

Samantha Simpson reports on the very successful summer symposium held at the University of Plymouth



Several months before the FSBI 2015 Annual Symposium on the “Biology, Ecology and Conservation of Elasmobranchs” in Plymouth, my PhD supervisor and symposium convener, Prof David Sims, asked for assistance with some of the planning for the conference. Having little experience in symposium planning I was keen to be involved! In the run up to the symposium we got

our team of student volunteers ready, designed banners and t-shirts, stuffed logo-adorned bags with goodies, planned the opening night drinks reception, before, finally, the opening day arrived on Monday 27th July.

It was to be a five day meeting of around 170 elasmobranch (shark, skate and ray) scientists from 34 countries, all converging on Plymouth with the aim to

explore how new scientific and technological approaches in elasmobranch biology and ecology can contribute to their conservation. The symposium welcomed 85 speakers, of which 39 were women, representation which sets a great example to all the up and coming young researchers also in attendance. The age range was impressive, from an A-level student to

◀ undergraduates, and PhD students to emeritus professors, inclusivity that I know the FSBI encourages, to their credit. Something that struck me over the week was just how friendly and encouraging the meeting was. Encouraging enough that our student volunteers asked questions of top researchers and were answered with the same passion and enthusiasm, which everyone in the field clearly possess. I also appreciated the open admission of difficulties found in some of the projects presented - tagging great white sharks can be as challenging as it seems according to the first Keynote speaker, Dr Gregory Skomal of the Woods Hole Oceanographic Institution, U.S.A.!

The five days were structured with different daily themes, including movement, behaviour and habitat use on the first day, genomics, development and evolution, and population structure, distribution and phylogeography on day two, with ecology, fisheries biology and management, population ecology and conservation occupying days three and four, and finally mobulid ecology and conservation on the last day.

The entire meeting was filled with excellent talks, but my highlights surprised me. I come from an ecological research background and though I have an interest in molecular biology, it is not something I have much experience or knowledge of. However the genomics session was fantastic. Starting with an impressive keynote address by Dr Sylvie Mazan (Biological Station, Roscoff, France) on shark developmental biology, this continued with Dr Kevin Feldheim of the Field Museum of Natural History in Chicago, U.S.A., a great keynote speaker who explained genetic tools and their use in the ecology and conservation of elasmobranchs so well, it set up everyone who came after. Andrew Griffiths of the University of Bristol, UK, gave a presentation on DNA barcoding in skate, which really sealed the deal for me concerning molecular biology (my PhD is on skates so I have some bias in my choices!). His analysis of DNA from skates caught from seamounts in the Azores Islands revealed a previously unrecognised species present in the region, and which may yet split the common skate (*Dipturus batis*) complex into 3 critically endangered species.

Testament to the power of molecular techniques added to conventional taxonomical approaches is that only 5 years ago there was only one recognised species of common skate, but now there are likely to be three, each with a smaller population size than previously realised.

Another highlight was the keynote talk by the Jack Jones Memorial Lecturer, Prof Gregor Cailliet from Moss Landing Marine Laboratories in Monterey, U.S.A. He gave a thorough retrospective on the research underpinning a key question in elasmobranch biology: how old do sharks, skates and rays get? He presented work highlighting various validation studies that he separated into ‘the good, the bad and the ugly’, illustrated naturally of course by a musical interlude of the Ukulele Orchestra of Great Britain playing Ennio Morricone’s classic. A Jack Jones lecture to remember!

I also saw colleagues from my own research group at the Marine Biological Association Laboratory speaking publically for the first time, including Nick Humphries who presented work on habitat partitioning among four sympatric species of skate off Plymouth. Some of my Arc GIS maps featured in the talk and I excitedly told anyone who would listen “I did that!”.

The focus on conservation biology was especially stimulating. An excellent keynote by Dr Julia Baum of the University of Victoria in Canada highlighted the plight of sharks on coral reefs, and how important it is to have in place long-term data collection to track abundance changes. Another highlight was Dr Rima Jabado who works on elasmobranchs in the United Arab Emirates (UAE). The UAE is a top exporter of shark fins and yet we know nothing about the species present in the area and therefore what species are actually being exploited. The presentation on the emerging elasmobranch ▶



Kevin Feldheim, David Sims and Ian Winfield in front of the reef aquarium in the National Marine Aquarium, Plymouth



Rima Jabado talking about shark biology in the United Arab Emirates

◀ diversity of the region also featured videos that illustrated the levels of exploitation occurring; huge shoals of eagle rays and turtles caught in nets. I think the audience audibly responded with shock at the sight of the exploitation and yet despite this I felt confident and optimistic that Rima was on the job! Passion, confidence and expertise seemed to radiate from her. So too from the Keynote speaker, Sonja Fordham of Shark Advocates International, Washington D.C., who described the successes and the challenges that lay ahead in terms of science-led global conservation of elasmobranchs.

An interesting aspect was the use of Twitter at the conference. As a relative newbie to Twitter myself, it was amazing to see just how Twitter can spread the word and take an FSBI symposium to the world. There were around 1000 tweets using the #FSBI2015 on a single day, with people not at the conference able to follow what was happening and even join in discussion. The symposium even ‘trended’ on Twitter! The

social events after each day’s presentations and discussions were also a fantastic place to meet with more of the attendees and carry on talking. The Icebreaker drinks reception at the Marine Biological Association went down a storm. Our sponsors, Plymouth Gin, are presumably largely to thank for that! The Wednesday night barbecue was also eventful, with Dr Kathryn

Elmer of the University of Glasgow receiving the FSBI Medal from the President, Prof Ian Winfield. The Thursday night banquet in front of the reef tank at the National Marine Aquarium was also an impressive and perfect venue for the last evening. After a lovely dinner there came the speeches and presentations: Prof Gordon McGregor Reid received the Le Cren Medal, and Ian Winfield and David Sims presented each Keynote speaker with a wonderful print of some British elasmobranchs by the marine artist Marc Dando (a very limited edition, only eight were printed!), which commemorated their great contributions to the symposium.

Being involved in the conference has broadened my horizons and though I absolutely love my PhD anyway, it was given me an even greater passion for elasmobranchs and research. I also now have a great respect for the organisers of these events. Even playing my small role in its organisation has given me an insight into what needs to be done to make a successful science conference. Overall I think the meeting was a great success and I was proud to be involved.



Plymouth Sound from in front of the Marine Biological Association and Sir Alister Hardy Foundation for Ocean Science

Editorial

Samantha Simpson's report on the summer Symposium on Elasmobranchs, is very welcome, particularly as I was unable to be there. With over 170 delegates the meeting has been one of the best attended for a long time. Ever since the Society began in 1967, the summer conference has focussed on one topic and in so doing it tends to exclude most members who are unlikely to be interested in the subject chosen. For some reason, which I find hard to understand, Elasmobranchs attract a huge audience, a fact born out for me through my Twitter account where I get more messages about sharks and rays than any other fish group. The unfathomable nature of this, to me at least, is paralleled by the attraction that turtles have

for many. Again, it is beyond me why they have such a following. Samantha Simpson demonstrates the enthusiasm for Elasmobranch in her article and it is good to see.

As you will read in the incoming President's piece, Iain Barber wants to consider the idea of widening the scope of the annual symposium to cover a wider range of topics so that more members would be attracted to come. At present Iain and Ian (present and past Presidents!) are in Portland Oregon at the annual meeting of the American Fisheries Society. As I can attest myself this is a massive affair with regularly over 1000 delegates and umpteen parallel sessions. Whilst we probably wouldn't want our meeting to be as large there is merit in the idea

of catering for a wider range of interests. This might also mean that the Annual General Meeting of the Society would no longer struggle to be quorate.

I would like to finish by thanking Ian Winfield for his excellent job as President. The job has become much more demanding than it was and most of the recent Presidents have done the job 'in their spare time', whatever that means. I also welcome Iain Barber to the position and we look forward to his 'reign'.

Paul Hart
Leicester 19th August 2015.

Next deadline, 1st November.

The new President of the Society, Dr Iain Barber, sets out his plans



It is a great honour to have been selected as the incoming Honorary FSBI President. I have been a member of the FSBI since starting

my PhD in Glasgow – back in the early 1990s, under the supervision of past President Felicity Huntingford – and a member of Council, including a period looking after the studentships committee, before serving as Vice-President during Ian Winfield's presidency. Like many of us, over the years I have benefited enormously from my membership of the Society; through a travel grant during my PhD days, a small research grant when I was a newly appointed lecturer in need of research funding, and more recently through supervising the recipient of a FSBI studentship. Of all the academic societies that I have been a member, the FSBI does far more for its membership than any other, and I am proud to have a chance to lead this fantastic organisation.

I'd like to start by thanking Ian Winfield for his outstanding leadership of the FSBI over the past 4 years. Ian has worked tirelessly to take the FSBI into new areas – including social media, greater internationalisation and sponsorship – as well as dealing with some challenging matters, and doing an excellent job on the day-to-day issues of leading Council. Perhaps one of Ian's most valuable contributions has been in developing the international links of the society, including an important role in delivering a successful World Fisheries Congress in Edinburgh in 2012. I am very grateful to Ian for offering to act as an FSBI link to the next WFC meeting in South Korea (http://www.wfc2016.or.kr/english/main/index_en.asp), and in general for his advice and

◀ assistance before, during (and hopefully after!) the Presidency handover.

Under Ian's leadership the Society has flourished. Membership now stands at record levels and we are involved in some new and exciting initiatives. Ian has done a fantastic job of streamlining and professionalising the work of the society over the last few years and I think the society is now more relevant to a broader range of fish biologists and fisheries scientists than ever. Following in Ian's footsteps will be tough, but I have been privileged to work closely with him these past few years and I hope to have learned from the way he has gone about the job. I will work hard to carry on the leadership that Ian has provided to Council, to further cement the FSBI as a major international society for fish biology and fisheries.

As you may know, the income that allows the FSBI to fund so many different initiatives and support our PhD studentship programme derives almost entirely from our profit share agreement with the publishers of our Society's journal, the *Journal of Fish Biology*. Consequently, the success and profitability of the journal is tied directly to the FSBI's ability to support research through its diverse mechanisms. Outstanding work by a long line of FSBI treasurers – including Paul Hart, Ian Winfield, Gordon Copp and Rob Britton – has meant that the FSBI is financially healthy, with a robust 'reserves policy' that ensures we have the resources to see through all funding initiatives to which we are committed. However, our complete reliance on journal profits leaves us relatively vulnerable to change, and it is becoming acutely clear that we are entering a potentially far less stable period than that which we have enjoyed over the past few years. The world of academic publishing has never

been more dynamic, and we must do everything we can to safeguard both the academic reputation and the profitability of our journal at a time of unprecedented change in the publishing industry. Balancing these potentially conflicting demands to ensure our future financial stability is likely to constitute our major challenge over the next few years. This challenge has been the main driver behind Council's recent decision to set up a publications committee, which will facilitate communication between the FSBI and the *Journal* as well as overseeing other forms of printed output, including briefings papers and book sponsorship initiatives.

Over the next few months I will be working with Council to identify priorities for attention. One urgent issue is to discuss and plan our 50th Anniversary conference in 2017, and I intend using this as an opportunity to review the way in which we organise our conference programme. Currently the FSBI provides substantial sponsorship for an annual international symposium, which typically focuses on a topic that arises through membership and Council suggestions. Over recent years the trend has been towards symposia based around more specialised topics, with smaller attendance figures (though this year's elasmobranch meeting in Plymouth bucked this trend spectacularly – congratulations to David Sims and the organisers of this hugely successful meeting). Whilst this model has many benefits, the specialised nature of these symposia does mean that we lack an opportunity to get a high proportion of the membership together. At Council in December we will discuss the possibility of a broader format for the 50th Anniversary conference, which would encompass a greater proportion of the diversity of our members' interests.

I would be very keen on hearing

what members of the Society have to say on this and on any other FSBI related issues. If you would like to email me directly, I would be interested in your views. Please contact me via the president@fsbi.org.uk email address.

I'd like to finish for now by stating that I am very much looking forward to working closely with my fellow officers Gary Carvalho (Vice-President), John Pinnegar (Secretary) and Rob Britton (Treasurer) and other Council members to take the Society forward over the months and years ahead. There has probably never been a more exciting time to be a fish biologist or fisheries scientist, nor when our work has been more broadly relevant. Similarly, FSBI members can now get more from their membership than ever before. I would urge all members in academia, industry or the commercial and public sectors to engage even more closely with the Society, to spread the word of our work and to take advantage of the many benefits of society membership.

I look forward to working with you and meeting as many of you as possible during my tenure.

Iain Barber
president@fsbi.org.uk

Travel Grant Reports

Paul Seear, Postdoctoral Research Associate working in Iain Barber's lab at the University of Leicester, UK writes:



Mike Bell, the conference organiser and stickleback *officanado*, starting proceedings

To attend the 8th International Stickleback Behaviour and Evolution Conference at Stony Brook University in Long Island, New York was a great privilege and it was only due to the generous support of a FSBI travel grant that I was able to attend the pinnacle meeting of stickleback research. The timing of the conference could not have been better for me as I had just published my work on the evolution of the stickleback nesting glue genes and I was very keen to hear feedback from other stickleback evolutionary biologists.

The conference was brilliantly organised and hosted by Mike Bell whose standing as one of the great stickleback scientists is only matched by his hospitality. Mike ensured that all conference attendees knew of the best places to eat and drink in Stony Brook and even hosted an open house at his home in Stony Brook during the free afternoon!

There were eight sessions over five days that ranged from stickleback behaviour and host-parasite interactions through ecotoxicology and genomics to evolution. With no parallel sessions I was able to attend the wide variety of talks. There were some excellent

presentations from the PIs, but also some outstanding talks from the postdocs and students. Each talk reinforced the importance that the three-spined stickleback has as a model to study behaviour, host-parasite interactions and evolution. This was particularly well demonstrated in the Stony Brook Provost Lecture given by David Kingsley who showed how changes in gene regulatory sequence could result in phenotypic changes not just in sticklebacks, but also in other vertebrates. This presentation was filmed and can now be seen on YouTube (<https://www.youtube.com/watch?v=LrWvpe5QBLk>). In addition to the talks, there was also a workshop about teaching with sticklebacks and a career mentoring lunchtime session for PhD students and postdocs that I found particularly interesting and useful!

I gave my own talk entitled “Differential expression of spiggin genes in nesting male Threespine Stickleback from diverse ecosystems” in the first session of the conference which was ideal to obtain feedback from my work. In my talk I was able to show how divergence of the duplicated genes encoding for the spiggin nesting glue may have allowed the threespine stickleback to adapt to different aquatic habitats, in addition to proposing an underlying gene duplication mechanism that has implications for stickleback evolution as a whole. I was very pleased with the level of feedback and interest I received and particularly happy when my work was mentioned in subsequent talks - including David Kingsley's! The feedback has given me a number of grant proposal ideas and confidence to continue my stickleback spiggin research.

I was not the only member of the Iain Barber lab to attend and present at this conference: Iain Barber gave a great talk



Paul Seear, giving his talk on spiggin genes in sticklebacks

entitled “Parasites, learning and memory in Threespine Stickleback (*Gasterosteus aculeatus*)” based on work undertaken by his 3rd year undergraduate student, Lucy Sullivan; while Stephan Grambauer gave an excellent first presentation at a major conference entitled “Towards an understanding of the genetic basis of behaviour manipulation in the Threespine Stickleback-*Schistocephalus* host-parasite system”. Iain was also able to give a short presentation to non-UK stickleback scientists on the impact that Springwatch and “Spineless Simon” had on the UK public, which was very well received by all at the conference!

This conference gave me some great opportunities to meet and network with other stickleback scientists from around the world, not only at coffee and lunch breaks, but also at the buffet dinner and closing banquet. During such discussions I was introduced to the importance of Twitter (I later joined) and it was not long before the conference gained a hashtag (#stickleback2015). It would also be remiss of me to not state how important the local bar (The Bench) was in discussing stickleback



Delegates enjoying a coffee break

◀ research! I would like to thank the FSBI once again on providing me with such a great opportunity to not only present my work and gain valuable feedback but also to learn about the latest stickleback research and meet fellow stickleback scientists!

Ottavia Benedicenti, a PhD student at the Scottish Fish Immunology Research Centre (SFIRC) and Marine Scotland Science Marine Laboratory in Aberdeen, UK, reports as follows:



I attended the 13th Congress of the International Society of Developmental and Comparative Immunology (ISDCI) in Murcia, Spain,

from 28th June to 3rd July, 2015. ISDCI organizes an international conference once every three years, and senior scientists and young PhD students from around the world have the possibility to discuss unpublished work and new techniques available in the field of comparative immunology in both plants and animals, with the latter covering invertebrates to mammals. The ISDCI conference represented an opportunity for me to become aware of the latest advances in the field, which stimulated new ideas for the next steps of my PhD work. In particular, I was interested in sessions dedicated to host-microbe interactions, mucosal and fish immunity. From the different talks, I had the opportunity to learn about recent findings in the field of mucosal immunity, like the characterisation and concentration of different immunoglobulins in the fish gills. I gave an oral presentation with the title "Which Th pathway is involved during a late stage of amoebic gill disease infection?" which represents work that will form a chapter of my PhD thesis. At this stage of the PhD I had benefits from this conference in terms of opinions and suggestions on how I can improve

my research and which aspects would be important to include in my thesis. I would like to thank the Fisheries Society of the British Isles for awarding me a Travel Grant.

Elodie Lédée, based at the Centre for Sustainable Tropical Fisheries and Aquaculture College of Marine and Environmental Sciences James Cook University, Townsville Australia reports on her conference trip.



In July 2015, I was fortunate enough to attend the 3rd International Conference for Fish Telemetry held in Halifax, Canada. The biennial conference presented the latest fish telemetry research undertaken around the world. I presented two projects from my PhD research, as a talk and a poster, which provided me the opportunity to discuss and further improve my work with experts. My oral presentation concerned the movement patterns of reef predators using a novel approach - network modelling, and my poster examined environmental drivers responsible for the movement of these reef predators. It was valuable to listen to the variety of research outputs that use similar technology in other ecosystems. This helped improve my understanding of the technology, but also provided valuable information on how to design and optimise future studies. I had the privilege of being invited as a shark expert to a shark trivia night organised by the WWF where I was able to test my knowledge on shark ecology and shark population alongside other experts from around the world. It was a great experience and also great

fun. Additionally, I participated in a VEMCO workshop to improve my knowledge on the tracking technology I use for my research, and I also learned about upcoming new technology to improve our understanding of animal movement and for potential use in future research. This conference provided a great platform for networking, establishing future collaborations and improving my knowledge on fish telemetry and it was a valuable experience. I am very grateful for the financial assistance provided by the Fisheries Society of the British Isles which made it possible for me to attend and present my work at this international conference.

Mei Sato, a Post Doctoral assistant in the School of Aquatic and Fisheries Science, University of Washington, USA attended and reports on the following:



In May 2015, I attended the 7th International Council for the Exploration of the Sea (ICES) Symposium on Marine Ecosystem Acoustics in Nantes, France. This conference presented and

discussed recent developments in acoustic methods and technologies used to characterize and manage marine and freshwater ecosystems. Approximately 225 people attended, with all talks in a single venue, which provided an excellent networking opportunity to meet representatives from all contributing countries. I presented our latest research project studying hypoxia effects on the fish and macrozooplankton community in Hood Canal, Washington. Using multifrequency acoustics (38-200 kHz) combined with net samples, we observed that pelagic fish were present in hypoxic waters throughout a seasonal hypoxia cycle in a temperate fjord. ▶

◀ This resilience to hypoxia was explained by their low physiological cost of remaining in low oxygenated waters, because the added respiration cost is compensated by additional flow over the gills while swimming. Although previous studies have shown distributional and behavior changes in response to hypoxia, distributions relative to hypoxia is context and environment specific. A combination of temperature and oxygen affect physiology of fish, which has not been considered. Due to the focused and close-knit nature of this conference, there was an excellent opportunity to discuss my research as well as general underwater acoustics with experts. This conference also provided me an opportunity to be exposed to new broadband acoustic technologies, which will be a key instrument in the future. I would like to thank the FSBI for the generous travel support allowing me to attend this conference.

Grant opportunities from the Leverhulme Trust

Anna Grundy, Grants Manager at the Trust writes:
'we would like to encourage more applications from researchers working in the fields of Zoology and Ecology'.



The Leverhulme Trust

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