

Letter from America

Victoria Braithwaite has been a stalwart of the FSBI, until she left us for the USA. Winner of the FSBI Medal, Victoria gives her view of how it is to be an academic on the western side of the Atlantic. Formerly employed by the University of Edinburgh, but now working at Penn State University, USA, Victoria is also an Adjunct Professor in the Department of Biology, University of Bergen, Norway.

Growing up in Britain, Sunday mornings meant listening to two radio programs; Alistair Cooke's engrossing weekly synopsis of life in America shortly followed by the omnibus edition of 'The Archers'. The former, known as 'Letter from America', gave wonderful insights into another culture, while the latter was, and still is, a radio soap opera that has been running for over 50 years – and is probably best described as an acquired taste! It never occurred to me then that I would be asked to write my own letter from America, but with a recent move from the UK to a job at Penn State University I was invited to write about the transition.

Towards the end of 2007 I announced to friends and colleagues that I was leaving Edinburgh University for a new job in the US. Gauged by their reaction, I think it is fair to say that most thought I was mad. Why America, what on earth could be the lure? Hadn't I heard of how terrible life was under the Bush administration – especially for science with the costly, botched overseas wars indirectly leading to harsh cuts in federal research funding? Well, eighteen months in, I can honestly say that I am really pleased with the move.

Life at Penn State revolves around the large, but carefully laid out campus, which is aptly named University Park. While a relatively young institution by European standards, Penn State boasts a 154 year history that has seen the student numbers swell from under a 100 to more than 44,000, with almost as many again attending the 23 branch



Figure 1. The mixing of old and new on the campus of Penn State University.

campuses dotted around Pennsylvania. Despite this rather daunting size the university runs remarkably smoothly, overseen by a slick group of administrators and managers who use the large sums of money raised through various means (such as state monies, investments, private donations, the medical school and student fees) to meet the challenges faced by a large institution in the 21st century. The university has three areas of excellence; research, teaching and extension – being a state university, admirable efforts are focused on disseminating knowledge and skills back into the state's community.

The campus is spacious and green – although to be fair in winter it should more accurately be described as white because persistent layers of snow last for weeks. Its large size has

allowed space to be developed carefully so that buildings have grass and trees between them providing a sense of openness. Recent buildings are cleverly integrated among the old (see Figure 1), and the more mature buildings are cunningly modernized from within. Green architecture has created colourful roof-gardens, and the use of glass emphasizes the spaciousness of the buildings both as you look in from the outside, but perhaps more significantly as you move around and use the space inside. I have been lucky enough to move into a building that is only three years old (Figure 2). It has state-of-the-art office and laboratory facilities as well as palatial teaching labs and lecture theatres. These are built

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Letter from America – Continued



Figure 2. Forest Resources Building, Penn State University campus.

around a large, well-lit atrium that is often used for social functions, or snoozing undergraduates who put the leather couches to good use the rest of the time. This seems a far cry from the 1960's building that I used to work in with its leaking roof and chronic shortage of space.

While the university is large, there is a strong undercurrent of cohesiveness stemming from an emphasis placed on interdisciplinary connections – these are both encouraged and fostered. My own position for example, is split across two faculties, the College of Science and the College of Agriculture. Within my first year, I was surprised to find myself talking about research to people from Engineering and the Humanities. Departments like these are found in most European universities, but how many of us manage to make direct connections? Penn State also has a number of virtual graduate programs that span multiple departments; the Ecology Program brings people together from fields such as entomology, forestry, wildlife, fisheries, soil science, biology and geography, while the Neuroscience Program links people from medicine, psychology, neuroethology and developmental biology – I am fortunate enough to be affiliated with both.

Another refreshing difference is that many of the colleagues I interact with have a genuinely positive attitude. This is in stark contrast to the stiflingly negative environment I had grown weary of in the UK. Here, if something isn't working or can't be done then people go out of their way to fix it, or to find a solution. Don't get me wrong, there are problems – with the current financial climate everyone is being squeezed – but the difference here is that people are prepared to cooperate and find alternative ways of moving forward. This attitude is in part helped by the greater degree of flexibility that a relatively wealthy state university is afforded. But it goes beyond this, there is also a vision and a healthy belief in investing for the future – the university funds new buildings, new appointments and large items of equipment if persuasive enough cases can be made to the powers that be.

In terms of the teaching, it costs students a lot to study at Penn State so they have high expectations, but it is clear to all that this is a significant part of the university's role and this helps to promote quality courses. Teaching is certainly a little different here. Practical classes, or labs, are run as separate courses to lecture-based classes. Team-taught courses

are also relatively rare – instead, faculty often teach a class on their own along with a teaching assistant. There are curricula for different courses, but these tend to reflect research strengths. The result is that faculty are asked to teach material that they are interested in and so motivated to deliver. Courses are not just directed at undergraduates, but graduate students are required to take advanced courses too. A surprise in all of this, however, is how little teaching theory, or pedagogy is provided to the faculty. As a new lecturer in Edinburgh, I was obliged to take courses on how to teach and how to use lectures or practicals to engage the students and promote learning. I found those courses extremely valuable and so it seems odd that these are not a prominent feature here where high standards are demanded.

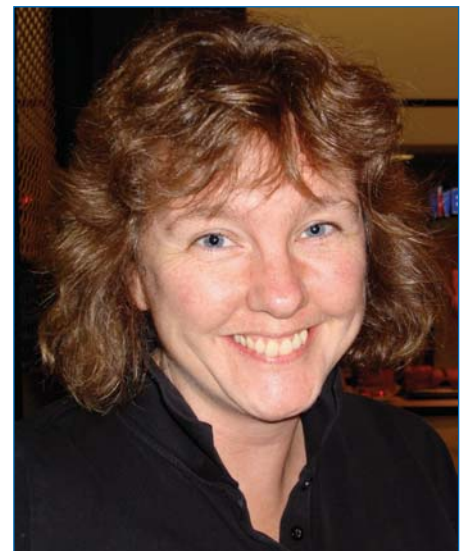


Figure 3. The author and Alister Cooke impersonator, Victoria Braithwaite.

Penn State takes pride in its research and works hard to facilitate it with different financial initiatives to promote pilot projects and to help new faculty become established. Interestingly, the US has yet to develop an equivalent to the UKs Research Assessment Exercise (RAE), so tenure and promotion issues are currently decided on scientific contribution rather than the number of grants obtained or papers published in *Nature* or *Science*. Research funding comes from large

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EDITORIAL

If our members in North America have ever heard of Alistair Cooke, it would not be for his *Letter from America*. The man's fame was context dependent and in the US he was best known for *Masterpiece Theatre* and for a cultural programme called *Omnibus*. The first programme used to run mostly British made drama series, which in the UK probably did not rate as masterpieces. *Upstairs, Downstairs* comes to mind as a series of programmes that featured on *Masterpiece Theatre* but which would hardly be classed as literary in their original context. It had butlers and servants, lords and ladies so somehow fulfilled the vision of Britain held by some Americans.

The lead article in this edition is a *Letter from America* of a different type although I suppose that Victoria Braithwaite has written with her erstwhile British colleagues looking over her shoulder. In other words she is doing what

Cooke did; translating the American experience for us Brits. The positive view of life that Victoria reports as being characteristic of academic life in the US contrasts with the overly bureaucratic life that those of us in British Universities now labour under. Bureaucracy is inherently negative in its outlook as 'due process' forces people to adopt one particular approach to an issue and discounts the value of innovation and spontaneity. I suspect that it is not just in Universities in Britain where people are weighed down by bureaucratic process and I can see the day when GB PLC sinks under its own weight of regulations and procedures.

One of the great things about the FSBI has been its freedom from bureaucracy. At Council meetings it has been possible to decide to take some course of action and immediately set the decision in train. Although the Society is still relatively free of procedure the new Charities

Law and the general ageing of the Society has seen the creeping growth of officialdom. I suspect that this process is part of the ageing of an organisation, a maturation that eventually leads to senescence. Unlike biological structures, institutions can be refreshed by change. It would be good for the Society to periodically review its activities and to prune processes that have grown by accretion, becoming sclerotic and slow moving. Look how *The Archers* has renewed itself over its 50 year life!

PS. This editorial is probably incomprehensible to anyone living outside the UK. I hope that you will allow the occasional inward looking commentary.

Paul Hart
Leicester
March 2009.

Next deadline for copy: 1st May 2009

Letter from America – Continued

organizations such as the National Science Foundation (NSF) or the National Institutes of Health (NIH). These operate in the same way as government funded research councils. I do, particularly, miss the UK application form, where the case for support is a civilized 6 to 8 pages. The equivalent sections in the US are up to 25 pages, making them unwieldy and they take forever to review. A bonus with the US system, however, is that you can have several goes with the same application using feedback to refine and hone proposals between rounds. A further unexpected advantage that came to light after

getting here is that there are also lots of alternative ways to fund your work. There are state level organizations that offer grants (e.g. Pennsylvania's Fish and Boat Commission and Game Commission), as well as several other federal organisations such as the US Geological Survey (USGS), the National Oceanographic and Atmospheric Administration (NOAA) and Homeland Security.

Pennsylvania is a beautiful part of the world, and I feel very fortunate to have moved to a place that offers such a rich rural life more or less on the doorstep – including black bears that decided to eat the peaches in my

garden last September! The state has over 4,000 streams and rivers with an excitingly diverse array of fish species; musky, sunfish, pumpkinseed, shad, walleye and sturgeon – including one of their strange looking relatives called the paddle fish, to name just a few. I am grateful for the opportunity to explore these streams and to work with their inhabitants. So, all in all, I am happy that I made the move. Of course, there are several things I miss about the UK, such as the radio, including 'The Archers' – all I can say is, thank goodness for podcasts!

BIOLOGY OF FISHES

Third Edition. By Q. Bone & R. H. Moore. 478 pp.

Published by Taylor & Francis Group, Abingdon, UK, 2008.

Price £39.99 ISBN: 978-0-415-37562-7.

I was extremely interested to see this new edition of a textbook that, in its first edition, featured heavily in my undergraduate reading. In this edition, Quentin Bone (Marine Biological Association, Plymouth, U.K.) has been joined by Richard Moore (Coastal Carolina University, South Carolina, U.S.A.). Together they have produced a nicely written (and often humorous) textbook suitable for undergraduates studying marine and freshwater biology or zoology. At a recommended price of £39.99, this book sits in the same ball-park as its main putative competitors (e.g. Helfman *et al.*, 1997 *The Diversity of Fishes*. Oxford: Blackwell Science; Moyle and Cech 2003 *Fishes: An Introduction to Ichthyology* (Ed V). Harlow: Benjamin Cummings).

The book starts with a short preface where the authors note that they have chosen to focus on certain topics that interest them, and that are not covered too well in other competing texts. The chapter list includes chapters on the diversity of fishes; fishes and their habitats; swimming, buoyancy, gas exchange; blood and the circulatory system; osmoregulation and ion balance; food and feeding; reproduction and life histories; endocrine systems; sensory systems, and communication; the nervous system; the immune system; behavior (note American English spelling) and cognition, and fisheries and aquaculture. Unsurprisingly, such a selective approach has not resulted in a balanced textbook, and of the 14 different chapters presented by the authors, some are extremely solid, whilst others are less useful. Chapters typically include a useful introduction to the subject (including a description of why it is of interest to fish biologists) followed by an often detailed description including a selective review of relevant literature. This review includes both recent citations and also some from the older literature which are often ignored by

students (and others) that are increasingly reliant on web-based databases. Although referencing is generally extensive, some nuggets of information remained unreferenced, and this reader at least felt a little disappointed at times. As a fish ecologist, I felt that the chapters focussed on physiology and anatomy were particularly useful and represented the real strength of the book. Conversely, the more ecological/applied chapters were relatively weak, especially the final chapter on fisheries and aquaculture, which frankly read very much like an add-on.

Like any work, this book is not perfect, and the text includes a series of annoying typographical mistakes that should have been picked up during the editorial process, e.g. mismatched figure numbers, random parentheses, and spelling mistakes. The veracity of some statements is questionable, as a focus on two genera of personal interest to this reviewer shows: catadromy in anguillid eels is not always obligate, and the misspelled *Corregonus* [*sic*] are never to my knowledge either herbivores or microphagous detritivores. However, these problems are relatively minor, and do not distract from the general suitability of the book. According to the publisher's web site, this edition includes 294 figures, including several photographs. These are rendered in black and white or greyscale and many are presented in a cartoon style. Initially, I was irritated by the quality of the figures, especially some of the cartoons, which I felt could limit information exchange, e.g. the authors include a very poor greyscale representation of an excellent echogram showing gas release in coregonids from Knudsen & Gjelland (2004, *Fisheries Research* 66, 337-341). In retrospect, although not stunning, the figures are sufficient to get the message across. The authors have also included a series of tables that are

typically easy to read.

Whilst reviewing this book I travelled between the U.K., Germany and Chile reading the book on a series of flights, between which the book was repeatedly stuffed into and retrieved from a rucksack. The paperback review copy clearly did not travel well, as the spine cracked, and the binding failed. However unlikely it is that other readers will treat their copy in such an unspeakable manner, it seems that the book has not been produced to the highest quality.

From my experience of undergraduate teaching in the U.K., Ireland and elsewhere in Europe, it seems that few students are introduced to the wonders of fish biology via traditional ichthyology courses that include a basis in physiology or anatomy. Conversely, their introduction increasingly comes through more general courses where fish are used to illustrate a certain issue or question. As such, this book is well placed to fill in the gaps in knowledge that today's PowerPoint-fed students have regarding the physiology and anatomy of fishes. I recommend this book to students that have developed an interest in fish biology via undergraduate courses in marine or freshwater biology/ ecology but who want a detailed understanding of fish biology. However, those undergraduates looking for a text on fish (or fisheries) ecology would be better off with more specialised texts. The book will be less useful to the more advanced reader, but could have a place on the shelf to permit a quick check of a forgotten feature of the biology of fishes.

Chris Harrod

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Norwegian Spring-Spawning Herring and Northeast Arctic Cod. 100 years of research and management

Edited by Odd Nakken

ISBN 978-82-519-2367-5, Tapir Academic Press, Trondheim, Norway, 2008 NOK 450.00/GBP46.00.

180 pp with numerous figures.



The Norwegian contribution to marine science, and particularly to marine fish biology, has been out of all proportion to the size of the Norwegian population. The importance of fish to the livelihoods of people in remote areas explains some of this dominance, but other areas of Europe have been equally influenced by fishing but have not contributed to the science of fisheries in quite the same way. One of the outstanding figures in the late 19th and early 20th century was Johan Hjort but this would overlook a number of other great biologists of the time such as Georg O. Sars and his father Michael. The latter began work on an understanding of the fluctuations of cod stocks off the north of Norway, work that was continued by his son who also did taxonomic work on marine crustacea. He was a brilliant artist and his illustrated *Crustacea of Norway* is a masterpiece both of taxonomy and illustration. It is said that he could draw equally well with his left and right hands so that he could do two drawings at once!

Norwegian Spring-Spawning Herring and Northeast Arctic Cod. 100 years of research and management, continues the Norwegian contribution to fish biology in the style we have come to expect. One of the advantages of the pioneering work done by Hjort and Sars is the very long data sets established on significant species. The data on catches and abundances for both cod and herring are some of the longest fish time series that exist anywhere. As a result it is possible

to examine in detail the dynamics of the stocks in relation to both fishing activity and environmental fluctuations as data on temperatures and other oceanographic variables have also been collected for a long time.

This book was the idea of Gunnar Sætersdal, who in the mid-1990s, suggested that it would be good to gather together knowledge about the cod (*Gadus morhus*) and herring (*Clupea harengus*) stocks that had been collected by Norwegian scientist over the past century. The plan was to publish the book in 2000 but Sæterdal died in 1997 leaving the book with just two chapters written. We must be grateful to Odd Nakken and his co-authors, and to the Institute of Marine Research in Bergen, for seeing the project through to completion.

The heart of the book are two chapters, as one might expect, the first on the herring written by Olav Dragesund, Ole Østvedt and Reidar Toreson and the second on cod written by Arvid Hysten, Odd Nakken and Kjell Nedreaas. Both give a detailed account of the two populations and the fisheries they supported. Each contains fascinating information about the biology of two species that range over extensive areas. One of the great discoveries in the herring work is how the over wintering site of the spring spawning herring stock has changed over the past 50 years. As has been suggested elsewhere, the location of the over wintering site could be determined by the presence in the population of older

fish that lead the stock to the site each autumn, using a memory of past migrations. When the stock has been very low, as it was in 1970s, it is possible that there were insufficient old fish to provide the leadership necessary, forcing the remaining fish to find a new over wintering location.

The remaining five chapters cover a range of topics: the history of fishery science in Norway, but placed in the context of the development of ICES, technical developments in Norwegian fisheries, the development of acoustic methods, again a largely Norwegian led technology and a chapter on fish behaviour in relation to fish capture.

The book is a delight to use and to read. All the modern illustrations are in colour and the layout and design are clear. There are some excellent maps illustrating migration routes and oceanographic details. The chapters are all easy to read and well structured. Although this book would not be used as a course text, it provides an excellent case study of the best in fish biology.

Paul Hart
University of Leicester

Travel Grant Reports

Dr Andrew Davie a Post-doctoral Research Fellow at the University of Stirling, UK, attended the 24th Conference of the European Comparative Endocrinologists in Genoa, Italy.

The 24th conference of the European Comparative Endocrinologists was hosted by the University of Genoa in Italy in September 2008. With over 200 oral and poster presentations crammed into the 5 day meeting it certainly was a busy schedule. With the support of the FSBI I was able to present my work titled "Non visual light perception in Atlantic cod (*Gadus morhua*): The first evidence of 'relative photoreception in teleosts'" as part of the "Chrono-endocrinology in vertebrates and invertebrates" session. This work is the culmination of two years research into the endocrine response of the light sensitive pineal gland in Atlantic cod. It has demonstrated for the first time in teleosts that non visual light perception is adaptive, being dependent on the previously experienced environment. Presentation of the results at CECE 2008 spurred numerous interesting conversations and has established a number of exciting collaborations for the future. I would like to take this opportunity to congratulate the organisers of CECE 2008 on a conference well run in the beautiful port of Genoa and crucially I'd like to thank the FSBI for their support, which allowed me to attend this stimulating conference.

Matteo Minghetti from the Institute of Aquaculture, University of Stirling, Stirling, FK9 4LA, Scotland, attended the International Copper Meeting: Copper and Related Metals in Biology in Alghero, Sardinia from 11th – 15th October 2008.

I am grateful to the Fisheries Society for the travel grant which allowed me to present my most recent work on copper homeostasis in fish at the Copper '08 meeting. I was selected to give an oral presentation entitled "Identification of a suitable in vitro system for copper homeostasis and heavy metal toxicity in a fish species, Sea bream (*Sparus aurata*)" and also presented a poster entitled "Cloning and expression of copper transporting P-type ATPases in fish". My presentation and poster were well received and I was given much positive feedback and encouragement. At the meeting I have learned a lot through attendance of

presentations given by the leading scientists in this field and I had the opportunity to discuss collaborations with researchers from the USA, Australia and Europe. In addition, I was able to meet with other researchers who are working on similar topics to myself.

Once again I would like to thank the FSBI for providing me with a travel grant which allowed me to present my work at such a high standing international conference.

Scott Campbell from the FRS Marine Laboratory, Aberdeen, writes about his visit to the 5th World Fisheries Congress.

The recent 5th World Fisheries Congress was impeccably well timed for me coming at the end of my PhD studies, thus affording me the opportunity to present just some of my findings as well as incorporating any valuable feedback into my thesis. Being one of the twenty or so British participants in Yokohama, I was initially accepted to deliver an oral presentation at 'The Japanese Society for Fish Pathology' meeting in Tokyo, one of the satellite symposiums organized around the Fisheries Congress. My talk 'Identifying virulence determinants for rainbow trout in viral haemorrhagic septicaemia virus (VHSV)' covered just one area of my work undertaken during my project looking at aspects of the virus to the host species. Certainly the evening reception allowed for extended discussion whilst sampling the fabulous local cuisine. After the two-day meeting I headed to the cultural and historically rich city of Yokohama for the Fisheries Congress to present a poster investigating the genetic basis for susceptibility of juvenile rainbow trout to VHSV. Being 'the' international fisheries congress, sessions encompassed everything from 'Aquaculture' to 'Fisheries Economics and Social Science'. While the presentations and organization was of a high standard, the organizers were especially keen to introduce the foreign participants to as much of the Japanese culture as possible, which included a visit by the emperor and empress. The congress ended with a superb banquet and performance by some traditional Taiko drummers. With that I would just like to take the opportunity to thank the FSBI for their generous contribution thereby allowing me to attend such an enjoyable and worthwhile set of meetings.

Special Issues in the *Journal of Fish Biology*

Readers will have noted that the *Journal*, as a recent innovation, has started to publish Special Issues on a defined topic of current interest and compiled by a Guest Editor. The content of the Special Issue includes reviews and original research in the form of regular papers and brief communications. These issues will keep the *Journal* in

the forefront of publishing fish biology research to an international audience. In 2008 *Fish Microarrays* (Kristi Miller-Saunders) was published; this year, 2009, two Special Issues will be published, the first on *Anguillid Eels* (Brian Knights) and the second on *Fish Reproductive Physiology* (John Leatherland). In 2010 one of the

topics will be *Fish Conservation* (Steve Blaber and Michel Kaiser). I would welcome suggestions for future subject matter and potential Guest Editors. Please contact me at journal.fishbiology@bopenworld.com

John Craig.
Editor

Additional notes on the Annual Symposium in Leicester

It might help members to know that although the Annual Symposium this year is also doubling up as the 6th *International Conference on the Behaviour and Evolution of Sticklebacks*, the topics covered will be very wide ranging. Although the central theme is focussed on one species, all aspects of fish biology are included. We had over 80 abstracts submitted and the topics covered range from fossils, to genes regulating various structures and

behaviours, to physiological responses to anthropogenic factors to detailed studies of various aspects of behaviour. Unlike many FSBI symposia the conference provides something of interest to all types of fish biologist and will give members who attend the chance to hear papers in their own area of speciality but to also hear the latest on other areas of fish biology with which they are less familiar.

Accommodation for the con-

ference will be in the new John Foster Hall, which has very comfortable en suite facilities. The proceedings of the conference will be held on the University campus with buses connecting the accommodation and the lectures. Please go to the conference web site at <http://www.fsbi.org.uk/2009/index.html> for more detailed information about booking and about how to get to Leicester.

Notice



STICKLEBACK 2009

and FSBI Annual Symposium

13th – 17th July 2009

University of Leicester, UK

See <http://www.fsbi.org.uk/2009/index.html>
for further information and booking.

**The Society's Annual General Meeting will be held at 1200 on Wednesday 15th July 2009
at the University of Leicester during the course of the Annual Symposium.**

NOTICES

1-4 September 2009

International Workshop on the Restoration of Fish Populations

Düsseldorf, Germany

Website www.alosa-alosa.eu

Contact Peter.Beeck@wasserlauf-nrw.de

Registration is now open for the "International Workshop on the Restoration of Fish Populations".

The key aim of this symposium is to synthesise contemporary understanding of fish restoration by facilitating the presentation of original research results from a number of different disciplinary fields. A considerable volume of information and expertise has been gathered over 50 years of fish restoration projects and the present conference provides an opportunity to bring together experts from around the world to share experiences and technical knowledge, to improve and optimise current fish restoration projects and to plan for the future.

The conference is co-organised by the IUCN/SSC Freshwater Fish, Re-Introduction, Salmon and Sturgeon Specialist Groups and the conference proceedings will be published in the international, peer-reviewed "Journal of Applied Ichthyology".

The conference fee includes registration, lunch, refreshments during sessions, social programme, a copy of the conference proceedings and a programme booklet.

Other meetings of interest (extracted from a list circulated by Dr Phil Hickley, Environment Agency)

18-21 May 2009

Lakes for Living, Lakes for Life International Conference

Windermere, Cumbria

Website <http://northwestsustainabledevelopment.com/event/2009/05/03/list/all/all>

15-18 June 2009

6th International *Salvelinus* Symposium

Stirling Management Centre,
University of Stirling, Scotland, UK

Website

<http://www.gla.ac.uk/departments/scene/charr09/>

7-9 July 2009

Freshwater Biological Association Annual Scientific Meeting 2009

Environment Centre Wales, Bangor, Wales

Website www.fba.org.uk

9-11 September 2009

Second International Workshop on Biology of Fish Gametes

Valencia, Spain

Website www.workshopbfg.upv.es

Contact workshopbfg@upv.es

14-18 September 2009

8th Conference on Fish Telemetry held in Europe

Umeå, Sweden,

Website <http://fishtelemetry2009.dinstudio.se/>

13-15 October 2009

Fisheries in a Changing Climate: 40th Annual Conference of the Institute of Fisheries Management

Stratford Manor Hotel, Stratford-upon-Avon, UK

Website <http://www.ifm.org.uk/conference/2009/>

23-28 August 2009

The Fourth International Symposium on Fish Otolith Research and Application

Monterey, California, USA.

Website <https://tundra.iphc.washington.edu/ios/>

30 August-3 September 2009

American Fisheries Society, 139th Annual Meeting

Nashville, Tennessee, USA

Website <http://www.fisheries.org/html/index.shtml>

25-30 October, 2009

The 6th International Symposium on Sturgeon: ENDANGERED GIANTS – LIVING FOSSILS Human impacts on sturgeons and conservation measures

Wuhan Science and Technology Exhibition Center,

Wuhan, Hubei Province, China

Website <http://www.iss6.org/>

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