a global area an area larger than Canada, wetlands are declining fast, with 35% losses since 1970, where data are available.
- Wetland plants and animals are therefore in crisis, with a quarter of species at risk of extinction.
- Quality of remaining wetlands is also suffering, due to drainage, pollution, invasive species, unsustainable use, disrupted flow regimes and climate change.
- Yet wetland ecosystem services, ranging from food security to climate change mitigation, are enormous, far outweighing those of terrestrial ecosystems.
- The Ramsar Convention promotes wetland conservation and wise use and is at the centre of efforts to halt and reverse wetland loss.
- Key steps in conserving and regaining healthy wetlands include:
 - enhancing the network of Ramsar Sites and other wetland protected areas
 - integrating wetlands into planning and the implementation of the post-2015 development agenda
 - strengthening legal and policy arrangements to conserve all wetlands
 - implementing Ramsar guidance to achieve wise use
 - applying economic and financial incentives for communities and businesses
 - ensuring participation of all stakeholders in wetland management
 - improving national wetland inventories and tracking wetland extent.

EXECUTIVE SUMMARY

Conservation and wise use of wetlands are vital for human livelihoods. The wide range of ecosystem services wetlands provide means that they lie at the heart of sustainable development. Yet policy and decision-makers often underestimate the value of their benefits to nature and humankind.

Understanding these values and what is happening to wetlands is critical to ensuring their conservation and wise use. The Global Wetland Outlook summarizes wetland extent, trends, drivers of change and the steps needed to maintain or restore their ecological character.



Status and Trends

Extent

Accuracy of global wetland area data is increasing. Global inland and coastal wetlands cover over 12.1 million km², an area larger than Canada, with 54% permanently inundated and 46% seasonally inundated. However, natural wetlands are in long-term decline around the world; between 1970 and 2015, inland and marine/coastal wetlands both declined by approximately 35%, where data are available, three times the rate of forest loss. In contrast, human-made wetlands, largely rice paddy and reservoirs, almost doubled over this period, now forming 12% of wetlands. These increases have not compensated for natural wetland loss.

Biodiversity

Overall available data suggest that wetland-dependent species such as fish, waterbirds and turtles are in serious decline, with one-quarter threatened with extinction particularly in the tropics. Since 1970, 81% of inland wetland species populations and 36% of coastal and marine species have declined.

Global threat levels are high (over 10% of species globally threatened) for almost all inland and coastal wetland-dependent taxa assessed. Highest levels of extinction threat (over 30% of species globally threatened) are for marine turtles, wetland-dependent megafauna, freshwater reptiles, amphibians, non-marine molluscs, corals, crabs and crayfish. Extinction risk appears to be increasing. Although waterbird species have a relatively low global threat level, most populations are in long-term decline. Only coral reef-dependent parrotfish and surgeonfish, and dragonflies have a low threat status.

Water quality

Water quality trends are mostly negative. Since the 1990s, water pollution has worsened in almost all rivers in Latin America, Africa and Asia. Deterioration is projected to escalate.

Major threats include untreated wastewater, industrial waste, agricultural runoff, erosion and changes in sediment. By 2050, one-third of the global population will likely be

exposed to water with excessive nitrogen and phosphorous, leading to rapid algal growth and decay that can kill fish and other species. Severe pathogen pollution affects one-third of rivers in Latin America, Africa and Asia, with faecal coliform bacteria increasing over the last two decades. Salinity has built up in many wetlands, including in groundwater, damaging agriculture. Nitrogen oxides from fossil fuels and ammonia from agriculture cause acid deposition. Acid mine drainage is a major pollutant. Thermal pollution from power plants and industry decreases oxygen, alters food chains and reduces biodiversity. At least 5.25 trillion persistent plastic particles are afloat in the world's oceans and have huge impacts in coastal waters. In nearly half OECD countries, water in agricultural areas contains pesticides above national recommended limits. These impacts harm our health, undermine ecosystem services and further damage biodiversity.

Ecosystem processes

Wetlands are one of the most biologically productive ecosystems. They play a major role in the water cycle by receiving, storing and releasing water, regulating flows and supporting life. River channels, floodplains and connected wetlands play significant roles in hydrology, but many "geographically isolated" wetlands are also important. However, land use change and water regulation infrastructure have reduced connectivity in many river systems and with floodplain wetlands. Wetlands regulate nutrient and trace metal cycles and can filter these and other pollutants. They store the majority of global soil carbon, but in the future climate change may cause them to become carbon sources, particularly in permafrost regions.

Ecosystem services

Wetland ecosystem services far exceed those of terrestrial ecosystems. They provide critical food supplies including rice and freshwater and coastal fish, and fresh water, fibre and fuel. Regulating services influence climate and hydrological regimes, and reduce both pollution and disaster risk. Natural features of wetlands often have cultural and spiritual importance.

Drivers

Wetlands offer recreational possibilities and tourism benefits. While some global data on ecosystem services are available, more targeted information is urgently required for national and local decision-makers.

Storage and sequestration of carbon by wetlands play an important role in regulating the global climate. Peatlands and vegetated coastal wetlands are large carbon sinks. Salt marshes sequester millions of tonnes of carbon annually. Despite occupying only 3% of the land surface, peatlands store twice as much carbon as the world's forests. However, freshwater wetlands are also the largest natural source of methane, a greenhouse gas, especially when not well managed. Tropical reservoirs also release methane, sometimes offsetting the reported low-carbon benefits of hydropower.

Wise use of wetlands requires a thorough understanding of the drivers of change so that the root causes of wetland loss and degradation can be addressed. Wetlands continue to be lost and degraded through drainage and conversion, introduction of pollution and invasive species, extraction activities, and other actions affecting the water quantity and frequency of flooding and drying.

These immediate drivers are in turn affected by indirect drivers, relating to supply of energy, food, fibre, infrastructure, tourism and recreation. Climate change is a direct and indirect driver of change. Therefore, adaptation and mitigation measures can have multiplier effects in addressing other drivers of wetland change. Global megatrends are also important, including demography, globalization, consumption and urbanization, with climate change creating uncertainty at every level.



The Ramsar Convention

The purpose of the Ramsar Convention is to promote wetland conservation and wise use. This ensures that the benefits of wetlands contribute towards meeting the UN Sustainable Development Goals (SDGs), Aichi Biodiversity Targets, Paris Agreement on Climate Change, and other related international commitments. The fourth *Ramsar Strategic Plan* guides the work of the Convention in addressing the drivers of loss, fostering wise use of wetlands, enhancing implementation of the Convention and effectively conserving and managing the Ramsar Site network. Parties to the Convention have already committed to maintaining the ecological character of over 2,300 Wetlands of International Importance covering nearly 250 million hectares, 13-18% of global wetlands.

The Ramsar Convention is uniquely positioned to reverse the loss of global wetlands. As the only international treaty focused on wetlands, it provides a platform to deliver many global wetland-related targets. In fact, wetlands contribute directly or indirectly to 75 SDG indicators. Of critical importance is the Convention's role in reporting on wetland extent drawing on information from national reports as a co-custodian with UN Environment of SDG indicator 6.6.1. The Convention provides a platform like no other to foster collaboration and partnership in support of other international policy mechanisms through providing the best available data, advice and policy recommendations to enable national governments to realize the benefits of fully functional wetlands to nature and society.





Responses

Urgent action is needed at the international and national level to raise awareness of the benefits of wetlands, put in place greater safeguards for their survival and ensure their inclusion in national development plans. In particular:

- **Enhance the network of Ramsar Sites and other wetland protected areas:** designation of over 2,300 internationally important wetlands as Ramsar Sites is encouraging. However, designation is not enough. Management plans must be developed and implemented to ensure their effectiveness. Less than half Ramsar Sites have done this as yet.
- **Integrate wetlands into planning and the implementation of the post-2015 development agenda:** include wetlands in wider scale development planning and action including the Sustainable Development Goals, the Paris Agreement on Climate Change and the Sendai Framework on Disaster Risk Reduction.
- **Strengthen legal and policy arrangements to protect all wetlands:** wetland laws and policies should apply cross-sectorally at every level. National Wetland Policies are needed by all countries. An important tool here is the avoid–mitigate–compensate sequence recommended by Ramsar and reflected in many national laws. It is easier to avoid wetland impacts than to restore wetlands.
- **Implement Ramsar guidance to achieve wise use:** Ramsar has a wide range of relevant guidance. Ramsar mechanisms – such as reports on changes in ecological character, the Montreux Record of Ramsar Sites at risk and Ramsar Advisory Missions – help to identify and address challenges to the conservation and management of Ramsar Sites.
- **Apply economic and financial incentives for communities and businesses:** funding for wetland conservation is available through multiple mechanisms, including climate change response strategies and payment for ecosystem services schemes. Eliminating perverse incentives has positive benefits. Businesses can be helped to conserve wetlands through tax, certification and corporate social responsibility programmes. Government investment is also critically important.
- **Integrate diverse perspectives into wetland management:** multiple wetland values must be taken into account. To ensure sound decision-making, stakeholders need an understanding of wetland ecosystem services and their importance for livelihoods and human well-being.
- **Improve national wetland inventories and track wetland extent:** knowledge supports innovative approaches to wetland conservation and wise use. Examples include remote sensing and field assessments, citizen science and incorporating indigenous and local knowledge. Identification and measurement of indicators of wetland benefits and drivers of change are key to supporting wise use policy and adaptive management.

A broad range of effective wetland conservation options is available at the international, national, catchment and site level. Good governance and public participation are critical throughout, management is required, investment essential and knowledge critical.