

FishBase Symposium 2003

Mapping Global Fish Biodiversity – the Baltic Context

A Report From The FishBase Symposium 20-21 November 2003
at The Swedish Museum of Natural History

by

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Photo: Fang Kullander



Naturhistoriska
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FishBase

FishBase

FishBase (www.fishbase.org) is the world's largest encyclopedia on fish covering all aspects on fish and is cited in newspapers, popular magazines, as well as in scientific journals. There are several on-line tools, which provide identification keys, number of fish species by geographic region, length-weight relationships, age analyses, data on fisheries catches by FAO area, and much more.

FishBase contains data on more than 28,000 fish species. There is a complete synonymy list with 80,000 scientific names. There are currently 35,900 pictures that is an ever and fast growing number. All information in FishBase is based on information published in scientific journals, with 32,800 references.

FishBase is freely available on the Internet and consulted by a wide range of visitors from over 150 countries. FishBase is available in eight languages and has full search capability for 187,400 common names from all over the world, including Greek, Arabic, Chinese, and other non-Latin alphabets. About 50% of the users come from the US with South America and Asia the fastest growing user bases. The FishBase web-servers registered 9.6 million hits during February 2004, with a peak of 505,670 hits on 11 Feb 2004.

For the latest web statistics of FishBase, please visit
<http://webusage.cgn.net/iclarm/fishbase/cum.htm>

FishBase began as an idea in 1987 by Daniel Pauly. The year after he started to work together with Rainer on the first prototype. The first CD-ROM arrived in 1994 and the first FishBase data were searchable on the Internet in October 1998. In the year 2000 there were 500 collaborators. Since 2001 FishBase is a non-profit consortium with seven members, including the Swedish Museum of Natural History; FishBase is developed with aid from the Food and Agriculture Organization of the United Nations and the European Union. FishBase today, 2004, is the result of the combined efforts of more than 1,000 collaborators.

For a detailed overview of the history of FishBase, please visit
http://www.fishbase.se/manual/fishbasethe_making_of_fishbase.htm

The Baltic Sea

The Baltic Sea drainage is one of the most studied aquatic regions in the world, with several nations and transnational organisations assembling and analysing high quality information on the region's fishes and habitats. Nonetheless, in FishBase there remains a conspicuous lack of data from the Baltic Sea drainage.

The Symposium

In order to examine availability of data sources with Baltic Sea drainage data coverage, and investigate the interest in regional collaboration to make such data more widely accessible, database holders from the states surrounding the Baltic Sea convened 20-21 November 2003 at the Swedish Museum of Natural History in Stockholm. The meeting was attended by 34 registered participants from Estonia, Germany, Poland, Russia, Spain, Sweden, and Switzerland, and representatives of FishBase from Germany, the Philippines and Sweden.

Meeting proceedings – Day 1

Moderator: Bo Fernholm, GBIF Sweden

The first day started with registration of all participants followed by a welcome address by Sven O. Kullander, project leader of FishBase Sweden. Rainer Froese, co-founder of FishBase, presented an overview of the recent advances in FishBase. Following that, each participant group gave a brief, 10-minute presentation of their database, its scope and availability to the FishBase community. The presentations given the first day were:

Helmut Winkler, University of Rostock

Databases cover the German part of The Baltic Sea. Electrofishing data may be hard to get.

Thomas Axenrot, University of Stockholm

Sonar and hydroacoustic data from along the Swedish Baltic Sea coast.

Thomas Saat, University of Tartu

Databases cover distribution, growth, age, morphometric data, DNA, common names, etc.

Olle Israelsson, Zoological Museum, Uppsala University

Museum material, partially in database

Barbara Bland, Havsfiskelaboratoriet, Fiskeriverket

Several large databases – bottom survey trawls, fisheries landings, life histories, etc.

Ann-Britt Florin, Kustlaboratoriet (Öregrund), Fiskeriverket

Long (20+ yrs) monitoring time series along Swedish coast, commercial landings, etc.

Iwona Psuty-Lipska, Sea Fisheries Institute, Gdynia

Databases on juvenile fish, monitoring trawls along Polish coast, commercial landings, etc.

Michał Skóra, University of Gdansk

Monitoring series of non-commercial Polish fishes.

Erik Degerman, Sötvattenslaboratoriet (Örebro), Fiskeriverket

Data from electrofishing and gill net surveys, with length and weight data.

Ulrika Beier, Sötvattenslaboratoriet (Drottningholm), Fiskeriverket

FIDES (Fish Database of European Streams), electrofishing data.

Lars Karlsson, Sötvattenslaboratoriet (Älvkarleby), Fiskeriverket

Salmon and trout databases: releases, spawning arrivals, smolt run, and catch data

Nina Bogutskaya, Russian Academy of Sciences, St. Petersburg

Literature and taxonomic history database with cross-references by Russian species

Lars Lundqvist, Zoological Museum, Lund University

Museum collection database, about to be released over the Internet

Bo Fernholm, GBIF Sweden

Presentation of the GBIF (Global Biodiversity Information Facility) project

Maurice Kottelat, Switzerland

Taxonomic considerations for databases

The presentations were followed by a short discussion on the financial difficulties of some institutions and how that may affect possibilities for cooperation. Rainer Froese said there is no limit in the amount of data FishBase can handle but also noted the potential of deep-linking to running databases.

The day was concluded with a visit to the Aquaria Water Museum with a guided tour and a banquet.

Summary of presentations

The presentations of the various databases had several aspects in common:

The Baltic Sea drainage as defined by HELCOM (<http://www.helcom.fi/>) includes Kattegat.

FishBase is deficient in data on the Baltic fish fauna. There are no comprehensive sources of information about Baltic fishes and still no dedicated web portal.

The amount of electronically archived information about The Baltic Sea fishes and environment is considerable, including museum records, fisheries statistics, fisheries surveys, and ecological inventories.

Many database initiatives are established or underway in all Baltic region countries. More information could be made available. Database guardians generally have no objections to data sharing.

Information should be served as presentations (dynamic web pages) available for all. Platforms should be established for data exchange between researchers.

Constraints on data sharing include language, systematics, political, and financial reasons; lack of suitable platform, and of course errors in data.

There was a general consensus that data to be shared are, but not limited to, images, occurrence records, and biological information (particularly length, weight, and age data). There are no limitations in amount of data to incorporate in FishBase. However, a growth equation or length/weight relationship may be preferable compared to raw data.

Meeting proceedings – Day 2

Day two continued with Rainer Froese presenting a tool available in FishBase, Lifemapper (<http://www.lifemapper.org>) that uses occurrence data to predict potential distribution range of species. After that, Sven Kullander presented the databases used by the fish group at The Swedish Museum of Natural History (<http://www.nrm.se/ve/pisces/artedian/>).

The day continued with the workgroup sessions. The participants were split into three workgroups which all were given a specific topic to discuss and report in the afternoon for a joint action plan. The three topics discussed were:

DiGIR practice, coordinator Mickaël Graf
Database format, coordinator Bodil Kajrup
Database technologies, coordinator Sven Kullander

The workgroup sessions were summarized at the concluding discussions with the following highlights:

DiGIR

Software to set up a DiGIR provider is available from GBIF home page (www.gbif.org). Instructions on how to set up a provider are available on the Internet and also provided with the DiGIR package. Anybody who has set up a web server already will be able to set up a DiGIR provider quickly. DiGIR: <http://digir.sourceforge.net/> .

GBIF-Sweden and FishBase Sweden team should be ready and able to provide help and assistance to set up a DiGIR provider.

For those who will not set up a DiGIR provider, GBIF-Sweden, FishBase, or OBIS (marine species: <http://www.iobis.org/>) can host their data.

Archiving of data is also possible with GBIF-Sweden, FishBase or OBIS. Some Swedish museum collections are already connected to GBIF.

Database format

Database field format and content in, e.g., Darwin Core (<http://tsadev.speciesanalyst.net/documentation/ow.asp?DarwinCoreV2>), OBIS, and FishBase occurrence data.

Training in database management is needed.

The possibility for “deep linking” to certain databases.

Database technologies

Electronically stored data derived from the scientific community, governmental bodies, other sources can be made available to the public in a wide variety of ways.

Presentation platforms available

ICES (political constraints)

FishNet (Species Analyst)

OBIS (Ocean Biogeographic Information System, Census of Marine Life)

FishBase

FishTrace (EC project on marine European fishes)

FAME (EC project on electrofishing registers)

GBIF

Various local efforts

Presentation protocols available

Direct access and http linking (Fishtrace, local servers, FAME, FishBase

DiGIR (PHP+XML) (GBIF, OBIS, FishNet)

Z39.50 (FishNet)

Database fields

Minimum required fields in Darwin Core

Submission methods

Server as data provider

Copy database

Ethical considerations

All information made available must be properly credited, and preferably always linked to a definite source (another website or publication).

Concerns from the audience

Participant may agree as person, but not necessarily for their respective institute.

General Conclusions

Most important – all participants agree that data should be shared to the benefit of all.

We must target decision makers and politicians to convince them about the necessity of FishBase and GBIF activities.

We must define the Baltic data deficiencies in time, space and taxa.

A next opportunity to meet and follow up will be at the XI Congress of European Ichthyologists in Tallinn, September 2004. Meanwhile, the FishBase Sweden team (fishbase@nrm.se) will be pleased to work together with Baltic data guardians in developing and making available their databases.

Participants of the FishBase Symposium 2003

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