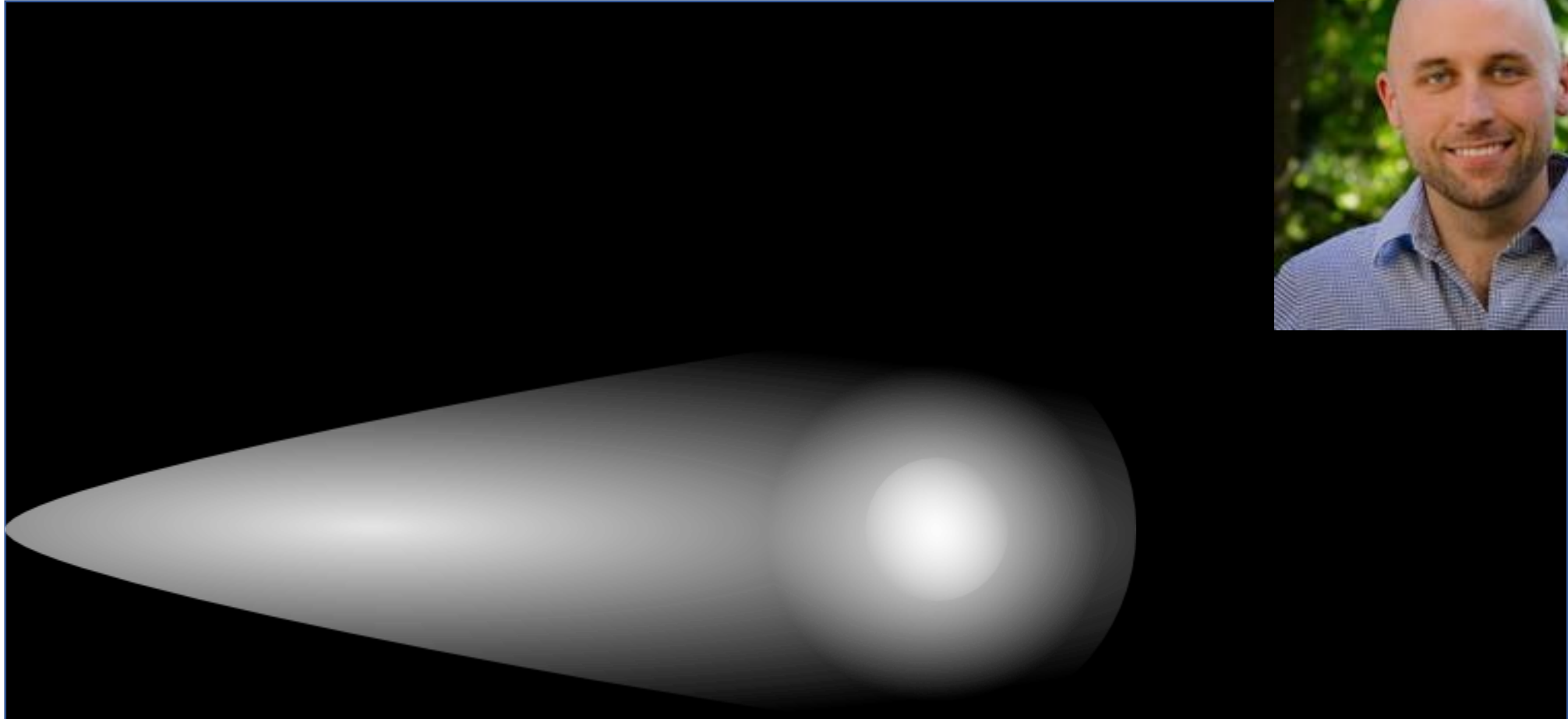


Luselarver med refleksvest



Sussie Dalvin, Cameron Thompson, Samantha Bui, Rasmus Skern-Mauritzen



'Black Box'

Monitoring Focus

(Wild fish, Farmed fish, Sentinal Cages)

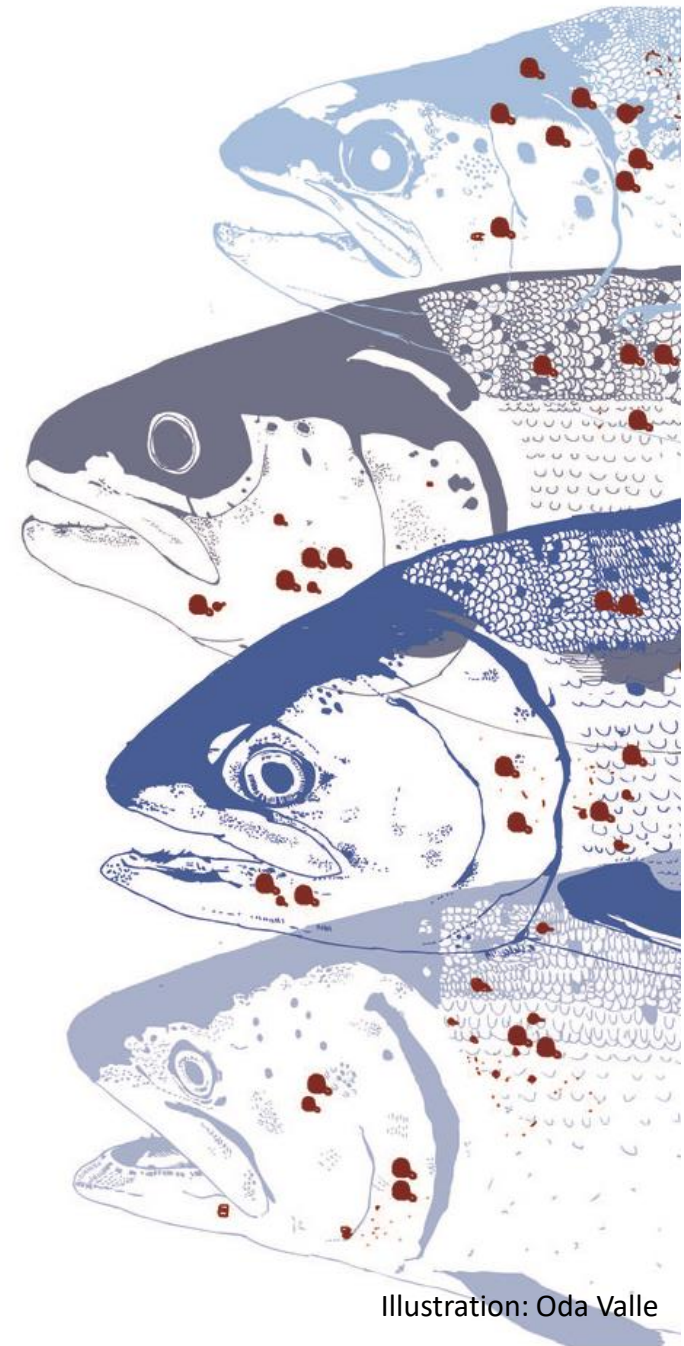
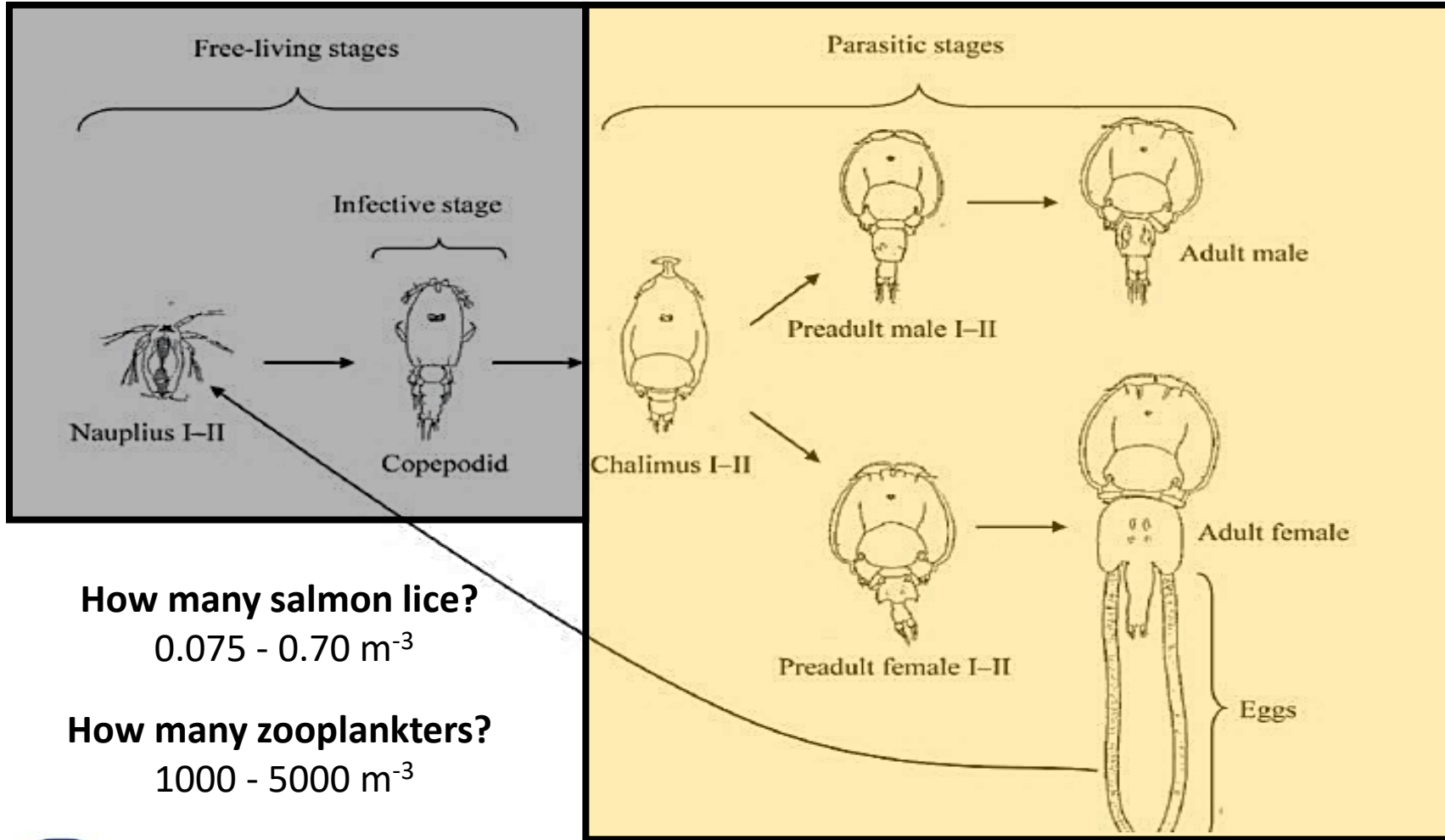


Illustration: Oda Valle



Figure 1. Developmental stages of *Lepeophtheirus salmonis* (modified from Schram, 1993). (Okechukwu et al 2013)

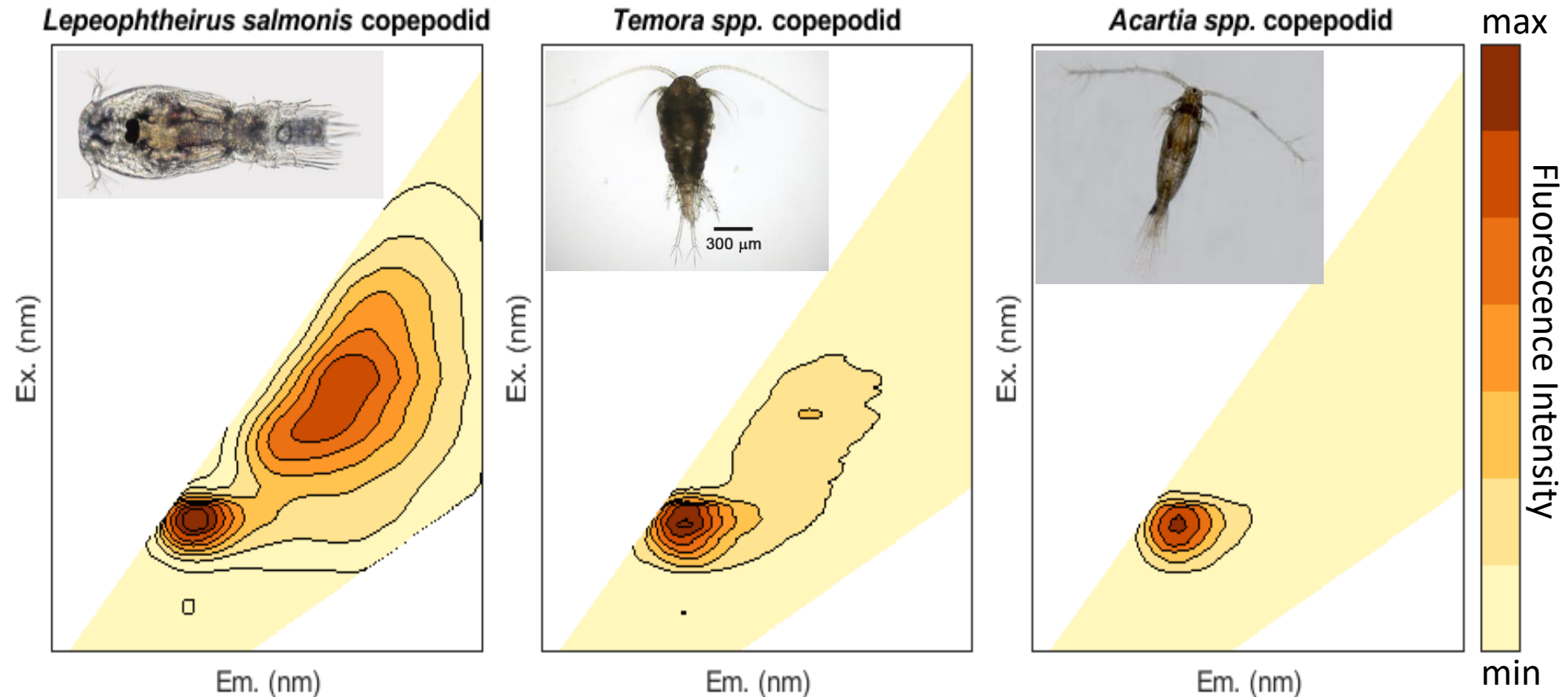
Why is the black box important?

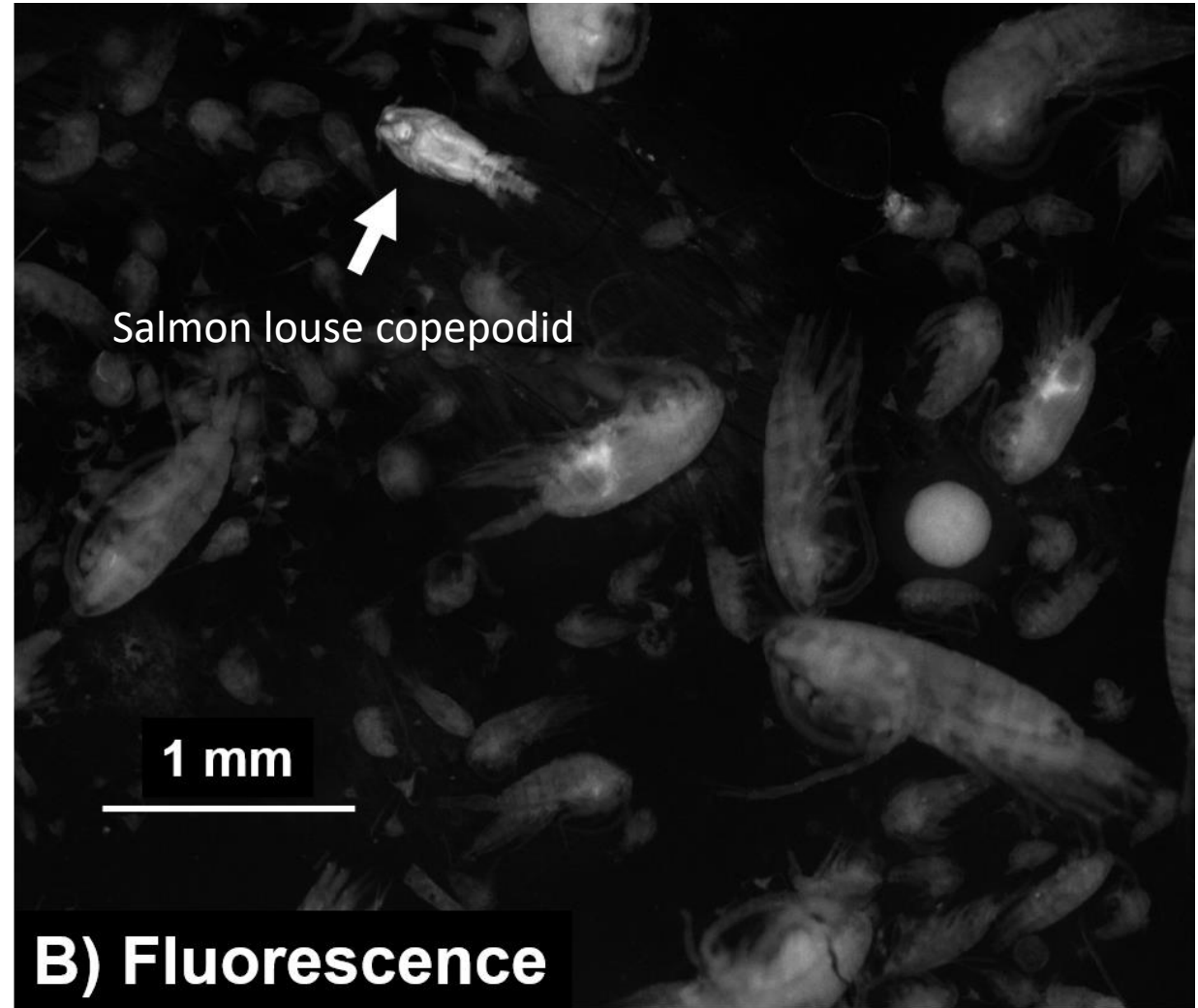
- Larval dispersal is governed by depth distribution
 - Depth distribution is influenced by salinity, pressure and light
 - Integration in nature?
- Present field estimates of larval abundance are indirect
 - Count lice on fish to investigate copepodid distribution
- Fluorolice: Aim to develop a method for reliable and rapid enumeration of planktonic stages

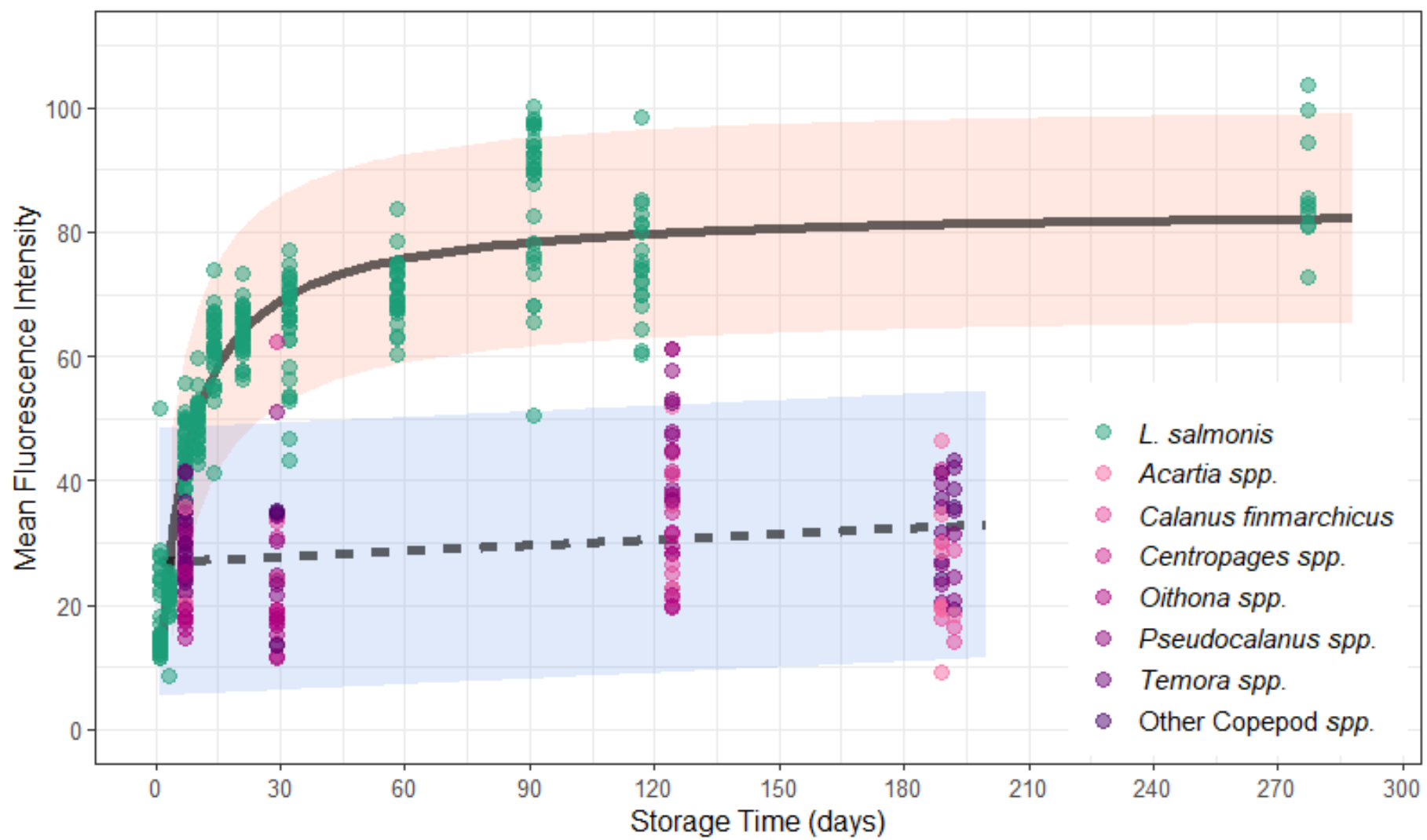


Finding the right light

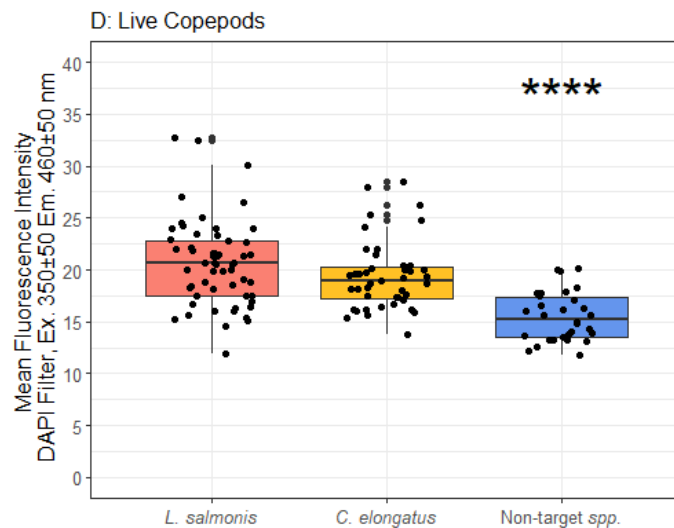
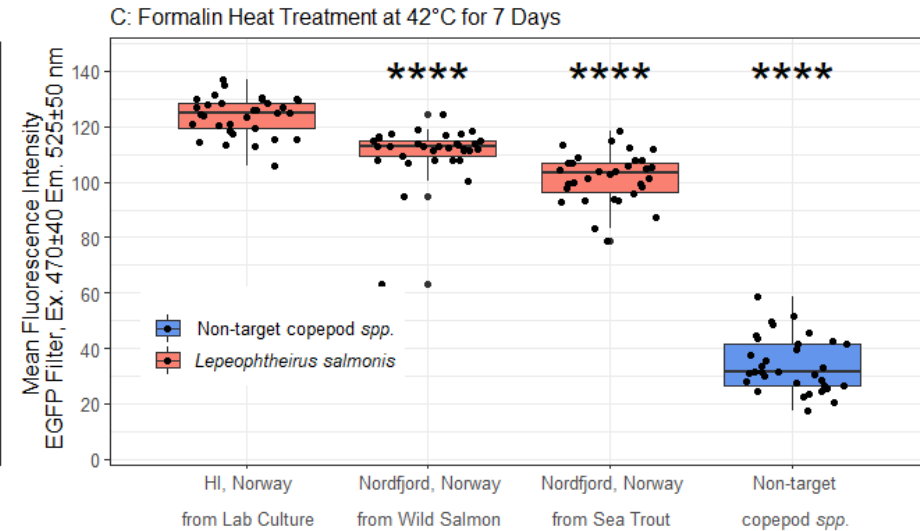
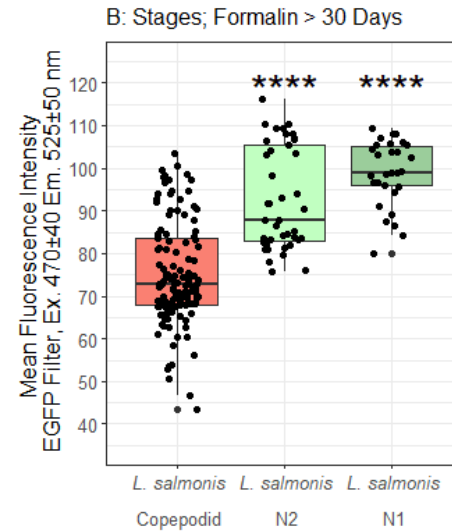
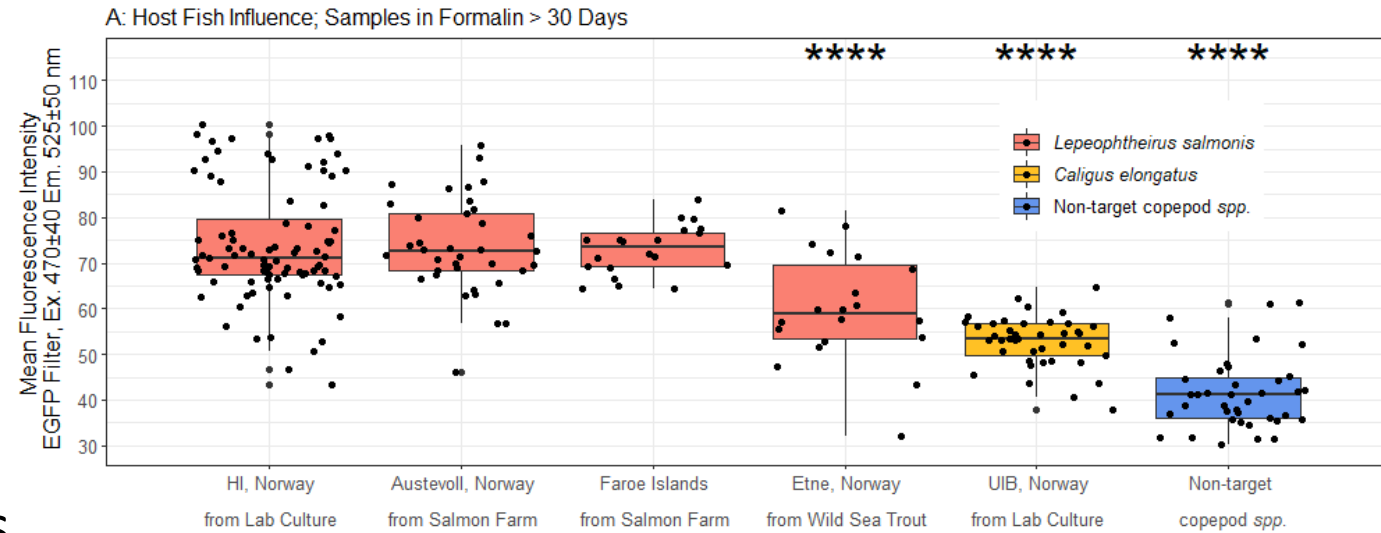
- 3D fluorescence spectrometry: create fluorescence fingerprints (EEMs)
- Identify peaks with the greatest fluorescence difference



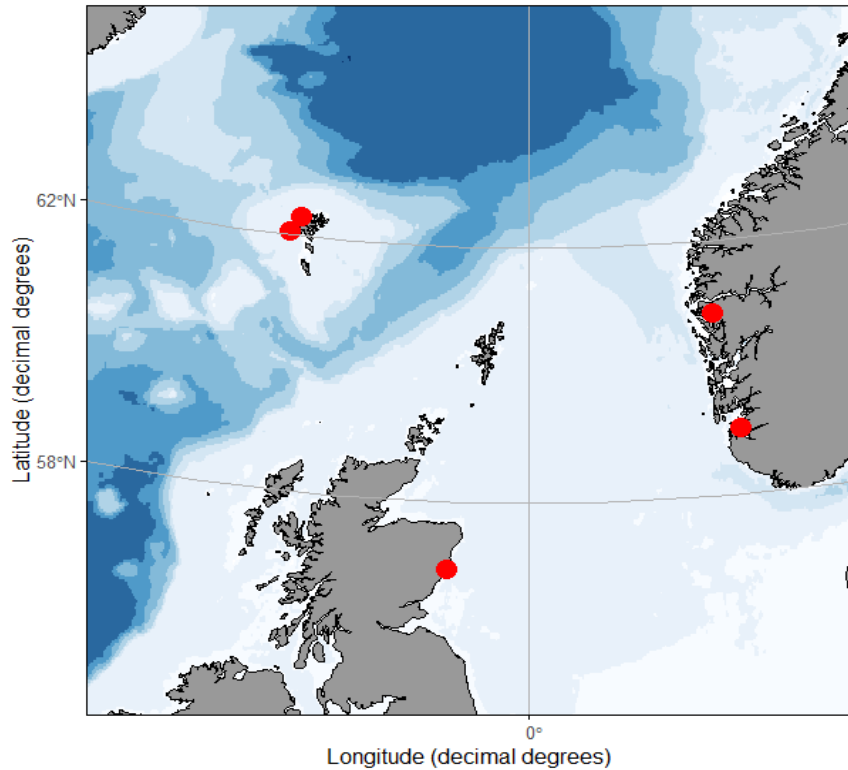




- Salmon lice are the brightest
- Naupli are brighter than copepodids
- Storage in formalin can be shortened by heat treatment
- Method does not work on live animals



Ring Test



59 zooplankton samples, 5 sites, 2 seasons

12,000 zooplankters per sample,
1 – 24 salmon lice, 3 counters (labs)



82% success, 20 min per sample (12000 animals)

Received: 15 November 2021 | Revised: 14 December 2021 | Accepted: 9 January 2022

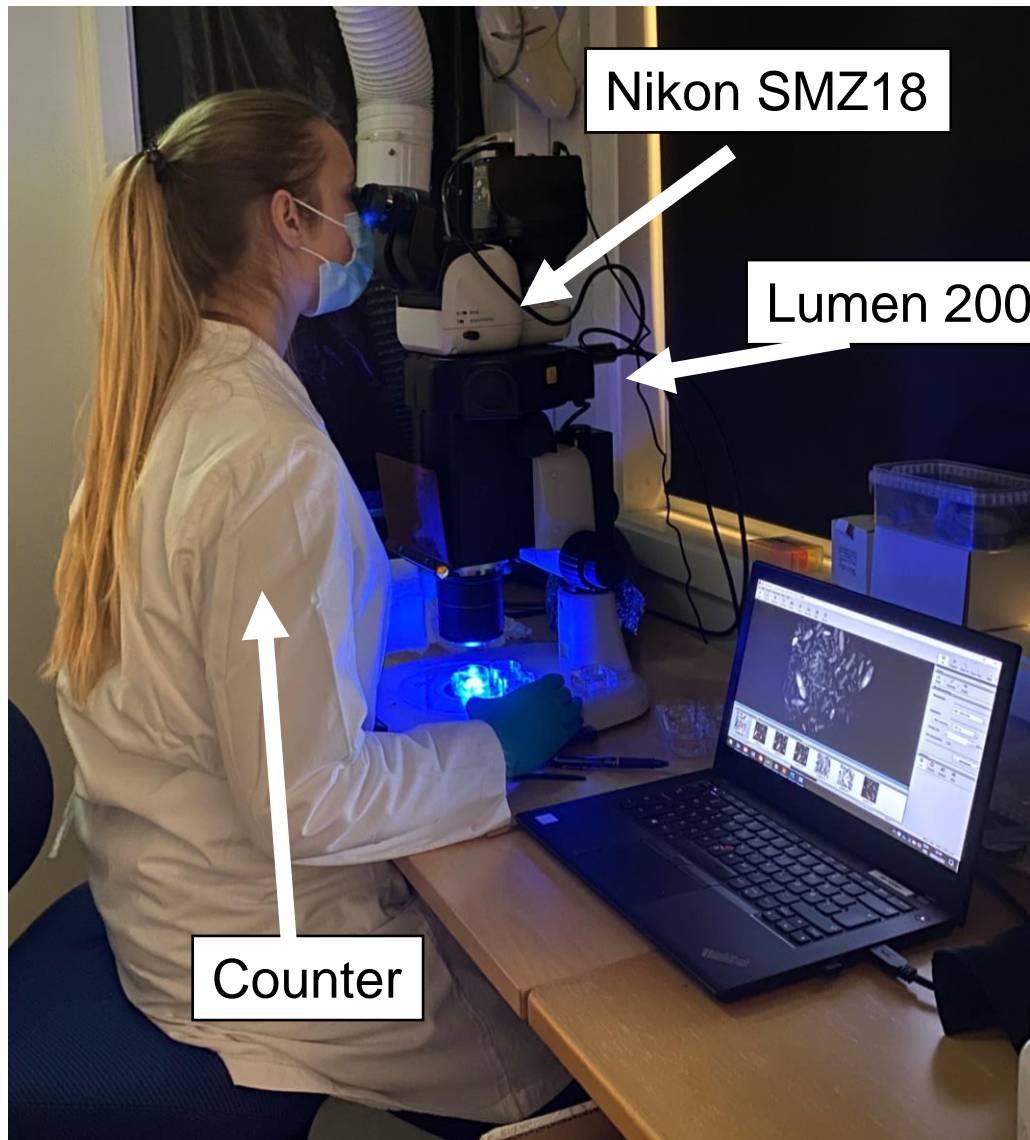
DOI: 10.1111/are.15750

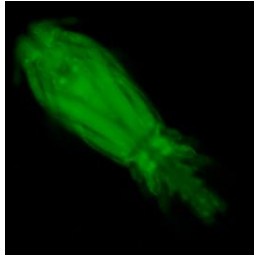
ORIGINAL ARTICLE



A novel method for the rapid enumeration of planktonic salmon lice in a mixed zooplankton assemblage using fluorescence

Cameron R. S. Thompson¹ | James Bron² | Samantha Bui³ | Sussie Dalvin¹ | Mark John Fordyce⁴ | Gunnvør á Norði⁵ | Rasmus Skern-Mauritzen¹





Problem solved?

- Analysis bottleneck successfully addressed :
 - With appropriate equipment sample analysis is no longer the limiting factor.
- A new bottleneck has emerged:
 - Acquiring samples of sufficient size and with appropriate parallels
 - Making analysis commercially available



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