

Bruno Streit



Curriculum Vitae (Stationen und Forschungsschwerpunkte)

04.03. 1948 Geboren in Basel / Schweiz

1955 – 1967 Primarschule und Mathematisch-Naturwissenschaftliches Gymnasium Basel

1967 – 1971 Studium der Biologie (Zoologie, Botanik) an der Universität Basel mit den Nebenfächern Geologie, Paläontologie, Chemie und Mathematik. Ergänzungsstudien an den Universitäten Freiburg i.Br. (Limnologie) und Zürich (Mikrobiologie, Molekularbiologie)

1971 – 1972 Praktische Tätigkeit in einem Gutachterbüro für Hydrogeologie

1972 – 1975 Dissertation am Limnologischen Institut der Universität in Konstanz über Energiefluss und Ökophysiologie der Flußmützenschnecke

1975 – 1978 Wissenschaftlicher Mitarbeiter am Limnologischen Institut. Forschungen: Toxikologie und Bioakkumulation von Umweltschadstoffen in aquatischen Nahrungsketten, Populationsökologie von Süßwasser-Invertebraten

1978 – 1979 Wissenschaftlicher Assistent am Zoologischen Institut der Universität Basel. Forschungsgebiet: Ökologie und Ökotoxikologie von Invertebraten (Regenwürmer, Milben) in Böden. Habilitation und Privatdozent in Zoologie (1979)

1980 – 1982 Dozentur mit Lehrstuhlvertretung an der Universität Basel: Umfassende Lehre in Allgemeiner Zoologie und Allgemeiner Ökologie. Forschungsgebiet: Bodenökologie

1982-1984 Research Associate am Department of Biological Sciences der Stanford University, California (26 Monate). Forschungsgebiet: Populationsbiologie, Ökotoxizität schwermetallreicher Böden

01.04.1985-30.09.2013

Lehrstuhl (Professur C4) an der Johann Wolfgang Goethe-Universität in Frankfurt am Main. Forschungsschwerpunkte: Evolutionsökologie, Allgemeine und Human-Ökologie, Biodiversitätsforschung, Gewässerökologie und Artenschutz, ehemals auch Ökotoxikologie. Methodisch Schwerpunkt in der molekularen Ökologie und Evolutionsforschung. Vielfältige Lehre und Lehrkoordination, studentische Exkursionen.

Funktionen in der Scientific Community: Herausgeber von Lehr- und Handbüchern, Mitglied im Editorial/Scientific Board von Journals, Ausland-Forschungsaufenthalte, Einberufung und Durchführung nationaler und internationaler Kongresse, z.B. Kongress zur 100-Jahre-Feier der DZG im Jahre 1990 (mit H. Zimmermann & C. Winter), die 75-Jahre-Gedenkveranstaltung der SIL (International Society of Limnology) im Jahre 1997) sowie den Kongress der gtoe - Society for Tropical Ecology - im Jahre 2011 (mit M. Niekisch). Projektkoordination BiK-F (Schwerpunkt Projektbereich "Adaptation and Climate", 2008-2011). Viele wissenschaftliche Begutachtungen.

Ausgewählte Funktionen innerhalb der Goethe-Universität: Mitglied des Dekanatsgremiums 1990–1993, Dekan des Fachbereichs Biologie 1991-92, Dekan des Fachbereichs Biologie und Informatik 2001–2003, Leiter der Ökologischen Außenstelle 1985–1994, Geschäftsführender Direktor des Zoologischen Instituts 1987–88 und 1999–2003 sowie ab 2005 des neu gegründeten Instituts für Ökologie, Evolution und Diversität (bis 2008, erneut 2012–2013).

Gründungsmitglied und Sprecher von BioFrankfurt – Netzwerk für Biodiversität (seit 2004).

seit 01.10. 2013 Seniorprofessor an der J.W. Goethe-Universität mit speziellen Aufgaben in der Lehre im Bereich Ökologie und Evolution, Sprecher von BioFrankfurt – Netzwerk für Biodiversität.



Curriculum Vitae and Academic Career

Bruno Streit was born in Basel, Switzerland, on 4th March 1948, where he also grew up and went to school. At Basel University, he originally started with economy and law, but soon switched to biology, which he studied between 1967 and 1971 at Basel University. The examina included zoology, botany, chemistry, mathematics, geology, paleontology. He supplemented his studies by additional courses at the Universities of Freiburg im Breisgau (in limnology) and Zurich (in microbiology and molecular biology). He conducted his dissertation at the Limnological Institute at Konstanz between 1972 and 1975, working on the ecology and energy flow of freshwater snail populations in the Lake Constance area. One of the major results was the high energy expenditure (measured in terms of ^{14}C carbon anabolism and catabolism) of these invertebrates for body functions other than growth or reproduction, especially for extensive mucus production.

Between 1975 and 1978 – still at Konstanz – he concentrated on problems of environmental toxicology, studying bioaccumulation processes and the toxicity of pesticides in freshwater biota. The results showed that uptake and bioaccumulation of lipophilic xenobiotic chemicals is predominantly the result of direct passive uptake through the skin in many aquatic organisms, and elimination occurs by passive diffusion out of the organism. The contribution of oral uptake of contaminated food is usually of lesser importance for accumulation. Also passive diffusive loss is more important in terms of elimination rates than active metabolic excretion rates in most small aquatic animals. Later, he developed mathematical models and scenarios for overall burden balances of organisms in variable environments.

Back at the Zoological Institute of the University of Basel, he became a 'Privatdozent' in 1979 and, since 1980, a 'Dozent' (assistant professor with full teaching obligation). His scientific focus at that time was the ecology and metal ecotoxicology of soil invertebrates (mites, springtails, earthworms),

emphasizing the importance of chemical speciation for uptake, bioaccumulation and toxicity of various metal ions. In 1982 he changed to the Department of Biological Sciences of Stanford University (California) as a Research Scholar, where he stayed for 26 months, studying plant and animal populations (especially butterfly larvae) on heavy metal rich grassland sites. In 1984 he was offered a Chair (full professorship) at Frankfurt University, where he started 1st of April 1985, to take over the Ecology Group within the Zoological Institute. In 1992/1993 he has been offered the chair of General Ecology at Cottbus Technical University, which he denied.

His major research field in the Frankfurt time became the evolutionary ecology of freshwater systems and their organisms, but he still continued studies on ecotoxicology. He published an extensive dictionary of ecotoxicology (1991, 1994), which became widely distributed as the first compendium on the market of this kind. He also emphasized the increasing importance of exotic species introduced to Central Europe at a time (1991), when this was not yet considered a serious issue for European ecosystems. Since the beginning of the 1990ies he intensified studies on molecular analyses in his research and renamed his group into Ecology and Evolution, which was quite novel at that time in Central Europe. Mitochondrial and nuclear DNA markers were applied for studies on the ecology, evolution and conservation biology of various aquatic animal species (e.g., *Nature*, 1996). Their methods have also been adopted in lab manuals (1997). The results, elaborated by members of his group, shed new light on evolutionary processes of speciation, natural hybridization, and biodiversity of benthic and planktonic freshwater invertebrates (especially snails and daphnids) in the light of natural and man-made global changes.

During the last 10 years his group established methods to reconstruct population histories of water fleas in large lakes by microsatellite analysis and "reanimating" dormant eggs from the sedimentary egg banks to active life (Dr. Klaus Schwenk and others). Thus the species, hybrid and backcross composition of past generations as well as their variable genetic structures and reproductive behaviors could be traced back many decennia to the first half of the 20th century. These population and community changes can be correlated to the increase and decrease of the high phosphate burden period typical for many lakes in the second half of the 20th century. Thus the studies help to understand man-made population fluctuations in nature. Other research projects of the group focused on speciation and on climate-driven range dynamics of basommatophoran snails. We are working in close contact with the new central laboratory of BiK-F, which is located within our building and run by Dr. Markus Pfenninger.

Currently, the group is being restructured and extended once more, implementing aspects on the ecology and evolution of behavior, and including more aquatic taxa (fish species, crabs, bird specimens as biological archives). The research topics are run by Dr. Martin Plath, Dr. Stefan Merker, Dr. Sebastian Klaus, and others and remain in close contact to M. Pfenninger and K. Schwenk. The group will move into a new building during summer 2011. A short history of the group is presented on this > site (in German).

Bruno Streit is author or coauthor of roughly 200 scientific publications, which largely appeared in international journals. These include *Oecologia*, *Hydrobiologia*, *Fundamental and Applied Limnology* (former *Archiv für Hydrobiologie*), *Pedobiologia*, *Comparative Biochemistry and Physiology*, *Water*

Research, Limnology and Oceanography, Ecological Modelling, Molecular Ecology, Chemosphere, Water Science and Technology, Ecotoxicology and Environmental Safety, Proceedings of the Royal Society of London, Nature, PNAS, Parasitology, Journal of Evolutionary Biology, Philosophical Transactions of the Royal Society, and many others.

He has edited and authored or coauthored sixteen books and special theme issues of scientific journals, nine of them in German and five in English, dealing with various aspects of biology and biodiversity, ecology and ecotoxicology, and on the evolution of man. For several years, he has acted as an associate editor of *Acta Oecologica*, *International Journal of Ecology*, in the editorial management of the 'Verhandlungen der Gesellschaft für Ökologie' (the scientific Ecological Society of the German speaking countries) and was temporarily in the scientific editorial board of *Hydrobiologia*, *International Journal on Limnology and Marine Sciences*.

He has organized or co-organized national and international congresses and symposia: the meeting of the Swiss Zoological Society in 1981 at Basel, the 100th anniversary of the German Zoological Society in 1990 at Frankfurt, the 13th annual meeting of the 'Deutsche Gesellschaft für Limnologie' together with the 75th anniversary of SIL (*Societas Internationalis Limnologiae*, joint event in 1997 in Frankfurt), and a meeting of the 'Gesellschaft für Tropenökologie' (1988 in Frankfurt) and the 'Gesellschaft für biologische Systematik' (2001 in cooperation with the Senckenberg Museum). In 2006, an international symposium on the hybridization of animal species was organized in the University's Casino building (together with Klaus Schwenk and Nora Brede). In 2011 (February 21-24), he will jointly organize (together with Prof. Manfred Niekisch) the Conference of the Society for Tropical Ecology at Frankfurt.

He is engaged in numerous teaching lectures, seminars, lab and field courses for students at various levels of the biology and ecology curricula. He has supervised more than 100 theses at the Basel and Frankfurt Universities (diploma, PhD, and civil-service theses) by today.

As part of Frankfurt University he temporarily took over various functions, including Executive Director of the Zoological Institute (1987-88, 1999-2003) and Vice Director of the University's Center of Environmental Research (*Zentrum für Umweltforschung*, 2000-2003) as well as Dean of the University's Biology Division (*Fachbereich Biologie*, 1991-1992) and the Biological and Computer Sciences Division (*Fachbereich Biologie und Informatik*, 2001-2003). From 2005 to 2008, and again from 2012 to 2013, he was Executive Director of the new Institute of Ecology, Evolution and Diversity of Frankfurt University. From 2008 to 2011, he served as a coordinator of the project area "Adaptation and Climate" within the Biodiversity and Climate Research Centre (BiK-F) and member of the BiK-F council. Since 2004, he runs the BioFrankfurt Network for Biodiversity.

Since October 1, 2013, Bruno Streit is assigned Senior Professor at the Johann Wolfgang Goethe University with special teaching duties in the field of ecology and evolution.

