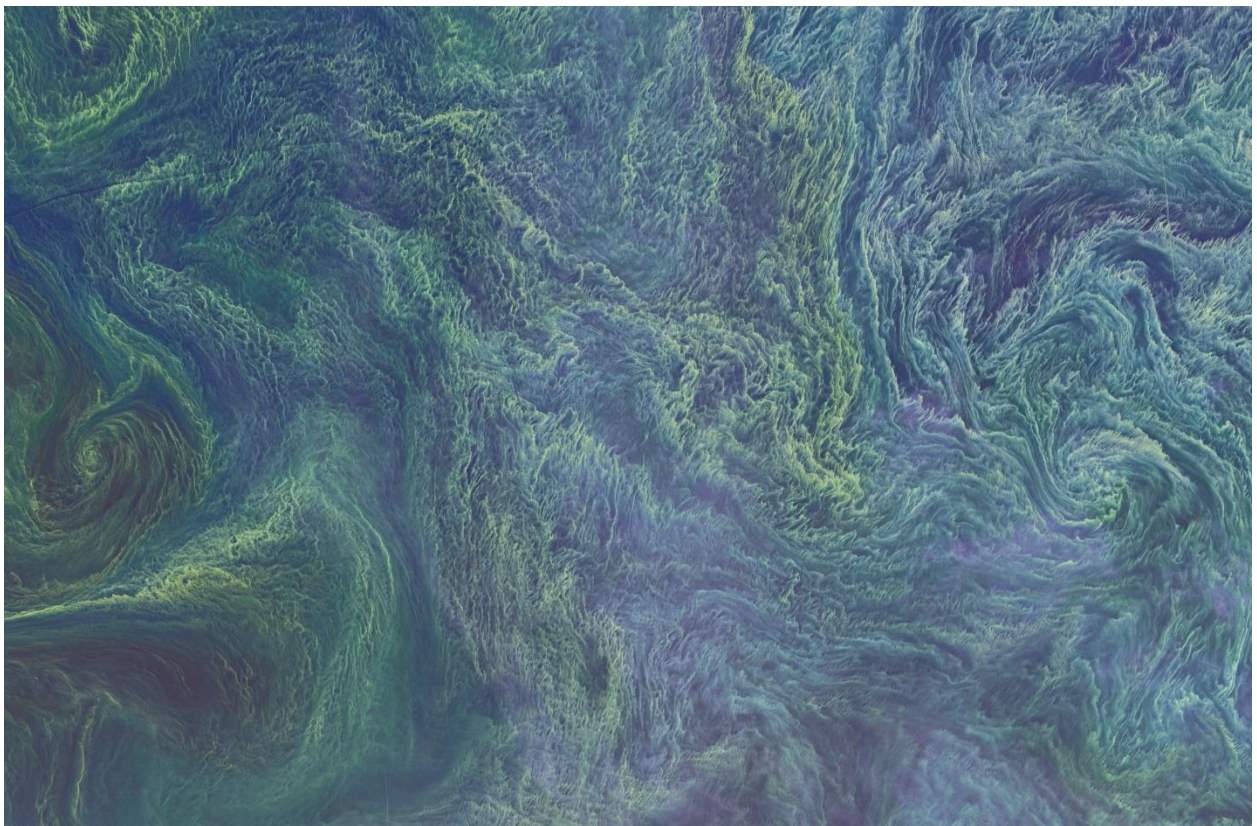


FishBase Symposium 2016

The Baltic Sea / Östersjön

Swedish Museum of Natural History

19 October 2015



Summary



FishBase Sweden
Naturhistoriska riksmuseet
Box 50007
104 05 Stockholm
fishbase@nrm.se
08-5195 40 00

28 October 2016

Text: Respective speaker and Michael Norén, FishBase Sweden

Cover photo: Satellite photo of cyanobacterial plankton bloom in the central Baltic Sea. The long side of the picture is approximately 150 kilometres. NASA Earth Observatory. CC-BY

Other photos: Linnea Rundgren. CC-BY-SA

Published by FishBase Sweden, Stockholm.

FishBase Symposium 2016 – The Baltic Sea

Introduction.....	4
Moderator: Sara Bergek.....	5
Martin Snickars.....	6
<i>IMPACT OF EUTROPHICATION AND CLIMATE CHANGE ON FISH IN THE BALTIC SEA – A BRIEF OVERVIEW</i>	6
Lovisa Wennerström	7
<i>GENETIC BIODIVERSITY IN THE BALTIC SEA: CURRENT KNOWLEDGE RELATING TO CONSERVATION MANAGEMENT</i>	7
Gustaf Almqvist	8
<i>WHAT COULD AN ECOSYSTEM BASED FISHERIES MANAGEMENT IN THE BALTIC SEA BE AND ARE WE ON THE RIGHT TRACK?</i>	8
Irene Adrian-Kalchhauser	9
<i>ADVANTAGES AND CHALLENGES OF ENVIRONMENTAL DNA ASSAYS IN MONITORING SPECIES DISTRIBUTION AND ABUNDANCE</i>	9
Anna Törnroos.....	10
<i>FISH – MORE THAN JUST FOOD? THEIR FUNCTIONAL ROLES, DIVERSITY AND LONG-TERM TRENDS IN THE BALTIC SEA</i>	10
Willem Dekker	11
<i>OUR EEL STOCK, IS IT SLOWLY DRYING UP?</i>	11
Participant list FishBase Symposium 2016	17
Programme (English)	22
Program (Svenska).....	23

Introduction

The theme for the 14th annual FishBase Symposium was *The Baltic Sea / Östersjön*. The Baltic Sea is a small brackish inland sea, with restricted connection to the Atlantic and low biodiversity, which makes it very sensitive to disturbance. At the same time it is under a lot of pressure from the estimated 85 million people living in the 14 countries located in the Baltic Sea catchment area, making it difficult to establish common environmental and fishing policies. Added to that are global drivers like climate change, rising sea levels, and invasive species.

To learn more about the situation for fish and fishery in the Baltic Sea, today and in the foreseeable future, FishBase Sweden invited six experts who gave lectures on a range of topics. Martin Snickars gave a brief overview of the effects of climate change and eutrophication on fish in the Baltic Sea. Lovisa Wennerström talked about the different levels of genetic diversity among fish stock in the Baltic Sea, and implications for fisheries management. Willem Dekker talked about the very real risk that the eel, *Anguilla anguilla*, faces extinction – but also that efforts to protect it may be starting to show results. Gustaf Almqvist explained the concept of ecosystem based fisheries management as it pertains to the Baltic Sea. Irene Adrian-Kalchhauser related real-world experiences with using environmental DNA for the monitoring of fish species distribution and abundance. Anna Törnroos rounded off the Symposium by talking about the functional roles and ecosystems services fish provide beyond being mere food for us humans.



198 participants listened to six invited experts give lectures about the Baltic Sea. Videos of the lectures have been posted to FishBase Sweden's YouTube channel, FishBase's Facebook page, and the homepage of the Swedish Museum of Natural History.

Moderator: Sara Bergek

Researcher and Deputy Director, Institute of Freshwater Research, SLU, Sweden



Sara Bergek took her PhD at Uppsala University where she studied population genetics in perch in lakes and in the Baltic. She has a background in population genetics but has a broad interest for aquatic ecology, fish ecology and fisheries management related questions. Sara is now a researcher and Deputy Director at the Institute of Freshwater Research, Department of Aquatic Resources, SLU. Her work is now focused towards monitoring program of the large lakes in Sweden, ecosystem research, ecosystem services and development towards ecosystem based management.

Martin Snickars

Husö Biological Station and Åbo Akademi University, Finland



Martin's has a background in marine biology and his research interests involve long-term changes in fish and zoobenthos communities as well as marine habitats in coastal waters. Recently his research has been focusing on effects of eutrophication and climate change on species distribution and production in benthic ecosystems. His research has also involved spatial marine ecology and habitat function of coastal fish nursery areas such as coastal lagoons, and behavioural responses of early life-stages of fish following environmental change. Martin has also

worked at the Natural Heritage Services Finland with applied resource management such as marine spatial planning and assessment of nature values of marine ecosystems. Martin is Head of Husö biological station at the Åland Islands, and Academy Lecturer at Environmental and Marine Biology, Åbo Akademi University.

IMPACT OF EUTROPHICATION AND CLIMATE CHANGE ON FISH IN THE BALTIC SEA – A BRIEF OVERVIEW

This talk will give a brief overview of some of the responses of fish to the two major drivers of change during the last 50-70 years in the Baltic Sea, i.e. climate change and eutrophication. During this period, environmental change has altered many marine ecosystems as it seems with an increasing pace. During the first part of the period, higher nutrient levels seem to have induced an overall positive effect on ecosystem productivity, especially in planktivorous fish such as sprat and herring. Eutrophication increases pelagic primary production, facilitating fish production but also the risk of low oxygen levels in deep water as well as decreased photic depth that may influence predator-prey interactions. Climate change resulting in increased temperature and lower salinity levels has in turn contributed to abrupt changes (so called regime shifts) inducing trophic cascades and affecting food-web dynamics in both in pelagic ecosystem and shallow coastal ecosystems. Rising water temperature during the last decades has facilitated a shift in the depth distribution of coastal benthic-feeding fish such as perch and cyprinids, as deeper waters are getting warmer. This may have consequences for the food-web as fish expand their feeding grounds towards deeper waters.

Lovisa Wennerström

Stockholm University, Sweden



Lovisa Wennerström is a researcher from the Department of Zoology, Stockholm University. Her research focuses on identifying and describing population genetic patterns primarily in marine species, but also in terrestrial species, such as the Swedish moose. She has studied a number of Baltic Sea species, such as salmon, pike, sticklebacks, amphipods, and mussels. She has also been involved in trans-disciplinary work on how genetics is incorporated in management policies. Lovisa defended her PhD-thesis “Population genetic patterns in continuous environments in relation to conservation management” earlier this year.

GENETIC BIODIVERSITY IN THE BALTIC SEA: CURRENT KNOWLEDGE RELATING TO CONSERVATION MANAGEMENT

Genetic variation constitutes a key part of biological diversity, forming the basis for variation also on species and ecosystem levels. Describing and monitoring this basal level of biodiversity is vital for effective management and conservation of species and populations. Genetic data can be used to provide information on the evolutionary history of species, identify the location of borders between subpopulations, estimate migration rates and identify populations to prioritize in conservation. All of which is valuable information for managers. Information on genetic patterns exist to some degree for over 60 Baltic Sea species, however this information is only used in management for a handful of them. One reason for this is a lack of communication between academics and bureaucrats. Another is the fact that genetics is being prioritized in international conventions, but on national and local levels the importance of conserving genetics is rarely mentioned in policy documents. This talk will focus on genetic patterns useful for management and conservation in the Baltic Sea. What we know and how this information can be used practically.

Gustaf Almqvist

Stockholm University Baltic Sea Centre, Sweden



Gustaf Almqvist is a researcher at the Stockholm University Baltic Sea Centre, Baltic Eye, with focus on Baltic fish ecology and fisheries. He has a PhD in marine- and freshwater ecology, with a thesis on invasive species in the Baltic Sea. He has also worked with research, development and mitigation of climate change impacts at SIDA (The Swedish International Development Cooperation Agency). Before joining the Baltic Eye, Gustaf worked at the Swedish environmental NGO the “Fisheries Secretariat”, also there with focus on fisheries policy in the Baltic Sea region and at EU level.

WHAT COULD AN ECOSYSTEM BASED FISHERIES MANAGEMENT IN THE BALTIC SEA BE AND ARE WE ON THE RIGHT TRACK?

Baltic fisheries are, compared to fishing in other European regions, considered to be well managed. While basically true, the changing marine environment combined with large human impact makes it particularly challenging to manage the fisheries in the Baltic sustainably. Furthermore, Baltic fisheries are currently handled in separation and a more inclusive ecosystem-based fisheries management (EBFM) is called for. This is also in agreement with objectives in the EU environmental legislations, although ideas on what that actually means and how it could be realized is debated. I will briefly present the state of Baltic fish stocks, how they are managed and suggest how broader environmental considerations could be taken in the management. I will highlight the need to consider connections and overlaps between fisheries management, habitat management, and nature conservation measures. Suggestions on how to make use of, and in some cases develop, already existing management structures within the region to overcome this, will also be presented. Depending on how it will be designed, EBFM has a potential to improve the buffer for environmental change, to provide long-term sustainability for Baltic fish stocks, and combined with a more balanced stakeholder involvement, benefit a positive economic development for the region.

Irene Adrian-Kalchhauser

Universität Basel, Switzerland



Irene Adrian-Kalchhauser is an Austrian molecular biologist and geneticist working at the University of Basel in Switzerland. After her studies of molecular biology at the University of Vienna and at the University of Bergen, she investigated fruit fly muscular development at the Institute of Molecular Pathology in Vienna. She then moved to Basel to use the *C. elegans* germline as a model to identify gene regulatory networks involved in cell fate decisions. Thereafter, she moved into the field of invasion biology and ecology. In recent years, she has established a range of molecular

tools to study the round goby, among them the round goby genome sequence. Her current research as independent research fellow at the University of Basel aims at deciphering the role of regulatory mechanisms such as gene expression regulation and epigenetic regulation in adaptive processes and behavioural decisions of wild populations of fish.

ADVANTAGES AND CHALLENGES OF ENVIRONMENTAL DNA ASSAYS IN MONITORING SPECIES DISTRIBUTION AND ABUNDANCE

A major task in environmental management is the monitoring of species occurrences and abundances. This is a challenging mission for species which live in habitats that are difficult to access, or for species which have a very remote lifestyle, or for species which are rare. In recent years, approaches involving environmental DNA have therefore gained increased attention. These assays detect organisms even when they are not physically present. Rather, the occurrence of a species is inferred from the DNA traces it has left behind, much like the presence of a person at a crime scene can be inferred from DNA traces in criminal investigations. Such assays have great potential in aquatic habitats, where the monitoring of species often requires special equipment and/or special training and/or catching (and thus harming) the organism of interest. Round gobies are a species under surveillance in Europe and Northern America. They are invasive and are, in many areas, considered as competitors for native species. Also, they are feared to endanger ongoing renaturation and restocking programs of, for example, the salmon. Therefore, their whereabouts are of great interest to environmental managers. However, they are difficult to detect when they are rare, since they are small, hide in the sand and under stones, and do not react well to electrofishing, a technique commonly used to monitor freshwater habitats. In my presentation, I will provide an introduction to the round goby and to environmental DNA assays. I will outline the methodologies available and will then present an environmental DNA assay that allows to detect the presence of invasive gobies from water samples, without the need to actually catch or sight the fish. Most importantly, I will share some general learnings about the advantages and shortfalls of environmental DNA assays for monitoring purposes.

Anna Törnroos

Åbo Akademi University, Finland



Anna Törnroos is a marine biologist and post-doctoral scientist within the EU BONUS project BIO-C3 (www.bio-c3.eu) at Åbo Akademi University in Finland. Currently she lives and works in Copenhagen as a visiting researcher at the Centre for Ocean Life (www.oceanlifecentre.dk) hosted by the Technical University of Denmark. Anna's research has focused on the diversity and functional roles of animals on the seafloor, particularly benthic macrofauna (such as

worms, mussels and snails). Lately her interest has also turned to fish and the interactions between macrofauna and fish, driven particularly by the fact that the former is an important food source for the latter. The Baltic Sea has always been of particular interest in her research, and still is as the BIO-C3 project aims to address biodiversity changes, their causes, consequences and possible management implications for the Baltic Sea.

FISH – MORE THAN JUST FOOD? THEIR FUNCTIONAL ROLES, DIVERSITY AND LONG-TERM TRENDS IN THE BALTIC SEA

When it comes to fish we usually think of their role as food for us humans and by doing so, often relate to a few economically interesting species and their stocks. There are, however, a lot more fishes in the marine ecosystem that all play somewhat different roles. Fish are diverse in terms of how they interact with and respond to their physical and chemical environment depending on the characteristics or traits they express. Some eat organisms living on the bottom, while others find food in the water column, some might reproduce fast while others only produce a few eggs that they guard. This is also true for fish in the relatively species poor Baltic Sea and means that fish play many different roles in the food web and in the environment in which they live. The talk aims to shed light on how we can make use of this biological knowledge to get a deeper understanding of the functional roles and diversity patterns of fish (and other marine organisms) in the Baltic Sea. It also provides examples of where in the Baltic Sea we can find certain functional characteristics and why. For management and conservation purposes it is also important to know the trends over time of certain functional types and diversity measures in order to project any future changes, and thus I will present some recent results from Baltic Sea coastal fish communities.

Willem Dekker

Swedish University of Agricultural Sciences (SLU), Sweden



Dr. Willem Dekker has been involved in eel research since 1984. Starting from a local perspective on the declining eel fisheries in Lake IJsselmeer (the Netherlands), he developed a pan-European view on the long-term population dynamics of the European eel stock, culminating in his 2004 PhD thesis: “Slipping through our hands; population dynamics of the European eel”. He chaired the Eel Working Group, jointly organized by the International Council for the Exploration of the Sea and the European Inland Fisheries Advisory Committee, from 1996 to 2006 – the years in which ‘the Eel Problem’ developed from a local non-issue into an international conservation challenge. His suggestions for an international management framework set the stage for the 2007 ‘European Regulation establishing measures for the recovery of the stock of European eel’. He is now employed at the Institute of Freshwater Research of the Swedish Agricultural University in Stockholm, and he is scientific advisor to the international Sustainable

Eel Group. His research interests focus on assessment and management of the eel fisheries throughout Europe, including socio-ecological, historical and cultural aspects.

OUR EEL STOCK, IS IT SLOWLY DRYING UP?

The eel constitutes the most wide-spread single fish stock in Europe, providing employment to around 10,000 fishers - more than any other fish stock does. The eel is bridging habitats as divergent as the open ocean, high seas and sheltered coasts, large lakes and small ponds, main rivers and smallest streams. Human impacts comprise fisheries, land reclamation, barriers to migration, hydropower killing passing migrants, pollution and many more. Since the mid-1800s, a gradual decline in abundance has been noted (ca. 5% per annum in recent decades). Remedial actions (artificial reproduction, restocking, technical development, etc.) have been pursued for over a century, but without major success. In 1980 (in our lifetime), a steep decline in the number of recruits commenced – their abundance diminishing consistently, by ca. 15% per annum.

Individual fishers and governments have long noticed the on-going decline, but on their own, none of them had any opportunity to reverse the global trend: protection and management of the eel requires a pan-European approach. In 2007, when just 1-10% of the recruits remained, the EU adopted a protection and recovery plan, obliging its Member States to develop national protection plans – a deliberate distribution of control. Recent post-evaluation (2015) now indicates that mitigation measures have been taken all over the continent, but that almost no country has reached the minimal protection needed for recovery. Analyses of the governance process indicates, that the current international scientific advice, which fails to relate to the ongoing protective actions, is a key factor in this impasse – aiming for a conservative, but unattainable data-driven assessment for the whole continent, it does not more than repeating the advice that the eel stock is in a terrible state. Thus, without international

feedback, the national protection plans have relapsed to uncoordinated and insufficient action. To fulfil the objectives of the European protection-and-recovery plan, a re-focus of the scientific advice on an achievable system of distributed-control is urgently required, enabling feedback on the national protection plans.

The first management actions under the European protection plan were implemented in 2009 – first continent-wide effects, if any, were expected to last at least a year or two. In 2012, an unprecedented rise in the number of recruits was observed all over Europe, which repeated in 2013 and again in 2014, but not in 2015. Though it is too early to credit this surprising trend reversal to the protection plans, it does indicate that there is hope the eel stock can recover – but only if international feedback brings the national management plans to the minimal protection mark.





Coffee break mingle



Coffee break mingle



Coffee break mingle



Coffee break mingle



Coffee break mingle



Coffee break mingle



Organizers and speakers of FishBase Symposium 2016. From left: Michael Norén, Andrea Hennyey, Sara Bergek, Anna Törnroos, Gustaf Almqvist, Irene Adrian-Kalchhauser, Willem Dekker, Lovisa Wennerström, Martin Snickars.



FishBase Sweden would like to thank all speakers and participants for making FishBase Symposium 2016 a success, and hope to see you all again next year, at FishBase Symposium 2017!

Participant list FishBase Symposium 2016

Speakers:

Irene Adrian-Kalchhauser	University of Basel
Gustaf Almqvist	Stockholm University
Willem Dekker	Swedish University of Agricultural Sciences
Martin Snickars	Åbo Akademi University
Anna Törnroos	Åbo Akademi University
Lovisa Wennerström	Stockholm University

Moderator:

Sara Bergek	Swedish University of Agricultural Sciences
-------------	---

Participants:

Michael Andersson	Blekinge Folkhögskola
Mikael Andersson	Naturhistoriska riksmuséet
Björn Ardestam	SLU Aqua
Marlene Areskog	SVA
Charlotte Axén	Statens veterinärmedicinska anstalt
Barbara Bauer	Stockholm University
Yordan Belivanov	Naturhistoriska riksmuséet
Bengt-Erik Bengtsson	Prof. emeritus (ACES/SU)
Kristian Benkö	Aquaria vattenmuseum
Håkan Berg	Stockholms universitet
Niclas Bergius	Länsstyrelsen i Västmanland
Tomas Bergman	Riksmusei Vänner, Biologistuderande
Eva Bergstrand	
Emma Björklund	
Anna Björn	Aquaria Vattenmuseum
Bo Björnsäter	Naturkonsult
Jimmy Blom	Länsstyrelsen Sörmland
Bertil Borg	Stockholms universitet
Claes Bourghardt	Stiftelsen för Östersjölaxen
Daniel Brelin	Länstyrelsen Uppsala
Ellen Bruno	Naturskyddsföreningen
Lasse Byrén	Marina läroverket
Britt-Marie Bäcklin	Naturhistoriska riksmuséet
Henrik C Andersson	Länstyrelsen Stockholm
Linda Calamnius	Högskolan i Gävle
Björn Centergren	Stockholms stad
Johan Charlier	Länsstyrelsen Västernorrland
Anna Constantinides	Naturhistoriska riksmuséet

Anna Dahlen
Rikard Dahlén
Nichlas Dahlén
Sara Danielsson
Bo Delling
Rickard Edvinsson
Nicklas Ekebon
Mats Ekenger
Mattias Ekstedt
Gustav Ekström
Suzanne Faxneld
Martin Franzén
Harald Frostling
Gun Frostling
Viktoria Frühling
Andrea Giesecke
Emily Gripenstam
Karl Gullberg
Karl Gunnarsson
Jenny Hallström
Jorid Hammersland
Joakim Hansen
Per Hedberg
Andrea Hennyey
Staffan Hermansson
Mikael Himberg
Erik Hoffmann
Thorbjörn Hongslo
John Hontalas
Martin Huss Knave
Emma Hårdsten Jörndahl
Oskar Häger
Håkan Häggström
Lars Hällbom
Jan Isakson
Sven Jakobsson
Mikael Johansson
Sten Johnels
Douglas Jones
Leif Jonsson
Jaan Kamm
Ingemar Karlsson
Christina Karlsson
Yolanda Karlsson
Oliver Karlöf
Ulla Kassman Rudberg
Lena Kautsky
Nils Kautsky
Ove Klerevall
Irena Koelemeijer
Sara Kurland

Sollentuna kommun
Länsstyrelsen Gävleborg
Naturhistoriska riksmuséet
Naturhistoriska riksmuséet
Blekinge Folkhögskola
Mälardalens Högskola, Uppsala Universitet
Feministiskt initiativ
Aquaria Vattenmuseum
Blekinge Folkhögskola
Naturhistoriska riksmuséet
Akvarievärlden

Författare

Sveriges Fiskares Fiskförbund
Akvarievärlden
Länsstyrelsen Gävleborg
Miljömagasinet
Marina Läroverket
Naturmiljöenheten, Miljö- och energidepartementet
Stockholms universitets Östersjöcentrum
Stockholms universitet
Naturhistoriska riksmuséet

Åbo Akademi
Stockholms universitet
SVA

Svenska Djurskyddsföreningen

Aquaria Vattenmuseum
Länsstyrelsen Stockholm
KRAV
Fiskesekretariatet
Stockholms universitet

Järfälla gymnasium
Naturhistoriska riksmuséet
Göteborgs Naturhistoriska museum
WajanKa AB

Stockholms stad
Saltsjöbadens Fiskevårdsförening
Stockholms universitets Östersjöcentrum
Stockholms Universitet

Stockholms Universitet
Stockholms universitet

John Kärki
Tiina Laantee
Joanna Lagberg
Jan Landin
Josefine Larsson
Terése Larsson
Bo Leander
Kim Liljedahl
Christina Lindhagen
Tomas Loreth
Sverker Loven
Lars Lundahl
Niklas Lundberg
Stefan Lundberg
Michaela Lundell
Markus Lundgern
Ola Lundgren
Johan Lundgren
Tyrone Lundström
David Lundvall
Thomas Lyrholm
Rolf Löfgren
Ola Magntorn
Katarina Magnusson
Emil Maier
Tanja Martins
Inger Melander
Daniel Melin
Mariana Mesherjakova
Nikolaj Meyer
Zakarias Mibesjö
Daniel Molin
Charlotta Moraeus
Veronica Morin
Aman Mottaqui-Tabar
David Mårding
Margareta Mårtensson
Ralph Mårtensson
Hans Möller
Sture Nellbring
Joakim Nilsson
Åsa Nilsson Austin
Edvar Nordenskjöld
Sofia Nordlund
Pär Nordquist
David Nordqvist
Lars Norelius
Michael Norén
Lars Nyberg
Elisabeth Nyberg
Nike Nylander

Sveriges Sportfiske- och Fiskevårdsförbund
Huddinge kommun

Linköpings universitet
Södertörn University

SWECO
Blekinge Folkhögskola
Sportfiskarna
Upplandsstiftelsen
Stockholms stad
Länsstyrelsen Blekinge
Svenska Djurskyddsföreningen
Vaaka Naturkonsult
Naturhistoriska riksmuséet
Sportfiskarna
Blekinge Folkhögskola
Länsstyrelsen Halland
Haninge Akvarieförening
Länsstyrelsen Dalarna
Naturhistoriska riksmuséet

Högskolan i Kristianstad
Sötvattenslaboratoriet
Haninge Akvarieförening
SLU Sötvattenslaboratoriet
WWF
Jordbruksverket
SLU Sötvattenslaboratoriet
Skansen-Akvariet AB
Blekinge Folkhögskola
Trapezia AB, Miljökonsult
Naturhistoriska riksmuséet
Marina läroverket
Skogsstyrelsen
Aquaria Vattenmuseum

Akvarieleasing
Stockholm University
Förbundet Unga Forskare
MSC - Marine Stewardship Council
Ekbackeskolan Osby
David Nordqvists Fiskexport AB
Bolandgymnasiet
Naturhistoriska riksmuséet
Länsstyrelsen Stockholm
Naturhistoriska riksmuséet
Trapezia AB

Lennart Nyman
Inger Näslund
Sven O Kullander
Christer Olburs
Martin Olgemar
Bengt Olsson
Mathias Palm
Johan Persson
Tove Porseryd
Anneli Rannamaa Söderström
Christina Rappe
Carl Rolff
Gunilla Rosenqvist
Chrysoula Roufidou
Piotr Rowinski
Carl Rubin
Jan Rudberg
Sonja Råberg
Jannikke Räikkönen
Susanna Schröder
Niklas Sjöberg
Henrik Sparholt
Anders Stark
Barbro Stark
Olof Stark
Thomas Strid
Göran Sundblad
Karl Svanberg
Henrik Svedäng
Linda Svensson
Kim Sävström
Björn Tengelin
Lars Thorsson
Åke Thudén
Viktor Thunell
Robban Tranefalk
Annica Wahlbom-Kamm
Jakob Walve
Anna Weise
Bo Wessman
Anna Westling
Håkan Wickström
Ulf Wiel-Berggren
Vera Wiel-Berggren
Elina Viinamäki
Charlie Wijnaldh
Sofia Wikström
Hans Wikström
Eva Willen
Jon Wilund
Ingrid Wänstrand

Man and Water AB
WWF
Naturhistoriska riksmuséet

Länsstyrelsen Stockholm
Kommunikatör Sportfiskarna
Riksmusei Vänner
Upplandsstiftelsen
Södertörns högskola
tidningen Grönt
Naturvårdsverket
Stockholms universitet
Norwegian University of Science and Technology
Stockholm University
Stockholm university
Uppsala Universitet

Länsstyrelsen Stockholm
Naturhistoriska riksmuséet
Naturvårdsverket
SLU Aqua / Lst Stockholm
Nordic Marine Think Tank
DFEN
Livsmedelsverket

Huddinge kommun
AquaBiota
Länsstyrelsen Södermanland
SLU Havsfiskelaboratoriet
Sportfiskarna
Blekinge Folkhögskola
Norconsult AB
Milva AB

AquaBiota
Aquaria Vattenmuseum
WajanKa AB
Stockholms universitet
Naturhistoriska riksmuséet
Blekinge Folkhögskola
SLU Artdata
SLU Aqua

Stockholms universitet
Naturskyddsföreningens Havsnätverk
Östersjöcentrum, Stockholms universitet

SLU
Blekinge Folkhögskola
Länstyrelsen Uppsala

Jan Wärnbäck
Rickard Yngwe
Kaj Ådjers
Erik Åhlander
Ola Åhlander
Johanna Öhr
Johan Öistämö
Lars Österdahl
Jonas Östgren
Örjan Östman
Mikael Andersson

Naturmiljöenheten, Miljö- och energidepartementet
Kustlaboratoriet
Ålands Landskapsregering
Naturhistoriska riksmuséet
Akvarieleasing
Länsstyrelsen Södermanland
Blekinge Folkhögskola

Trapezia AB, Miljökonsult
SLU Akvatiska resurser
Naturhistoriska riksmuséet

FishBase Symposium 2016 — *The Baltic Sea*

Programme

09:00 - 09:30	Registration, coffee and sandwiches Moderator: Sara Bergek , Swedish University of Agricultural Sciences
09:30 - 09:35	Opening, Michael Norén , FishBase Sweden
09:35 - 10:20	Martin Snickars , Åbo Akademi University: <i>Impact of eutrophication and climate change on fish in the Baltic Sea – a brief overview</i>
10:20 – 10:50	Fruit break
10:50 – 11:35	Lovisa Wennerström , Stockholm University: <i>Genetic biodiversity in the Baltic Sea: current knowledge relating to conservation management</i>
11:35 – 12:20	Willem Dekker , Swedish University of Agricultural Sciences: <i>Our eel stock, is it slowly drying up?</i>
12:20 – 13:20	Lunch break
13:20 – 14:05	Gustaf Almqvist , Stockholm University: <i>What could an Ecosystem Based Fisheries Management in the Baltic Sea be and are we on the right track?</i>
14:05 – 14:50	Irene Adrian-Kalchhauser , University of Basel: <i>Preliminary title: Detecting invasive pontocaspian gobies using eDNA</i>
14:50 – 15:20	Coffee break
15:20 – 16:05	Anna Törnroos , Åbo Akademi University: <i>Fish - more than just food? Their functional roles, diversity and long-term trends in the Baltic Sea</i>
16:05 – 16:10	Symposium Close

Time: Monday, 17th October 2016, 09:00 – 16:10.

Place: Main Auditorium, Swedish Museum of Natural History, Frescativägen 40, Stockholm.

FishBase Symposium 2016 — Östersjön

Program

09:00 - 09:30	Registrering, kaffe och smörgås Moderator: Sara Bergek , Sveriges Lantbruksuniversitet
09:30 - 09:35	Inledning, Michael Norén , FishBase Sweden.
09:35 - 10:20	Martin Snickars , Åbo Akademi: <i>Impact of eutrophication and climate change on fish in the Baltic Sea – a brief overview</i>
10:20 – 10:50	Fruktpaus
10:50 – 11:35	Lovisa Wennerström , Stockholms Universitet: <i>Genetic biodiversity in the Baltic Sea: current knowledge relating to conservation management</i>
11:35 – 12:20	Willem Dekker , Sveriges Lantbruksuniversitet: <i>Our eel stock, is it slowly drying up?</i>
12:20 – 13:20	Lunch
13:20 – 14:05	Gustaf Almqvist , Stockholms Universitet: <i>What could an Ecosystem Based Fisheries Management in the Baltic Sea be, and are we on the right track?</i>
14:05 – 14:50	Irene Adrian-Kalchhauser , Universität Basel: <i>Advantages and challenges of environmental DNA assays in monitoring species distribution and abundance</i>
14:50 – 15:20	Kaffepaus
15:20 – 16:05	Anna Törnroos , Åbo Akademi: <i>Fish - more than just food? Their functional roles, diversity and long-term trends in the Baltic Sea</i>
16:05 – 16:10	Avslutning

Tid: Måndag 17:e oktober 2016, 09:00 – 16:10.

Plats: Stora hörsalen, Naturhistoriska riksmuseet, Frescativägen 40, Stockholm.