

# KIRSTIN ELIASÉN

## CONTACT

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## EDUCATION

### 2009 – 2013 PHD IN BIOSCIENCE - AARHUS UNIVERSITY

**Thesis title:** Sandeel, *Ammodytes* spp., as a link between climate and higher trophic levels on the Faroe Shelf (Funded by Danmarks Forskning- og Innovationsstyre)

**Supervised by:** Peter Grønkjær, Jens Tang Christensen, Eilif Gaard, Jan Arge Jacobsen and Bogi Hansen

**Synopsis:**

- Investigation of the ecological role of sandeel in the Faroe shelf ecosystem
- Estimation of the influence of the climate on sandeel

### 2004 – 2005 MSC BIOLOGY – COPENHAGEN UNIVERSITY

**Dissertation title:** The diet and prey availability of juvenile sandeel, *Ammodytes* spp., on the Faroe shelf

### 1999 – 2002 BSC BIOLOGY - UNIVERSITY OF THE FAROE ISLANDS

## RESEARCH INTERESTS

I have a strong interest in ecology and animal welfare. The research conducted as part of my doctoral studies focused on how sandeel (*Ammodytes* sp.) transfers energy through its position in the Faroe shelf food web, and furthermore, how changing climatic factors, i.e., temperature, influences sandeel negatively, as well as demonstrating how this further affects higher trophic levels. My current work focuses on lumpfish (*Cyclopterus lumpus*), sea trout (*Salmo trutta*), pink salmon (*Oncorhynchus gorbuscha*) and sea lice (*Lepeophtheirus salmonis*), which allows me to combine fascinating ecological work with the utility of applied research with focus on fish welfare.

## RESEARCH EXPERIENCE

**2019-**

### **THE SEA TROUT PROJECT**

The aim of the project is 1) to gain knowledge on when and under what circumstances juvenile sea trout migrate to sea, and 2) to examine annual variations in the condition of adult sea trout at sea. A trap is mounted in a local river from late April to mid-July, where seaward migrating smolts are monitored daily. Through citizen science and gill net samplings we collect scale and other information on sea trout at sea.

**2016-**

### **HEAD OF THE FISH HEALTH DEPARTMENT - FISKAALING**

I oversee the department, supervise, and support staff, and work to develop new opportunities for projects and networking.

**2013-2016**

### **CO-ORDINATOR OF THE FAROESE SEA LICE MONITORING PROGRAMME - FISKAALING**

Legislations have assigned Fiskaaling as the sole and independent party conducting the Faroese sea lice monitoring programme. Sea lice counts are conducted according to legislation, resulting in sea lice data from every salmon cage in the Faroe Islands every fortnight. Besides from being an operational tool for the authorities, Fiskaaling communicates and use the data for research purpose.

**2009-2013**

### **PHD PROJECT - UNIVERSITY OF AARHUS AND FAROE MARINE RESEARCH INSTITUTE (HAVSTOVAN)**

The objectives of the thesis were to investigate the ecological role of sandeel in the Faroe shelf ecosystem, and to estimate which influence changes in climate might have on sandeel. In five consecutive years (2007-2011) sandeel (age 1+) surveys were conducted on the Faroe shelf in mid-April. Based on the results obtained on these surveys and on the available time-series on temperature, primary production, zooplankton, 0-group sandeel, cod and seabirds from the same area, analyses were performed to investigate the questions set.

**2007-2008**

### **BIOLOGIST AT FAROE MARINE RESEARCH INSTITUTE (HAVSTOVAN)**

Developing a protocol for monitoring sandeel on the Faroe shelf.

## PUBLICATIONS

### PEER REVIEWED:

**Imslund AKD, Berg MS, Haugland GT and Eliassen K (2022)** Comparing Body Density of Lumpfish (*Cyclopterus lumpus*) to Different Operational Welfare Indicators. *Fishes*, 7: 284, <https://doi.org/10.3390/fishes7050284>

**Eliassen K and Johannesen UV (2021)** The increased occurrence of *Oncorhynchus gorbuscha* (Walbaum, 1792) in the Faroe Islands. *BioInvasions Records* 10(2): 390-395, <https://doi.org/10.1007/s10499-016-0093-y>

**Eliassen K, Patursson EJ, McAdam BJ, Pino E, Morro B, Betancor M, Baily J and Rey S (2020)** Liver colour scoring index, carotenoids and lipid content assessment as a proxy for lumpfish (*Cyclopterus lumpus* L.) health and welfare condition. *Scientific Reports*, 10: 8927, <https://doi.org/10.1038/s41598-020-65535-7>

**Eliassen K, Danielsen E, Johannesen Á, Joensen LL and Patursson EJ (2018)** The cleaning efficacy of lumpfish (*Cyclopterus lumpus* L.) in Faroese salmon (*Salmo salar* L.) farming pens in relation to lumpfish size and seasonality. *Aquaculture*, 488: 61-65, <https://doi.org/10.1016/j.aquaculture.2018.01.026>

**Eysturskarð J, Johannesen Á and Eliassen K (2016)** Application of real-time PCR for specific detection of *Lepeophtheirus salmonis* in fluid samples from lumpfish (*Cyclopterus lumpus*) stomachs. *Aquaculture International*, 25: 969-973, doi:10.1007/s10499-016-0093-y

**á Norði G, Simonsen K, Danielsen E, Eliassen K, Mols-Mortensen A, Christiansen DH, Steingrund P, Galbraith M and Patursson Ø (2015)** Abundance and distribution of planktonic *Lepeophtheirus salmonis* and *Caligus elongatus* in a fish farming region in the Faroe Islands. *Aquaculture Environment Interactions*, 7: 15-27, <https://doi.org/10.3354/aei00134>

**Eliassen K (2013)** Sandeel, *Ammodytes* spp., as a link between climate and higher trophic levels on the Faroe Shelf. Ph.D. Thesis

**Eliassen K, Reinert J, Gaard E, Hansen B, Jacobsen JA, Grønkjær P and Christensen JT (2011)** Early life of sandeel in relation to primary production on the Faroe shelf. *Marine Ecology Progress Series*, 438: 185-194, <https://doi.org/10.3354/meps09301>

**Debes H, Eliassen K and Gaard E (2008)** Seasonal variability in copepod ingestion and egg production on the Faroe shelf. *Hydrobiologia*, 600: 247-265, <https://doi.org/10.1007/s10750-007-9238-3>

**Debes HH and Eliassen K (2006)** Seasonal abundance, reproduction and development of four key copepod species on the Faroe Shelf. *Marine Biology Research*, 2(4): 249-259, <https://doi.org/10.1080/17451000600798787>

**Bengtson S-A, Eliassen K, Jacobsen LM and Magnussen E (2004)** A history of colonization and current status of the house sparrow (*Passer domesticus*) in the Faroe Islands. *Fróðskaparrit*, 51: 237-251

### SELECTED REPORTS:

**Eliassen K, Johannesen UV, Petersen SI and Bergkvist KSG.** Annual report 2021 – The sea trout project. Fiskaaling rit. [https://fiskaaling.fo/media/2793/2022-01\\_annual-report-2021-the-sea-trout-project.pdf](https://fiskaaling.fo/media/2793/2022-01_annual-report-2021-the-sea-trout-project.pdf)

**Eliassen K, Johannesen UV, Petersen SI and Bergkvist KSG.** Annual report 2020 – The sea trout project. Fiskaaling rit. <https://fiskaaling.fo/media/2615/2021-01-sea-trout-project-annual-report-2020.pdf>

## BOOKS:

Johannesen Á, Arge R, Eliassen K

Chapter on Lumpfish as a cleaner fish in the Faroes. In: Cleaner Fish Biology and Aquaculture Applications, edited by Jim Treasurer, Ardtoe Marine Research Facility and Ardtoe Marine Laboratory, United Kingdom

## PRESENTATIONS

### **LUSEKONFERANSEN 2022, TRONDHEIM, NORWAY**

Invited talk on sea lice monitoring in the Faroe Islands

### **GLOBAL CLEANERFISH WORKSHOP 2019, ST. JOHN'S, CANADA**

Invited talk on lumpfish research in the Faroe Islands

### **ATLANTIC CANADA CLEANERFISH WORKSHOP 2018, ST. JOHN'S, CANADA**

Invited talk on monitoring of lumpfish in cages

### **CLEANERFISH IN CAGES - NUTRITION AND FEEDING, 2018, NORWAY**

Invited talk on monitoring of lumpfish in cages and estimating lumpfish health

### **INTERNATIONAL CLEANERFISH SUMMIT, 2017, GLASGOW, SCOTLAND**

Invited talk on the production and use of cleanerfish in the Faroe Islands

### **SEA LICE 2016, WESTPORT, IRELAND**

Talk on evaluation of the effect of lumpfish, *Cyclopterus lumpus*, as a cleaner fish in the Faroese salmon farming industry

### **SEA LICE 2014, PORTLAND, MAINE, USA**

Talk on the effect of coordinated delousing programs in the Faroe Islands

### **SALMON LICE WORKSHOP, 2014, TÓRSHAVN, FAROE ISLANDS**

Invited talk on contemplation of salmon louse enumerations

### **FAROESE MINISTRY OF FISHERIES, 2013, TÓRSHAVN, FAROE ISLANDS**

Invited talk on how fluctuations in primary production, through sandeel, influences commercially important fish stocks such as cod and haddock

### **DANSK HAVFORSKERMØDE, 2011, KNEBEL, DENMARK**

Talk on the main results from the PhD project

### **ICES ANNUAL SCIENCE CONFERENCE, 2009, BERLIN, GERMANY**

Talk on the preliminary results from the PhD project

## CONSULTANCY WORK

- Monterey Bay Aquarium Seafood Watch, Atlantic salmon (*Salmo salar*), Faroe Islands Marine Net Pens, 2022 Update.
- Member of the Traffic Light System for Norwegian Salmonid Aquaculture Evaluation Committee 2020-2022 (The Research Council of Norway). Eliassen K, Jackson D, Koed A, Revie C, Swanson HA, Turnbull J, Vanhatalo J and Visser A (2021) An evaluation of the Scientific Basis of the Traffic Light System for Norwegian Salmonid Aquaculture. The Research Council of Norway Report. ISBN 978-82-12-03918-6
- Regulatory Processes for Setting Sensitive-Period Sea-lice Thresholds in Major Salmon Producer Jurisdictions: An Evaluation. By Irja Vormedal and Mari Lie Larsen. The Fridtjof Nansen Institute (FNI). November 2021.

## COMMUNICATION OF SCIENCE

- Scientific advisor on the animation of the life cycle of salmon lice [https://www.youtube.com/watch?v=AcowNwZ\\_YKk](https://www.youtube.com/watch?v=AcowNwZ_YKk)
- Been part of a range of TV and radio programmes for KVF (National Faroese Broadcasting), where I have talked about e.g., sandeel, sea lice, sea trout, pink salmon and escaped farmed salmon.
- Lectures at the University of the Faroe Islands for Bachelors of Science in Biology, and external supervisor for three BSc dissertations and one MSc dissertation.
- Presented my work on lumpfish and sea lice to the industry and general public in shape of talks, lectures and leaflets.
- Have, as part of a lumpfish team, arranged educational workshops for salmon farmers regarding lumpfish husbandry and welfare.