



SEFS13 Regular Sessions

RS01	Large rivers
RS02	Biogeochemical processes and greenhouse gas emissions in inland waters
RS03	Microbial ecology in freshwaters
RS04	Addressing freshwater biodiversity decline
RS05	Small water bodies
RS06	Advancing our understanding of freshwater ecosystems with molecular approaches
RS07	Freshwater quality: research to support progress towards zero pollution targets
RS08	The past is the key to the future: the role of palaeoecology in understanding and managing fresh waters
RS10	Biomonitoring
RS11	Restoration, conservation and management of freshwater systems
RS12	Advances in environmental flow science and practice
RS13	Climate change and freshwaters: challenges and solutions
RS14	Emergent diseases and pathogens in freshwaters
RS15	Ecological interactions in freshwater environments
RS16	Freshwater meiofauna
RS17	Science dissemination/communication & education
RS18	The ecology of the freshwater underworld: springs, hyporheic zones and other groundwater-dominated ecosystems
RS19	Fish ecology
RS20	Aquatic terrestrial linkages
RS21	Wetland ecology and management
RS22	Stakeholder/community engagement in restoration, conservation, management planning
RS23	Ditching misconceptions: the ecological diversity of artificial waterbodies

RS01. Large Rivers

Large rivers have a long history of multiple human uses, often with conflicting aims and, therefore are among the most degraded ecosystems on Earth. They are hot spots of biodiversity and provide a variety of ecosystem services. This session invites papers focusing on a better understanding of essential features of these unique, complex, and adaptive systems, their emergent properties, and the interlinkages between natural and human components of large rivers as social-ecological systems. Papers highlighting impacts of key anthropogenic stressors and emphasizing adaptive and integrated management solutions are also welcome.

RS02. Biogeochemical processes and greenhouse gas emissions in inland waters

Vast amounts of organic matter and nutrients are transformed during transport from soils to oceans. Those transformations shape the structure and function of aquatic ecosystems and define their interaction with the climate system, e.g. through the exchange of atmospheric greenhouse gases. This session aims to broadcast novel findings in a wide array of topics: terrestrial-aquatic biogeochemical linkages, aquatic carbon and nutrient cycling and export to the sea and greenhouse gases fluxes and sources. The goal of the session is to foster interactions between researchers from contrasting disciplines, studying different cycles or using diverse approaches and scales that help to better assess the impacts of climate-induced changes on aquatic biogeochemical cycles.

RS03. Microbial ecology in freshwaters

Microbial assemblages not only are selected by the environment, but also change the environmental conditions in an interplay of metabolic capabilities. This session aims to cover all aspects of the ecology of microorganisms and the role they play in aquatic environments, and would include also the advances in the metodological approaches for such kinds of studies.

RS04. Addressing freshwater biodiversity decline

Freshwaters are considered to be experiencing biodiversity loss at unprecedented rates but relatively few studies to date have documented the loss. This session will feature papers dealing with research reporting on aquatic biodiversity decline, knowledge gaps and how best to address them, new methodologies and indicators to detect/monitor/quantify declines as well as research on protection and restoration of freshwater biodiversity.

RS05. Small water bodies

This session presents research on the characteristics, functioning and contribution to local and catchment-wide biodiversity of small water bodies. These include naturally created and man-made standing and running small water bodies such as small streams, ditches, ponds, small lakes, springs and flushes. Challenges related to the filling of knowledge gaps and monitoring options and methodologies are included. Papers dealing with the management of small water bodies are welcome especially in the context of integrated catchment management.

RS06. Advancing our understanding of freshwater ecosystems with molecular approaches

Globally, freshwater systems are among the most threatened with respect to loss of biodiversity and associated ecosystem services. In recent years, rapid development of genomic molecular tools has led to an unprecedented opportunity to gain insight into the biodiversity which inhabit these important systems, such as: population structure, species-specific adaptations, community composition and ecosystem function. This session will focus on advancement in our understanding of freshwater biodiversity with molecular approaches (such as environmental DNA, metabarcoding, omics and comparative genomics) and we particularly invite talks with real-world application of molecular methods which aid conservation and protection of the biodiversity within these systems.

RS07. Freshwater quality: research to support progress towards zero pollution targets

Water quality issues continue to degrade freshwater ecosystems around the world. This session investigates the challenges posed by major freshwater pollutant pressures including eutrophication, organic pollution, and toxic compounds including plastics, as well as solutions that promote their sustainable management. In particular, this session explores progress towards the achievement of zero-pollution targets, in line with the ambitious EU vision that aims to reduce pollution to levels no longer considered harmful to health and natural ecosystems by 2050.

RS08. The past is the key to the future: the role of palaeoecology in understanding and managing fresh waters

Palaeoecology has progressed rapidly as a science in the last few decades from one typically associated with long-term reconstructions of the environment based on one or two proxies to a much more diverse discipline. The new palaeoecological approaches complement contemporary ecological studies and employ a wide range of physical, chemical and biological indicators to assess local and regional changes of freshwater ecosystems and in turn to inform their conservation and management. This session invites contributions from across the full spectrum of palaeoecology as applied to fresh waters and especially encourages papers that showcase the role of palaeoecology in freshwater management and conservation.



RS10. Biomonitoring

The assessment of freshwater environments using biological communities has been a useful tool for over a century, enabling early detection of environmental stressors and thus timely action by national monitoring agencies. However, the development and application of effective biomonitoring approaches can often be complex due to the dynamic nature of freshwater systems, in which multiple stressors typically interact to influence ecosystem health. This session will focus on the use of both structural and functional communities in novel and emerging biomonitoring approaches designed to enable effective health assessments in freshwater ecosystems adapting to global change.

RS11. Restoration, conservation and management of freshwater systems

With the EU Biodiversity Strategy 2030 and its key element, the new nature restoration law, freshwater restoration, conservation and sustainable management will hopefully gain further importance in research and policy contexts. This session will focus on current developments related to systematic restoration, conservation and management approaches from the local to the catchment to the continental scale, practical applications including nature-based solutions, and discussing knowledge gaps and potential future research avenues.

RS12. Advances in environmental flow science and practice

Accelerating the design and implementation of environmental flows (e-flows) is a management and policy priority to curb the decline of freshwater biodiversity and the associated benefits to people. At the same time, increasing the effectiveness of future e-flow implementations requires continued development of their scientific foundation, better inclusion of uncertainties due to global change, and more meaningful engagement of diverse stakeholders. This session aims to showcase research from all perspectives on environmental flows and levels, from the stream reach to the global scale, and from innovative case studies of e-flow implementation to advances in e-flow frameworks for sustaining human cultures.

RS13. Climate change and freshwaters: challenges and solutions

Climate change is having profound impacts on freshwaters, with rising temperatures and changing precipitation patterns leading to shifts in hydrology, water quality, and the distribution and abundance of aquatic species. This session will discuss research on climate change impacts on aquatic ecosystems, including consequences for water availability, water quality or extreme events (e.g., heat). Contributions on strategies for managing freshwaters in the face of climate change, including the use of adaptive management and integrated watershed management approaches are also welcome!

RS14. Emergent diseases and pathogens in freshwaters

The role of pathogens in fresh waters is almost certainly greatly underestimated. New examples of a role for diseases and parasites in the population dynamics of freshwater animals are arising frequently, and new diseases are being discovered. The incidence of new pathogens is linked to the rapid spread of non-native species, but new diseases may be associated with environmental change. They are of conservation importance and can be of great economic significance (as in the case of fish diseases).

RS15. Ecological interactions in freshwater environments

Research on ecological interactions in freshwaters has typically focused on food webs due to their important role in determining the structure and function of these ecosystems. There are, however, also a range of other positive and negative interactions occurring in freshwater systems, e.g., parasitism, symbioses, competition, to name just a few. This session is a space to talk about ecological interactions in all their forms and how they can affect the structure and function of freshwater ecosystems.

RS16. Freshwater meiofauna

The freshwater meiofauna - small multicellular animals - consist partly of the very young stages of species that form the more familiar macrofauna, but also several groups that remain in meiofaunal size fraction throughout their lives. They seem to be ubiquitous and can make up a substantial fraction of benthic secondary production. We still need to know far more of their role in freshwater food webs, in processes such as grazing and decomposition, and as part of the biofilm community. Molecular methods of identification hold promise for accelerating progress in this area.

RS17. Science dissemination/communication & education

Freshwater ecosystems are degrading at alarming rates, leading to a biodiversity crisis and posing risks to food and water security. Thus, there is an urgent need to raise social awareness that can promote management and political actions. Within this context, communicating science is essential to make the challenges that freshwater ecosystems face visible and promote societal transformation. For a long time, scientists have paid little attention to communicating their results to broad audiences. However, science communication is becoming increasingly important (e.g. it is often valued by selection committees) and easy (social media, new data visualization tools, etc.). In this session, we aim at debating science communication and education, exploring the existing barriers and opportunities.

RS18. The ecology of the freshwater underworld: springs, hyporheic zones and other groundwater-dominated ecosystems

Groundwater is a hidden asset, providing a vital source of freshwater that delivers essential base flow to rivers and acts as habitat for biodiverse communities, including some rare and specialist species. The ecological importance of groundwater and the functions it supports in wider freshwater ecosystems is increasingly recognized by an emerging body of research. This session will share research exploring the breadth of groundwater-influenced ecosystems, from springs to the hyporheic zone and deeper phreatic groundwaters. We invite papers examining the biodiversity, structure and functioning of groundwaters as well as evaluating how ecological criteria can be used to assess the value and function of this important resource.

RS19. Fish ecology

Herbivorous and predatory freshwater fish play a key role in aquatic foodwebs contributing to its stability, yet also to the regional biodiversity. They are indicators of ecosystem health and hence are used in assessment of the ecological status of water bodies. Yet fish also display a huge variety of life histories and traits. What do we know about the diversity/biology/ecology and vulnerability of small fish? Does climate change alter behaviour and other traits of fish species? How can fish species (especially, yet not only, the small ones) cope with heat stress and declining space? Does

environmental change increase parasite load of fish or foster new biological interactions? Contributors are invited to address these and other topics which might have emerged only recently and put them in to focus.

RS20. Aquatic terrestrial linkages

The aquatic-terrestrial ecotone, being an integral part of both landscapes and riverscapes as documented in many scientific studies, is more than ever under enormous pressure with respect to its structural and functional properties. Especially the typical and often not predictable event-related as well as seasonal hydrologic dynamics may be seriously altered by human activities and ongoing climate change, thus interfering with structures and processes and hence ecosystem services provided by this specific environment. Can we deduce promising conservation and management strategies from growing knowledge? We invite contributions highlighting the significance of flow dynamics on these aquatic-terrestrial linkages either from natural observations, field or laboratory experiments, including molecular approaches as novel tools. Other key aspects defining the ecotone characteristics which might play a role, e.g., focusing on standing water bodies, are welcome as well.

RS21. Wetland ecology and management

This session addresses a variety of issues related to fragile wetland ecosystems – from biodiversity and environmental parameters that determine distribution of taxa and habitats, through functional relations, up to the monitoring and management. The idea is to point to complexity, to provide new data and approaches to research, summarize the state of related ecosystems, but also to offer methodologies and point to necessity of their conservation.

RS22. Stakeholder/community engagement in restoration, conservation, management planning

Participatory processes, i.e. the collaboration of researchers, stakeholders, local experts, decision makers, and the general public, are becoming a standard feature of many environmental decision making efforts. This trend is mirrored in 21st century environmental legislation, directives, policies and research funding calls which now often ask for knowledge co-production. This session invites papers which investigate theoretical developments as well as practical application examples of stakeholder engagement, co-production, public participation etc. This session specifically aims at building momentum for engagement processes that are based on scientific understanding as well as building a network of researchers interested in and/or actively working with collaborative processes.

RS23. Ditching misconceptions: the ecological diversity of artificial waterbodies

Artificial waterbodies are widespread and support diverse ecological communities and a range of biochemical processes. However, these characteristics are often undervalued and thus understudied relative to similar processes and communities in natural and semi-natural waterbodies. This session will showcase the full range of biochemical and ecological research conducted in artificial waterbodies, and aims to promote discussions around maximising the value of artificial waterbodies for mitigating the effects of climate change and biodiversity loss that are predicted to manifest in the coming decades.



SEFS13 Special Sessions

SS01	Mechanisms underlying responses to multiple stressors
SS02	Monitoring, managing and protecting/restoring freshwaters – the role and power of citizen science
SS03	Conservation of Anadromous Fish in a Changing World
SS04	Soundscape studies in ponds and lakes
SS05	Freshwater Macroecology research and perspectives
SS06	Ponds as integral part of aquatic and terrestrial landscapes
SS07	Conservation translocations: successes, failures and lessons learned
SS08	Freshwater ecosystems and urbanization – is the sustainable development of cities really possible?
SS09	The temporal dynamics of multiple stressors
SS10	Freshwater salinization: causes, consequences and management
SS11	Understanding ecological complexity of freshwaters under a chemical stress context
SS12	Modelling meets data science - what can we and our machines learn from each other?
SS13	River connectivity: processes, methods and case-studies
SS14	Drying rivers in a time of global change
SS15	Who knows what is “good”? Defining aquatic ecosystem health targets for the United Nations Sustainable Development Goals, national and international policies
SS16	Unravelling biological invasions in freshwaters: challenges and knowledge gaps in a hyper-connected world
SS17	Delta Ecosystems in transition
SS18	Driving forward the network on the interpretation, conservation and management of temporary ponds

SS01. Mechanisms underlying responses to multiple stressors

Convenors:

Prof. Dr. Bernd Sures, University of Duisburg Essen

Prof. Dr. Daniel Hering, University of Duisburg Essen

Prof. Dr. Ralf Schäfer, University of Koblenz-Landau

The effects of multiple stressors on freshwater biota have been in the focus of research since a few decades. However, the mechanisms underlying multiple stressor effects and the recovery trajectories from multiple stressors remain poorly understood. Our session aims at unravelling these mechanisms, thereby fostering our capacity for prediction. We particularly welcome contributions targeting the mechanistic understanding of multiple stressor effects, e.g. on direct / indirect effects, on the role of dispersal or of biotic interactions for recovery from multiple stress and on a comparison of stressor tolerances between laboratory and field studies. Contributions resulting from field studies, mesocosm experiments, or modelling approaches for all components of the stream food web are welcome.

SS02. Monitoring, managing and protecting/restoring freshwaters – the role and power of citizen science

Convenors:

Dr Bill Brierley, Freshwater Biological Association, UK

Ms Rebecca Lewis, Buglife, UK

Dr Laurance Carvalho, Norwegian Institute for Water Research (NIVA), Norway

Public interest and concerns about the health of our freshwaters has led to the development of many varied citizen science programmes around the world. These initiatives bring together members of the public (especially young people and ECRs), researchers, water managers/regulators and policy makers in new inclusive ways. This is leading to new types of evidence and ways of thinking on how freshwater ecosystems are managed and protected. This is all happening at a time when many established water monitoring programmes are being reduced or are under threat due to reduced finances. It also presents an opportunity to address gaps in current monitoring programmes (e.g. small water bodies), both spatially and temporally.

Both national and international initiatives are proliferating and there are some key issues that need to be developed in an inclusive way between citizen scientists, researchers, regulators and managers to identify best practice covering method development and training, monitoring (e.g. where citizen science should be targeted), data and information sharing and reporting and how we develop this into the evidence required for sound decision making in freshwater management.

SS03. Conservation of Anadromous Fish in a Changing World

Convenors:

Dr Jack Bloomer, Tyne Rivers Trust

Dr Colin Bull, Atlantic Salmon Trust

Anadromous fish have been negatively affected by changing land-use patterns for centuries and, increasingly, a warming climate in freshwater and marine systems. While conservation efforts to address these issues are widespread, they are often implemented based on relatively poor knowledge of their potential to influence lifetime survival prospects. Here we discuss the challenges facing anadromous fish in freshwater and ocean-going phases and propose a new management decision support framework that integrates mechanistic understanding from across the salmon life cycle. This empowers river and catchment managers to deliver actions with the greatest benefit for anadromous fish and many other freshwater species.

SS04. Soundscape studies in ponds and lakes

Convenors:

Mr David de la Haye, Newcastle University. Music Technician and PhD candidate.

Prof. Carl Sayer, Geography at UCL. Pond Restoration Research Group

Mr Jack Greenhalgh, University of Bristol. Freshwater ecology PhD student

Listening to underwater soundscapes of ponds, lakes, and rivers reveals much about the biodiversity hidden beneath the surface. Ongoing research into the acoustic ecology of freshwater habitats continues to captivate listeners with a bewildering array of sounds produced by invertebrates, amphibians, and aquatic plants. This session will explore this frontier sonic research, and how the listening process itself can be used to make sense of species richness in an accessible way. It will also promote the use of hydrophones not only for acoustic documentation but also to inspire stronger cultural connection to water through artistic practice.

SS05. Freshwater Macroecology research and perspectives

Convenors:

Researcher Gonçalo Duarte, Forest Research Centre, School of Agriculture, University of Lisbon, Associate Laboratory TERRA

Researcher Paulo Branco, Forest Research Centre, School of Agriculture, University of Lisbon, Associate Laboratory TERRA

Professor Pedro Segurado, Forest Research Centre, School of Agriculture, University of Lisbon, Associate Laboratory TERRA

Ecosystems are increasingly impacted by anthropogenic occupation and actions, in particular freshwater systems given their ubiquitous presence throughout the landscapes and the disproportional elevated and imperiled biodiversity they contain. Considering the hierarchical, dendritic and directional nature of river network, using riverscape-related approaches provides a sound methodological perspective for freshwater macroecological studies. Moreover, European policies and management guidelines generally target large spatial scales and extents. Considering this, freshwater macroecological research is a scientific field of growing interest that provides valuable knowledge to assess the status and safeguard the future of river ecosystems under a changing environment.

SS06. Ponds as integral part of aquatic and terrestrial landscapes

Convenors:

Helen Greaves, UCL / EPCN / NPP

Dr Marlene Pätzig, EPCN / EPCN Germany

Simon Johnson, FBA / NPP

Ponds (small lentic systems, <5 ha, <5 m depth) are of enormous global importance due to their worldwide distribution and multiple ecosystem functions. Nevertheless, they receive less attention compared to larger aquatic systems and are particularly vulnerable, especially to climate change and anthropogenic stressors. The European Pond Conservation Network (EPCN) was established in 2004 to promote pond conservation. Since then, much scientific knowledge and practical experience has been gained. This session invites contributions representing not only the diversity of ponds in terms of the natural and manmade habitats in which they are situated but also their origin and utilisation, ranging from traditional uses to contemporary employment as Nature-based Solutions.

SS07. Conservation translocations: successes, failures and lessons learned

Convenors:

Dr Louise Lavictoire, Freshwater Biological Association

Dr John Taylor, Natural Resources Wales
Dr Roisin Campbell-Palmer, Beaver Trust

Conservation translocations are movements of a species from one area to another for the conservation benefit of the species or local ecosystem. In this session we will discuss the lessons learned from a number of conservation translocation projects on a wide variety of species from across Europe (and beyond), and aim to draw out common factors which can cause successes as well as challenges. We will also consider monitoring requirements to accurately assess the scale of success/failure, and pose important questions surrounding cost-benefit analyses and deciding when to stop, either due to success, or as part of an exit strategy.

SS08. Freshwater ecosystems and urbanization – is the sustainable development of cities really possible?

Convenors:

Dr Maria João Feio, University of Coimbra, Marine and Environmental Sciences Centre, Portugal
Prof. Salomé Almeida, University of Aveiro, GeoBioTec, Portugal
Prof. Sylvain Dolédec, University of Lyon 1, France

Healthy freshwater ecosystems can increase urban livability, climate change resilience, flood mitigation, public health and well-being and contribute to the preservation of biodiversity. Yet, urbanization has been leading to strong hydromorphological modifications; water pollution; removal of riparian vegetation; spread of invasive species; increased GHG (methane) emission; among others. These pressures alter freshwater biodiversity, ecosystem functions and services. However, the patterns of response and magnitude, and how these aspects are interrelated remain unclear, preventing the implementation of effective rehabilitation measures. Participatory approaches may contribute to achieve better results. This special session will bring together scientists to debate all these aspects.

SS09. The temporal dynamics of multiple stressors

Convenors:

Dr Michelle Jackson, Oxford

Novel ecosystems are increasingly the norm, and these are also exposed to multiple new stressors associated with human activity. Although significant strides have been made in recent years in understanding how stressors operate when they are imposed simultaneously, their temporal dimension has largely been ignored. This is a critical research gap as the timing of stressor events is key to understanding their ecological outcomes. Even when stressors occur in perfect synchrony in time (which is rarely, if ever, the case), they can have combined effects that do not equal the sum of their parts. In this session we invite talks that ask, does the order of stressor exposure matter? If one stressor comes first, are there different biodiversity outcomes? Is there any evidence of adaptation if stressors are staggered over time?

SS10. Freshwater salinization: causes, consequences and management

Convenors:

Dr. Miguel Cañedo-Argüelles, IDAEA-CSIC
Dr. Elisabeth Berger, University of Koblenz-Landau
Dr. David Cunillera, University of Barcelona

All around the world the ion concentration of freshwater ecosystems is being altered by human activities. Available studies have shown that this can have strong effects on socioecological systems. However, there are still important gaps of knowledge that limit our ability to manage this emerging

environmental problem. In this session we will address some pressing research questions like the interaction of freshwater salinization with other stressors, the potential of salinization to trigger trophic cascades in freshwater ecosystems or the effects of freshwater salinization on ecosystem functioning and human welfare.

SS11. Understanding ecological complexity of freshwaters under a chemical stress context

Convenors:

Dr. Mirco Bundschuh, Functional Aquatic Ecotoxicology, iES Landau, Institute for Environmental Sciences, University of Koblenz-Landau, Germany

Dr. Andreu Rico, Cavanilles Institute for Biodiversity and Evolutionary Biology, University of Valencia, Spain

Prof. Dr. Antonio Camacho, Cavanilles Institute for Biodiversity and Evolutionary Biology, University of Valencia, Spain

Further than affecting the physiology of aquatic organisms, chemical stress in freshwaters can shape local populations and communities as well as the functions these communities perform. The effects of chemical stress, and the interaction among these effects, may act at multiple levels of organization, from genes to landscape, or even the biosphere as a whole. This session aims to collect contributions of scientific research with the purpose of consolidating the scientific foundations of ecotoxicology in the context of Ecology, through the interaction of freshwater ecologists and ecotoxicologists.

SS12. Modelling meets data science - what can we and our machines learn from each other?

Convenors:

PD Dr. Nele Schuwirth, Eawag

Dr. Sami Domisch, IGB

MSc Johannes Feldbauer, TU Dresden

Dr. Thomas Petzoldt, TU Dresden

In the past, mechanistic modelers, statistical modelers and machine learning communities tended to work in different silos, and also the lake and river modelling communities had limited exchange. There is however an increasing interest in integrating data in mechanistic models and inferring potential mechanisms from data. In this session, we want to overcome barriers between different research fields to exchange on novel, trending, or classical methods for synthesizing and increasing our understanding and for prediction of freshwater ecosystem responses to environmental drivers. We welcome presentations on technical challenges and methodological issues as well as applications that focus on modelling results.

SS13. River connectivity: processes, methods and case-studies

Convenors:

Researcher Paulo Branco, Forest Research Center, School of Agriculture, University of Lisbon | Associate Laboratory TERRA

Researcher Gonçalo Duarte, Forest Research Center, School of Agriculture, University of Lisbon | Associate Laboratory TERRA

Professor José Maria Santos, Forest Research Center, School of Agriculture, University of Lisbon | Associate Laboratory TERRA

River network connectivity is paramount for the maintenance of several ecosystem processes and to maintain healthy ecosystems. Mostly because crucial habitats within rivers are temporal and/or spatially separated, and, animals, nutrients, water and sediments need to be able to move freely along river networks. To holistically approach river

connectivity, one should be able to measure fragmentation, apply connectivity management and enhancement actions, such as fishway development and dam removal, as well as techniques to prioritize restoration actions accounting for their potential benefits and drawbacks. This session will holistically showcase all research related to river network connectivity.

SS14. Drying rivers in a time of global change

Convenors:

Prof. Rachel Stubbington, Nottingham Trent University

Dr Thibault Datry, INRAE

Dr Romain Sarremejane, INRAE

Rivers and streams which sometimes dry are diverse, dynamic ecosystems that dominate global river networks. These ecosystems support high aquatic–terrestrial biodiversity and deliver valued ecosystems services, are increasing in extent due to climate change and other human impacts. As a result, drying rivers are currently the subject of considerable research spanning disciplines including biogeochemistry, ecology, geomorphology, hydrology and the social sciences. This inclusive session will bring together scientists from across disciplines to share recent advances in drying river science and its application to inform the protection of biodiversity within ecosystems adapting to global change.

SS15. Who knows what is “good”? Defining aquatic ecosystem health targets for the United Nations Sustainable Development Goals, national and international policies

Convenors:

Dr Sandra Poikane, EC Joint Research Centre

Dr Prof Martyn G Kelly, Bowburn Consultancy; University of Nottingham

Dr Prof Agnieszka Kolada, Institute of Environmental Protection, Poland

Target setting is fundamental for long-term sustainable water management. Targets are essential for identifying water bodies in need of restoration and for assessing restoration effectiveness. Pressure-related targets help to diagnose cause(s) of deterioration and guide the urgency and scale of remedial action. However, targets are often not based on hard evidence and set using “expert judgement”, “best available” sites or a simple division of gradients. Whilst we have made progress setting targets for nutrients, we still lack targets for less-understood pressures, such as salinization and hydrological/ morphological alterations. It is timely to share experiences on all aspects of target setting and evaluation in the context of freshwater ecosystem management. In this session, we welcome critical evaluations of past target setting successes and failures as well as new perspectives on enhancing this process in the future.

SS16. Unravelling biological invasions in freshwaters: challenges and knowledge gaps in a hyper-connected world

Convenors:

Dr Simone Guareschi, Doñana Biological Station

Dr Josie South, University of Leeds

Dr Zarah Pattison, University Of Stirling

Dr Kate Mathers, Loughborough University

Biological invasions are an imperative global scale challenge for the management and conservation of inland waters. Substantial knowledge gaps prevent a full understanding of biological invasions and limit our ability to effectively manage them.

This Special Session seeks contributions focused on biological invasions at all spatial and temporal scales, including experimental, field and modelling studies. All organisms and geographical areas are encouraged. We welcome submissions related but not limited to: implications of invasive species; population dynamics; dispersal vectors; management efforts and policy implications. We also strongly welcome studies bridging the disciplines of invasion biology and social science.

SS17. Delta Ecosystems in transition

Convenors:

Prof Suzanne McGowan, Netherlands Institute of Ecology

Prof Andy Large, Newcastle University

Dr Ginnie Panizzo, University of Nottingham

Prof Andy Henderson, Newcastle University

River deltas are productive and dynamic environments, supporting a diversity of lentic and lotic ecosystems. Globally, over 500 million people live on river deltas, many of whom depend on freshwater ecosystem services. The aquatic ecosystems of deltas are often interdependent and highly interconnected over large terrestrial areas. Multiple threats including climate change, rising sea levels, pollution from intensive farming, urban and industrial expansion and damming are changing freshwater ecosystems in delta regions. We invite contributions on deltaic systems from around the world aiming to learn more about their freshwater systems including ponds, rivers, ditches, floodplains, wetlands reservoirs and lakes.

SS18. Driving forward the network on the interpretation, conservation and management of temporary ponds

Convenors:

Dr. Vito Emanuele Cambria, Sapienza University of Rome

Prof. Fabio Attorre, Sapienza University of Rome

Prof. Simonetta Bagella, University of Sassari

On March 2022, a Natura 2000 Networking Event titled “Disentangling the complexity and variability of Mediterranean temporary ponds (habitat 3170*)” was organised at the Botanic Garden of Rome. About 80 Natura 2000 practitioners, researchers and policy-makers from the whole Mediterranean area convened to brainstorm assessment, restoration and valorisation schemes to harmonise identification approaches and enable long-term conservation of habitat 3170*. SEFS13 will be an excellent opportunity to put forward the network and to exchange non-Mediterranean views and methodological advancements on the interpretation, conservation and management of temporary ponds.