fsbi
An International Society for Fish Biology
Spring 2020

The President, Professor Gary Carvalho writes:

I welcome an opportunity to bring members up to date with some recent activities of the Society. Foremost amongst the original key objectives of the **President's Strategy Plan** (2019-2021) was to increase interactions and representation of our membership, alongside our associations with other scientific societies. Additionally, I wish to remind members of an important role that the Society serves.

Progress on key objectives. I am pleased to report, with the help of our Web Design Consultant, Christopher Brodie, release of our FSBI membership survey, aimed at identifying the key needs and future developments of the FSBI. The survey continues until 1 March 2020, and we plan to present key outputs, in the next edition of the Newsletter. Within data protection constraints, outcomes will inform members of Council of the current composition of our membership, and how best to match FSBI resources to representative needs. We are keen to ensure that in addition to our core funding programs, including our PhD studentships, that we identify and support a range of more specialised training programs, especially pertinent to fish and fisheries scientists, including generic skills in scientific communication. Depending upon perceived needs, we envisage a mix of FSBI-sponsored support for existing training courses, with the potential to develop bespoke FSBI-led programs. I encourage all members, who are yet to complete the survey, to do so as soon as possible. If you have problems in accessing the survey, please contact the FSBI Administrator, Jane Smith at j.p.smith@bangor.ac.uk. Additional information is also now available on the website, giving deadlines for other FSBI funding opportunities. We will soon populate an interactive calendar on the FSBI website to provide a one-stop resource that details FSBI grant deadlines, Council and Committee meetings, symposia, and other FSBI-related activities.

In relation to closer integration with other learned societies, we are currently exploring complementarity with the Institute of Fisheries Management (IFM) and the Royal Society of Biology (RSB). Initially we have details on the FSBI website, of salient information concerning the **IFM**, including various training opportunities. Similarly, we plan to promote reciprocally, details of key relevant RSB and FSBI activities to reach a wider scientific community across various disciplines. Importantly, fish continue to serve as an experimental model to explore a plethora of scientific questions.

We have launched the first call for the new FSBI funding scheme, in line with the FSBI mission of enhanced internationalisation, the FSBI **Postdoctoral International Travelling Fellowships** (PITF), with a closing date for the first applications, on **24 February 2020**. The funding opportunity aims to support postdoctoral scientists to undertake research that is in line with the objectives of the FSBI, and to facilitate international mobility and expertise and/or facilities of the chosen host. The research can comprise independent experimental studies, development/validation of a methodology or fieldwork, or similar activities within an existing programme of research. We offer an outgoing fellowship from the British Isles, globally, as well as an incoming Fellowship each year, from appropriate host institutions across the world, to work in laboratories and institutions within the British Isles. Along similar lines, we are pleased to report the first FSBI student visit, to our partner Society, the Japanese Society for Fisheries Science (JSFS) that will take place in March 2020. The recipient of the travel award is Kevin Schneider, from Glasgow University, currently undertaking a PhD on the genomics of adaptive diversity in Arctic charr (see his report in this issue). Kevin will be delivering an oral presentation in the English session at the **JSFS spring meeting.**

Many of the longer-serving FSBI members will remember the valuable support and contributions of our previous long-term FSBI publicity coordinator, Professor Terence Langford. After many years, Terry stood down from the role, though he remains an active member of the Society. After a period without such representation, I can report the appointment of a new FSBI publicity coordinator, William Perry. William, was our FSBI-sponsored PhD student who attended the AFS Reno conference in October 2019. William is in his final year of a PhD, at Bangor University, UK, exploring the impacts of domestication in Atlantic salmon. William moves into the post with an already close ➤

association with the FSBI, and we look forward to working with him, alongside other members of the FSBI Communications Committee in developing and expanding our publicity portfolio.

Contributions of the FSBI within the fish and fisheries community. In light of ongoing demands for scientific evidence, and in the face of ongoing environmental threats to fish and fisheries, it is timely to remind members of some activities in support of the FSBI mission. We invest significant resources in facilitating research and training within the international fish and fisheries community, and as such, identify and promote advances in scientific activity and understanding. The FSBI is committed to equipping current and future generations of scientists with skills and expertise, enhanced career opportunities and networking opportunities across individuals and institutions. Unlike some learned societies, however, the FSBI is a non-political organisation, and while its research activities can inform policy, the Society does not typically lobby or promote particular points of view. Rather, we aim to foster an objective evidence base in fish and fisheries science. Such information, published within the Society journal, the *Journal of Fish Biology* and at its annual symposia, has relevance to policy that can inform conservation and management strategies. With other organisations promoting sustainable fisheries, such as the FAO, OECD and ICES, the FSBI contributes scientific information with relevance to the decision-making process. As an illustration, we can consider implications of the current UK Government plan to restrict access to marine fishes within the EEZ of the United Kingdom (see Figure 1), following Brexit. Without political statement or alignment, such fundamental shifts in the way that natural resources are managed requires access to fundamental scientific data, reinforced by active communication of results. The FSBI through its various activities can contribute. It is only through integration of data across the life cycle of marine species that locally adapted stocks can retain integrity and respond to ongoing environmental change. The FSBI has a responsibility to ensure a clear and coherent demonstration of impacts arising from proposed shifts in policy, reinforced by illustrative case studies. It remains crucial to support and disseminate quality science across disciplines, encompassing data on all aspects of the life history of an exploited species. Such integration underpins our ability to elucidate and predict any disruption of existing spatially defined stock assessment models that depend upon data sharing, typically across transnational sea areas. Key determinants of the ecology of a species depend strongly on processes and exchange with populations from outside UK waters. Indeed, among the various priorities of the *Journal of Fish Biology*, associated with our new publishing strategy, is to enhance linkages between fundamental aspects of fish biology and ecology with fisheries science. Our Editor-in-Chief, Michel Kaiser, Senior Editors, Kath Sloman and Nick Graham and the broader more diverse editorial board, welcome new submissions to the *Journal* that further strengthen such Society outputs and contribution.

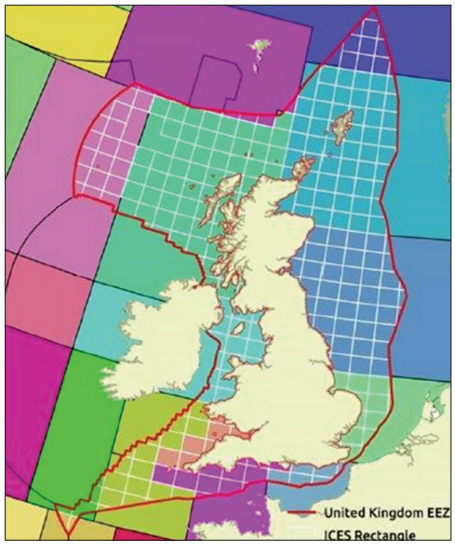

Figure 1: Proposed UK EEZ and Brexit fisheries. Many important fisheries rely upon exchange and interaction across political boundaries, a necessary corollary to promote local adaptation and sustainability. The need for an evidence base drawing on a range of approaches in fish and fisheries science, in conjunction with other impacts such as climate change, is a core activity of the FSBI and its Journal of Fish Biology.

Map: Courtesy Maurizio Gibin, EC JRC © 2017

Important reminders and dates. Please remember the call for new FSBI Council members, who are Trustees of the Society and can serve for a period of 4 years. Details and a **nomination form** are available on the FSBI website. Active members are eligible to nominate Council members for consideration at the next Council meeting, on 29 April. Candidates will be voted for at the annual general meeting, during our FSBI 2020 symposium in July. On joining Council, an Elected Member is allocated to one of five committees dealing with; Communications, Publications, Research Grants, Studentships and Travel Grants. Each committee receives and assesses funding requests and work is carried out primarily by electronic mail, although some committees may also periodically meet in person, usually in London. As many members will know, a major event in our annual calendar is the FSBI annual symposium, this year at Nottingham Trent University, UK (27-31 July 2010), **Fish in a dynamic world**. As the title suggests, the focus is on the diversity of impacts and strategies of fish and fisheries in the context of environmental change (see the flyers in this issue). Our aim is to attract an equally dynamic and diverse programme of scientific presentations and discussions, across broad themes. While the deadline for submission of abstracts has now passed, registration is open, and as usual, there are opportunities for support in relation to bursaries for PhD student. Further details are provided on the website.

Editorial

There is always sadness when a colleague dies and the event is more of a loss when the person dying is still in mid-career. In this edition, Felicity Huntingford writes about the life of Victoria Braithwaite who succumbed to pancreatic cancer at the early age of 52. She was a valued colleague and although I did not always agree with her views on the mental capacities of fish, she never failed to be sharp but reasonable in discussion.

At the other end of the scale is the death of Sydney Holt on 22 December 2019 in Paciano, Italy, at the age of 93. We were able to award Sydney the Beverton Medal in 2017 as previously reported in this newsletter. It must have been a matter for reflection by Holt that the medal was named after his great collaborator Ray Beverton with whom he researched and published in 1957 *On the dynamics of exploited fish populations* one of the most iconic books in fisheries science. Ray had strong connections to the FSBI being its President in the 1980s and he also had a place in the UK academic establishment being the first Secretary (now called the CEO) of NERC and then a Professor at the University of Cardiff after he left the Lowestoft Laboratory.

Sydney Holt took a very different route in his post-Lowestoft life. He suffered badly from sea sickness so could not continue at Lowestoft where Michael Graham, the then director, insisted that all scientists should go to sea. Sydney joined the Fisheries Department of FAO where he found his niche. In the 1970s I once attended a meeting of the FAO Fisheries Committee in Rome and took the liberty of introducing myself to a then very trendy looking Holt at a reception organised by the Portuguese Embassy. Sydney Holt was most famous in the wider world for his work on whale conservation and it was this that took centre stage on the BBC Radio 4's obituary programme *Last word*. For someone of his age, death is a completion rather than, as in the case of Victoria, a premature end to a life's work. Despite the difference we mourn them both for their respective contributions.

Paul J B Hart
Leicester, February 2020

Next deadline: 1st May 2020

Reports from FSBI PhD students

Ben Parker – Bournemouth University – 2nd year PhD Student

Microplastics (MPs), small plastic pieces 1 µm-5 mm in diameter, are an important and highly topical stressor affecting aquatic systems globally. Compared with marine systems, less is known about levels in freshwaters, including the levels in fish and how these affect the behavioural and ecology of contaminated individuals. My research is addressing these knowledge gaps through a combination of field and laboratory studies. The field studies are being completed first, with baseline MP levels detected then used to inform a series of controlled experiments that test the effect of different MP levels on fish feeding, reproduction, body condition and on host-parasite interactions.

The field study has involved the regularly sampling of sites on two local rivers (Bourne and Stour), with the collection of water, sediment, macroinvertebrate and fish samples from sites across their catchments. These two rivers differ markedly in their hydrology, ecology and waste inputs. The study will test whether MP concentrations vary seasonally, correlate with increased levels of urbanisation, and if they are higher in certain species or vary in relation to body size and/or trophic position. This involves carefully processing samples using techniques such as dissection, microscopy, filtration, density separation and spectroscopy. These analyses separate the MPs from other materials while avoiding contamination from the environment, equipment etc.

I am currently almost half way through my field sampling. To date, fibres are dominating the MPs detected within the fish samples, with this generally consistent with other studies. Since MPs are also present in water and sediments samples, but mostly absent in invertebrates, fish are likely actively consuming them, possibly due to a resemblance to prey, or are unable to egest them. Environmental microplastic loads also appear to be more dependent on river properties than levels of urbanisation. This is most evident from the number of MPs seen in water and sediment samples nearer to the source. The slower flow and softer sediments appear to favour the sinking of materials into the sediment, whereas for gravel-based sites with greater flow, the turnover time of materials is likely higher and MP concentrations therefore lower.

The next stage of my work will commence in early 2020 with the controlled experiments. In these, fish will be exposed in tank aquaria to known MP levels that match those detected in the field study. Following exposure at a range of different levels, I will compare actual MP loads of individuals in relation to their initial exposure levels, and the effects of these on their foraging rates, body condition and reproductive traits. These experiments will thus test the sub-lethal impacts of known MP contamination through measuring their effects at the individual level. ➤

Bethany Smith – University of Glasgow – 2nd year PhD Student

My project aims to use complementary lab and field experiments to investigate plasticity and evolution in Threespined sticklebacks (*Gasterosteus aculeatus*) across thermal habitats. Geothermal hot springs in Iceland have created numerous habitats that have extreme temperature gradients within very short distances, allowing for the investigation of temperature as a factor.

My lab experiments, at the University of Glasgow, use fish bred from wild sticklebacks caught in six of these warm-cold habitat pairs in Iceland. When the wild fish were bred, their egg clutches were split in two and divided between a warm (18ºC) temperature and a cold (12ºC) temperature and then raised to adulthood. From October to December 2018, I collected the livers and brains of these fish. I plan to use these samples to investigate how gene expression in these organs is affected by the rearing temperature and the habitat the wild parents were sourced from. For my field experiment, I travelled to Iceland in June with my supervisor, Dr Parsons, and built 12 m^3 cages in the warm and cold sides of a geothermal habitat known to contain sticklebacks. We caught fish from either side of the habitat and weighed, photographed and tagged them. I then performed a reciprocal transplant experiment by placing warm-sourced fish into cages in the cold habitat, and vice versa (as well as control fish that were placed in cages in their native habitat). After 30 days we recovered the fish, weighed, photographed and identified them before taking liver, brain and muscle samples that will be used for gene expression analysis. This design allows for an assessment of the effect of thermal habitat on growth rate and gene expression and whether warm and cold fish respond differently. Preliminary results from the data gathered during this experiment show that weight change over the month was significantly affected by parasite (*Schistocephalus solidus*) infection and an interaction between fish source and destination. Additionally, cold source fish transplanted to the warm habitats were significantly more likely to be infected than any other group. These results suggest that parasite infection may play an important role in the distinction between the warm and cold habitats.

Work is continuing with further analysis of the data gathered during the field experiment, and preparations are being made for the beginning of the gene expression analysis of the lab experiment samples.

Kevin Schneider – University of Glasgow – 4th year PhD Student

Some groups of salmonids, such as charr and whitefish, repeatedly and rapidly diversified into co- occurring ecomorphs in various lake habitats. This diversification potential has, at least to some degree, a genetic basis. Using transcriptome data from various species of salmonids, I screened for footprints of natural selection to identify the genetic toolbox that could enable some salmonids to diversify rapidly. In this way, I pinpointed the gene functions associated with weak or strong selective pressure in charr and whitefish as well as those that experienced molecular diversification. These patterns of selection characteristic of charr and whitefish can tell us more about the potential for evolutionary innovation and the importance of certain biological processes in rapidly diversifying taxa.

Various populations of Arctic charr, which is often considered the most variable vertebrate on earth, are characterised by ongoing or recent diversification into mostly benthic and limnetic ecomorphs. To learn more about this evolution-in-progress, I am using whole-genome data to understand how adaptation to different environments shapes the genomes of diverging ecomorphs. Importantly, I am also focussing on the amount of ongoing or past gene flow between ecomorphs and among populations and its potential effects on the divergence process. Using this whole-genome approach, I discovered genes and genomic regions that are consistently different and under selection in all sampled pairs of ecomorphs of Arctic charr. What is more, these genomic regions have been shown to be associated with key quantitative traits in a range of salmonids.

It has been shown that the demographic history of populations can influence the degree and nature of diversification. However, we know little about the interplay of demography and adaptation or selection at the genome level. With the help of in-silico simulations of large genomic elements and comparisons of the obtained genomic signatures of selection under various demographic scenarios to real-world data, I am trying to disentangle the complexities of these evolutionary processes to inform analyses of empirical data. Specifically, this approach can clarify which metrics can be used to detect unbiased signatures of selection under complex demographic scenarios.

Victoria Anne Braithwaite 1967-2019

Victoria Braithwaite was an outstanding biologist with a life-long interest in animal cognition, who carried out research on the difficult and controversial question of whether fish feel pain. She died on 30th of September 2019, after a long and brave fight against cancer.

Victoria had a strong association with the Fisheries Society of the British Isles (FSBI), regularly publishing in the *Journal of Fish Biology* and giving loyal service as a member of FSBI Council, as Chair of the Research Grants Committee and, after her move to the United States, as the Society's North American representative. In 2006 she was awarded the FSBI medal for her outstanding contribution to research in fish biology, a small taste of which is given in this obituary.

Having taken a BA in Zoology, Victoria gained her PhD in 1993, both at Somerville College, Oxford. Her PhD studies on how homing pigeons use visual cues as guides for orientation marked the beginning of an enduring interest in spatial learning in animals and what this tells us about their cognitive capacities. After her PhD, Victoria moved to the University of Glasgow, to work with myself and John Armstrong (from the-then - Scottish Office Agriculture and Fisheries Department's Freshwater Laboratory) on the role of visual landmarks in space use and population processes in juvenile Atlantic salmon. This came about because, having correctly identified the relative paucity of studies of spatial learning in fish, Victoria approached us to suggest our working together. The resulting successful application for funding from the UK's Natural Environmental Research Council was jointly written and drew heavily on Victoria's expertise in spatial learning in animals. She proved herself to be the perfect collaborator. She was an extraordinarily effective, imaginative and meticulous researcher, well able to deal with the intellectual and technical challenges of moving from studying birds in the terrestrial environment to working with fish in the aquatic environment. She also moved very effectively from precisely controlled experiments in the laboratory to field studies of space use by tagged individual fish.

John Armstrong recalls that "Victoria applied herself with immense enthusiasm to the challenging issue of resolving what is going in in the minds of fishes, and in particular how they map their surroundings and use cues to navigate. This endeavour led Victoria to construct what came to be known as the *sensory deprivation unit* where she spent months sat in darkness and silence training young salmon and observing their responses to tiny changes in the environment. Salmon were not compliant subjects and at first results made no sense. However, through skilful redesign of the experiments Victoria revealed the potential importance of deposited olfactory cues to salmon and hence the beginnings of a new and much deeper understanding of [the] structuring of their social interactions and space use in natural streams. This is one example of Victoria's focused determination, which was coupled with kind and engaging interactions with her colleagues, skilful mentoring of student assistants and a spirit of generosity that much enriched the world around her."

In 1994, Victoria took up a lectureship in Animal Behaviour at the University of Edinburgh, where she remained until 2007, when she moved to the United States to take up a post as Professor of Fisheries and Biology at Penn State University. During her time in Edinburgh, Victoria continued to study orientation and navigation in fishes, demonstrating among other things that the way a particular species uses spatial cues is finely tuned to the environment in which it lives. In 2005, this and other work on the spatial abilities of animals earned her a Fellowship of the Royal Institute of Navigation.

The research for which Victoria is probably most famous arose out of discussions with her Edinburgh colleague, Michael Gentle of the University's Roslin Institute, then working on nociceptors in chickens. With an unerring eye for important un-asked questions, Victoria recognised just how little was known about nociception in fishes. In 1999, she and Gentle obtained funding from the BBSRC for a programme of research into nociception and pain in rainbow trout (concentrating at that point on the mouth). Victoria and her colleagues went on to show at a neuroanatomical level that these fish possess the same kinds of nociceptors that are found in mammals and at the neurophysiological level that standard nociceptive stimuli such a bee venom and acetic acid, applied to these receptors induce similar patterns of response in fish as they do in mammals. At a behavioural level, they demonstrated that fish exposed to such harmful stimuli, as well as showing a physiological stress response, also undergo complex shifts in motivation and attention, the last effect being ➤

reversed by morphine. These important results, subsequently extended by several research groups looking at different species of fish and different parts of the body, received much attention and have generated a sea change in the way the welfare of fish is perceived and protected.

For the rest of her life, Victoria continued to wrestle with the challenging question of pain in animals, working with colleagues from many different disciplines to develop ways of studying rigorously the subjective experiences of animals, particularly when exposed to harmful stimuli. To give a typically thoughtful but robust quotation from her book *Do Fish Feel Pain? (*2010 Oxford University Press*)*: "The issues and the evidence are not always black and white, which makes pain in animals a difficult topic, with tricky ethical and philosophical implications. However, if we already accept that mammals and birds are sentient creatures that have the capacity to experience positive and negative emotions – pleasure and suffering, we should conclude that there is now sufficient evidence to put fish alongside birds and mammals. Given all of this, I see no reason why we should not extend to fish the same welfare considerations that we currently extend to birds and mammals."

At Penn State University, Victoria pursued various lines of research into behaviour and cognition in fishes, for example working with colleagues at the University of Bergen, where she held a visiting professorship. A close colleague from Bergen, Anne Gro Salvanes, describes how a meeting at the FBSI symposium on *Fish as Models of Behavior* (2003) led to a long and fruitful collaboration to study environmental influence on behavior and neural development in fish, with several highly cited articles as one result. "Victoria has been an exceptionally important research collaborator and a very good friend. I have benefited greatly from her creativity and knowledge. She was friendly and inclusive, and so easy to like. She also had a great sense of humour. The British humour –appreciated and perhaps similar to that of west Norwegians?"

As well as being an outstanding researcher, Victoria was a committed and highly effective undergraduate teacher and an inspirational trainer and mentor of young researchers, most of whom went on to work in fish and fisheries biology. She supervised some 20 doctoral students, one of whom (Philip Boulcott, now working at Marine Science Scotland) writes: "I was lucky enough to study under Victoria when she supervised my PhD, on the behaviour of sticklebacks. I was always struck by her enthusiasm for the subject, and for science in general, finding it an infectious source of inspiration when work became, as it so often does, tough and slow moving. Very little was regarded by her as being too much when it came to lending a helping hand if it was needed. … She is sorely missed."

Another graduate student, Cairsty De Pasquale, now Associate Professor at Penn State: "Victoria was a one-of-a-kind mentor, throughout my PhD and beyond. I was always in awe at her effortless ability to make science so accessible to everyone, to take complex scientific concepts and describe them in a straightforward way. She was an intensely curious person, and instilled in me an 'enquiring mind', something I will forever be grateful for. She was an inspiration."

Victoria trained and mentored many postdoctoral researchers, including Iain Barber (recent President of the FSBI and a Professor at Nottingham Trent University, UK) who comments: "Victoria was a brilliant behavioural scientist and an outstanding research leader, but what made her so special was that her deep curiosity about the natural world was matched by her interest in the people that she worked with, and her concern and care for their wellbeing. As a beneficiary of Victoria's mentorship in the early days of my own research career, I often reflect on how she managed the perfect balance between allowing her students and post-docs considerable freedom to pursue their own interests, while providing enough guidance to ensure that the essential elements of a project were addressed. I realise now what a rare skill this is. Those of us fortunate enough to have worked with Victoria will never forget her warmth and her kindness. Perhaps most importantly, she showed us how it was possible to successfully combine the twin responsibilities of an academic career and raising a family."

At the time of her illness, Victoria was on the point of taking up the post of Director of the Leibniz-Institute of Freshwater Ecology and Inland Fisheries in Berlin, where her broad scientific vision and expertise, organisational skills and careful treatment of colleagues would have provided inspirational leadership. In the context of this proposed move, Anne-Gro Salvanes says: "I looked so much forward to her moving back to Europe so we could see each other more often and continue working together. And then she had to give up for cancer. It is just so tragic that Victoria had to leave her children, the scientific community, this world and all of us so young. She was a very special and good friend and colleague. Victoria has been such a great inspiration to my work as a scientist!"

The many colleagues and friends Victoria made during her tragically shortened career and the many young researchers whom she inspired and for all of us in the FSBI, we all have good reason to mourn her loss.

Felicity Huntingford
Glasgow, December 2019

Travel Grant Reports

Monash University, Clayton, Victoria, Australia, used the FSBI travel grant to attend the 23rd European Elasmobranch Association (EEA) Meeting, held in Rende, Italy.

Working to protect sharks, rays and chimeras in Australia is awesome, unfortunately the land Down Under is quite far to reach and the possibilities to connect with researchers working in the rest of the world are scarce. Thanks to the FSBI travel grant I was able to travel to Italy and participate to the 2019 European Elasmobranch Association (EEA) meeting, a renowned conference bringing together leading researchers not only European but from all over the World (North and South America, New Zealand and all around the Mediterranean). Several outstanding talks were given by the invited speakers: Ted Taylor, a leader in physiology, Barbara Block, expert in tagging techniques, Diana Pazmino, presenting all the possibilities that genetic techniques possess, Sarah Fowler, presenting the advances in sharks protection and management and Holly Shiels narrating the amazing adaptations that allow the longest living vertebrate, the Greenland shark, to cope with ageing. Given my main interests the most stimulating talks were the one related to conservation, physiology and fisheries history and management of this extremely threatened group of animals. At the conference I had the privilege to presented part of the results of my experiment investigating the long-term reproductive impairments caused by fisheries capture stress in an Australian ray. Alongside, the conference it was also important to learn about other research topics and new techniques (from genetic tools to tagging techniques) that potentially can be included in my future researches. No less important, being in the 3rd year of my PhD in Australia, presenting at EEA was a fantastic opportunity for me to promote the outcomes of my PhD research at this critical stage in my career, network with European scientists and forge some new. I would like to thank again the FSBI for helping me experience such an amazing, interesting and varied trip, which has taught me so much.

Christina Hunt from the University of Oxford UK used her travel grant to attend the Gulf and Caribbean Fisheries Institute 72nd conference (GCFI72) in Punta Cana, Dominican Republic. She chose GCFI72 to present her work as it is the one that most lionfish researchers attend and thus would be good for presenting her research and networking.

The five-day conference was packed full of interesting talks on a wide range of topics such as plastic pollution, marine protected areas and the sargassum influx. I particularly enjoyed the 'fishers forum' session, where fishermen talked us through short films they had produced about their fishing methods and sustainability. Alongside the academic sessions, there were plenty of social and networking events such as drinks with the GCFI board members, a poster session and a banquet on the beach! One poignant event was a film screening of 'Albatross' by Chris Jordan, which shows how plastic pollution can impact species even in the most remote areas of the world.

I was surprised by the diversity of talks in the lionfish session, which included topics such as ulcerative skin disease, vocalisations and lionfish traps. I presented a ten-minute talk titled 'Invasive lionfish decrease shelter use in the presence of native spiny lobster'. My talk focused on the results from my research in Honduras in the summer of 2019, which included *in-situ* habitat preferences and *ex-situ* shelter competition experiments. I received useful feedback and had some interesting discussions about my work, both of which have proven invaluable now I have started writing up my results as a paper.

I would like to thank the FSBI for funding my travel to the GCFI conference and for funding the research that I presented.

Notices

Briefing papers

Briefing papers were first instigated when Professor Nick Polunin was Vice President of the Society in the late 1990s. Their aim is to provide non-technical and neutral summaries of issues relating to fish and fisheries that could be useful to journalists and policy makers. Early papers have dealt with marine protected areas and fish welfare. The Society is seeking people who would be prepared to propose new topics for briefing papers and to write one. Often the papers provide the basis for a review which is published in the *Journal of Fish Biology*, subject to the normal refereeing process. If you are interested in producing a briefing paper or have an idea for one, please contact Ian Winfield in the first instance.

Journal of Fish Biology

The Editor in Chief, Professor Michel Kaiser is looking for new assistant editors to help with the handling of papers. He is also keen to hear proposals for review papers or for special issues which would focus on a particular topic. Please contact Mike Kaiser if you are interested.

The World Fisheries Congress 2020 (WFC2020) is set to welcome an inspiring range of plenary speakers for the event taking place in Adelaide from 11 to 15 October 2020. As part of the dynamic, engaging and comprehensive program, the speakers will share their global perspectives under the overarching theme 'Sharing our oceans and rivers – a vision for the world's fisheries'.

The congress will bring together the largest gathering of research, industry and management sectors across commercial, recreational and indigenous fisheries, to discuss key developments needed to ensure a sustainable future of the world's oceans, lakes, estuaries, and rivers.

Chair of the WFC2020 Gavin Begg said the plenary speakers, who will be announced in March when registration will open, will deliver insightful, engaging presentations, offering something of value to every delegate.

"WFC2020 aims to foster cooperation and engagement in commercial, recreational and indigenous fisheries, which is why we're pleased to welcome world-class plenary speakers at this year's congress," Prof Begg said. "We've thrown the net out wide, and have brought together world leaders in research, industry and international fisheries policy to speak across the four key themes: Sustainable Fisheries; Fish and Aquatic Ecosystems; Fisheries and Society; and the Future of Fish and Fisheries."

Summer symposium 2021 in Leuven Belgium

The summer symposium from 5th– 9th July 2021 will take place at the Leuven Institute for Ireland in Europe, Leuven. The local organiser will be Filip Volckaert and the topic of the meeting will be 'Fish and Ecosystems'.

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

Phone: +44 (0) 151 600 3362

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

Tel: 0151 600 3000 (ext. 3362)

Fax: 0151 227 3185

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

Secretary: Dr Ian Winfield

Mob. +44 (0)7747 532897

E-mail: ianjwinfield@icloud.com

www.fsbi.org.uk