

Conservation physiology; an emerging research paradigm being developed by the 2008 FSBI Medallist, Steven Cooke and friends



Figure 1. FSBI Medallist Steven Cooke in the Bahamas.

Members of the Cooke lab (Figure 1) are interested in all aspects of aquatic ecology, conservation biology, physiological ecology, animal behaviour and environmental science. Our research efforts primarily focus on freshwater and marine fish. Specific interests include: (1) determining the energetic, fitness, and potential evolutionary consequences of a variety of natural stressors such as winter and reproduction, and those stressors deriving from anthropogenic sources such as angling and environmental pollution and, (2) understanding the diversity of energetic, physiological, and behavioural responses of fish to

stress at the individual, population, and species level. We then apply the fundamental knowledge derived from these basic research activities to aid in the conservation and management of aquatic resources. Lately, our lab has been involved with defining the new discipline of “conservation physiology” – a field dedicated to understanding the mechanisms underlying conservation problems. We are currently extending these ideas further by examining how knowledge of organismal physiology can be used to enhance restoration strategies. Since our work is heavily based in the field, we rely on technologies including

underwater videography and telemetry (Figure 2), to monitor free-swimming fish in the wild. Essentially, we take the lab to the fish rather than bringing fish to the lab.

Our current research activities focus on three disparate study systems that enable us to address basic and applied questions in fish ecology. Our work in Midwestern North America is focused on temperate centrarchid sunfishes where we study the physiology and energetics of parental care. Each spring our team dons wetsuits and explores the littoral zones of freshwater lakes in search of bass nests. Male bass provide protracted care and during this period, parental males are extremely vulnerable to capture by hook and line. So, we are able to repeatedly sample the same wild fish throughout the parental care period. This model system also enables us to evaluate how factors such as the burden imposed by nest predators and brood size influence the costs of parental care. One of our newer projects is focused on understanding how individual-level stress can affect population-level processes using largemouth bass as a model. Using PIT tags and a whole-lake telemetry array, we are studying how exogenous cortisol injections influence fish behaviour, condition, immunocompetence, fitness, and survival.

Continued on page 2

Conservation physiology – Continued

In British Columbia, we study the behaviour and physiology of Pacific salmonids (Figure 3) during their spawning migration – from high seas to natal spawning grounds – and attempt to understand how thermal conditions and disease affect migration success. In Canada and elsewhere, there is increased pressure on the development of hydropower facilities, so an expanding focus of our work in the Pacific Northwest is on studying how fluctuating flows caused by hydropower operations and how power station infrastructure such as fishways affect migration success.

The last system studied by our lab is the coastal flats of the Caribbean. Here we study the physiology and spatial ecology of fish in environmentally-dynamic habitats. One project is focused on understanding the thermal biology and trophic ecology of a prized sportfish called the bonefish to yield information needed to better manage and protect their habitat. We are also launching a new project focused on understanding the movement and habitat use of barracuda relative to their accumulation of the biotoxin, ciguatera. Because most of the fish that we study are targeted by

recreational anglers, we have a number of complementary projects underway to understand the consequences of recreational fishing on fish and fisheries and to develop strategies to ensure that fish are released with negligible injury, stress, and mortality consistent with maintaining the welfare status of angled fish.

Check out our lab website at www.carleton.ca/fecpl

Steven Cooke,
Fish Ecology and Conservation
Physiology Laboratory
Carleton University,
Ottawa, Canada



Figure 2. Using an antenna to detect radio tagged fish in British Columbia, Canada



Figure 3. Cooke with friend. Sampling salmon in British Columbia.

Travel Grant Report

Inês Gonçalves from the University of Gothenburg reports on the **2nd International Workshop in Evolutionary Biology: Evolution of Parental Effects – Conceptual Issues and Empirical Patterns** held in Wollongong, Australia between 30th January and 1st February, 2008.

The Workshop was small, with around 40 participants, but it was a valuable opportunity for researchers working on all sorts of animal and plant systems to come together and share their contributions.

The travel grant from the FSBI gave me the opportunity

to present the first work from my PhD research to experts within my field of interest. I was also able to learn much about what else is being done by others working on similar issues. The workshop schedule provided ample time for questions and discussions and the presentations were of very high quality: interesting, well planned, and giving me much to think about, both in terms of the broad field of research and also in relation to my own research.

I would like to thank the FSBI for giving me this opportunity.

EDITORIAL

That the Society is a charity is well known, but the legal framework for charities in the UK is changing so that they have to explain more clearly how the work they do is 'of benefit to the public'. The work a charity does has also to be available to as wide a range of people as possible and for this reason, your *Newsletter* is soon to be available on the society's web site. It will be freely available there and accessible for any member of the public to download and read. Our Briefing Papers are also a valuable element of the benefit the Society provides to the general public. These are downloaded many thousands of times each month although we do not know for what purpose they are downloaded. Members of the Society are presumably interested in fish biology and fisheries science, but it is not so obvious as to how non-members, the general public, might benefit from some of the Society's activities. By definition, one has to be a fish freak to want to belong to the Society and most people are not in that category.

When the Briefing Papers were first introduced there were some members of Council who thought that the money spent on them was a waste. From the viewpoint of a member of the society this might be true in that a fisheries professional is possibly already informed about the subjects covered. But in these days of specialisation, this is just not the case. Consider the breadth of the topics covered in the first few Briefing Papers issued to far. Marine Protected Areas in the North Sea, Fish Welfare, The Effects of Fishing

on Biodiversity in the North Sea and Global Warming. Each of these is a special area that draws on its own specialist scientific literature so that an individual member is unlikely to be expert in all areas. I would propose that these Briefing Papers serve two purposes; they help members keep up to date with areas of fisheries science they are not specialists in and they inform non-specialists in areas of current concern. This last purpose is fulfilled in several ways. Many of those who download the Briefing Papers could be teachers and pupils in schools or University students who need the information for class instruction or for the preparation of course work. The second group who might use the Briefing Papers are journalists and it is surely of benefit to the wider public that the articles they write are informed by a reliable and impartial source of information. Finally policy makers in government and NGOs are the final constituency that these Briefing Papers might be of use to. This was one of the main audiences that the originators of the Briefing Papers had in mind.

At present all this activity is supported through the money generated from the *Journal of Fish Biology*. The Journal benefits the fisheries biology community by providing an outlet for their scientific endeavours and the money so generated is used to inform not only the specialist but also the general public. Many charities in the UK actively work to raise cash from people who sympathise with their cause. Charities dealing with disease and disability are prime examples and it is sad to

see how some of these charities resort to unsavoury tactics to generate money. People who give a donation out of true charitable feelings are then targeted and either bombarded with literature or phoned up and worked on to give more money. I believe that a list exists of people who have responded to pleas for money from particular charities and organisations then focus their efforts on these poor people. There is a fine line between encouraging people to donate and blackmailing or tricking them into donating more than they would choose to do.

The FSBI is not yet in the position where it has to extort donations out of people by trickery. Or to hold bring and buy sales, or to put on special events to generate cash. If we did have to raise money through persuading people to donate sums of money with nothing to be gained in return other than feeling worthy, then it is unlikely that the Society would survive. At present the Society exists because members who subscribe gain a number of benefits and the *Journal* is in demand as a source of high quality scientific information. In turn, the Society is able to generate documents that have a much wider use and so fulfil its duty as a charity under British law.

Paul Hart
Leicester, UK

[The next deadline for copy is 1st August 2008]

Medalists 2008

FSBI MEDAL

Awarded to: **Dr Steven Cooke**,
Fish Ecology and Conservation
Physiology Laboratory,
Institute of Environmental Science and
Department of Biology, Carleton
University, Ottawa, Ontario, Canada
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Dr Steven Cooke pursued his Masters at the University of Waterloo, Ontario (1997-1999) before moving to the University of Illinois, Champaign / Urbana to study for a Ph.D. in Natural Resources Ecology and Conservation Biology, with NSERC Support (1999-2002). Since then he has been a postdoctoral research fellow (Killam fellowship and NSERC support) in the Centre for Applied Conservation Research at the University of British Columbia (2002-2005) and recently (2005) took up a post as Assistant Professor of Fish Ecology and Conservation Physiology at Carleton University, Ottawa.

Cooke's approach to fish and fisheries research cuts across fields of ecology, behaviour, physiology, fisheries management and conservation biology. He is keen to drive forward new methods and concepts and has an enthusiastic approach that has stimulated a great number of interdisciplinary collaborations. This became particularly evident during his fellowship at UBC and has continued since arriving at Carleton. Steven Cooke's work on ecophysiology has been highly productive and informative, providing new insights into the links between behaviour and physiology at the individual scale, illustrated by his work on the energetics of parental care by fishes. He has also linked the physiological work with an extensive use of telemetry. Many of his papers explore the significance of individual variability to behavioural, physiological and life history traits. His work on the fate of a range of Fraser River sockeye salmon stocks during upriver migration is now generating a set of papers in high quality journals (*Ecology*, *Canadian Journal of Fisheries and Aquatic Sciences*, *Journal of Experimental Biology*). These papers make conceptual advances in our understanding of the physiological and behavioural processes, which are

linked to variations in observed mortality, which can be very high in some salmon stocks. The work will be frequently cited in future, not just as individual papers, but as an integrated series of well-designed experiments, which draw out the relative effects of the various likely causative factors.

Steven Cooke has produced over 100 peer-reviewed publications, yet he is still only 34. The breadth of Cooke's research is exemplified by the range of journals in which his work appears which span fisheries and behavioural ecology and review journals. This combination of research has resulted in the importance of conservation physiology being brought forward as a critical and novel area for consideration in fish conservation. This research was importantly highlighted with an elegant study of the physiological response of fish to chronic recreational angling and demonstrated the heritable effects associated with this activity.

Much of Cooke's research requires the application of invasive techniques and he has generated a substantial set of publications dealing with issues deriving from this activity. This work has contributed to the development of more humane invasive techniques.

Many of Cooke's papers are well cited with over 10 citations per paper but the papers below represent his most cited works.

SJ Cooke, CD Suski Do we need species-specific guidelines for catch-and-release recreational angling to effectively . . . Biodiversity and Conservation, Cites (29). Clearly a highly applied but clearly relevant paper that is likely to have an important impact on direct conservation benefits to the species concerned.

SJ COOKE, IG COWX – The Role of Recreational Fishing in Global Fish Crises *BioScience* (cites 26). A wide-ranging and globally important paper given the topical nature of recreational fisheries across the globe.

SJ Cooke, DP Philipp, KM Dunmall, JF Schreer – The Influence of Terminal Tackle on Injury, Handling Time, and Cardiac Disturbance of Rock Bass. *North American Journal of Fisheries Management* Cites (40). A rather more

focussed but highly cited paper. Nonetheless, important implications for one of North America's most important recreational species.

SJ Cooke, SG Hinch, M Wikelski, RD Andrews, LJ Biotelemetry: a mechanistic approach to ecology – *TREE* Cites (52). An important and agenda setting review paper in a high profile journal highlighting the new possibilities to apply and adapt telemetry for ecological studies.

JF Schreer, **SJ Cooke**, RS McKinley - Cardiac Response to Variable Forced Exercise at Different Temperatures: An Angling Simulation for . . . *Transactions of the American Fisheries Society* Cites (40). A highly cited paper – again of most interest to those in North America given the species in question but highlights the link between physiology and behavioural competence under different temperature regimes.

BEVERTON MEDAL

Awarded to:
Professor Paul Hart,
Department of Biology,
University of Leicester,
Leicester LE1 7RH, UK

During his very active career, Paul has made outstanding contributions to and published widely in many areas associated with fish biology and fisheries science. His interests range from the mechanisms underlying decision-making and behaviour in fish to the processes that affect the choices of fishermen and to the biology of effective conservation.

One continual theme in his work is directed at identifying the traits in animals that promote survival and reproduction and hence determine Darwinian fitness. In this context, he has focused on the morphology, foraging behaviour and the decisions that fish make on a day-to-day basis. Much of his work has used the three spined stickleback to investigate these types of process (e.g. Utne-Palm & Hart 2000; Kraak et al. 2001; Hart 2003; Ward & Hart 2004; Ward et al. 2005). In

Continued on page 5

The President writes

One aim of successive Presidents has been to increase the international profile of the Fisheries Society of the British Isles. Looking through the draft minutes of the Council meeting held in April (produced as usual with great efficiency by our Honorary Secretary, Brian Eddy, and summarised elsewhere in the Newsletter), I was struck by just how far this aim has been realised. Many of the items that Council discussed have a strong international dimension; here are just a few of these

Since the *Journal of Fish Biology* is among the top peer reviewed journals in the discipline, we are used to a strong international representation in our journal. Interestingly, a wide national spread is also seen in the hits on the Society's website (ably managed by Toby Carter). More than half of the 19,500 hits per month are from countries other than the UK.

As far as young researchers are concerned, this year's FSBI medal, which is awarded to young researchers of exceptional promise, has gone to Steve Cooke. Steve is an Assistant Professor at the Institute of Environmental Science and the Department of Biology at Carleton University, Ottawa, Ontario, Canada. We hope that he will be able to attend our annual conference to accept his medal.

We have always used our travel grants to help young researchers to travel abroad, attending conferences and making research visits, but we now have an expanding programme of student exchanges. To date, this has involved reciprocal invitations between the FSBI and the American Fisheries Society for PhD students from each society to attend each other's annual conference. This has proved a really good experience for the students, who have also acted as excellent ambassadors for their respective sponsoring societies. We are currently discussing expanding this programme to encourage an exchange of students between the FSBI and the Australian Fisheries Society.

This is part of a continuing process of strengthening links with other Fisheries Societies. There is a tradition of an exchange of invitations between the FSBI and the American Fisheries Society for an office bearer on our Councils to attend each other's annual meetings. This year, I am delighted to say that Mary Fabrizio, the AFS President, will join us at our meeting in Cardiff in July and that our Honorary Treasurer, Gordon Copp, will represent the Society at the AFS annual meeting in Ottawa in August. In the future, links will be even closer, because both the AFS and the Japanese Fisheries Society have guest members on the organising committee for our 2010 summer symposium, which will be held in Belfast on the topic of Climate Change.

The FSBI is an active member of the World Council of Fisheries Societies which oversees the running of the World Fisheries Congress. For the 2008 Congress (in Yokohama in October), we are sponsoring a workshop on Welfare and Fisheries. This is a one day meeting, organised by our Vice President, Mike Kaiser, the aim of which is to discuss the extent to which experience from aquaculture and from recreational fisheries can help when considering fish welfare in the context of commercial fisheries. There will be a short web-based discussion during the summer, to allow an initial exchange of views and to identify issues for more detailed discussion at the workshop. We hope FSBI members will take part in this, so watch the website.

The FSBI is preparing a bid to be presented at Yokohama to host the next WFC meeting in 2012, in Edinburgh. There are of course numerous slips between cup and lip, but we hope that the combination of an experienced organising society and a magnificent venue will make us strong candidates.

Felicity Huntingford,
University of Glasgow.

Medalists 2008 – continued

In addition to this Paul has published widely on many other species; for example, cod, whiting, tuna and others, and some of his very influential work has tackled the thorny issue of conservation of fish (e.g. Blyth et al. 2004). Finally, he has played an influential and important role as the editor of journals such as *Reviews in Fish Biology*, and more recently *Fish and Fisheries*.

Paul has also written or edited many highly influential reviews and books (with co-authors such as Tony Pitcher, John Reynolds and Michael Kaiser), as well as many important and frequently cited book chapters. Through his writing and through his teaching, Paul has inspired many

young fish biologists and fisheries scientists. For example, at the University of Leicester he has trained many undergraduate and graduate students, as well as post-doctoral researchers, who have themselves gone on to lead successful, independent careers in fish biology (examples include Iain Barber, Andrew Gill, Ashley Ward, Sarah Kraak and Anne Christine Utne Palm).

Paul has made substantial contributions to organisations in the UK and internationally. He has worked tirelessly for the FSBI over a very long period first as a Council member, then Treasurer and President and now as the newsletter editor. He has been a Visiting Professor at Bergen and at the University of British Columbia,

Vancouver and has received numerous invitations to participate in international conferences and research programmes. He has played an active role in the World Fisheries Congresses in Beijing and Vancouver.

In summary, Professor Paul Hart is a highly respected and influential fisheries scientist and fish biologist with a strong and very well deserved international reputation. It is for these outstanding lifelong contributions to the study of fish biology and fisheries science that the Society is delighted to award him the Beverton medal for 2008.

HIGHLIGHTS FROM THE 87th COUNCIL MEETING

The 87th Council Meeting took place at the Linnean Society London in their Council Room, on Thursday 10th April 2008 at 1100. The President, Felicity Huntingford chaired the meeting and ten others were present. Nigel Balmforth and Silvana Marciano from Wiley-Blackwells attended for part of the meeting.

Issues of general interest to the membership are as follows.

MATTERS ARISING FROM THE MINUTES OF THE 86th COUNCIL MEETING

The President had received an appreciative letter from David Cole of Granta thanking the Society for gifts of crystal glass and whisky.

There is a strong case to appoint some more Life Members and suggestions from Council are encouraged, to be discussed at the December meeting.

The budget for symposia has remained at £10K for several years and will increase to £12K.

NEWSLETTER EDITOR'S REPORT

For convenient access by members and for the benefit non-members it was suggested that the newsletter should also appear as a pdf file on the website and the "hits" monitored.

STUDENTSHIP COMMITTEE

This year the applications were of a good standard but there were fewer (13) compared to last year (15) and the previous year (21). Seven students were interviewed, 2 by telephone and two appointments made – Anna Lewis' who will work on otolith microchemistry at Southampton/CEFAS supervised by Clive Trueman and Ewan Hunter and Mathew Edenbrow's who will work on behaviour in killifish at Bangor supervised by Darren Croft.

Council approved the idea that upon appointment each student should be assigned to an appropriate Council Member as mentor. Interactions would be by email in the first instance. The main aim would be

pastoral support rather than academic supervision of the project. Students starting in 2008 will also be encouraged to attend one FSBI Symposium and can receive financial support. If the theme is inappropriate to their subject, then a 15 minute presentation could be given in a session immediately before the AGM.

TRAVEL GRANTS

Reports should include the name and address of the recipient in the body of the report.

RESEARCH GRANTS

There were 16 applications in the January 2007 round of which the top two were funded.

FSBI WEBMASTER

The recently redesigned website is averaging about 650 hits a day.

Recent additions to expedite FSBI business include a discussion forum and a secure site for confidential conduct of awarding medals.

JOURNAL OF FISH BIOLOGY

The time between acceptance and publication is now about 3 months.

The Editor is encouraging Special Issues and the first on microarrays will appear in June. Subsequent topics include reproductive physiology, conservation and biology of eels.

FSBI Briefing Papers on the web have proved to be successful, but they do tend to show different styles and formatting. Through Wiley-Blackwells they could be format edited to a uniform style and be clearly identifiable as FSBI productions.

A successful 2007 under the banner of Wiley-Blackwells was reported by W-B representatives with increases in impact factor, downloads and profits for the Society.

Membership is now managed by Wiley-Blackwells and to date there are 466 membership renewals but further renewals are expected in the period to July when the membership year closes.

SOCIETY ADMINISTRATION

The new draft constitution was introduced by the President and the responsibilities of elected councillors (or trustees) were emphasised.

Specific tasks on Council are performed by Guest Councillors such as the Editor of the Journal and the Newsletter Editor, for as long as required. They do not vote on council matters.

Since the Society is a charitable organisation it is important to identify ways to benefit the public and the President encourages suggestions.

SYMPOSIA

The 2008 symposium is in Cardiff, 21-25 July with the AGM on 23rd July. The 2009 symposium will be in Leicester, 13-17 July with the AGM on 15th July. Preparations for the meeting progress well and Carl Smith has agreed to be the Guest Editor. Finally the 2010 symposium will be in Belfast and Ian Winfield will be the guest editor.

Proposals for the 2011 Symposium were invited by the President, to be discussed at the next meeting of Council.

THE WORLD COUNCIL OF FISHERIES SOCIETIES AND THE WORLD FISHERIES CONGRESS.

The Society will be represented by the President and Vice President at the 5th World Congress in Japan in October 2008 where a workshop will be hosted on Welfare and Fisheries. 6th World Congress 2012. Sandy Scott has agreed to help further the Society's bid to hold the Congress in Edinburgh in May 2012.

MEDALS.

Steven Cook was awarded the FSBI medal and Paul Hart the Beverton medal (see special section for more detail).

Correspondence

Dear Editor

Reading Timothy Bagenal's letter in the Spring 2008 Newsletter made me think that it would be appropriate to add a few more words about the founding and first years of the *Journal of Fish Biology*. Timothy has recalled the reasons for the establishment of the Society and the occasion of the inaugural meeting. Jack Jones and Peter Tomblason undeniably saw the Society as a permanent successor to the very successful Freshwater Fisheries Conferences organised at the Zoology Department of the University of Liverpool in the 1960s.

I remember the occasion during the 1967 Fisheries Conference when I was asked if I would be willing to edit a journal for a nascent society. I was in the Parasitology Aquarium when approached by Jack Jones, Peter Tomblason and Lionel Mawdesley-Thomas. I willingly agreed although, of course, the first task was to establish a society. Once established and with a knowledge of the number of members, negotiations could begin with prospective publishers to find one willing to bear the establishment costs of a scientific journal. From the start it was recognised that the Journal had to be scientific in order to interest a publisher and ensure a long-term future. This outcome was perhaps disappointing to Peter Tomblason's. [Tomblason was editor of the *Angling Times* and therefore much more on the angler side than on the side of science. Ed.]

After the Inaugural Meeting of the Society, and with the authority of Council, I approached Academic Press Inc. (London), Blackwell Scientific Publications and Pergamon Press. Academic Press (Roger Farrand) and Blackwell's (Per Saugman) were interested. Draft proposals were put to Council and debated carefully, but in the end Council decided that Academic Press offered the best worldwide circulation. Accordingly, Jack Jones signed a Heads of Agreement with Academic Press on 6 March 1968. The Journal was to be published quarterly, with the first issue January 1969.

The original members of the Editorial Board were: T. Backiel (Poland), E.D. Le Cren (England), D.J. Crisp (Wales), C.L. Deelder (Netherlands), J.M. Dodd (Wales), R.W. Edwards (Wales), S.D. Gerking (USA), G.L. Hoffman (USA), D.W. Jolly (England), J.W. Jones (England), A. Lelek (Czechoslovakia), L.E. Mawdesley-Thomas (England), O.W. Owen (England), W.E. Ricker (USA), C.J. Sindermann (USA), S.F. Snieszko (USA), G. Svårdson (Sweden), P. Tomblason (England), A.H. Weatherley (Australia), A.E.J. Went (Eire) and A.C. Wheeler (England). The Board comprised a wide range of international fisheries and fish parasitology specialists. Academic Press encouraged the international flavour of the Board.

The Journal cover design was a hybrid, in red with the 'block' layout for the title, expressing my preference for a bold, striking cover, and with a fish logo, originated by Lionel Mawdesley-Thomas.

A number of manuscripts were solicited to make up the first issue. The new Journal was advertised widely: the red leaflets, incorporating the cover design, certainly were eye-catching. It was a matter of concern that the Journal might

not attract sufficient high-quality manuscripts to fill the first issues, but by the end of 1969 a good flow of papers was arriving each week, sufficient to ensure rejection of any manuscripts the referees considered unsuitable for publication. As is evident from the size of the Journal to-day, that flow of manuscripts has continued uninterrupted ever since!

I edited the *Journal* for the year prior to publication, and three years thereafter. In 1972 Council appointed Lionel Mawdesley-Thomas editor, because I felt it fitting that there should be a change of editor at regular intervals. By 1971 the Journal was showing a profit for the Society (£330). Now, as we all know, the *Journal* is one of the premier, international, scientific fishery publications and through the years the royalties paid to the Society have facilitated many of its activities.

One person alone achieves nothing. The success of the *Journal* was forged by the then officers of the Society, members of Council, editorial board, referees, and indeed, the authors who took the risk of publishing in an untried location. The Society should be grateful that its founders were so inspired. But now, what of the future of printed journals in this electronic age? No doubt difficult decisions await Council in the not too distant future.

Jimmy Chubb

Liverpool, 28 April 2008

[More history from those remaining few who were in at the start of the Society and the Journal would be welcome. Ed.]



STICKLEBACK 2009

7th International Conference on Stickleback Behavior and Evolution

THE FSBI SUMMER SYMPOSIUM 2009 CONSISTING OF THE 7TH INTERNATIONAL CONFERENCE ON STICKLEBACK BEHAVIOUR AND EVOLUTION WILL TAKE PLACE AT THE UNIVERSITY OF LEICESTER, UK, 12-17TH JULY 2009

The following keynote speakers will speak on the topics indicated.

Deborah McLennan, University of Toronto, Adaptation and phylogeny.

Felicity Huntingford, University of Glasgow, Behaviour.

David Kingsley, Stanford University, Evolution & development.

Ulrika Candolin, Helsinki Univ, Responses to anthropogenic disturbance.

Mike Bell, SUNY Stony Brook, Paleobiology.

Bill Bradshaw, University of Oregon, Photoperiodism.

Bob Wootton, Aberystwyth University, History of stickleback studies.

Accommodation is reserved in the new John Foster Hall of Residence at the University's Oadby campus. Talks and posters will be located on the main University campus near the city centre.

Abstracts of spoken papers or posters may be submitted any time up until 1st November 2008.

A web site will be available soon but further details can be obtained from either Paul Hart at pbh@le.ac.uk or Tricia Ellis-Evans at tricia@paceprojects.co.uk



The Fisheries Society of the British Isles

NOTICES

Annual General Meeting

The Society's Annual General Meeting will take place at Cardiff University, on Wednesday 23rd July 2008 at 1200. This meeting gives members a chance to hear reports from the main officers of the Society and to raise any issues that you, as a member, think important. For those of you who will be at the symposium, please attend and hear what your Council has been up to during the past year.

Annual Symposium 2010

More detailed announcements will be made at a later date but the 2010 Symposium will take place at Queen's University, Belfast, 25-29th July. The Convenors are Chris Harrod (QUB) and David Sims (MBA, Plymouth). The topic will be *Fish and Climate Change*.

Journal of Fish Biology Special Issue on Anguillid Eels

CALL FOR PAPERS

Interest in anguillid eels world-wide is at an all-time high and the *Journal of Fish Biology* is planning to devote a Special Issue on anguillid biology, conservation and management (covering all species and including reviews and original research)

This is a very good opportunity to publish your up-to-date work or reviews in an international journal.

We plan the issue to be a key volume of high quality papers on anguillid biology. The normal JFB submission, format, refereeing, selection and editing processes will be followed

Deadline for submission of manuscripts to JFB 31 September 2008

Publication in June 2009

The Guest Editor will be Dr Brian Knights to whom initial inquiries and offers of papers can be made at PandBKnight@aol.com. Authors should follow JFB Instructions for Authors (<http://www.blackwellpublishing.com/submit.asp?ref=0022-1112>). Papers considered appropriate by the Guest Editor should be submitted to JFB through Editorial Manager (<http://www.editorialmanager.com/jfb/>) to go through the review process

INFORMATION DESK

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