



55th Annual Conference



Shellfish
Association of Great Britain

#SAGB55

European Lobster Settlement Index (ELSI) project

Fisheries Science Industry
Partnership (FISP)





Background

- ▶ Larval settlement monitoring programs established since 1980s to forecast trends in stock:
 - ▶ Western rock lobster (*Panulirus cygnus*) – Australia (Phillips & Melville-Smith, 2005)
 - ▶ American lobster (*Homarus americanus*) – USA & Canada (Wahle *et al.*, 2009)
- ▶ Gather data on Early Benthic Phase (EBP) lobsters to predict harvest stocks 6-8 years in advance once the of-year EBP lobsters have been recruited into the fishery
 - ▶ Using Larval Settlement Index
- ▶ Larval Settlement Index in Maine, USA
 - ▶ Forecasted trends for harvest correlate well with reported landings
 - ▶ Recruitment reference points provide useful threshold for management decisions

Settlement Cages



- Early Benthic Phase Lobster
- Diversity of seabed

Plankton tows

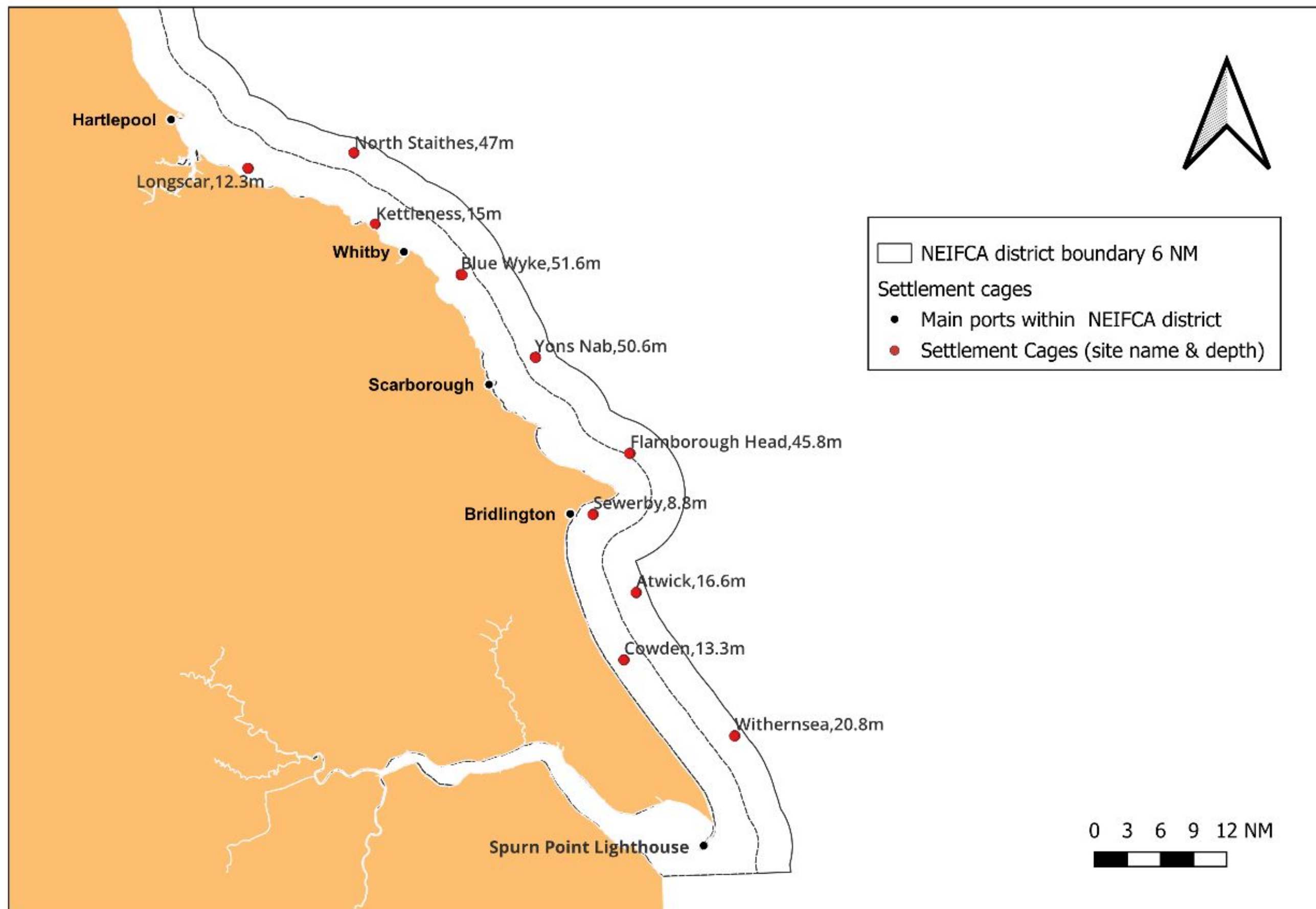


- Lobster larvae abundance
- Seasonality

Growth Study

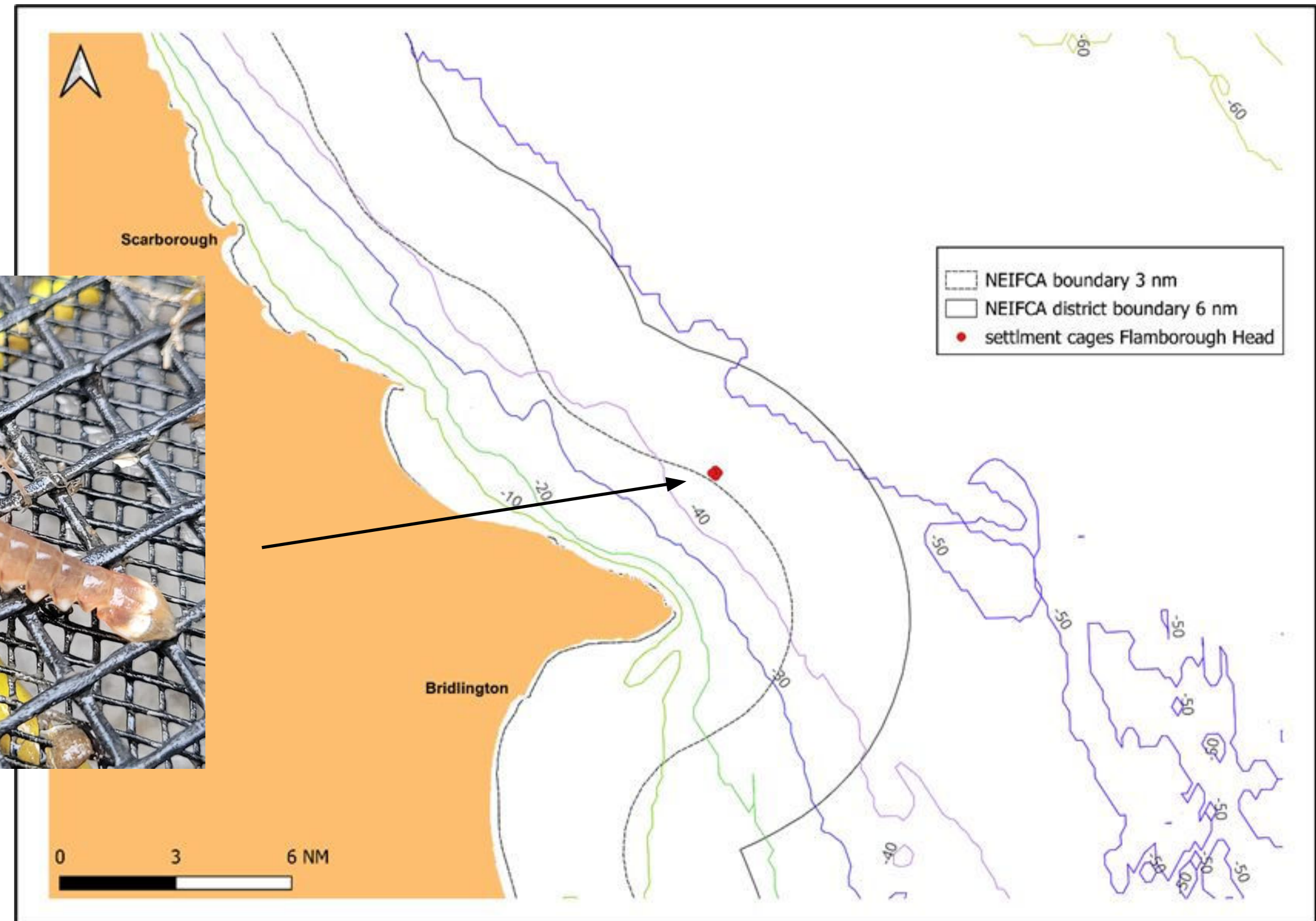


- Lobster growth rate

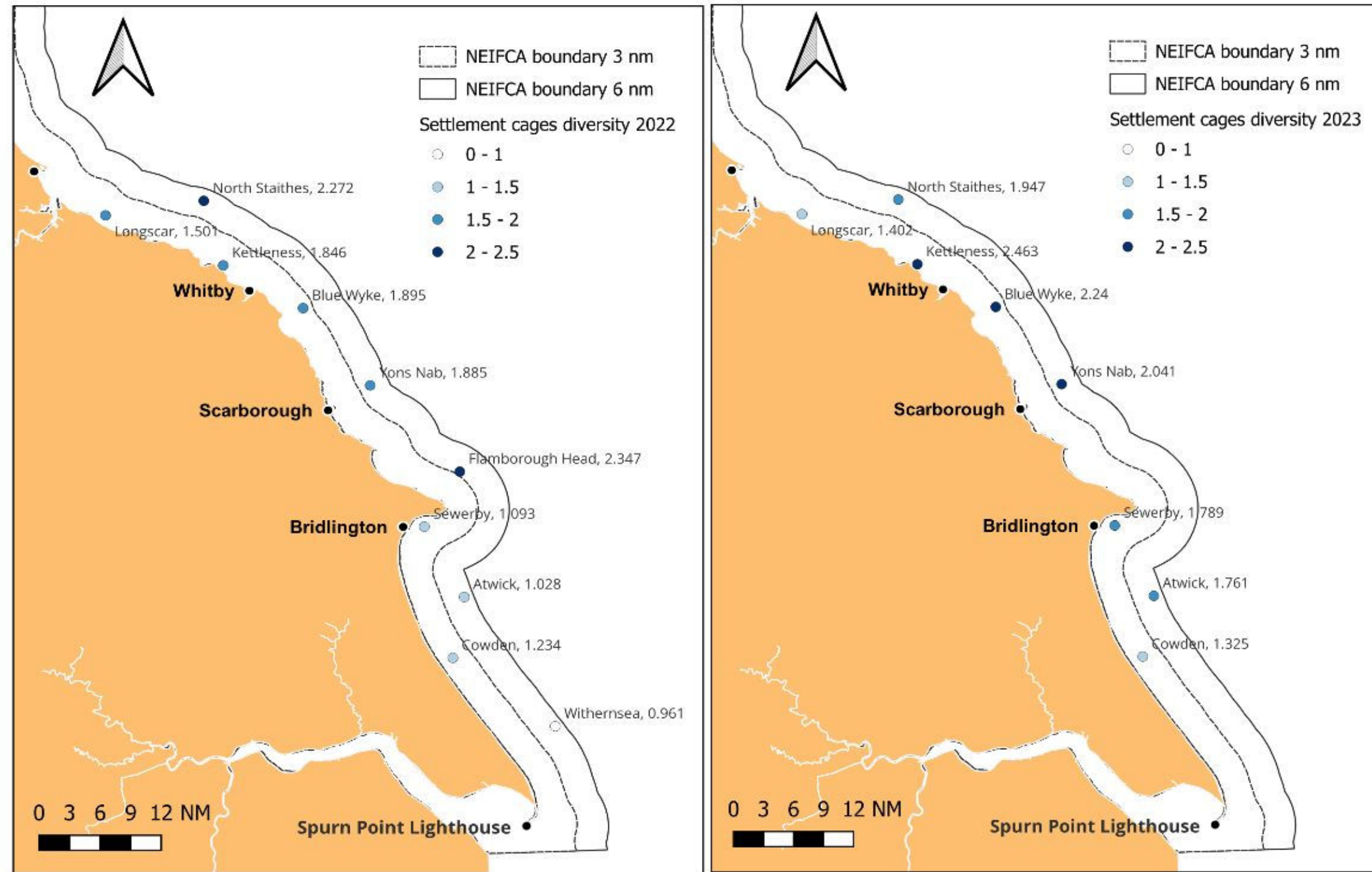


Outcome

1 EBP
lobster



Diversity



- High species diversity
 - 215 species identified
- □ higher species interaction (predatory/competitive)
- Rocklings present in cages
 - up to 6 per cage at some sites
 - Predatory
 - Feed on small fish, molluscs, polychaetes and crustaceans

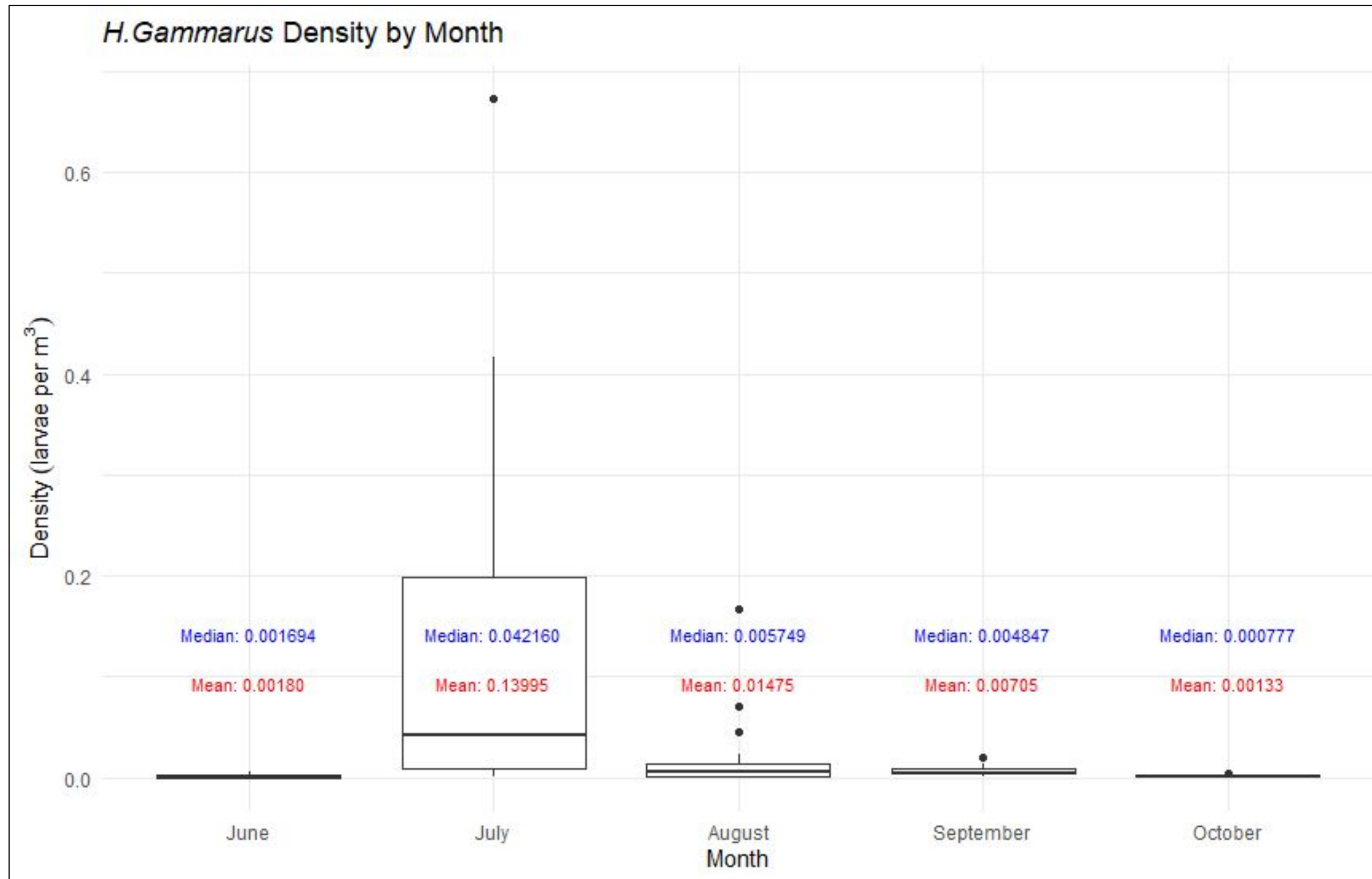


Ciliata mustela – 5-bearded rockling - MARLIN

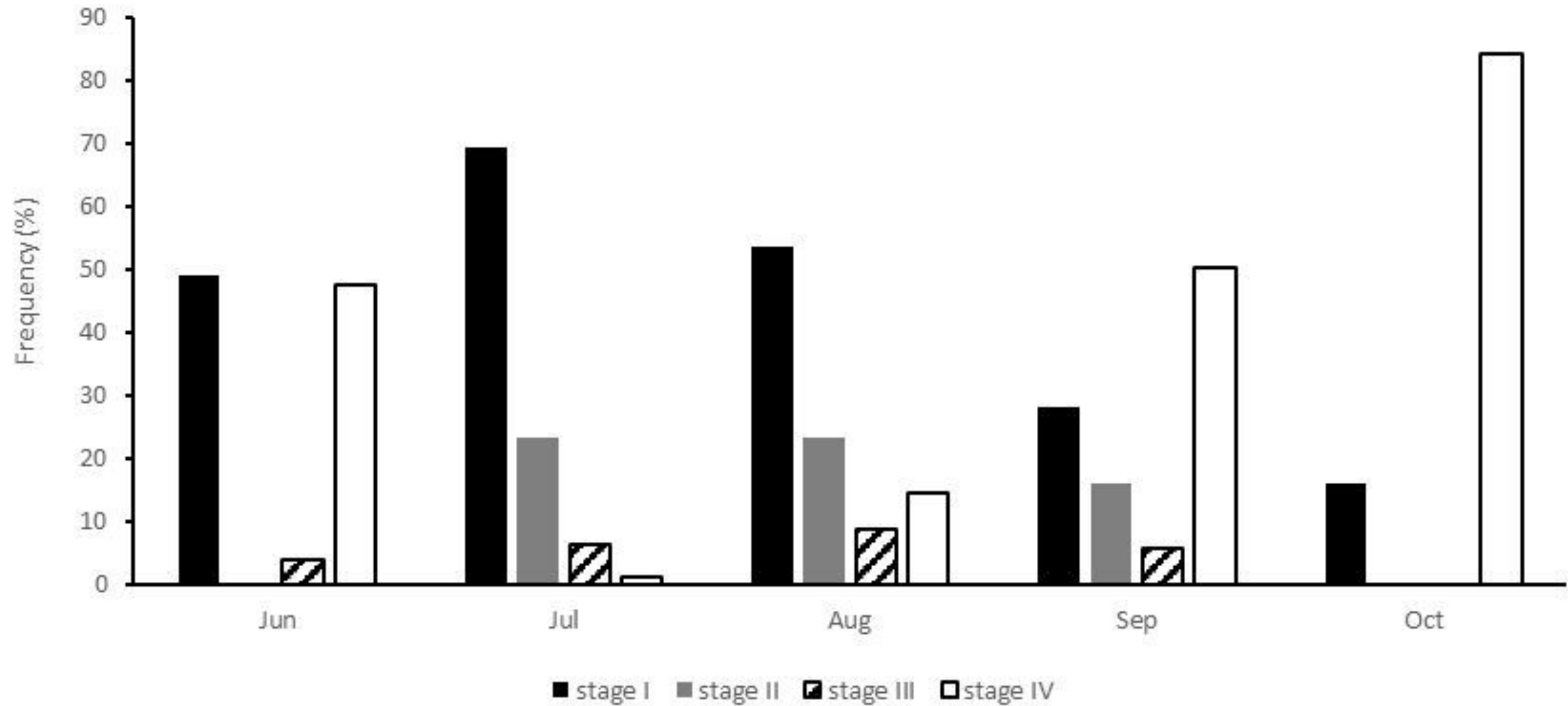


Gaidropsarus vulgaris– 3-bearded rockling – European Marine Life

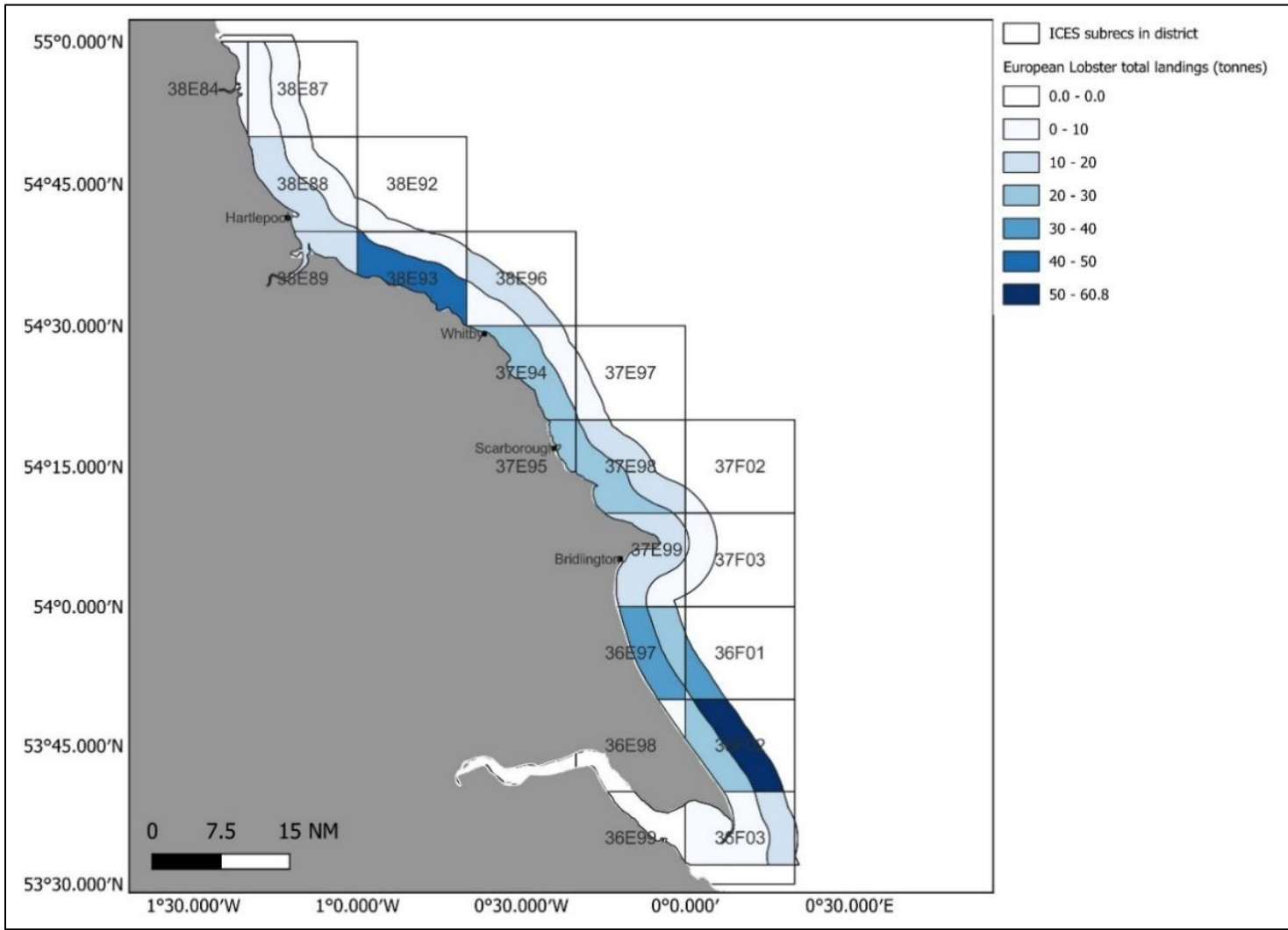
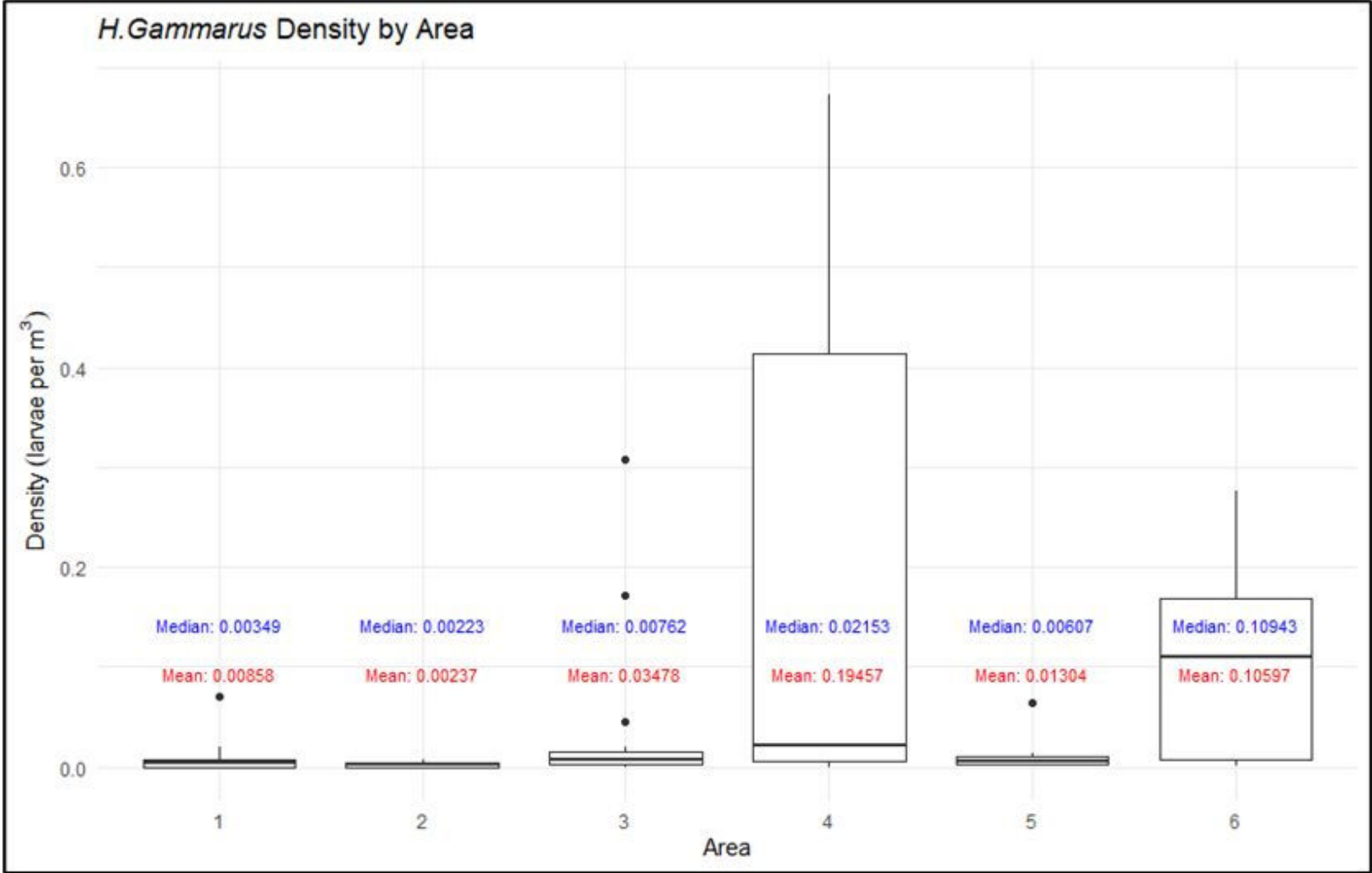
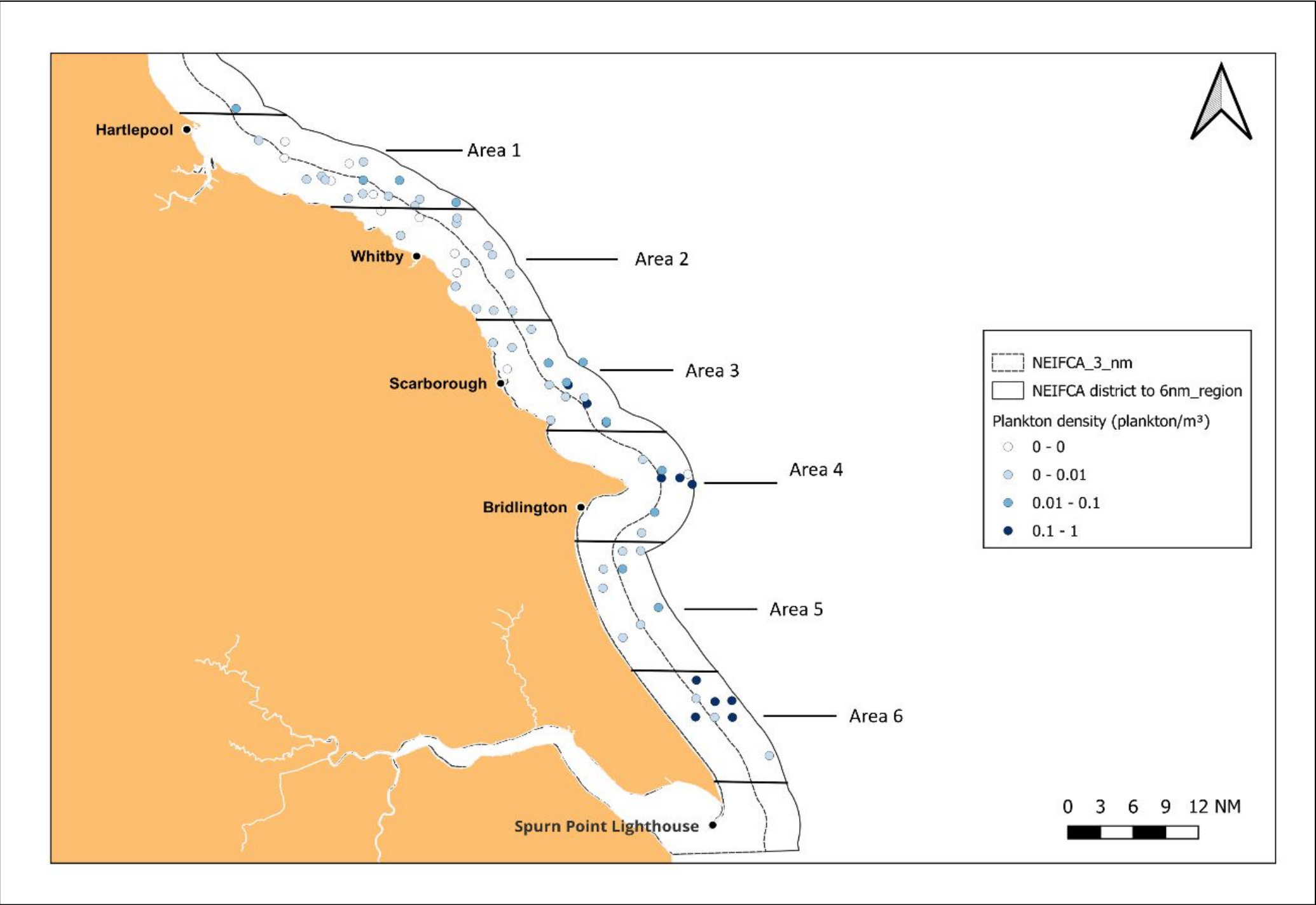
Plankton



Hommarus gammarus planktonic larvae (stage I-IV)



Abundance & Density of planktonic larvae



Conclusion

- Lower density of juvenile lobsters
- Higher diversity
- Cages and substrate are not attractive/suitable enough



Next steps:

- Plankton tows
 - Increase data gathering
 - Building timeseries
 - Identifying areas with high densities
- Deployment of settlement collectors
 - Focus in areas with high plankton abundance
- Settlement collectors
 - Testing different types of sediments
 - Reducing predation

Questions?

With thanks to:

- DEFRA – FISP Team
- HFIG
- FV Challenge
- FV Provider
- FV Seiont A
- University of Hull



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