

JEROEN HUBERT

Leiden University
Institute Biology Leiden (IBL)
Department Animal Sciences, Behavioural biology
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EDUCATION

- 2017 – 2020: PhD, thesis: “Sound Investigation: Effects of noise on marine animals across trophic levels”, Leiden University (defended September 2021)
- 2013 – 2015: MSc Biology, Animal Biology and Disease Models, Leiden University
- 2008 – 2012: B Agr Animal husbandry, Hogeschool Inholland Delft

RESEARCH EMPLOYMENT

- 2021 – 2023: Postdoctoral researcher at Leiden University
The effects of offshore windfarms on pelagic fish communities and harbour porpoises and (improving) the efficacy of acoustic deterrent devices.
- 2016: Research assistant at Leiden University (5 months)
The avoidance effects of artificial sounds on European seabass in a large self-build floating pen in the Oosterschelde sea-arm.
- 2015: Research assistant at Leiden University (10 months)
The iambic-trochaic law in zebra finches, studies using an identification task in skinnerboxes.

RESEARCH INTERNSHIPS

- 2014 – 2015: MSc intern at Leiden University (5 months)
Rhythm perception of zebra finches, budgerigars and humans using a Go/Nogo paradigm in skinnerboxes or on a laptop.
- 2014: MSc intern at Leiden University (10 months)
Effects of anthropogenic sound on the swimming patterns of European seabass using a large self-build floating pen in the Oosterschelde sea-arm.

PUBLICATIONS

a. Peer reviewed

[11] **Hubert, J.**, Moens, R., Witbaard, R. and Slabbekoorn, H. (2022). Acoustic disturbance in blue mussels: recovery varies with pulse train speed but no sound impact on filtration rate. *ICES J. Mar. Sci.* 79, 2540-2551. doi:10.1093/icesjms/fsac193.

[10] **Hubert, J.**, Booms, E., Witbaard, R. and Slabbekoorn, H. (2022). Responsiveness and habituation to repeated sound exposures and pulse trains in blue mussels. *J. Exp. Mar. Biol. Ecol.* 547, 151668. doi:10.1016/j.jembe.2021.151668.

[9] van der Knaap, I., Reubens, J., Thomas, L., Ainslie, M. A., Winter, H. V, **Hubert, J.**, Martin, B. and Slabbekoorn, H. (2021). Effects of a seismic survey on movement of free-ranging Atlantic cod. *Curr. Biol.* 31, 1555-1562.e4. doi:10.1016/j.cub.2021.01.050.

- [8] **Hubert, J.**, van Bemmelen, J. J. and Slabbekoorn, H. (2021). No negative effects of boat sound playbacks on olfactory-mediated food finding behaviour of shore crabs in a T-maze. *Environ. Pollut.* 270, 1–8. doi:10.1016/j.envpol.2020.116184.
- [7] **Hubert, J.**, Campbell, J. A. and Slabbekoorn, H. (2020). Effects of seismic airgun playbacks on swimming patterns and behavioural states of Atlantic cod in a net pen. *Mar. Pollut. Bull.* 160, 111680. doi:10.1016/j.marpolbul.2020.111680.
- [6] **Hubert, J.**, Neo, Y. Y., Winter, H. V., Slabbekoorn, H. (2020). The role of ambient sound levels and stimulus pulse rate on behavioural disturbance of seabass in a net pen. *Behav. Process.* 170, 103992. doi:10.1016/j.beproc.2019.103992.
- [5] **Hubert, J.**, Campbell, J., van der Beek, J. G., den Haan, M. F., Verhave, R., Verkade, L. S., Slabbekoorn, H. (2018). Effects of broadband sound exposure on the interaction between foraging crab and shrimp – A field study. *Environ. Pollut.* 243, 1923-1929. doi:10.1016/j.envpol.2018.09.076.
- [4] Neo, Y. Y., **Hubert, J.**, Bolle, L., Winter, H. V., ten Cate, C., and Slabbekoorn, H. (2018). European seabass respond more strongly to noise exposure at night and habituate over repeated sessions. *Environ. Pollut.* 239, 367-374. doi:10.1016/j.envpol.2018.04.018.
- [3] Spierings, M., **Hubert, J.**, and ten Cate, C. (2017). Selective auditory grouping by zebra finches: testing the lambic-Trochaic law. *Anim. Cogn.* 20, 665–675. doi:10.1007/s10071-017-1089-3.
- [2] Neo, Y. Y., **Hubert, J.**, Bolle, L., Winter, H. V., ten Cate, C., and Slabbekoorn, H. (2016). Sound exposure changes European seabass behaviour in a large outdoor floating pen: Effects of temporal structure and a ramp-up procedure. *Environ. Pollut.* 214, 26–34. doi:10.1016/j.envpol.2016.03.075.
- [1] Ten Cate, C., Spierings, M., **Hubert, J.**, and Honing, H. (2016). Can birds perceive rhythmic patterns? A review and experiments on a songbird and a parrot species. *Front. Psychol.* 7, 1–14. doi:10.3389/fpsyg.2016.00730.

b. Conference proceedings

- [2] **Hubert, J.**, Wille, D. A., and Slabbekoorn, H. (2020). Exploring effects of sound on the time budget of fishes: An experimental approach with captive cod. *POMA.* 37, 010012. doi:10.1121/2.0001253.
- [1] **Hubert, J.**, Neo, Y. Y., Campbell, J., and Slabbekoorn, H. (2016). Particle motion and pressure soundscape in outdoor vs indoor set-up. *POMA.* 27, 1-7. doi:10.1121/2.0000273.

c. Popular article

- [1] Soudijn, F. H., **Hubert, J.**, and van der Knaap, I. (2020). Herrie onder water: Hoe geluid het gedrag van kabeljauw beïnvloedt. *Visionair.* 57, 38-41.

FUNDING

2016: Travel grant Aquatic noise conference (\$ 504 + registration fee)

FIELDWORK

Since 2021: Belgium & The Netherlands, North Sea: Deploying multi-sensor frames with echosounders, C-pods, and hydrophones to monitor pelagic fish and harbour porpoises in windfarms and control locations.

2017 – 2018: Belgium, North Sea: Deploying tag receivers to track tagged Atlantic cod in the

context of a seismic survey.

- 2020: Saudi Arabia, Red Sea: Tagging and conducting experimental playback trials with spider conches and giant clams in situ at coral reefs.
- 2014, 15, 17, 18: The Netherlands, Oosterschelde: Assembling a study island with large floating pen and experimentally exposing tagged European seabass and Atlantic cod to sound.

CONFERENCE PRESENTATIONS/POSTERS/INVITED PRESENTATIONS

- 2022: Talk: Deterrence tests at sea. *Bioacoustic day*.
- 2022: Invited talk: What do we know about Atlantic cod and pelagic fish in windfarms? *Offshore wind seminar Oslo*.
- 2022: Talk: Impact of sound on mussels: effects and mechanisms. *Aquatic Noise*.
- 2021: Talk: Does sound pull a mussel? *ASAB winter meeting*.
- 2021: Talk: Does sound pull a mussel? *NVG meeting*.
- 2021: Invited talk: PCAD4Cod scaled exposure studies. *Spawnseis symposium*.
- 2020: Poster: Boat sound does not negatively affect olfactory-mediated food finding in shore crabs. *NVG meeting*.
- 2019: Talk: Effects of seismic airgun playbacks on swimming patterns and behavioural states of Atlantic cod. *NVG meeting*.
- 2019: Talk: Cod behavioural response to seismic airgun playbacks. *Bioacoustic day*.
- 2019: Speed talk + poster: Seismic airgun playback to double tagged Atlantic Cod. *Aquatic Noise*.
- 2018: Poster: Effects of sound exposure on foraging crab and shrimp. *NVG meeting*.
- 2016: Poster: Particle motion and pressure soundscape in outdoor vs indoor set-up. *Aquatic Noise*.
- 2014: Talk: Behavioural response of European seabass to artificial sound exposures in an outdoor setting. *NVG meeting*.

CONFERENCES ATTENDED

ASAB (2021), Aquatic noise (2016, 2019, 2022), NVG meeting (2014, 2015, 2016, 2018, 2019, 2020, 2021, 2022), Bioacoustic day (2014, 2016, 2018, 2019, 2020, 2021, 2022), Offshore wind seminar Oslo (2022).

COURSES

- 2022: B-VCA – safety on the workfloor (valid until: August 2032)
- 2021: STCW (Standards of Training, Certification, and Watchkeeping) basic – offshore safety (valid until: June 2026)
- 2019: PhD courses: Communication, Scientific communication, Planning, & Scientific integrity
- 2016: Laboratory Animal Science (FELASA category C, Dutch article 9 WOD)
- 2015: NVG Master Class on Animal Personality

TEACHING

- Since 2019: BSc year 2: Behavioural biology theory – giving a lecture on foraging behaviour and giving several practicals, on measuring brain regions using ImageJ, and the 7 sins in behavioural biology research (Milinski, 1997)
- Since 2018: BSc year 2: Behavioural biology field course – giving/coordinating three practicals on measuring and processing (underwater) sound, graphics in R & glm's in R. Also supervising 1-2 groups of students on a 2.5-week research project
- Since 2019: BSc year 1: Ecology, Biodiversity and Behaviour project – supervising 2-8 groups of students on their first behavioural experiment (6 days)
- 2018 – 2021: BSc year 1: Bionieuws symposium – giving a talk on my own research for student to write a science communication article about
- Since 2021: BSc year 1: Behavioural biology – giving a talk on my own research
- 2019: MSc: Intro course – giving a talk on my own research
- 2018: MSc: Animal personality – chairing a book chapter discussion

STUDENT SUPERVISION

I supervised 13 BSc, 4 MSc, and 1 honours student(s) for their internships (until July 2022). BSc internships were always 5 months, and MSc internships varied between 5 and 9 months. All projects consisted of a written proposal, end report, multiple presentations, data processing and statistics, and often also designing and conducting the experiment. I had weekly meetings with the students and helped them through all stages of their project.

PHD CANDIDATE SUPERVISION

- Since 2021: Co-supervision: Jozefien (Fien) M. Demuynck – Effects of offshore windfarms and acoustic deterrence on pelagic fish and harbour porpoises.

ACADEMIC SERVICES

- Reviewer for journals: Animal Behaviour (2019), Journal of Ichthyology (2017), Aquaculture Environment Interaction (2019), Aquaculture Research (2021), Environmental Pollution (2 x 2020), ICES Journal of Marine Science (2019), Journal of Marine Science and Engineering (2022), Marine Biology Research (2022), Marine Pollution Bulletin (2021), Nature Communications (2021), Scientific Reports (2021, 2022), Behavioural Processes (2022)
- Other reviews: External examiner for a Master thesis for Utrecht University (2019)
Grant reviewer for Aquaexcel (2022)
- PhD opposition: Fabian Heim (2022)
- Since 2021: Member of the Institute Council; monitors and advices management team and educational office of IBL
- Since 2019: Member of the IPPA; organizes social events for PhD's and PostDocs of IBL

PUBLIC OUTREACH

- 2022: TV: Eénvandaag – Zo beschermen perenbomen, visverjagers en zelfs windmolens de vissen in de Noordzee
<https://eenvandaag.avrotros.nl/item/zo-beschermen-perenbomen-visverjagers-en->

zelfs-windmolens-de-vissen-in-de-noordzee/

- 2022: Online: Leeuwarder courant – Heeft een mossel hinder van lawaai?
<https://lc.nl/friesland/WadWeten-Heeft-een-mossel-hinder-van-lawaai-27733408.html>
- 2021: Magazine: Waddenmagazine – Rumoer onder water
<https://twitter.com/JeroenHubert/status/1382357242469625857>
- 2019: Online: Mare – Onderwaterherrie
<https://www.mareonline.nl/wetenschap/brugada-onderwaterherrie-zorgstress/>
- 2016: TV: Vroege vogels – Lawaai onder water
<https://www.bnnvara.nl/vroegevogels/videos/283480> (from 14:35)
- 2016: Radio: BNR – Effecten van explosies op bruinvissen
<https://www.bnr.nl/player/archief/20160729113200300>

ANCILLARY ACTIVITIES

- 2007 - 2022: Voluntary work at YVZ (Speed skating club Zoetermeer), this included giving training (13 years), making and maintaining the website (11 years), and coordinating the jury for speed skating competitions (5 years)

REFERENCES

Available upon request.