

# Helen Currie BSc (Hons), MSc, AFHEA, MRSB

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## Education

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- 2015 – 2021 **PhD Environmental Engineering**, University of Southampton, UK (Successfully defended: 23<sup>rd</sup> April 2021)  
*Supervisors:* Prof. Paul Kemp, Prof. Timothy Leighton & Prof. Paul White
- 2012 – 2013 **MSc Animal Behaviour and Welfare**, The Queen's University of Belfast, UK  
*Supervisor:* Dr. Hansjoerg Kunc
- 2007 - 2010 **BSc (Hons) Biology and Psychology**, Newcastle University, UK
- 2017 – 2018 Introduction to Learning and Teaching for Researchers (ILTeR), University of Southampton, UK  
*Equivalent to the first module of the Postgraduate Certificate in Academic Practice (PGCAP) programme.*  
*ILTeR teaching mentor:* Prof. Simon Kemp

## Employment history

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May 2021 – ongoing: **Cooke Lab: Fish Ecology and Conservation Physiology Laboratory, Ottawa, Canada**  
(Post-doctoral Research Associate, short-term remote contract)

Part-time role as a post-doctoral associate, working on a project focusing on operationalising the emergency action plan for restoring freshwater biodiversity.

February 2021 – April 2021: **Public Policy | Southampton (PPS), Southampton, UK** (Policy Associate, short-term contract)  
Research Associate role, contributing to a team of well-respected experts in science, policy and communications who are launching a start-up tech initiative “Sycamore”, a kick-starter style platform for environmentally positive solutions – to support circular economy projects. I took an active lead synthesising and disseminating a policy brief focusing on the circular economy of plastic waste – specifically, end-of-life fishing gear, and was responsible for the successful organisation and hosting of a policy roundtable with attendance from stakeholders across the value chain.

May 2018 – August 2018: **Royal Society of Biology (RSB), London, UK** (UKRI, formerly RCUK, Science Policy Internship)  
Responsible for taking an active lead on the RSB official response to the DEFRA consultation on Post-EU Environmental Principles. A key output of this report was the RSB's invitation to follow-up governmental talks with Michael Gove, former UK Secretary of State for Environment, Food & Rural Affairs. I also contributed to internal report briefings, development of the online policy resource portal, policy working group committee meetings at learned societies and within Parliament, and wrote a range of RSB and Natural Capital Initiative (NCI) blogs.

January 2014 – September 2015: **Centre for Behaviour and Evolution at The Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UK** (Postgraduate Research Assistant)

Voluntary internship as a postgraduate research assistant working with Prof. Candy Rowe and her academic staff. This position involved assisting with experimental design, field, and laboratory work on differing projects focusing on predator-prey interactions. *For example:*

- Using behaviour to measure praying mantid (*Sphodromantis lineola*) taste perception
- Discrimination of palatable/ unpalatable toxic prey by European starlings (*Sturnus vulgaris*)

July – August 2013: **'Oxford Navigation Group' Copeland Manx Shearwater Chick-Rearing Tracking 2013,**  
Copeland Islands, UK (Fieldwork Assistant)

Working at the Copeland Bird Observatory (Ireland), I provided assistance to a University of Oxford DPhil student in tracking Manx Shearwater (*Puffinus puffinus*) feeding routes using GPS devices.

## **Publications**

- Currie, H.A.L., White, P.R., Leighton, T.G., and Kemp, P.S. (2021). Collective behaviour of the European minnow (*Phoxinus phoxinus*) is influenced by signals of differing acoustic complexity. *Behav. Process.* **104416**. [doi:10.1016/j.beproc.2021.104416](https://doi.org/10.1016/j.beproc.2021.104416).
- Currie, H.A.L., Flores Martin, N., Espindola Garcia, G., Davis, F.M., and Kemp, P.S. (2020). A mechanical approach to understanding the impact of the nematode *Anguillicoloides crassus* on the European eel swimbladder. *J. Exp. Biol.* **223**, jeb219808. [doi: 10.1242/jeb.219808](https://doi.org/10.1242/jeb.219808).
- Currie, H.A.L., White, P.R., Leighton, T.G., and Kemp, P.S. (2020). Group behavioral response and tolerance of European minnow (*Phoxinus phoxinus*) to tones of differing pulse repetition rate. *J. Acoust. Soc. Am.* **147**, 1709. [doi: 10.1121/10.0000910](https://doi.org/10.1121/10.0000910).
- Leighton, T.G., Currie, H.A.L., Holgate, A., Dolder, C., Lloyd Jones, S., White, P.R., and Kemp, P.S. (2020). Analogies in contextualizing human response to airborne ultrasound and fish response to acoustic noise and deterrents. *Proc. Mtgs. Acoust.* **37(1)**, 010014. [doi: 10.1121/2.0001260](https://doi.org/10.1121/2.0001260).
- Currie, H.A.L., White, P.R., Leighton, T.G., and Kemp, P.S. (2019). Group behavioural responses of juvenile common carp (*Cyprinus carpio*) to pulsed tonal stimuli in the presence of masking noise. *Proc. Mtgs. Acoust.* **37(1)**, 010008. [doi: 10.1121/2.0001180](https://doi.org/10.1121/2.0001180).
- Currie, H.A.L. (2016). Towards the development of a globally effective behavioural guidance system for use in fish passage systems. In: *Sea Lines of Communication Discovery*. University of Southampton Press. (ISBN: 9780854329960).
- Currie, H.A.L., White, P.R., Leighton, T.G., and Kemp, P.S. (In prep). Impacts of anthropogenic noise on fish across freshwater and marine habitats: a meta-analysis.
- Currie, H.A.L., White, P.R., Leighton, T.G., and Kemp, P.S. (In prep). Masking noise reduces the anti-predator-like response of common carp (*Cyprinus carpio*) to an acoustic stimuli: application of Signal Detection Theory to fisheries management.
- Currie, H.A.L., White, P.R., Leighton, T.G., and Kemp, P.S. (In prep). The influence of underwater sound on the upstream route choice decision of common roach (*Rutilus rutilus*) under differing velocity gradients.
- Currie, H.A.L., Flores Martin, N., Espindola Garcia, G., Ramos, I.C.R., Silva, L.G.M., and Kemp, P.S. (In prep). Barriers to migration: The impacts of barotrauma on the physiology of a commercially important species (*Prochilodus lineatus*).

## **Science magazine articles, and policy consultation reports**

- 2021 Tackling end-of-life fishing gear and rope for a blue circular economy. *Public Policy|Southampton, Policy Brief*.
- 2018 Rethinking investment in research. *The Biologist*. **65(4)**, 9.
- 2018 [Response from the Royal Society of Biology](#) to the U.K. Department for Environment, Food and Rural Affairs (DEFRA) consultation on *Environmental Principles and Governance after EU Exit*.

## **Science blogs**

- 2021 [Towards more diversity, equity and inclusion in academia](#). *University of Southampton, Doctoral College blog*.
- 2018 [What exactly is the Industrial Strategy?](#) *Royal Society of Biology blog*.
- 2018 [National Parks Revisited – a literary review?](#) *Natural Capital Initiative blog*.
- 2018 [The Biologist says goodbye to plastic wrap](#). *Royal Society of Biology blog*.

## **Journal paper acknowledgements**

- 2016 [Acknowledgment for help in behavioural analysis](#). Gray, *et al.* (2016) *eNeuro*, **3(4)** e0195-16.2016 1–15.

## **Conference organisation, attendance and presentations (selection)**

- 2020 **Festival of Doctoral Research: PhD Virtual Festival of Equality, Diversity and Inclusion in Academia** *University of Southampton, UK*  
**EDI Event Series Joint-Lead Organiser:** Responsible for event running, organisation and securing activities fund to run a series of three events on EDI. The first was a highly successful virtual seminar with keynote speakers Dr Sheila Kanani (Royal Astronomical Society), Dr Alexis Stokes (Harvard John A. Paulson School of Engineering and Applied Sciences), and Dr Jess Wade (Imperial College London).
- 2020 (Postponed) **FSBI Symposium 2020: Fish in a Dynamic World** *Nottingham Trent University, UK*  
**Accepted talk:** “Application of Signal Detection Theory to understand the anti-predator responses of

cyprinids to masked acoustic signals in still and flowing water.”

Accepted poster: “A novel mechanical approach to understanding the impact of the invasive nematode *Anguillicoloides crassus* on the European eel (*Anguilla anguilla* L.) swimbladder.”

2020 (Postponed) **13<sup>th</sup> Power Industry Cooling Water Specialists (PICWS) network conference**  
*University of Southampton, UK*  
**Conference organisation committee member**

Invited talk: “Determining fish response to acoustics: on the road to behavioural deterrents”

2019 **5th International Conference on the Effects of Noise on Aquatic Life**  
*The Hague, The Netherlands*

Coates Award Speed Talk and poster: “Group behavioural responses of juvenile common carp (*Cyprinus carpio*) to pulsed tonal stimuli in the presence of masking noise”

2018 **Fish Passage 2018: International Conference on River Connectivity**  
*Albury, New South Wales, Australia*

Talk: “Group behavioural response of cyprinids to artificial acoustic stimuli: implications for fisheries management”

Poster: “Barriers to migration: impacts of barotrauma on fish physiology”

Poster: “A novel mechanical test to better understand the impact of repeated invasive parasite infection (*Anguillicoloides crassus*) on the critically endangered European eel (*Anguilla anguilla*)”

2018 **Student Conference on Conservation Science (SCCS)** *University of Cambridge, UK*

Poster: “Using sound to save fish: development of an “acoustic scarecrow” for use in freshwater fisheries management and conservation”

2016 **Sea Lines of Communication Discovery Conference** *University of Southampton, UK*

Talk: “Towards the development of a globally effective behavioural guidance system for use in fish passage systems”

2016 **Sustainability in Action 2016** *University of Southampton, UK*

**Lead Conference Organiser**: Responsible for all aspects including running conference committee, inviting speakers and chairs, venue hire and catering, advertising event, administration, abstract acceptance and publication of conference booklet and packs, industry job-fair company invitations, prize money negotiation, budget, and on the day running.

Poster: “Behavioural response of European minnow to acoustic stimuli; Future investigation and potential applications”

2015 **Association for the Study of Animal Behaviour (ASAB) Easter Conference**  
*Durham University, UK*

Poster: “Using behaviour to measure praying mantid taste perception”

## ***Awarded grants and funds***

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		Amount
2020	<b>Festival of Doctoral Research Activities Fund</b>	£1000.00*
	* grant awarded to fund a series of events promoting equality, diversity and inclusion in postgraduate research.	
2019	<b>Aquatic Noise 2019 Travel Support</b>	£825.35
2018	<b>Fisheries Society of the British Isles (FSBI) Travel Grant</b>	£1000.00
2018	<b>RCUK (now UKRI) and RSB Policy Internship Scheme Funds</b>	£6038.00
2018	<b>British Ecological Society (BES) Training and Travel Grant</b>	£169.85
2017	<b>FBA NERC Funded Advanced Training Short Course</b>	~£1200.00
2015	<b>Association for the Study of Animal Behaviour (ASAB) Conference Grant</b>	£151.40

## ***Awards, nominations and media recognition***

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- 2020 Nominated for a University of Southampton Vice-Chancellor Award for Equality, Diversity and Inclusion
- 2019 **Nature Careers Q&A** “[Communicating science at a music festival – with 135,000 attendees](#)”
- 2018 Nominated for a University of Southampton Vice-Chancellor Award for participation in public engagement
- 2017 Winner for “Research Communicator” category at the [University of Southampton Roadshow Awards](#)

2016 Winner for best poster presentation (Water and Environmental Engineering category) at Sustainability in Action conference

## ***Teaching, mentoring and departmental/ research group responsibilities***

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### ***Guest lecturer***

2021 Fundamentals of Fish Characteristics (Doctoral level)  
2018 Environmental Law and Management (Graduate level)  
2017 Environmental Field Techniques and Applications (Undergraduate level)

### ***MSci/ BSc student project supervision***

2018 Marine Biology (MSci) Masters student final year project co-supervision  
2017 Environmental Science (MEnvSci) Masters student final year project co-supervision  
2017 Environmental Science (BSc) Undergraduate group project supervision (6 students) for 'Environmental Field Techniques and Applications' module

### ***Practical class demonstration, report marking, and seminar lead***

#### ***Undergraduate level***

2016-2019 Animal Behaviour  
2016-2018 Evolution  
2016-2018 Environmental Science Research and Applications

#### ***Graduate level***

2018-2020 Environmental Pollution  
2016-2018 Professional Research Skills  
2016-2017 Advanced Quantitative Methods

### ***International Centre for Ecohydraulics Research (ICER) group coordinator (Dec. 2016 – May 2018)***

Responsible for biweekly seminar series organisation; information dissemination among research group and external parties; and inviting external speakers and hosting guest researchers.

### ***Equality, Diversity and Inclusion (EDI) representative (Nov. 2018 – Feb. 2021)***

Voicing the needs and experiences of the postgraduate student body within the school of Engineering. I have actively worked on a PGR-EDI student satisfaction questionnaire, and raised funds to host a series of EDI events. I also sit as a joint postgraduate (PGR) representative on the [Athena Swan](#)\* self-assessment team.

\* charter established and managed by the UK Equality Challenge Unit in 2005 that recognises and celebrates good practices in higher education and research institutions towards the advancement of gender equality: representation, progression and success for all.

## ***Professional contribution and affiliations***

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### ***Journal reviews***

2020 *The Journal of the Acoustical Society of America*  
2019 *Reviews in Fish Biology and Fisheries*

### ***Member affiliations***

2018 – present Associate Fellow of **The Higher Education Academy**  
2017 – present Student Member of **The Fisheries Society of the British Isles**  
2017 – present Student Member of the **British Ecological Society**  
2013 – present Student Member of the **Association for the Study of Animal Behaviour (ASAB)**  
2012 – present Member of the **Royal Society of Biology (MRSB)**

## ***Public engagement and outreach events***

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**2018:** Greenman Festival (Einstein's Garden)  
World Fish Migration Day

**2017:** Bournemouth Air Show

**2016:** Ecology and Management of the New Forest in an Era of Climate Change  
Environmental Rock  
World Fish Migration Day

BBC Countryfile Live  
Glastonbury Festival (Science Tent, Green Futures)  
Southampton Science and Engineering Festival  
Brighton Science Festival

### ***Continued professional development (CPD) and training***

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2020 ( <i>postponed</i> )	<b>Career and Leadership Development Course</b> <i>University of Southampton, UK</i>
2019 – ongoing	<b>BSAC sports diver qualification training</b>
2019	Confirmed membership status of the <b>UK STEM Ambassador Programme</b>
2019	<b>“Securing funding from grant making trusts” seminar</b> <i>Royal Society of Biology approved CPD event</i>
2018	<b>“Environmental DNA (eDNA) sampling for freshwater species: a practitioners perspective on its development, characteristic, and applications to fish passage and aquatic connectivity”</b> <i>Charles Sturt University, Albury-Wodonga, Australia</i>
2018	<b>“Animals used for scientific purposes” online training</b> <i>Royal Society of Biology approved CPD event</i>
2018	<b>“Introduction to project management” online training</b> <i>Royal Society of Biology approved CPD event</i>
2017	<b>ITC Outdoor First Aid Course</b> <i>University of Southampton, UK</i>
2016	<b>Electric Fishing Theory &amp; Practical Training Course</b> <i>University of Southampton &amp; Game &amp; Wildlife Trust, UK</i>
2013	<b>BSAC Boat Handling course</b>

### ***Academic summer schools and skills courses***

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2019	Advanced statistics workshop: <b>Statistical Programming in ‘R’ with a focus on generalised linear mixed models</b> <i>University of Southampton, UK</i>
2017	<b>Freshwater Taxonomy and Field Identification Skills Course</b> <i>Freshwater Biological Association, Windermere, UK</i>
2017	<b>Acoustic Communication Summer School (SNAK)</b> <i>University of Southern Denmark, Odense, Denmark (10 ECTS)</i>
2017	<b>Coding in ‘Python’</b> <i>Coding for Girls at University of Southampton, UK</i>

### ***Computational and statistical software skills***

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<b>Adobe Audition/ Audacity/ Avisoft-SASLab Pro</b>	<i>analysis of acoustic data</i>
<b>Rstudio</b>	<i>statistical modelling and data visualisation</i>
<b>Matlab</b>	<i>acoustic recording, data manipulation, artificial sound production, mapping acoustic sound fields, and fish video tracking</i>
<b>SPSS/ Minitab</b>	<i>statistical analysis</i>
<b>GIS</b>	<i>spatial analysis</i>
<b>Ethovision</b>	<i>animal video tracking</i>
<b>The Observer</b>	<i>behavioural analysis</i>
<b>Microsoft Office</b>	

### ***Further skills and experience***

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- **Experience working with acoustic set-ups underwater and in-air** both via use of DAQ systems and hand-held audio-recording devices. Competent in use of micro-/ hydrophones, pre-amps and data acquisition. Familiar with National Instruments, Brüel & Kjær, Reson, etec, Lubell labs, TASCAM, and Marantz technologies.
- **Experience working with hypo-hyperbaric (barotrauma) chamber and biomaterial tensile strength machinery**
- **Competent working in hydraulic flumes and use of velocimeters** including Valeport and Nortek Vectrino technology
- **River/ terrestrial/ marine habitat animal and plant species surveying**

- **Seine/ fyke netting and electric fishing** – actively involved in monitoring fish communities for the [Devon & Wildlife Trust's River Otter Beaver Trial](#)
- **Macroinvertebrate kick-sampling and identification**
- **Fish/ animal physiology and dissection skills**
- **Animal husbandry/ handling and schedule 1 trained**
- **Experience in risk assessment and practical ethics in research**

*References available upon request*

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