

Louise Firth from the University of Plymouth reports on a conference on *Aquatic Biodiversity and Ecosystems: Evolution, Interactions and Global Change* held at the end of August 2015 and sponsored in part by the FSBI

The Aquatic Biodiversity and Ecosystems Conference was a meeting for aquatic scientists (both marine and freshwater) with a focus on evolution, interactions and long-term change – particularly how these shape patterns of biodiversity and the relationships between biodiversity and ecosystem functioning. The scope was deliberately broad encompassing natural and highly modified habitats in both marine and freshwater aquatic

systems. Ecology and Evolutionary Biology were the key focus, but the meeting also catered for an interdisciplinary approach to studying and managing aquatic ecosystems, especially unravelling local and regional scale impacts from global climate driven change. The University of Liverpool hosted the seminal “Plant-animal interactions in the marine benthos” conference in 1990. This was a one-off conference that focused on biotic

interactions between benthic marine organisms. One of the aims of Aquatic Biodiversity and Ecosystems Conference 2015 was to provide a forum to revisit some of the themes of Plant Animal Interactions, review scientific advances in the field after 25 years, and to broaden it to freshwater systems.

The conference was jointly hosted by the University of Southampton and Plymouth University between August 30th >



The usual line-up of conference delegates usefully using the stagger in a lecture theatre

◀ and September 4th 2015. The organising committee led by Louise Firth (Plymouth University) included Steve Hawkins, Hanna Schuster, Katrin Bohn (University of Southampton), Antony Knights (Plymouth University), Leonie Robinson (University of Liverpool), Nessa O'Connor (University College Dublin), Ian Donohue (Trinity College Dublin), Martin Genner (Bristol University), Gray Williams (University of Hong Kong), Iwan Jones (Queen Mary University London) and Chris Frid (Griffith University). Over 300 delegates from over 40 countries came to the conference representing all continents (see picture above).

There was a stellar line up of plenary speakers linked with the conference themes: Steve Hawkins (University of Southampton) and Brian Moss (University of Liverpool) gave a regional perspective on day 1. The British Ecological Society sponsored a special session on “Biodiversity, ecosystem functioning and stability” featuring Kevin McCann (Guelph University), Brian Silliman (Duke University) and Emma Johnston (University of New South Wales). The “Evolutionary biology: speciation, phylogeography and biogeography” talks featured Christine Maggs (Bournemouth University), George Turner (Bangor University) and Lynn van Herwerden (James Cook University). The “conservation, management and policy” talks featured David Lodge (Notre Dame University) and Jake Rice (Canadian Department Fisheries and Oceans) and the talks on “Global environmental change” featured Brian Helmuth (Northeastern University), David Dudgeon (University of Hong Kong).

In addition to the plenary speakers, the conference featured an excellent line up of keynote speakers: Laura Airoidi (University of Bologna), Amanda Bates (University of Southampton),

Lisandro Benedetti-Cecchi (University of Pisa), Jennifer Dodd (Glasgow University), Romina Henriques (University of Stellenbosch), Stuart Jenkins (Bangor University), Rebecca Kordas (Imperial College London), Pippa Moore (Aberystwyth University), Eoin O’Gorman (Imperial University), Anne-Marie Power (National University of Ireland Galway), Steve Swearer (University of Melbourne) and Guy Woodward (Queen Mary University London).

The prizes for best student oral presentations were sponsored by the Marine Biological Association of the UK and were awarded to Rebecca Atkins (1st prize, University of Georgia) and Curtis Horne (2nd prize, Imperial College London). Joint 3rd prize for student talks was awarded to Ben Harvey (Aberystwyth University) and Carla Lourenco (Rhodes University). The prizes for best student poster presentation were sponsored by MARS Network and awarded to Elizabeth Elliott (1st prize, Plymouth University) and Zahra Alsaffar (2nd prize, King Abdullah University of Science and Technology, Saudi Arabia). Runners up (joined 3rd prizes) included Nathan King (Aberystwyth University) and Rebecca Atkins (University of Georgia).

Steve Hawkins was presented with a framed collection of limpet shells as recognition of his long career studying the ecology of rocky shores and administering a number of significant institutions including the Directorship of the Marine Biological Association of the UK. (During the conference Steve also announced the sad news that Roger Hughes, a pillar of marine biology and a past colleague of Steve’s whilst he was at Bangor University died on 30th August. Although Roger might best be recognised for his work on marine zoology he was also a significant contributor to the fish behaviour literature and was a keen angler and member of the Grayling Society, Ed.)

The organisers wish to thank the University of Liverpool conference organising team for all their help. The organisers would also like to thank the Fisheries Society of the British Isles for their generous support towards plenary and keynote speakers at the conference.

The organisers are curious to hear who might be interested in taking on ABEC in 2020.....?



The author, Louise Firth, presenting Steve Hawkins with a collection of limpet shells from around the world in recognition of his work on shore ecology

Editorial

There is a good set of copy this quarter so there is little room for any editorial comment. As Editor I attended the International Council for the Exploration of the Sea Annual Science Conference in Copenhagen in September and I was going to write a report. The ICES annual meeting is always

a great pleasure because of its diverse topics and delegates who come from an increasingly wide geographical area, which now includes Australia, New Zealand, Chile, Brazil, Colombia, Japan and Thailand although of course the bulk of delegates come from Europe, the US and Canada. I gave

a paper in a session on fishing industry and science cooperative research, a partnership, which is growing in its activities.

Paul Hart
Leicester, November 2015

Next deadline: 1st February 2016

President's piece November 2015

It seems no time at all since I wrote my first President's piece and here we are approaching the festive season; by the time this issue pops through into letterbox it will be upon us, so let me start by wishing you all a happy and healthy festive season, and a productive New Year!

The first few weeks of my Presidency have been busy. In August I attended the American Fisheries Society (AFS) meeting in Portland, Oregon. The FSBI and AFS enjoy a strong relationship and our respective Presidents traditionally attend each other's annual meetings. Many of you will have attended AFS meetings before, but I had not, and I was staggered by the scale of the event; over the 5 days of the event, more than 2000 oral presentations were delivered in 101 symposia focusing on every conceivable aspect of fisheries science, with over 3,300 delegates attending from 32 countries. One of these symposia, on 'Interactions between hatchery and wild salmonids', was co-organised by Ian Winfield and part-funded by the FSBI, who sponsored Nigel Milner's very well-received presentation giving a UK perspective on Atlantic Salmon stocking. These exchange visits serve many functions, but it was especially useful for me to attend this meeting at the start of my term to get to know the officers

of the AFS and other member organisations of the World Council of Fisheries Sciences (WCFS), including those of Australia, Japan and China. Much discussion at our meetings centred on the forthcoming World Fisheries Congress (WFC) in Busan, South Korea, in May 2016, at which the FSBI is sponsoring a session – led by Gary Carvalho, Arne Eide and Ernesto Jardim – on novel approaches to improving our usage of marine food resources. The WFC planning process is now well underway, with abstracts being accepted as this article goes to press.

Over the past year I have been fortunate enough to see first-hand the difference that FSBI funding is making to the careers of younger fish biologists. In April I attended the Nottingham premiere of Jack Perks' film 'Beneath the Waterline', which documents the threats facing British freshwater fish and the efforts being made to conserve them. Jack is a young wildlife cameraman and filmmaker with a passion for fish, and he funded his film through an FSBI sponsorship grant and crowd-sourcing via Kickstarter. Jack has had quite a year, with his quest to film all of the UK's freshwater fish in their native habitats being featured on Springwatch, Countryfile and a number of regional TV programmes, bringing

the plight of our native fish fauna into the homes of millions across the country. I was also fortunate to listen to talks given by a number of PhD students who had received FSBI travel grants to attend major international conferences this summer. These included FSBI studentship holder Dominic Andradi-Brown (Oxford), who delivered a talk at the AFS meeting in Portland on the problems of invasive lionfish, and Alex Brazenor and Alejandro Trujillo Gonzalez – two PhD students at James Cook University – (see Travel Reports) who presented talks on their work on host-parasite interactions of reef fish at the 9th International Symposium on Fish Parasites held in Valencia. All students gave great talks, and I'm pleased to report that each remembered to acknowledge the FSBI's financial support.

These various encounters reinforced my understanding of one of the most important roles of our society, which is to develop the next generation of fish biologists and fisheries scientists. However, my experiences at the AFS also left me wondering whether we could do more to support and encourage our students as future leaders. It was noticeable that the AFS mentor their young scientists very proactively through the ranks of their Society; for example, travel grant recipients are expected to ►



◀ serve on selection panels for future awards, and subsequently take up positions on their Council. Whilst the FSBI provides very generous financial support to students through the provision of internships, stipends, travel funding and research grants, we have never – to my knowledge at least – provided such a mechanism to involve our funded students more directly in the direction and governance of our Society, and I think we may be missing out by not doing this.

Considering ways by which we could increase the involvement of early-career members in our Society will be one of a number of items on the agenda for our forthcoming Council meeting, and I look forward to updating you on the results of these discussions in a future issue.

With very best wishes
Iain Barber
Leicester, 8th November 2016

Recent FSBI funding recipients. (From top) Dominic Andradi-Brown (Oxford) delivering his talk on invasive lionfish at the AFS meeting in Portland, Oregon; Alex Brazenor and Alejandro Truillo Gonzalez (James Cook University, Townsville) with me after successfully delivering their talks at the 9th ISFP meeting in Valencia; Jack Perks at the Nottingham premiere of his FSBI co-funded film 'Beneath the Waterline', available on DVD and for download at <http://www.btwlfishproject.com/>

Travel Reports

FSBI PhD Student: Dominic Andradi-Brown, University of Oxford, reports on the American Fisheries Society Annual Meeting in Portland, Oregon 2015.

During August 2015 I was lucky enough to travel to the American Fisheries Society (AFS) Annual Meeting in Portland, Oregon as the FSBI Exchange Student. This exchange program run jointly by the FSBI and AFS International Section allows one FSBI PhD student to attend the AFS annual meeting, and one AFS student member to attend the FSBI Annual Symposium. This was the first

large (several thousand people) conference I had attended that was so focused in on one topic – fish biology – making for great in-depth conference sessions and a lot of interesting people to talk to! My PhD research focuses on the ecology of mesophotic reef fish (reef fish found in the 30-150m depth range) on the Meso-American Barrier Reef, in the southern Caribbean and particularly the impacts of invasive lionfish (*Pterois volitans*) at these depths. During the meeting I particularly enjoyed the sessions on reef fish ecology and conservation. I had the chance to present some of my FSBI funded PhD work in one of the invasive marine fish sessions and was delighted to be scheduled alongside several U.S. based lionfish scientists who's work I'd read but I'd never had the chance to meet. This led to some great conversations during the coffee breaks on some of the unexplored questions related to fish communities and the lionfish

invasion at mesophotic depths. I was also pleased to meet several other researchers also working on the Meso-American Barrier reef, which has potentially led to some new collaboration opportunities.

The socials at the meeting were great for networking, all helped by a large supply of famous Portland beer! The AFS International Section social was an especially great opportunity, as all the members were so welcoming and it was great to get to meet fisheries scientists from all over the world.

Being based in the Pacific North-West there was a big focus ➤



Dominic Andradi-Brown presenting his FSBI funded PhD research on mesophotic lionfish at the AFS Meeting in Portland. Photo credit: Iain Barber



From left to right: AFS President: Donna Parish, AFS Exchange Student: Jeremy Higgs, FSBI Exchange Student: Dominic Andradi-Brown, FSBI President: Iain Barber

◀ on salmon at the meeting, and as well as the main conference sessions I had the opportunity to escape Portland briefly to see some fisheries management in action at the Columbia River Gorge. While at the Gorge I visited an active salmon hatchery and learnt how the salmon population is managed. Throughout the meeting I really got the feeling that Portland was the ideal venue for the meeting – as fish really are a big part of local culture.

Thanks very much to Patrick Cooney, William Franzin and Danielle Reich from the AFS International Section for the opportunity to attend and sorting all the logistics. I strongly encourage other FSBI PhD students to consider applying for this opportunity next year.

Alex Brazenor and Alejandro Trujillo González, both from the University of Brisbane, Australia attended the 9th International Symposium on Fish Parasites in Valencia, Spain. (See also the President's report).

Alex writes: Due to generosity of both the Australian Biological Resources Study and the Fisheries Society of the British Isles, I was able to attend the 9th International Symposium on Fish Parasites (ISFP) in Valencia, Spain from the 31st of August-4th of September. The grants helped pay in full my travel costs to and from Spain and accommodation during the conference where I gave an oral presentation on part of my PhD research to my international peers.

The 9th ISFP focused on many topics related to fish parasites. Two of these were the phylogenetic research of fish parasites and the impact of parasites on fish health. These two topics directly related to the research I am currently conducting on the isolates of a species of parasite which infects the outer surfaces of teleost hosts; *Neobenedenia* (Capsalidae: Monogenea). The presentation

was well received and although I was not awarded any student prizes, one plenary speaker (Dr Tim Littlewood, a Platyhelminth phylogeneticist) referenced part of my presentation in his seminar to all conference attendees.

Attending this conference has allowed me to network with a diversity of researchers and has allowed to me to facilitate a greater exposure of my work to my international peers. This networking has provided me with a broader perspective on global parasitological research and the possibilities for future directions of work.

Whilst at the conference, I also attended a workshop on the impacts of parasites on the global aquaculture industry chaired by Barbara Nowak and Francisco Montero; two world-leading parasitology researchers. This workshop provided detailed information on the problems facing specific aquaculture industries around the world.

Alejandro reports:

During the conference I had the opportunity to learn, discuss and observe current trends in fish parasitology, as well as meeting leading researchers from around the world in the area of fish parasitology.

Having this unique opportunity [...] was a milestone in my life as a researcher. Listening to experts in the field, learning new ways to study fish parasites, sharing with other fellow students about my experiences as a PhD student in Australia, allowed me to hone my skills as a researcher, and open my mind to new technologies in a rapidly changing scientific community

I enjoyed also meeting many researchers only known by name, such as Professor Kazuo Ogawa, Professor Thomas Scholz and Professor Kurt Buchmann. Being able to talk to them, listen to them and learn from their expertise was

certainly an invaluable experience.

I would like to thank the Fisheries Society of the British Isles for their support. (Given that we have had two reports from the same conference Alejandro's report has been edited to make it shorter. Ed.)

Fiona Lappin, attended the Annual meeting of Society for Experimental Biology as well as a satellite meeting both in Prague in the summer of 2015.



The grant provided to by FSBI allowed me to attend the annual meeting of the SEB in Prague, Czech Republic, summer 2015. It also allowed me to attend a satellite meeting held before the main meeting, titled *Genome-powered perspectives in integrative and evolutionary biology*. The satellite meeting allowed me to interact with leaders in their field on a more one-to-one basis, with my poster presentation being one of only four given by students attending the meeting. At the main meeting I had the opportunity to present an oral presentation at the session titled 'Gen(om)es-to-Environments and vice versa- A tribute to Andrew R. Cossins' I spoke to ~50 people about my current line of research focusing on the lineage specific re-diploidization of duplicated Hox gene clusters after whole genome duplication. This was my first oral presentation at an international level and I feel it was well received. The variation ►

◀ of subject matter hosted at the SEB annual meeting allowed for insight into multiple different areas of research from across the globe ranging from food security to bio-mechanics allowing me to attend many interesting sessions not only in my personal area of interest but also general

interest, with keynote addresses from prominent scientists in the areas of plant, cell and animal biology. One of the most valuable discussions personally was a lunchtime seminar focused on early stage researchers in which a panel of leading scientists hosted a question and answer session

covering everything from finding applications to managing research with personal life. The main meeting also offered a number of networking and social events that allowed me to mix with scientists at all different levels of their careers.

Notices

The Fisheries Society of the British Isles (FSBI) call for PhD Studentship applications for 2016 start.

The Fisheries Society of the British Isles (FSBI) offers up to two competitively awarded MPhil/PhD studentships annually. FSBI Studentship awards are based on PhDs funded by the Natural Environment Research Council (www.nerc.ac.uk) and cover the costs of the stipend (NERC rates plus £1000, London weighting of £2000) and of the annual registration fees (at EU citizen rates), with a small annual contribution (£1,250) towards project expenses. Research projects are proposed by the candidate and may be in any field of study relevant to fish biology and the aims of the Fisheries Society, as stated at: <http://www.fsbi.org.uk>. This includes projects in which fish are the study species as well as those that examine the influence of non-fish taxa on fish biology, e.g. the effects of infectious agents on fish health, of fish-eating birds on fish populations, of invasive crayfish on fish behaviour. However, the focus of the research must be fish biology, and the FSBI reserves the right to decide on the suitability of proposed research topics for its awards.

Applicants should hold a Bachelor's degree, with first or upper second class Honours, in a subject relevant to fish biology, normally in the biological sciences.

An alternative combination of qualifications and experience that clearly demonstrates equivalent knowledge and ability may be considered at the discretion of the FSBI Studentship Committee. Applicants will be expected to be members of the FSBI and the successful appointees will be expected to remain as FSBI student members for the duration of their funding.

Applicants should develop the proposal in consultation with the proposed supervisor(s), one of which must hold an academic position at any institution of higher education in the British Isles (including the Republic of Ireland). However, the application form and project proposal MUST be written and completed by the APPLICANT, not by the proposed supervisor(s). Applicants may hold any nationality, but FSBI Studentships are fixed at rates applicable to UK/EU citizens, and any registration fees above the base rate (currently about £3,750 per annum) must be justified in the application. The Society will be responsible for the payment of institutional fees, including the costs of tuition and registration for a higher degree. The Society will pay annual university fees up to the level required for EU nationals. Applications cannot be considered from non-EU students who would be subject to foreign student fees.

The closing date for applications is Tuesday 12th January 2016. Selected applicants

will be interviewed at the end of February or beginning of March 2016.

For further details and a downloadable application form, please refer to the FSBI studentship webpage <http://www.fsbi.org.uk/grants/phd-studentships/>. Please note that applications are limited to one per applicant. Informal queries about the application submission process may be addressed to Shirley Robinson (admin@fsbi.org.uk) with subject-related queries directed to the Committee Chair, Professor Paul Kemp (studentships@fsbi.org.uk).

HTI Sonar have some courses on offer.

Using Acoustic Tags to Track Fish

4-5 February 2016 - 9:00 am to 5:00 pm

Attend Online or On-Site

Hosted at the University of Washington School of Aquatic Fishery Sciences, Seattle, WA http://www.HTIsonar.com/at_short_course.htm

This course addresses all aspects of tracking fish movement with acoustic tags, including three-dimensional tracking with sub-meter resolution. It includes hands-on operation and a variety of fish monitoring applications are covered. Lunch is provided for on-site students. Reserve a seat or ask a question at support@HTIsonar.com. Tuition Rate Offer (50% discount) for university students, university staff, non-profit and ▶

◀ tribal organizations. http://www.htisonar.com/Training_Special_Offer.htm

Using Hydroacoustics for Fisheries Assessment

11-12 February 2016 - 9:00 am to 5:00 pm

Attend Online or On-Site. Hosted at the University of Washington School of Aquatic Fishery Sciences, Seattle, WA

http://www.HTIsonar.com/ha_short_course.htm

This course covers mobile and fixed-location hydroacoustic survey techniques, including basic hydroacoustic theory, deployment logistics, data collection and processing, as well as typical results. Split-beam, single-beam, and multi-beam frequency techniques are discussed in detail. Lunch provided for on-site students. Reserve a seat or ask a question at support@HTIsonar.com.

Tuition Rate Offer (50% discount) for university students, university staff, non-profit and tribal organizations. <http://www.>

[htisonar.com/Training_Special_Offer.htm](http://www.htisonar.com/Training_Special_Offer.htm)

Nigel Balmforth, who is well known to FSBI members, joins 5m Publishing.



Nigel Balmforth is joining 5m Publishing as Head of Publishing. In a specially created role Nigel will be responsible for managing the growth of 5m's Publishing including aquaculture, fisheries and fish biology. Nigel has over 30 years' experience in scientific publishing and has developed highly successful book and journal

publishing programmes in fish, fisheries and aquaculture, first with Chapman & Hall and then with Blackwell / Wiley Blackwell. Nigel has been responsible for many new start journals including *Fish and Fisheries* (the number 1 impact factor journal in the ISI fisheries category), *Reviews in Aquaculture*, *Aquaculture International* (with the European Aquaculture Society) and book series such as the Fish and Fisheries Series, the Fish and Aquatic Resources Series, and the World Aquaculture Book Series.

'I am delighted to be joining 5m Publishing to develop their publications in aquaculture and related areas. 5m Publishing is part of Benchmark Holdings, which has as its core focus a commitment to driving sustainability throughout the food chain and establishing the highest possible standards of animal health and welfare. I'm greatly looking forward to this new role'.

Nigel can be contacted at nigel.balmforth@5mpublishing.com www.benchmarkplc.com www.5mpublishing.com

Introduction to statistics and R for biologists

Overview:

The course will introduce students to statistical modelling using R software. It will consist of a series of modules (listed below), each lasting roughly half a day, and designed to build required skills for subsequent modules and more advanced courses. At its conclusion, participants will have acquired basic skills in coding with R, and will be able to perform and interpret simple analyses, and critically evaluate similar analyses from the scientific literature and technical reports.

Each module will include practical and selfassessment exercises to help attendees gauge their understanding of the concepts. All course materials (including copies of presentations,

practical exercises, self-assessment problems, data files, and example scripts prepared by the instructing team) will be provided electronically to participants.

Intended audience:

New research postgraduates, or professionals in government, industry, or charitable organizations who have little or no formal statistical training, and who want to learn about modern biostatistical approaches and R software.

Contact PR~statistics (see contact info at right) if you are unsure about whether to enrol in this or another more advanced course in statistical modelling using R.

Teaching format:

Although there will be brief lectures that introduce the theory behind statistical reasoning, the course is heavily focussed on the practice of performing and interpreting analyses. Each module will therefore include both a detailed practical exercise as well as supplementary material that can be completed either during the course or after its conclusion.

Assumed knowledge:

Basic numerical competence, but without formal statistical training. No previous experience in coding with R or other statistical languages is required. ▶

Practicalities:

The course will run from 7th – 10th December 2015 at SCENE (the Scottish Centre for Ecology and the Natural Environment), Glasgow. The course is 4 days long and classes will run from 9.00am – 5:30pm including an hour for lunch and breaks. The cost is £380 including lunches and course materials. An all-inclusive option is also available at £550; this includes breakfast, lunch, dinner, refreshments, accommodation and course materials. Participants will need a working laptop computer on which recent versions of R and RStudio software have been installed. Detailed instructions for installing software and the associated R packages required will be provided by the instructors a few weeks before the course.

Curriculum:

Day 1:

Module 1 Coding in the R language

Module 2 Graphics using R

Day 2:

Module 3 Probability theory and distributions

Module 4 Null hypothesis testing and parameter estimation

Day 3:

Module 5 Univariate regression

Module 6 Multiple regression

Day 4:

Module 7 Categorical variables

Module 8 Case study: predicting fish abundance

Further details:

For further details about the course visit www.prstatistics.co.uk or questions contact **Oliver Hooker** by phone **+44 (0) 7966500340** or by email oliverhooker@prstatistics.co.uk



Information Desk

For all membership enquires (except subscription payments), including grant application submissions, please contact the FSBI office at:

FSBI, c/o Charity & Social Enterprise Department, Brabners, Horton House, Exchange Flags, Liverpool L2 3YL, UK

Contact: Shirley Robinson

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Email Enquiries: grants@fsbi.org.uk

In the UK and Europe subscription enquiries should be addressed to:

admin@fsbi.org.uk Charities and Social Enterprise Department, Brabners, Chaffe Street, Horton House, Exchange Flags, Liverpool L2 3YL

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See <http://www.fsbi.org.uk/membership/joining-the-fsbi/> for further information.

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