

# Tom J Langbehn

POSTDOCTORAL RESEARCH FELLOW, THEORETICAL ECOLOGY GROUP

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*I am a marine biologist with a keen interest in evolutionary ecology and global change biology, i.e., how climate change and human activities such as fisheries shape biological interactions and processes across various levels of organisation. I aim to solve real-life problems by identifying and understanding how processes at the individual level drive ecosystems. In my work, I combine mechanistic modelling often informed by theory with observation from the field. I enjoy thinking broadly and across disciplines and have a particular fascination for polar ecosystems and the ocean twilight zone.*

## Publications

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\*indicates equal author contributions

### ARTICLES IN PEER-REVIEWED JOURNALS

Butler, W. E., Guðmundsdóttir, L., Logemann, K., **Langbehn, T.J.**, & Marteinsdóttir, G. (2020). Egg size and density estimates for three gadoids in Icelandic waters and their implications for the vertical distribution of eggs along a stratified water column. *Journal of Marine Systems*, 204(2019), 103290. <https://doi.org/10.1016/j.jmarsys.2019.103290>

Kaartvedt, S., **Langbehn, T.J.**, & Aksnes, D. L. (2019). Enlightening the ocean's twilight zone. *ICES Journal of Marine Science*, 76(4), 803–812. <https://doi.org/10.1093/icesjms/fsz010>

**Langbehn, T.J.**, Aksnes, D., Kaartvedt, S., Fiksen, Ø., & Jørgensen, C. (2019). Light comfort zone in a mesopelagic fish emerges from adaptive behaviour along a latitudinal gradient. *Marine Ecology Progress Series*, 623, 161–174. <https://doi.org/10.3354/meps13024>

Sguotti, C., Otto, S. A., Frelat, R., **Langbehn, T.J.**, Ryberg, M. P., Lindegren, M., ... Möllmann, C. (2019). Catastrophic dynamics limit Atlantic cod recovery. *Proceedings of the Royal Society B: Biological Sciences*, 286(1898), 20182877. <https://doi.org/10.1098/rspb.2018.2877>

Geoffroy, M., Berge, J., Majaneva, S., Johnsen, G., **Langbehn, T.J.**, Cottier, F., ... Last, K. (2018). Increased occurrence of the jellyfish *Periphylla periphylla* in the European high Arctic. *Polar Biology*, 41(12), 2615–2619. <https://doi.org/10.1007/s00300-018-2368-4>

**Langbehn, T.J.**, & Varpe, Ø. (2017). Sea-ice loss boosts visual search: fish foraging and changing pelagic interactions in polar oceans. *Global Change Biology*, 23(12), 5318–5330. <https://doi.org/10.1111/gcb.13797>. *The Ecological Society of America featured this article as a dispatch* *Melting sea ice may open polar oceans to new predators in Frontiers in the Ecology and the Environment*.

Katzenberger, J., **Langbehn, T.J.**, & Zacharias, D. (2013). Erstnachweis von *Hydrellia tarsata* (Diptera: Ephydriidae) für Bremen in Blüten von *Stratiotes aloides*. *Abhandlungen Des Naturwissenschaftlichen Vereins Zu Bremen*, 47(1), 193–195.

### WORKING PAPERS UNDER REVISION OR REVIEW

*in. prep.* articles only listed when ready to submit

Geoffroy, M., **Langbehn, T.J.**, Priou, P., Varpe, Ø., Johnsen, G., LeBris, A., ... Berge, J. (in prep.). Pelagic fish and zooplankton avoid artificial light from scientific instruments, including red light. *Tbd.*

**Langbehn, T.J.**, Aksnes, D. L., Kaartvedt, S., Fiksen, Ø., & Jørgensen, C. (in prep.). Poleward distribution of mesopelagic fishes is constrained by seasonality in light. *Tbd.*

Ljungström\*, G., **Langbehn\***, **T.J.**, & Jørgensen, C. (under revision). Light and energetics at seasonal extremes limit poleward range shifts. *Nature Climate Change*.

### ARTICLES IN PEER-REVIEWED CONFERENCE PROCEEDINGS

**Langbehn, T.J.**, & Schoenle, A. (2016). Deep | Dark | Cold - Frontiers in Polar and Deep-Sea Research. In M. Bode,

## Talks

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- Langbehn, T.J.**, Ljungström, G., & Jørgensen, C. (2020). *Equatorwards shifts of marine fishes under climate change: A rule rather than exception?* Ocean Sciences Meeting, 16.- 21. Feb, San Diego, USA.
- Langbehn, T.J.**, Aksnes, D. L., Kaartvedt, S., Fiksen, Ø., & Jørgensen, C. (2019). *Light and the ecology of mesopelagic fish at high latitudes*. Ocean Outlook 2019, 8. May, Bergen, Norway. **Invited.**
- Langbehn, T.J.**, Aksnes, D. L., Kaartvedt, S., Fiksen, Ø., & Jørgensen, C. (2019). *Poleward distribution of mesopelagic fish is constrained by seasonality in light*. ICES Symposium Challenging The Scientific Legacy Of Johan Hjort, 12.- 14. Jun, Bergen, Norway.
- Langbehn, T.J.**, Jørgensen, C., Fiksen, Ø., Aksnes, D. L., & Kaartvedt, S. (2019). *From light, to vision, to species distribution*. Biodagen at the University of Bergen, 15. Mar, Bergen, Norway. **Invited.**
- Langbehn, T.J.**, Jørgensen, C., Ljungström, G., Andersen, K. H., Aksnes, D. L., & Enberg, K. (2019). *Can a food systems approach redefine ecosystem-based?* MARmaED Symposium, 25.- 26. May, Palma de Mallorca, Spain.
- Langbehn, T.J.**, & Varpe, Ø. (2019). *Poleward distribution of mesopelagic fish is constrained by seasonality in light*. BIARRITZ (Bridging International Activity and Related Research Into the Twilight Zone) workshop, 22.- 26. Jun, Southampton, UK. *[Flash talk]*.
- Langbehn, T.J.**, & Varpe, Ø. (2019). *Sea-ice loss boosts visual search: Fish foraging and changing pelagic interactions in polar oceans*. Polar Express, Polar Sciences Network, University of Bergen, 15. May, Bergen, Norway. *[Flash talk]*.
- Langbehn, T.J.**, Aksnes, D. L., Kaartvedt, S., Fiksen, Ø., & Jørgensen, C. (2018). *The deadly midnight sun: Visual predators and northern range limits in mesopelagic fish*. ICES annual science conference, 24.- 27. Sep, Hamburg, Germany. **Best Presentation Award.**
- Langbehn, T.J.**, & Varpe, Ø. (2018). *Sea-ice loss boosts visual search: Fish foraging and changing pelagic interactions in polar oceans*. ICES annual science conference, 24.- 27. Sep, Hamburg, Germany.
- Langbehn, T.J.** (2017). *Abundance and productivity of mesopelagic fish*. Ocean Conference as part of the naming ceremony for the new research vessel Dr. Fridtjof Nansen, 24. Mar, Oslo, Norway. *[Pecha Kucha]* **Invited.**
- Langbehn, T.J.**, & Varpe, Ø. (2015). *Photoperiodic implications on range expansion in polar marine ecosystems*. 6th YOMARES Conference, 16.- 18. Sep, Bremen, Germany. **Best Speaker Award.**

## Posters

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- Langbehn, T.J.**, Jørgensen, C., & Enberg, K. (2020). *Exploring the emergent niche of greater argentine (argentina silus) along gradients of topography, light and advection*. Ocean Sciences Meeting 2020, 16.- 21. Feb, San Diego, USA.
- Langbehn, T.J.**, Aarflot, J. M., & Varpe, Ø. (2019). *Sea-ice loss is bad news for large copepods*. Nansen Legacy Annual Meeting, 29.- 31. Oct, Oslo, Norway.
- Langbehn, T.J.**, Aksnes, D. L., Kaartvedt, S., Fiksen, Ø., & Jørgensen, C. (2019). *Poleward distribution of mesopelagic fish is constrained by seasonality in light*. BIARRITZ (Bridging International Activity and Related Research Into the Twilight Zone) workshop, 22.- 26. Jun, Southampton, UK.
- Langbehn, T.J.** (2017). *Limits to northwards range shifts of fish stocks under climate warming - a fish can't eat food it can't find*. MARmaED midterm meeting, 11.- 12. Oct, Oslo, Norway.
- Langbehn, T.J.**, Ljungström, G., Aksnes, D. L., Andersen, K. H., Olsen, Y., Ø., & Jørgensen, C. (2017). *Increasing marine food production through ecolabeling*. Havforskermøtet, 20. Sep - 23. Nov, Bergen, Norway.
- Langbehn, T.J.**, Ljungström, G., Fiksen, Ø., & Jørgensen, C. (2017). *Introducing a new hypothesis: Southward shifts of species distributions under climate change?* 3rd International Workshop on Trait-based Approaches to Ocean Life, 23.- 24. Mar, Bergen, Norway.

- Langbehn, T.J.** (2016). *Seasonal seas - limits to northward range shifts of marine organisms under climate warming*. MARmaED workshop, 28. Jul - 3. Aug, Banyuls sur mer, France.
- Langbehn, T.J.**, & Varpe, Ø. (2016). *Photoperiodic implications on visual foraging in polar marine ecosystems*. 16th Congress of the International Society for Behavioural Ecology, 28. Jul - 3. Aug, Exeter, UK.
- Langbehn, T.J.**, & Varpe, Ø. (2016). *Photoperiodic implications on visual foraging in polar marine ecosystems*. 7th YOUMARES Conference, 11.- 13. Sep, Hamburg, Germany. **Best Poster Award**.
- Langbehn, T.J.**, & Varpe, Ø. (2016). *Photoperiodic implications on visual foraging in polar marine ecosystems*. IMBER ClimEco5 Summer School, 10.- 17. Aug, Natal, Brazil. **Student Choice and Special Mention Poster Award**.
- Langbehn, T.J.**, & Varpe, Ø. (2015). *Visual search as a trait: Consequences of sea ice change in high latitude oceans*. 2nd International Workshop on Trait-based Approaches to Ocean Life, 5.- 8. Oct, Waterville, New Hampshire, USA.
- Langbehn, T.J.**, & Landschoff, J. (2012). *Live fast, die young: What do changes in age structure tell us about management of cod stocks?* Graduate Marine and Fisheries Sciences Summer Programme, Jun 2010, University of Iceland, Reykjavík, iceland. **Best Student Poster**.