

LEIF CHRISTIAN STIGE - CURRICULUM VITAE

PERSONAL INFORMATION

Name Leif Christian Stige
Position Researcher
Affiliation Centre for Ecological and Evolutionary Synthesis (CEES), Department of Biosciences, University of Oslo, Pb. 1066 Blindern, 0316 Oslo, Norway.
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Year of birth 1969
Civil status Married (children born 2006 and 2007)
Nationality Norwegian

PRESENT RESEARCH ACTIVITIES AND FIELDS OF RESEARCH

Population dynamics – mainly in marine systems – using statistical approaches to deduce the underlying processes. Recent work has focused on fluctuations of zooplankton and fish in the Barents Sea, to understand how climate and human influences such as fishing and possible oil spills affect populations.

EMPLOYMENT

2014–present Researcher and, since 2015, core member, Centre for Ecological and Evolutionary Synthesis (CEES), University of Oslo (UiO).
2013–2014 Senior Advisor, Environmental Affairs Section, Ministry of Fisheries and Coastal Affairs, from 2014 part of Ministry of Transportation and Communications, Oslo.
2013–2014 Adjunct (10 %) Associate Professor, CEES, University of Oslo.
2005–2013 Researcher, CEES, University of Oslo.
2004–2005 Post doc, Université de Bourgogne, Dijon, France.
1999–2000 Research assistant, Alpha Environmental Consultants, Oslo.

EDUCATION

2004 Dr. scient. (PhD) in biology, University of Oslo. Thesis title: *Fluctuating asymmetry: a marker of individual genetic or phenotypic quality?* Supervisors: Profs. Asbjørn Vøllestad, Dag O. Hessen and Tore Slagsvold.
1999 Cand. scient. (Master) in marine biology, University of Bergen. Thesis title: *Dispersal of seaweeds on ship hulls – observations on the sailing vessel Hnoss from Norway to Barbados.* Supervisor: Ass. Prof. Tor Eiliv Lein.

SCIENTIFIC LEADERSHIP, PROJECT ACQUISITION AND MANAGEMENT

2018–2021 *Drivers and effects of spatial shifts in early life stages of marine fish – SpaceShift.* (Norw. Res. Council; 8.1 mill. NOK). Role: Author and PI.
2017–2023 *The Nansen LEGACY. Scientific exploration and sustainable management beyond the ice edge.* (Norw. Res. Council / Ministry of Education and Research; 740 mill. NOK). Co-author, budget responsible for UiO, WP leader and part of project leader team.
2016–2018: *Long-term effects of local scale OIL pollution on fish Populations and COMMunities in the Lofoten-Barents Sea system – OILCOM* (Norw. Res. Council; 7.5 mill. NOK). Co-author and Investigator.
2014–2017: *Green growth based on marine resources: Ecological and socio-economic constraints – GreenMar* (Nordic Council; 27 mill. NOK). Co-author and WP leader.
2010–2015: Nordic Centre of Excellence: *Climate Change Effects on Marine Ecosystems and Resource Economics* (Nordic Council top-level research initiative; 66 mill. NOK). Co-author and PhD supervisor.

- 2010–2015: *Adaptive management of living marine resources by integrating different data sources and key ecological processes - ADMAR* (Norw. Res. Council; SIP; 31 mill. NOK). Co-author and WP leader.
- 2010–2013: *Spatiotemporal variability in mortality and growth of fish larvae in the Lofoten-Barents Sea ecosystem - SVIM* (Norw. Res. Council; 9 mill. NOK). Co-author and WP leader.
- 2007–2011: *Arctic and sub-Arctic climate system and ecological response to the early 20th century warming - ARCWARM* (Norw. Res. Council; 12 mill. NOK). Co-author and Investigator.
- 2007–2010: *The potential role of zooplankton in modulating ecosystem effects of acute oil spills in the Norwegian and Barents Seas - OilPlank* (Norw. Res. Council; 4 mill. NOK). Author, Co-PI.

COMMISSIONS OF TRUST

- 2004–present Reviewer for various scientific journals, including *Aquat. Living Res.*, *Bot. Mar.*, *Can. J. Fish. Aquat. Sci.*, *Clim. Res.*, *Clim. Change*, *Ecol. Evol.*, *Ecol. Lett.*, *Env. Mod. Softw.*, *Env. Poll.*, *Fish. Oceanogr.*, *Fund. Appl. Limnol.*, *Gene*, *Glob. Change Biol.*, *ICES J. Mar. Sci.*, *J. Plankt. Res.*, *J. Sea Res.*, *Mar. Ecol. Prog. Ser.*, *Mar. Poll. Bull.*, *Oecologia*, *PLOS One*, *Proc. R. Soc. Lond. B*, *Proc. Nat. Acad. Sci. USA*, *Progr. Oceanogr.*
- 2016–present Reviewer of project applications for Fram Centre, Research Council of Norway, National Science Center Poland.
- 2011 Evaluator of project report for Dept. Env., Food and Rural Affairs (DEFRA), London.

SUPERVISION, MENTORING AND TEACHING EXPERIENCE

- 2012–present Main supervisor of 2 PhD-students (Kristina Ø. Kville, Kaixing Dong) and co-supervisor of 1 PhD-student (Elisabeth Lundsør) at Univ. of Oslo (UiO).
- 2015–present Lectures on climate effects on arctic marine ecosystem dynamics, Int. Summer School, UiO.
- 2015–present Lectures on population effects of oil spills in ecotoxicology course, UiO.
- 2011 Invited lecture, Northern (Arctic) Federal University, Arkhangelsk.
- 2010 Supervision of French student at 5-months research internship at CEES, UiO.
- 2008–2009 Co-supervision of two Chinese PhD-students visiting UiO.
- 2007 Teaching population dynamics part of general ecology course, UiO.
- 2004–2005 Co-supervision of two 2nd-year Master students, Université de Bourgogne.

INTERNATIONAL CONFERENCES, MEETINGS, SYMPOSIA, SCHOOLS

- 2013–2017 Participation at 6 international meetings or conferences last 5 years: ICES Ann. Sci. Conf. 2013 (talk), 2016 (talk), Tømte Symp. 2015 (invited talk), ICES/PICES Zoopl. Symp. 2016 (poster), Arctic Frontiers 2017 (talk), ESSAS Int. Conf. Subarct. Arct. Sci. 2017 (talk).

MEMBERSHIP IN ACADEMIC AND PROFESSIONAL BODIES

- 2015–present Core member of *Centre for Ecological and Evolutionary Synthesis* (CEES)
- 2014–2016 Member of *National Research Committee on Marine Mammals*

OUTREACH ACTIVITIES

- I regularly post popularised summaries of my scientific articles at the Marine Science blog at CEES (<http://www.mn.uio.no/cees/english/outreach/blogs/marine-science/>), which are reposted internationally at Research Blogging (<http://researchblogging.org/blog/home/id/4091>).
- Popular science articles (e.g. in the Norwegian-language journal *Biolog* 2015, 33: 19-23) and newspaper commentaries (e.g., *Aftenposten* 16.04.2018).
- Popular science lectures (e.g., UiO Arctic Day 2016, Norwegian-Russian Chamber of Commerce 2017).
- I collaborate with journalists at forskning.no and similar popular science websites (see <http://forskning.no/content/blir-skagerrak-varmt-torsken> and <http://sciencenordic.com/soviet-cold-war-oceanographic-surveys-opened-western-scientists>).

SELECTED ACADEMIC AND PROFESSIONAL PUBLICATIONS

- 53 articles in International peer-reviewed journals, 21 of these as first author [incl. three with shared first authorship]; 11 articles in *Proc. Nat. Acad. Sci. USA*, 8 in *Mar. Ecol. Prog. Ser.*, 5 in *Proc. R. Soc. Lond. B*, 3 in *Progr. Oceanogr.*, 3 in *ICES J. Mar. Sci.*, 3 in *Mar. Poll. Bull.* ≤ 2 in other journals.
- Average citations per article 20.5, h-index 19 (Web of Science Core collection).
- 5-year track record (2013–2017): 22 publications, 9.5 citations per article, 5-year h-index 9.

Publications 2013–2018 (* Equal contribution as first author.):

- Stige LC**, Ottersen G, Yaragina NA, Vikebø FB, Stenseth NC, Langangen Ø. 2018. Combined effects of fishing and oil spills on marine fish: Role of stock demographic structure for offspring overlap with oil. *Mar. Poll. Bull.* 129: 336-342.
- Langangen Ø, **Stige LC**, Kvile KØ, Yaragina NA, Skjæraasen JE, Vikebø FB, Ottersen G. 2018. Multi-decadal variations in spawning ground use in Northeast Arctic haddock (*Melanogrammus aeglefinus*). *Fisheries Oceanogr.* DOI: 10.1111/fog.12264
- Stige LC**, Kvile KØ, Bogstad B, Langangen Ø. 2018. Predator-prey interactions cause apparent competition between marine zooplankton groups. *Ecology.* 99: 632-641.
- Niiranen S, Richter A, Blenckner T, **Stige LC**, Valman M, Eikeset A-M. 2018. Global connectivity and cross-scale interactions create uncertainty for Blue Growth of Arctic fisheries. *Mar. Policy.* 87: 321-330.
- Stige LC**, Kvile KØ. 2017. Climate warming drives large-scale changes in ecosystem function. *Proc. Nat. Acad. Sci. USA.* 114: 12100-12102. (Commentary article).
- Stige LC**, Yaragina NA, Langangen Ø, Bogstad B, Stenseth NC, Ottersen G. 2017. Effect of a fish stock's demographic structure on offspring survival and sensitivity to climate. *Proc. Nat. Acad. Sci. USA.* 114: 1347-1352.
- *Xu L, ***Stige LC**, Chan K-S, Zhou J, Yang J, Sang S, Wang M, Yang Z, Yan Z, Jiang T, Lu L, Yue Y, Liu X, Lin H, Xu J, Liu Q, Stenseth NC. 2017. Climate variation drives dengue dynamics. *Proc. Nat. Acad. Sci. USA.* 114: 113-118.
- Langangen Ø, Olsen E, **Stige LC**, Ohlberger J, Yaragina NA, Vikebø FB, Bogstad B, Stenseth NC, Hjermann DØ. 2017. The effects of oil spills on marine fish: Implications of spatial variation in natural mortality. *Mar. Poll. Bull.* 119: 102-109.
- Langangen Ø, Ohlberger J, **Stige LC**, Durant JM, Ravagnan E, Stenseth NC, Hjermann DØ. 2017. Cascading effects of mass mortality events in Arctic marine communities. *Glob. Change Biol.* 23: 283-292.
- Langangen Ø, Ottersen G, Ciannelli L, Vikebø FB, **Stige LC**. 2016. Reproductive strategy of a migratory fish stock: implications of spatial variations in natural mortality. *Can. J. Fish. Aquat. Sci.* 73: 1742-1749.
- Kvile KØ, **Stige LC**, Prokopchuk I, Langangen Ø. 2016. A statistical regression approach to estimate zooplankton mortality from spatiotemporal survey data. *J. Plankt. Res.* 38: 624-635.
- Kvile KØ, Langangen Ø, Prokopchuk I, Stenseth NC, **Stige LC**. 2016. Disentangling the mechanisms behind climate effects on zooplankton. *Proc. Nat. Acad. Sci. USA.* 113: 1841-1846.
- Feng J, Durant JM, **Stige LC**, Hessen DO, Hjermann DØ, Zhu L, Llope M, Stenseth NC. 2015. Contrasting correlation patterns between environmental factors and chlorophyll levels in the global ocean. *Glob. Biogeochem. Cycles.* 29, 2095–2107.
- Stige LC**, Langangen Ø, Yaragina NA, Vikebø FB, Bogstad B, Ottersen G, Stenseth NC, Hjermann DØ. 2015. Combined statistical and mechanistic modelling suggests food and temperature effects on survival of early life stages of Northeast Arctic cod (*Gadus morhua*). *Progr. Oceanogr.* 134: 138-151.
- Savriama Y, **Stige LC**, Gerber S, Pérez T, Alibert P, David B. 2015. Impact of sewage pollution on two species of sea urchins in the Mediterranean Sea (Cortiou, France): Radial asymmetry as a bioindicator of stress. *Ecol. Appl.* 54: 39-47.
- Kvile KØ, Dalpadado P, Orlova E, Stenseth NC, **Stige LC**. 2014. Temperature effects on *Calanus finmarchicus* vary in space, time and between developmental stages. *Mar. Ecol. Prog. Ser.* 517: 85-104.
- Langangen Ø, **Stige LC**, Yaragina N, Ottersen G, Vikebø FB, Stenseth NC. 2014. Spatial variations in mortality in early life stages of a marine fish (*Gadus morhua*). *Progr. Oceanogr.* 127: 96-107.
- Dalpadado P, Arrigo KR, Hjøllo S, Rey F, Ingvaldsen RB, Sperfeld E, van Dijken GL, **Stige LC**, Olsen A, Ottersen G. 2014. Productivity in the Barents Sea – response to recent climate variability. *PLOS ONE.* 9: e95273.

- Stige LC**, Dalpadado P, Orlova E, Boulay A-C, Durant JM, Ottersen G, Stenseth NC. 2014. Spatiotemporal statistical analyses reveal predator-driven zooplankton fluctuations in the Barents Sea. *Progr. Oceanogr.* 120: 243-253.
- Feng J, **Stige LC**, Durant JM, Hessen DO, Zhu L, Hjermann DØ, Llope M, Stenseth NC. 2014. Large-scale season-dependent effects of temperature and zooplankton on phytoplankton in the North Atlantic. *Mar. Ecol. Prog. Ser.* 502: 25-37.
- Ottersen G, Bogstad B, Yaragina N, **Stige LC**, Vikebø F, Dalpadado P. 2014. A review of early life history dynamics of Barents Sea cod (*Gadus morhua*). *ICES J. Mar. Sci.* 71: 2064-2087.
- Xu L, **Stige LC**, Kausrud KL, Ben Ari T, Wang S, Fang X, Schmid BV, Liu Q, Stenseth NC, Zhang Z. 2014. Wet climate and transportation routes accelerate spread of human plague. *Proc. R. Soc. Lond. B.* 281: 20133159.
- *Langangen Ø, ***Stige LC**, Yaragina NA, Vikebø F, Bogstad B, Gusdal Y. 2014. Egg mortality of Northeast Arctic cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*). *ICES J. Mar. Sci.* 71: 1129-1135.
- Hunsicker ME, Ciannelli L, Bailey KM, Zador S, **Stige LC**. 2013. Climate and demography dictate the strength of predator-prey overlap in a subarctic marine ecosystem. *PLoS ONE.* 8(6): e66025.
- Ottersen G, **Stige LC**, Durant J, Chan K-S, Rouyer T, Drinkwater K, Stenseth NC. 2013. Temporal shifts in recruitment dynamics of North Atlantic fish stocks: effects of spawning stock and temperature. *Mar. Ecol. Prog. Ser.* 480: 205-225.
- Stige LC**, Hunsicker ME, Bailey KM, Yaragina NA, Hunt Jr GL. 2013. Predicting fish recruitment from juvenile abundance and environmental indices. *Mar. Ecol. Prog. Ser.* 480: 245-261.

MAIN COLLABORATIONS (≥2 JOINT PUBLICATIONS LAST 5 YEARS)

- Polar Res. Inst. of Marine Fisheries and Oceanogr. (PINRO), Murmansk: Natalia Yaragina, Irina Prokopchuk
- Instituto Español de Oceanografía: Marcos Llope
- National Oceanic and Atmospheric Administration, Washington: Mary E. Hunsicker
- Oregon State University: Lorenzo Ciannelli
- Washington State University: Jan Ohlberger
- University of Iowa: Kung-Sik Chan
- Alaska Fisheries Science Center: Kevin M. Bailey
- Nankai University, College of Environmental Science and Engineering: Jianfeng Feng
- Chinese Center for Disease Control and Prevention: Lei Xu
- Inst. of Marine Research, Bergen: Geir Ottersen, Padmini Dalpadado, Bjarte Bogstad, Frode Vikebø
- Norwegian Institute for Water Research: Dag Ø. Hjermann
- University of Oslo: Nils Chr. Stenseth, Øystein Langangen, Joël M. Durant, Kristina Ø. Kvile, Dag Hessen