Understanding the underlying mechanisms affecting growth of SPF

An experimental meta-analytical approach

SPF Symposium 2026

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Small Pelagic Fish:
New Frontiers in Science and Sustainable Management

November 7 - 11, 2022
Lisbon, Portugal

PICES · ICES CIEM · Food and Agriculture Organization of the United Nations

ENDORSED BY 2021 2030 United Nations Decade of Ocean Science for Sustainable Development

- Part of **Activity 3** of the WGSPF
  - Drivers of growth, reproduction and survival

Understanding the underlying mechanisms affecting growth of small pelagic fish

An experimental meta-analytical approach

Florian Berg, Marta Moyano, Jennifer Boldt, Quentin Queiros, Tómas Árnason, Martin Lindegren, and Arild Folkvord

Have you conducted an experiment with Small Pelagic Fish?

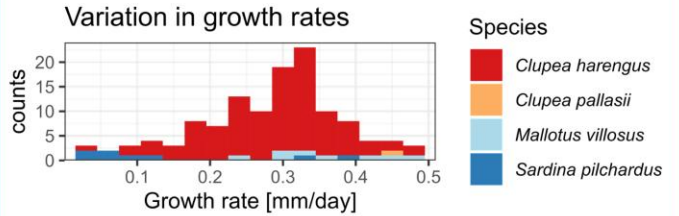
Yes

No

See results or get a drink

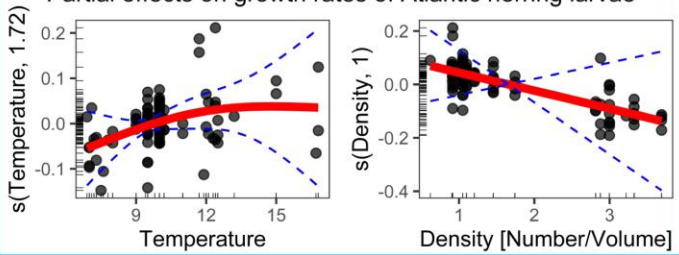
SCAN ME

Preliminary results



Initial GAMs indicate **significant effects** of **temperature** and **larval density**, but not *salinity* on growth rates. Other factors, e.g. food, need to be investigated further.

Partial effects on growth rates of Atlantic herring larvae

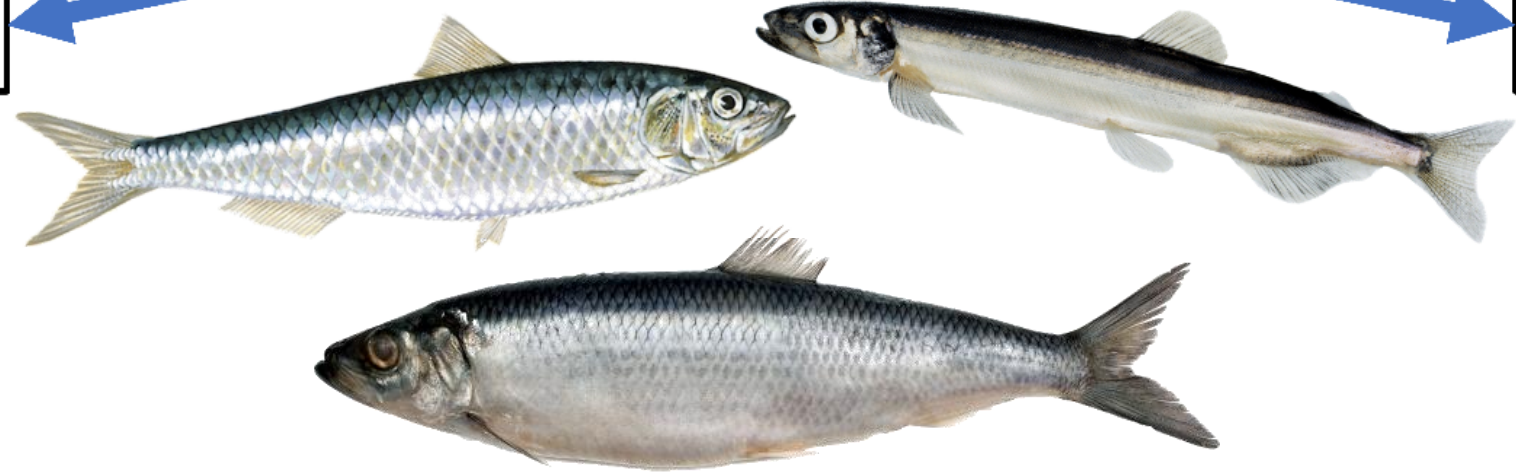


Please contact Florian Berg (florian.berg@hi.no) for further questions, suggestions, input, help, ...

Have you conducted an experiment with Small Pelagic Fish?

Yes

No

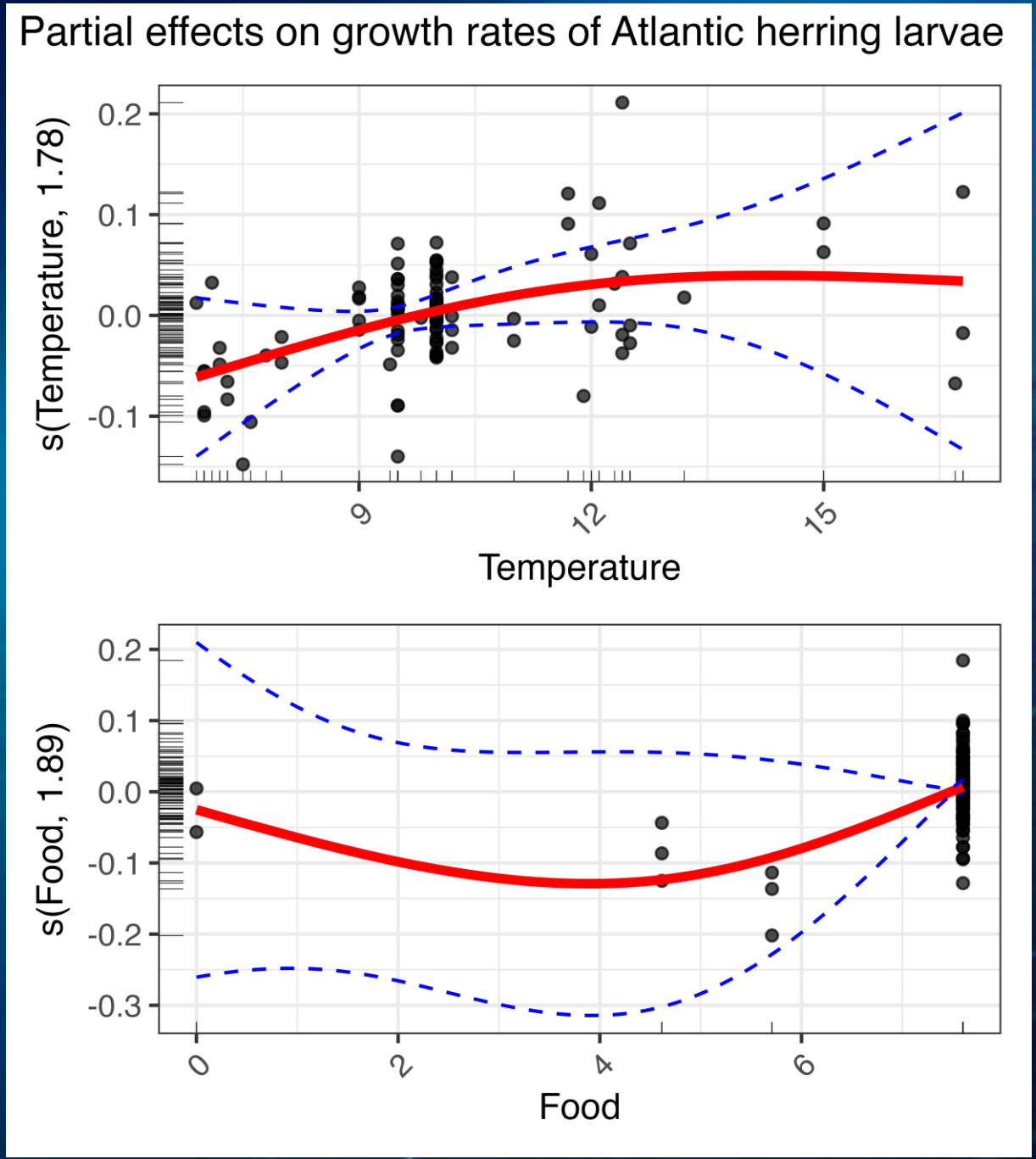


If yes …

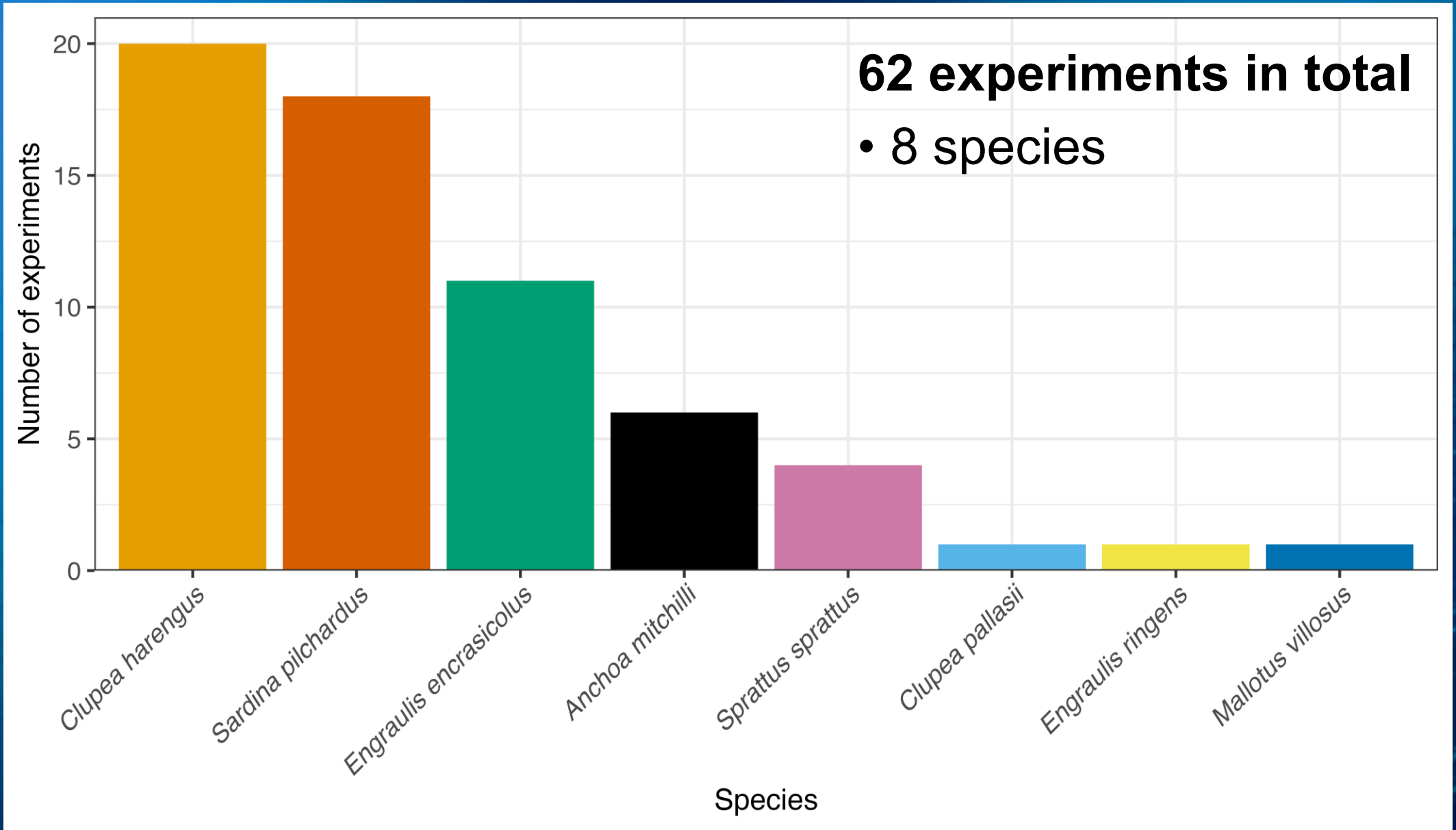
Marta Moyano
Jennifer Boldt
Quentin Queiros
Tómas Árnason
Martin Lindegren
Arild Folkvord
Claudia Ofelio
Myron A. Peck
Edward Houde
Susana Garrido

Conclusion

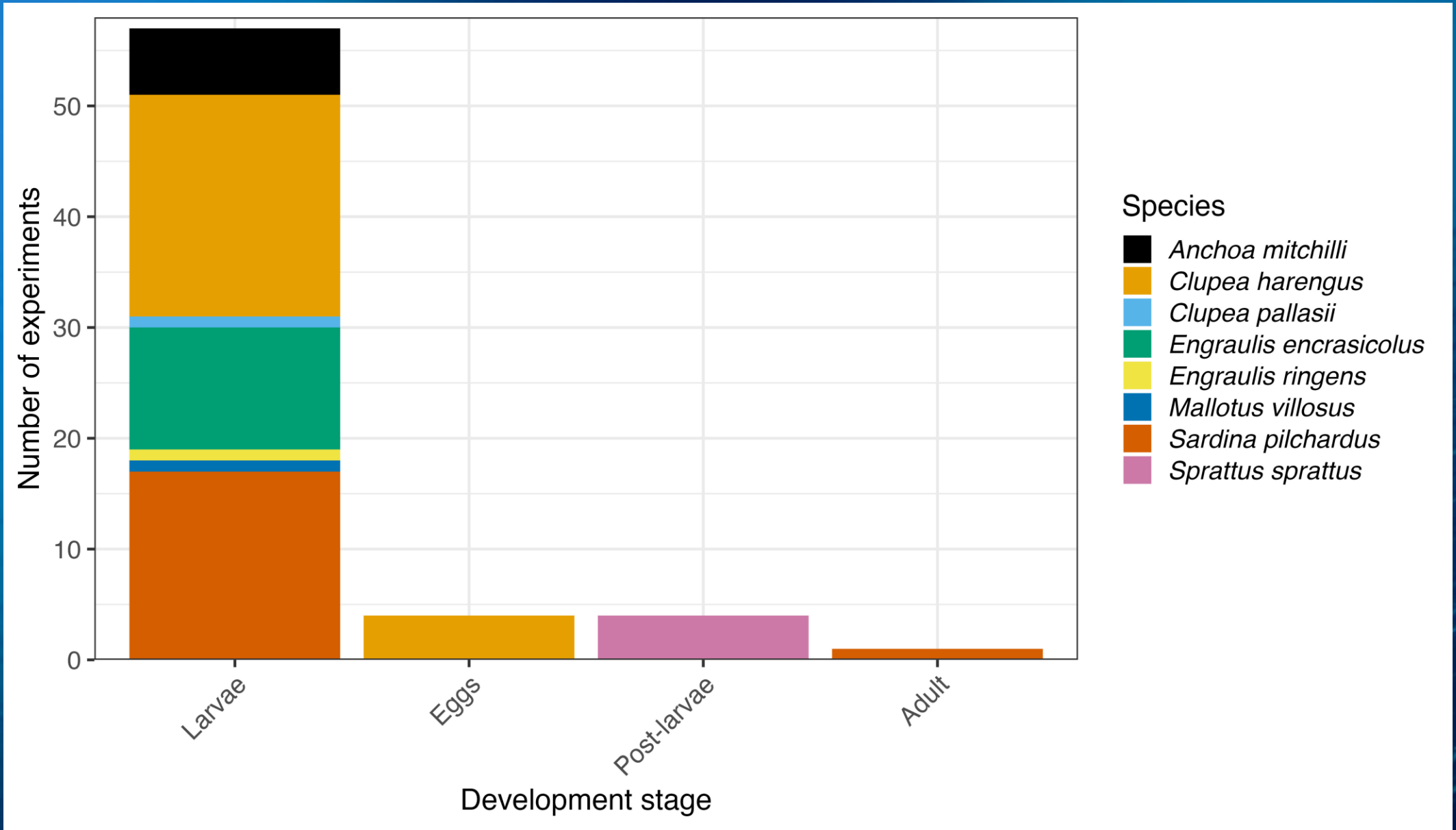
- Growth rates varied substantially
- Primary factors influencing growth
  - Temperature
  - Food availability
  - Rearing density
- Empirical foundation for improving parameterization to predict responses of SPF to environmental drivers.



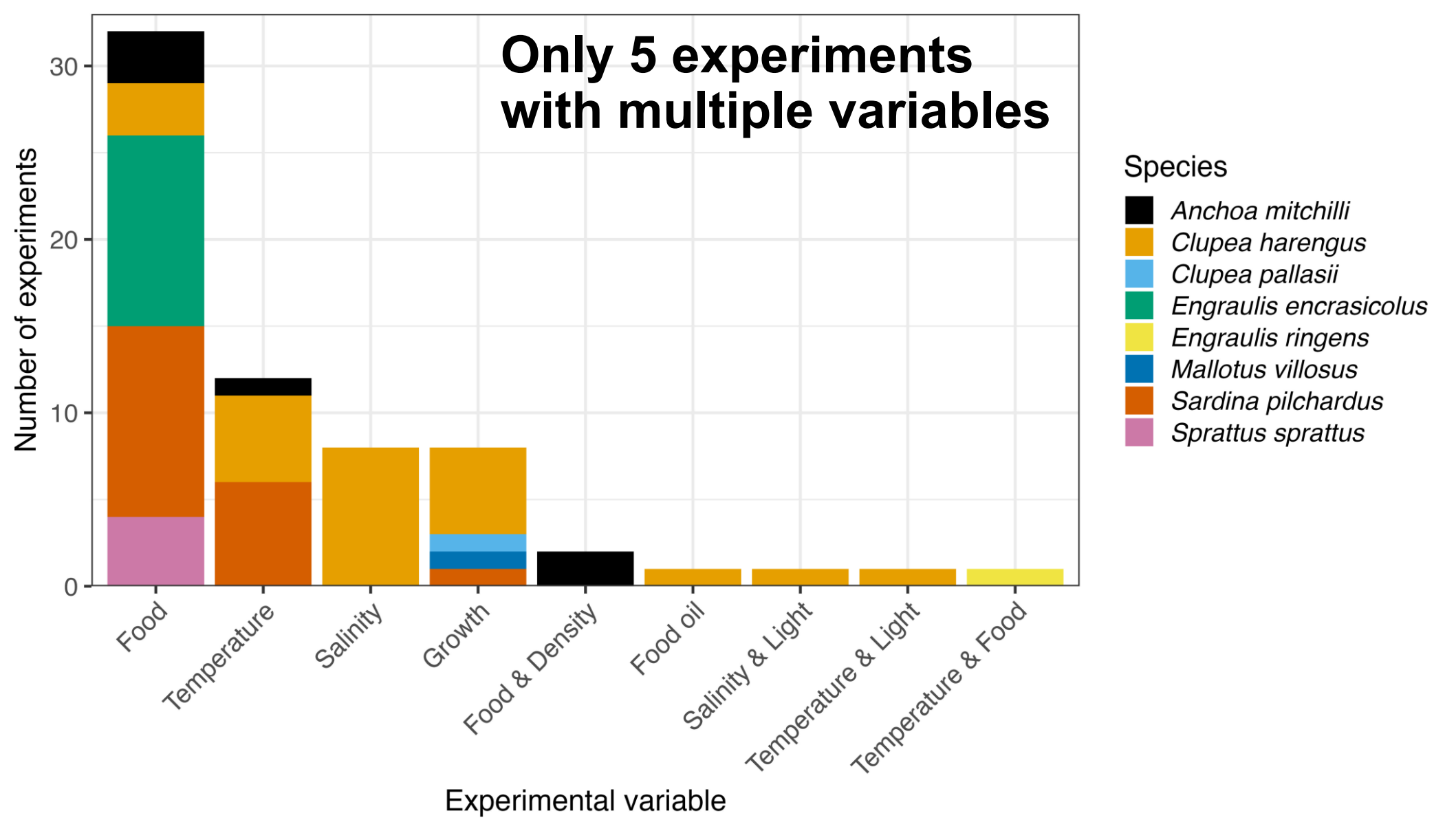
Experiments per species



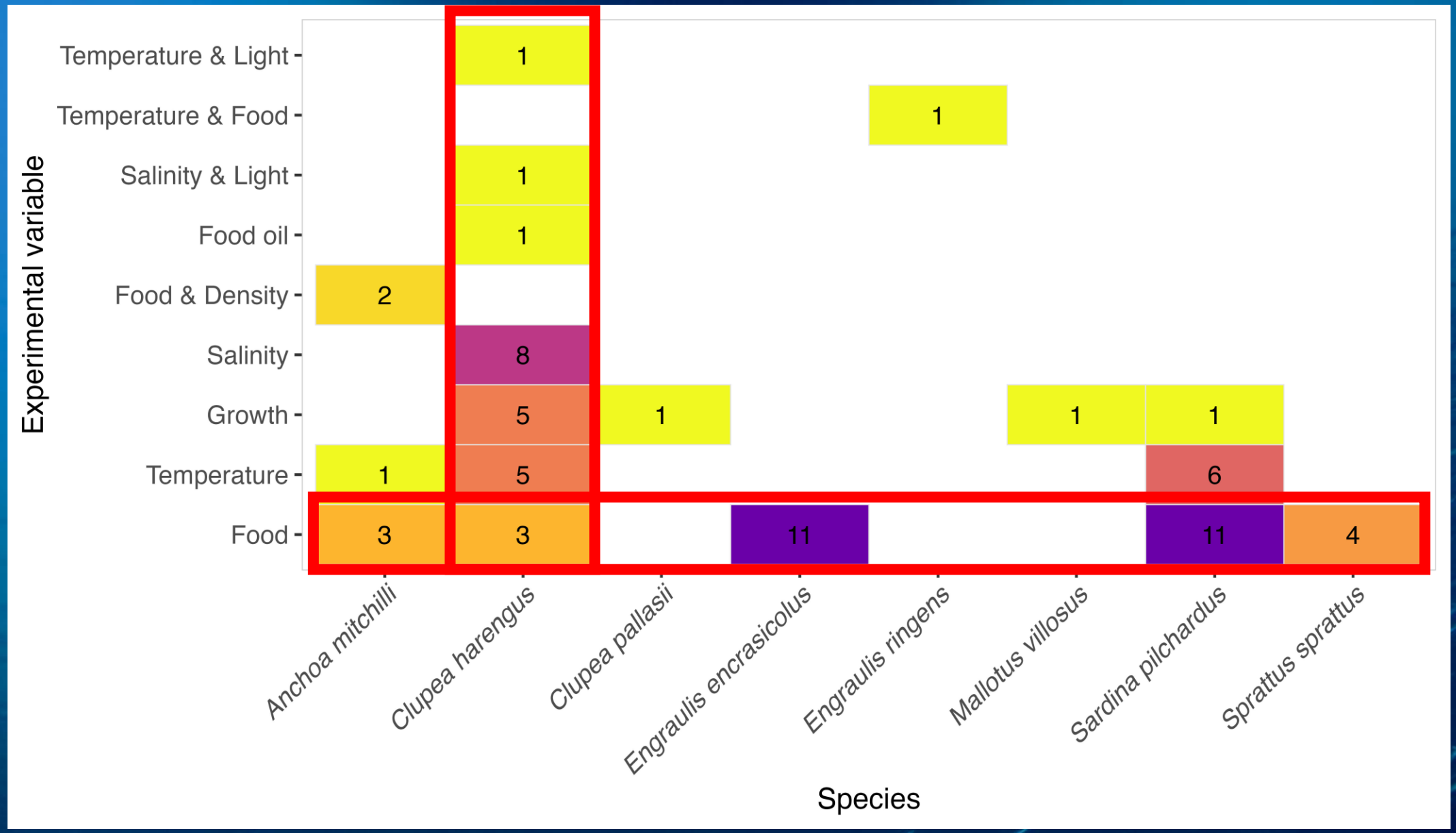
Experiments per development stage



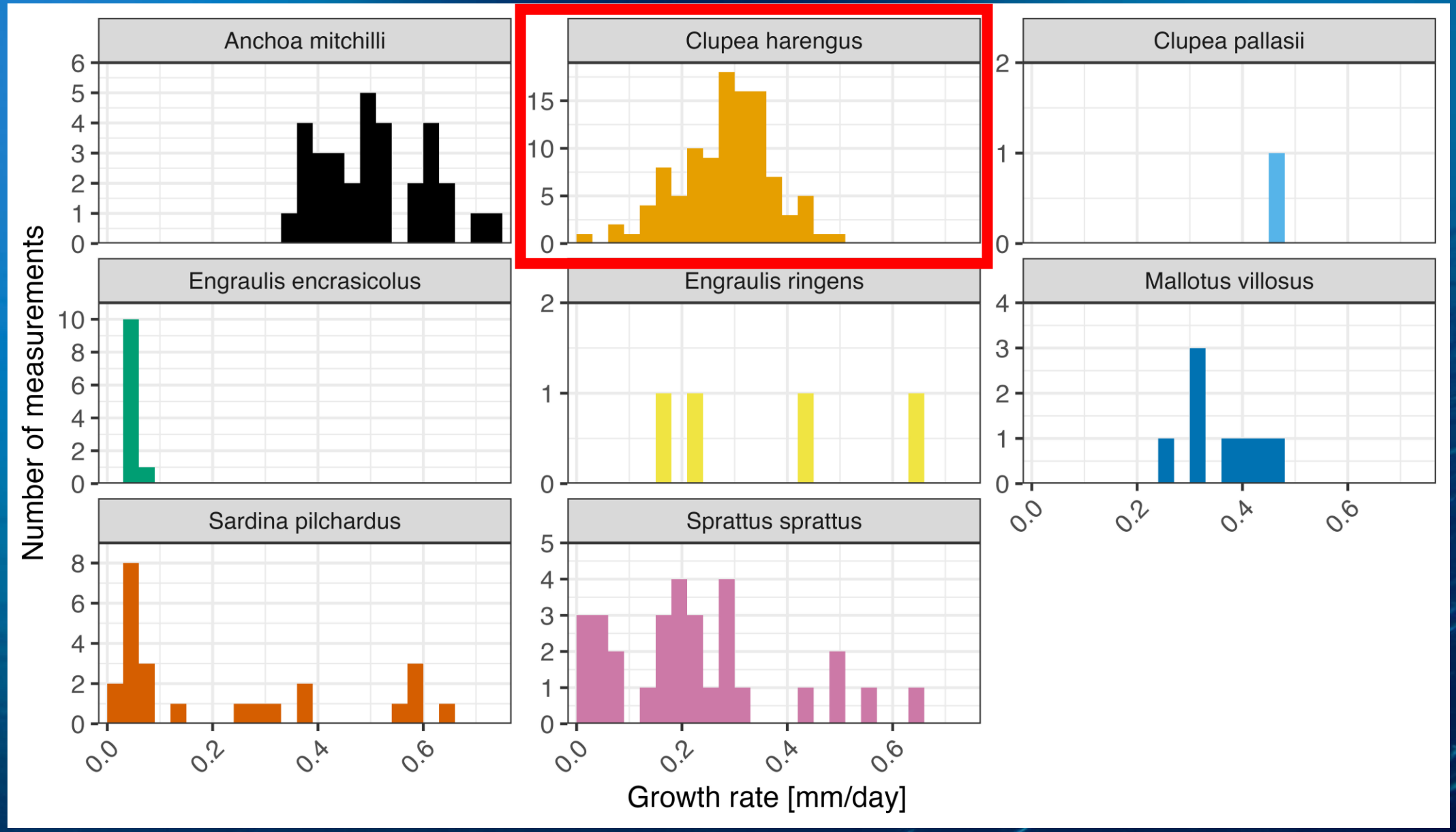
Experimental variables



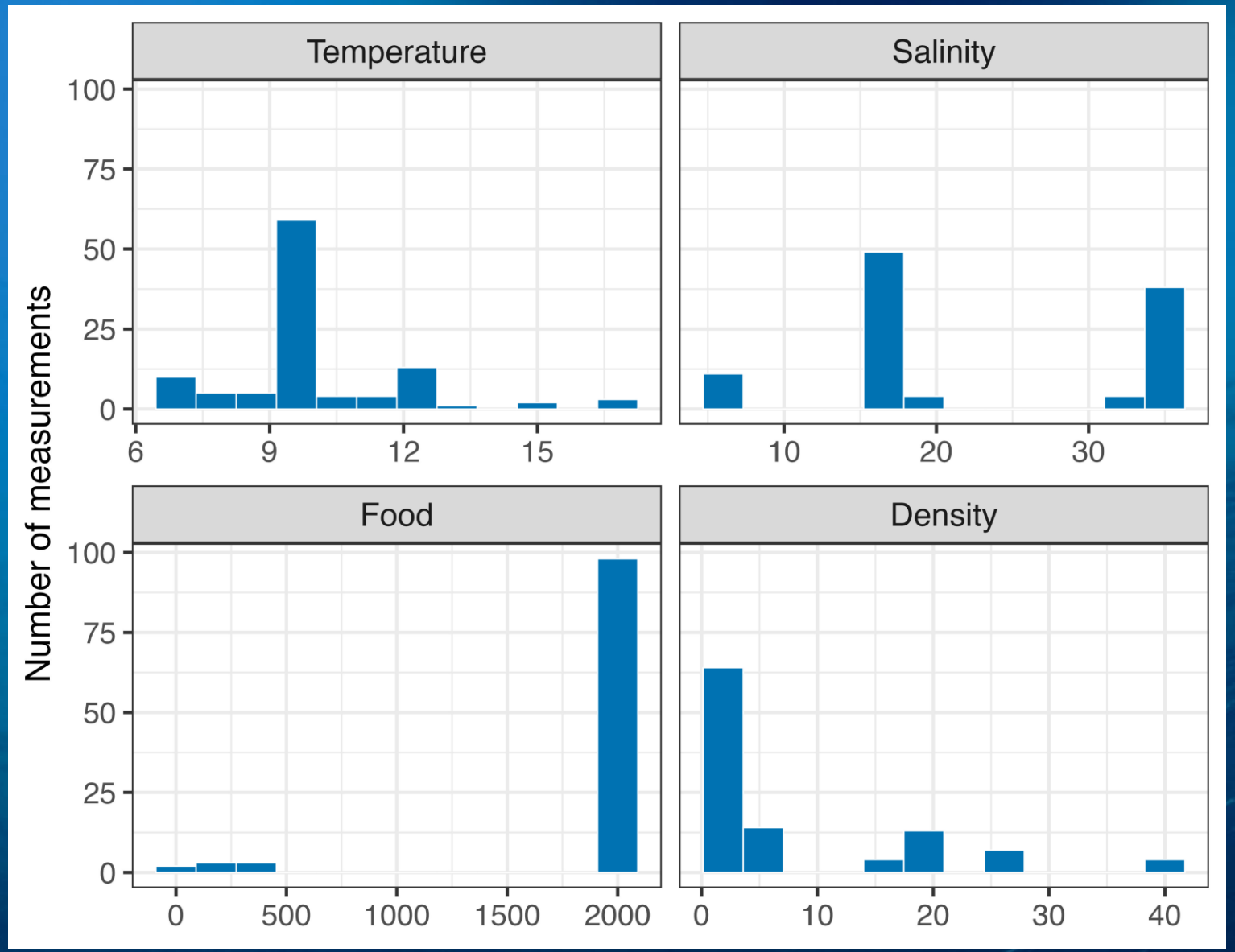
Experimental variables

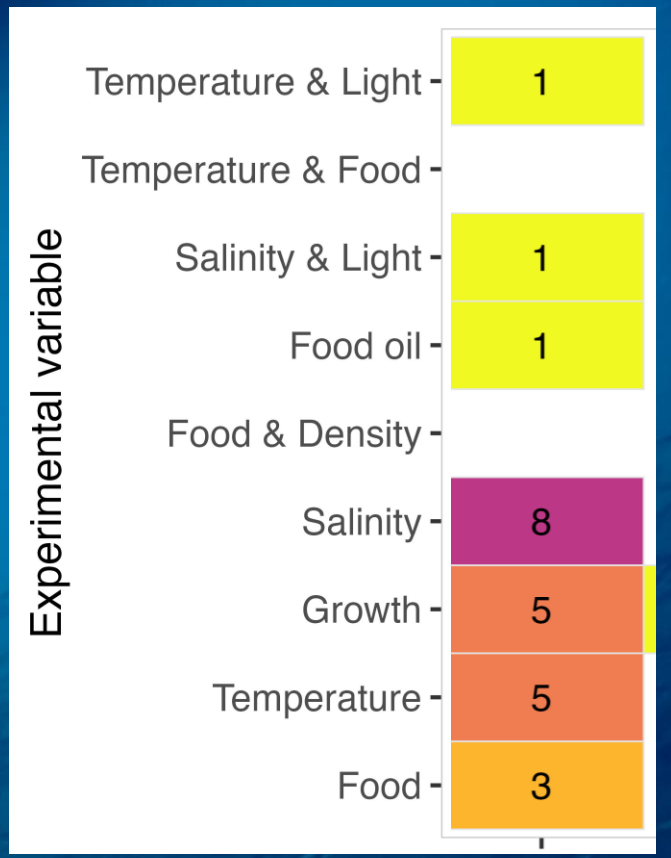


Variation on growth rates



Atlantic herring





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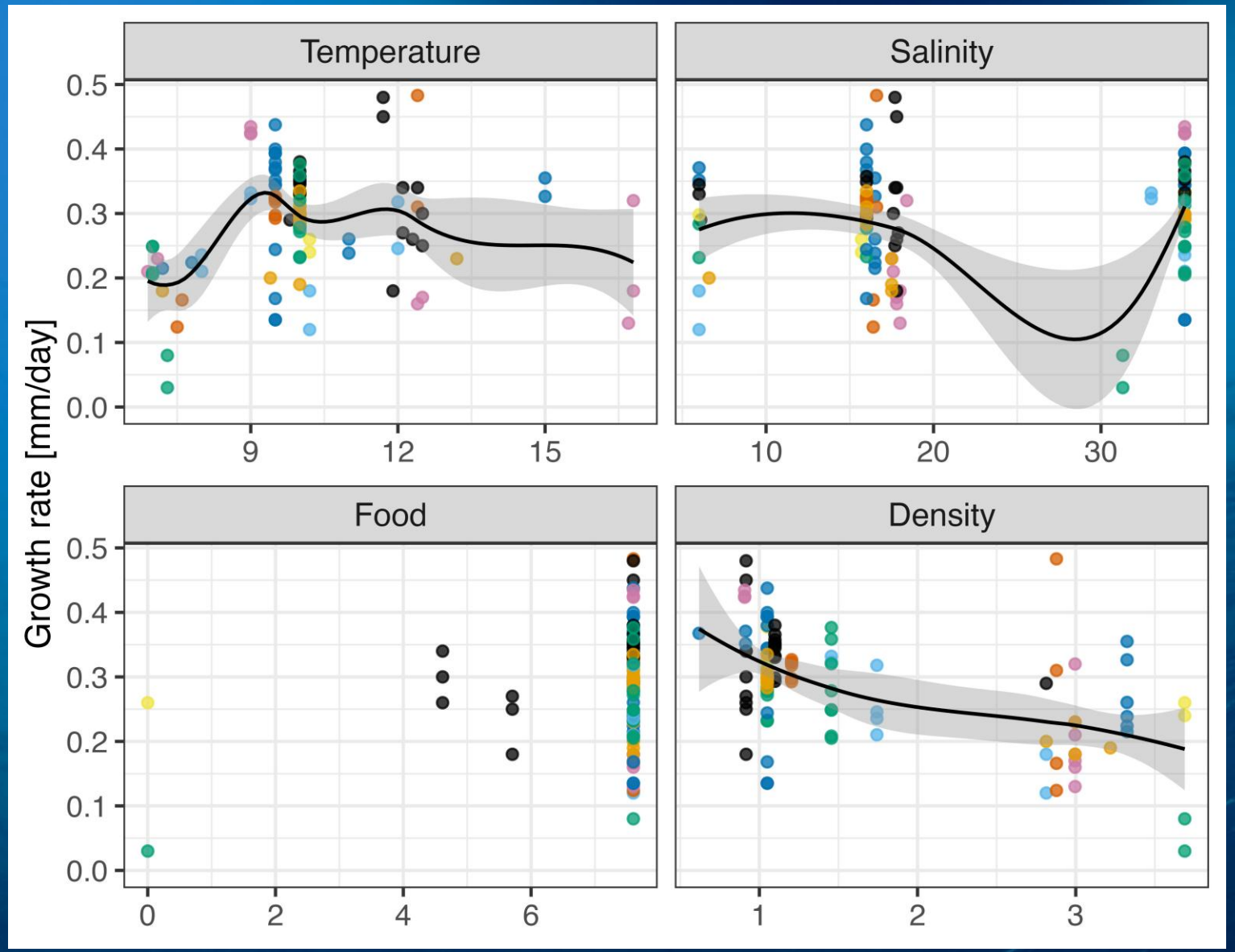

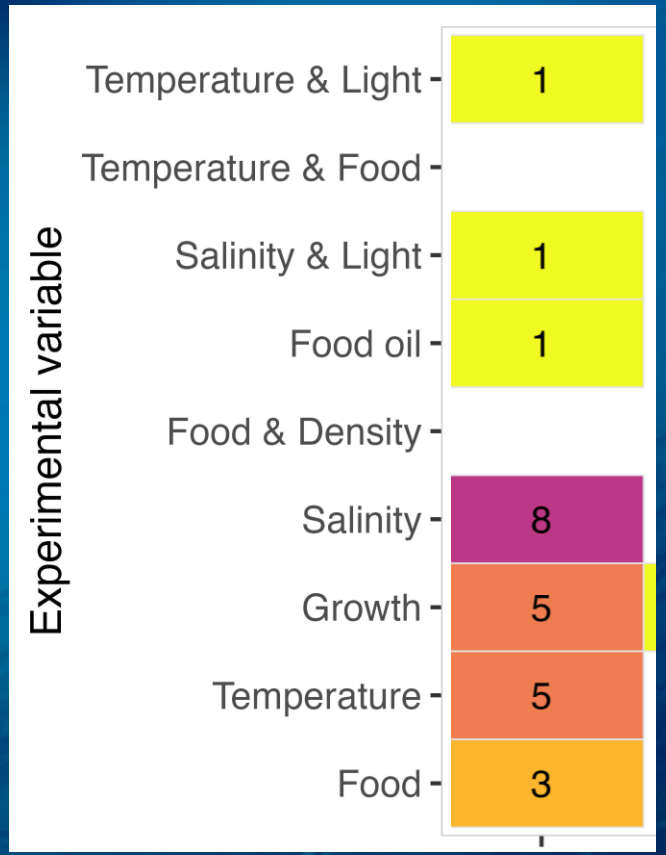

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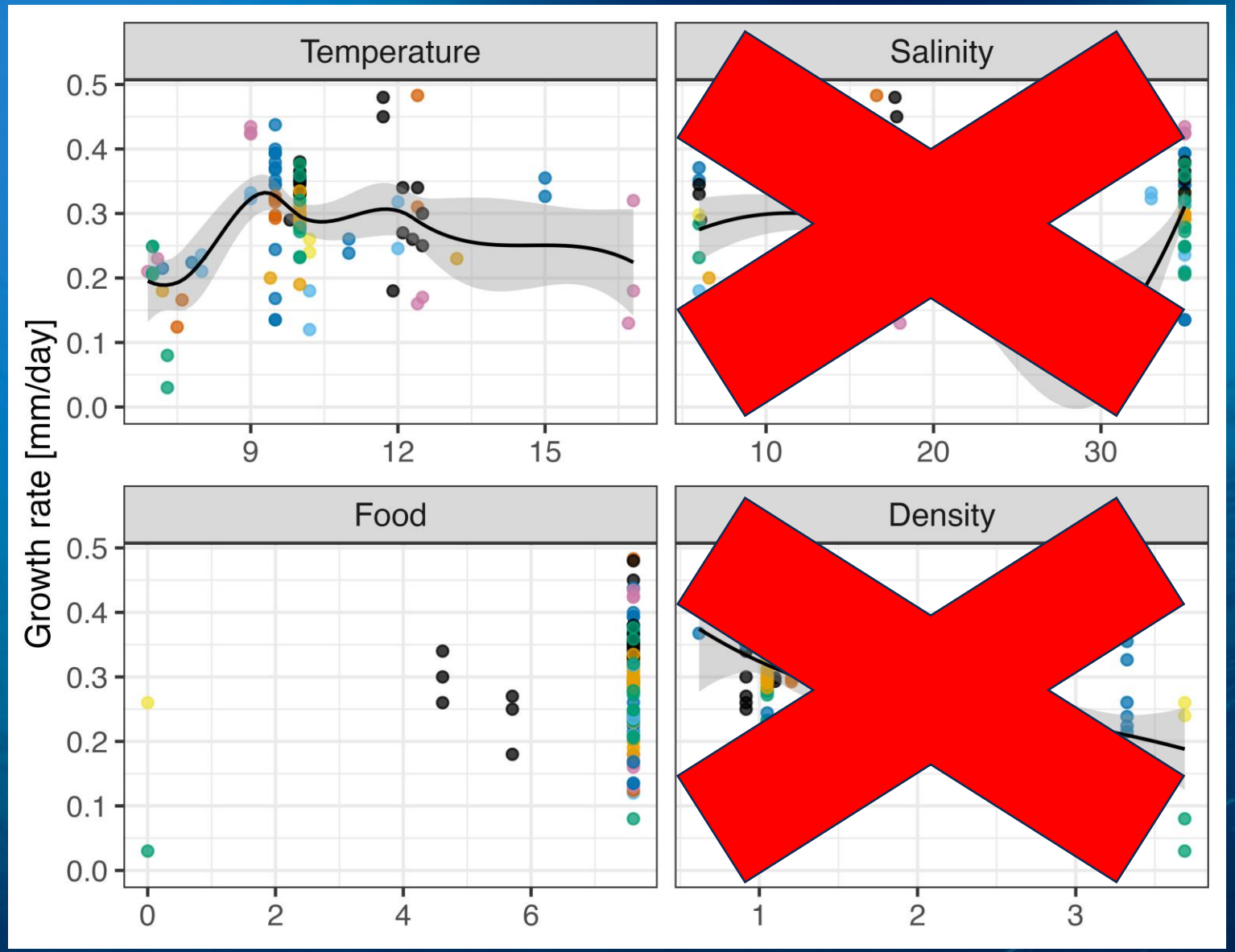

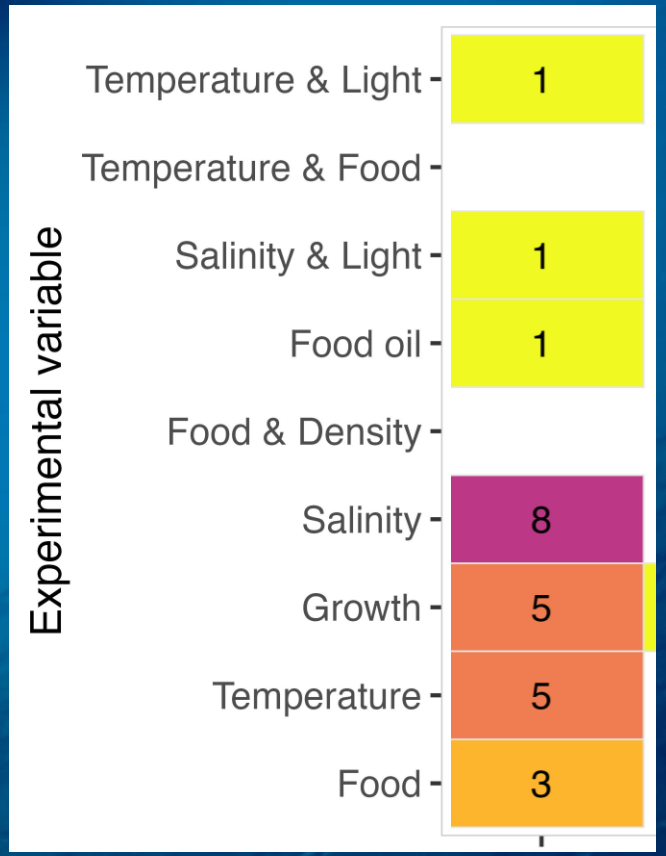

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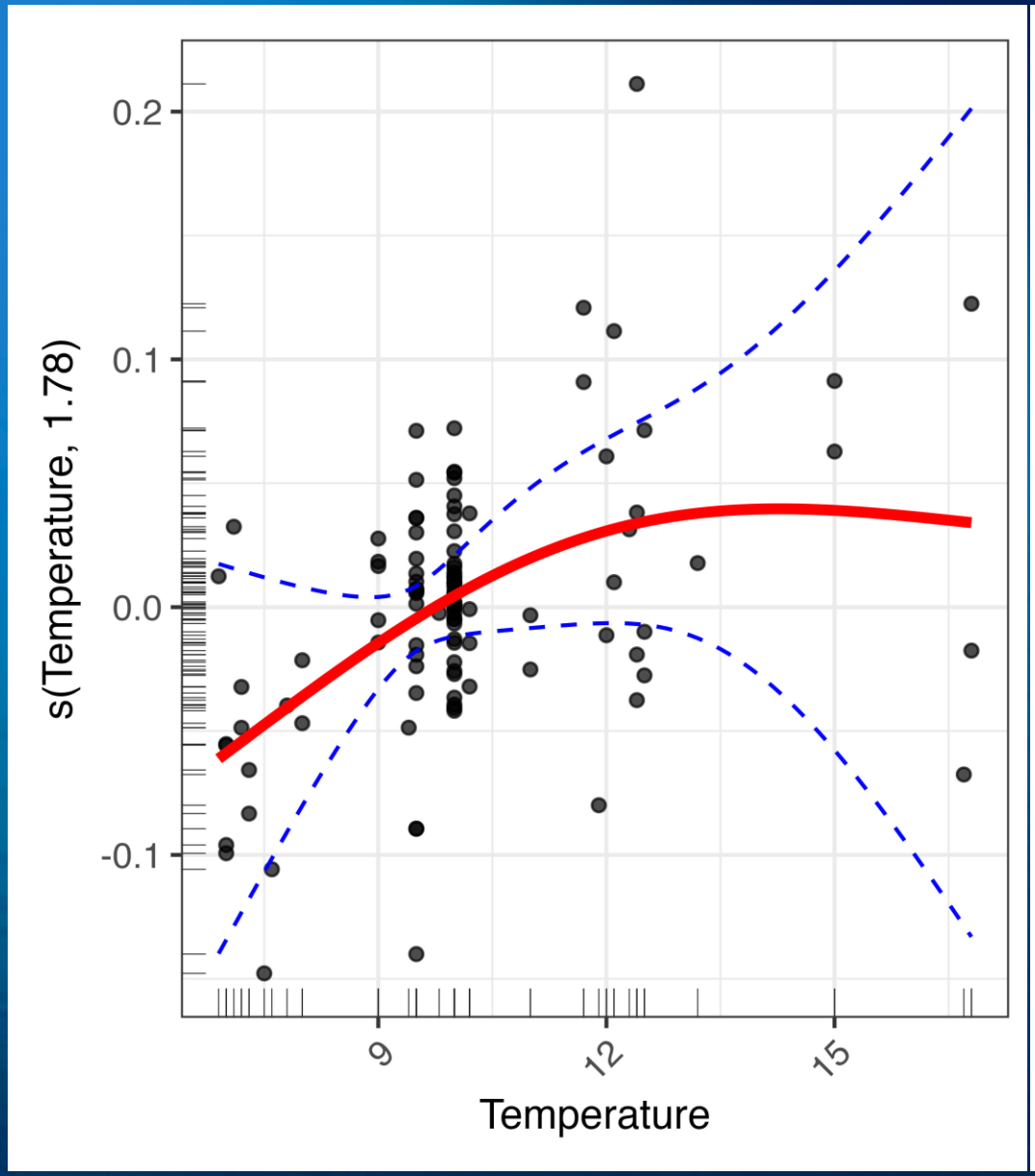

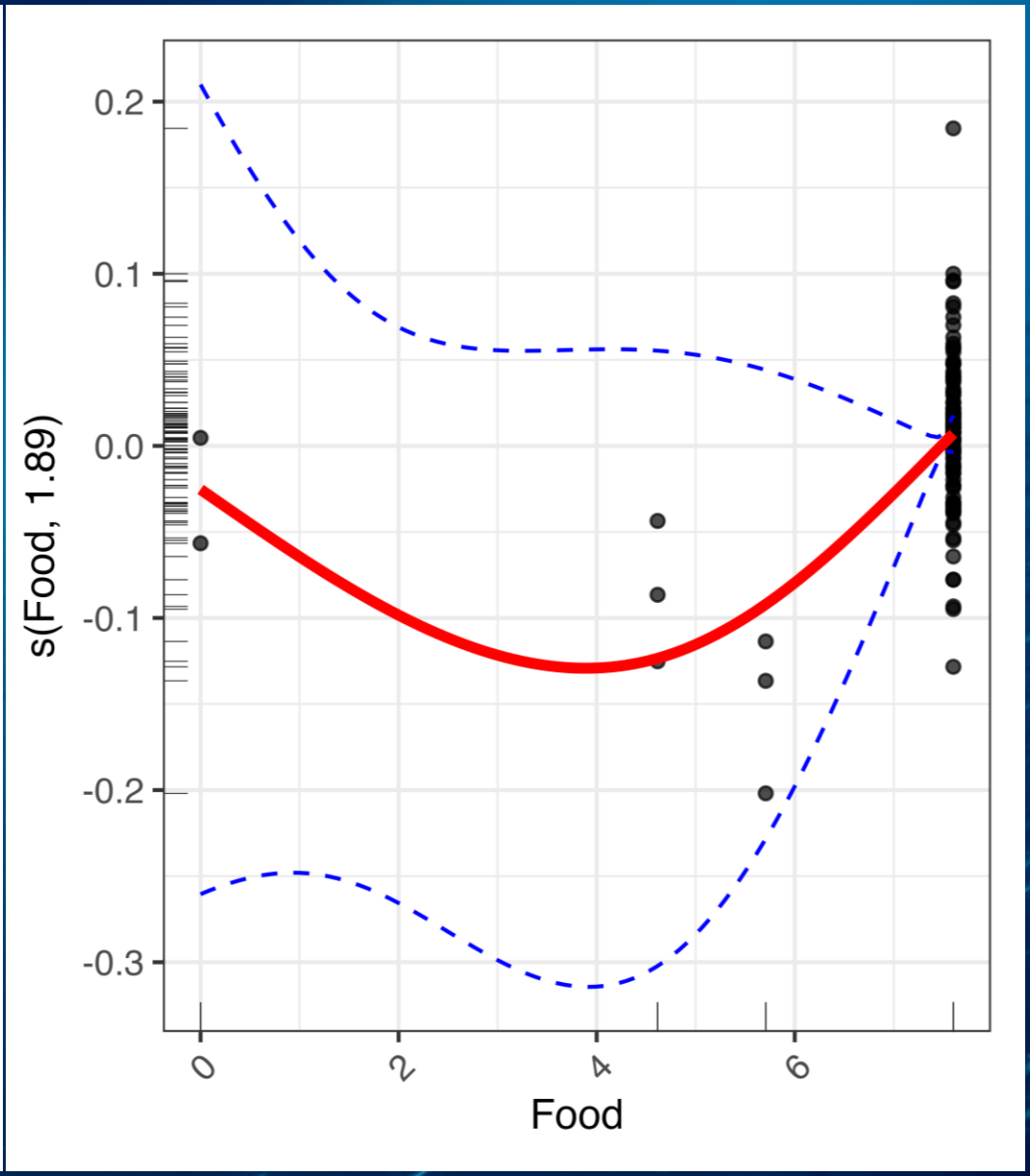

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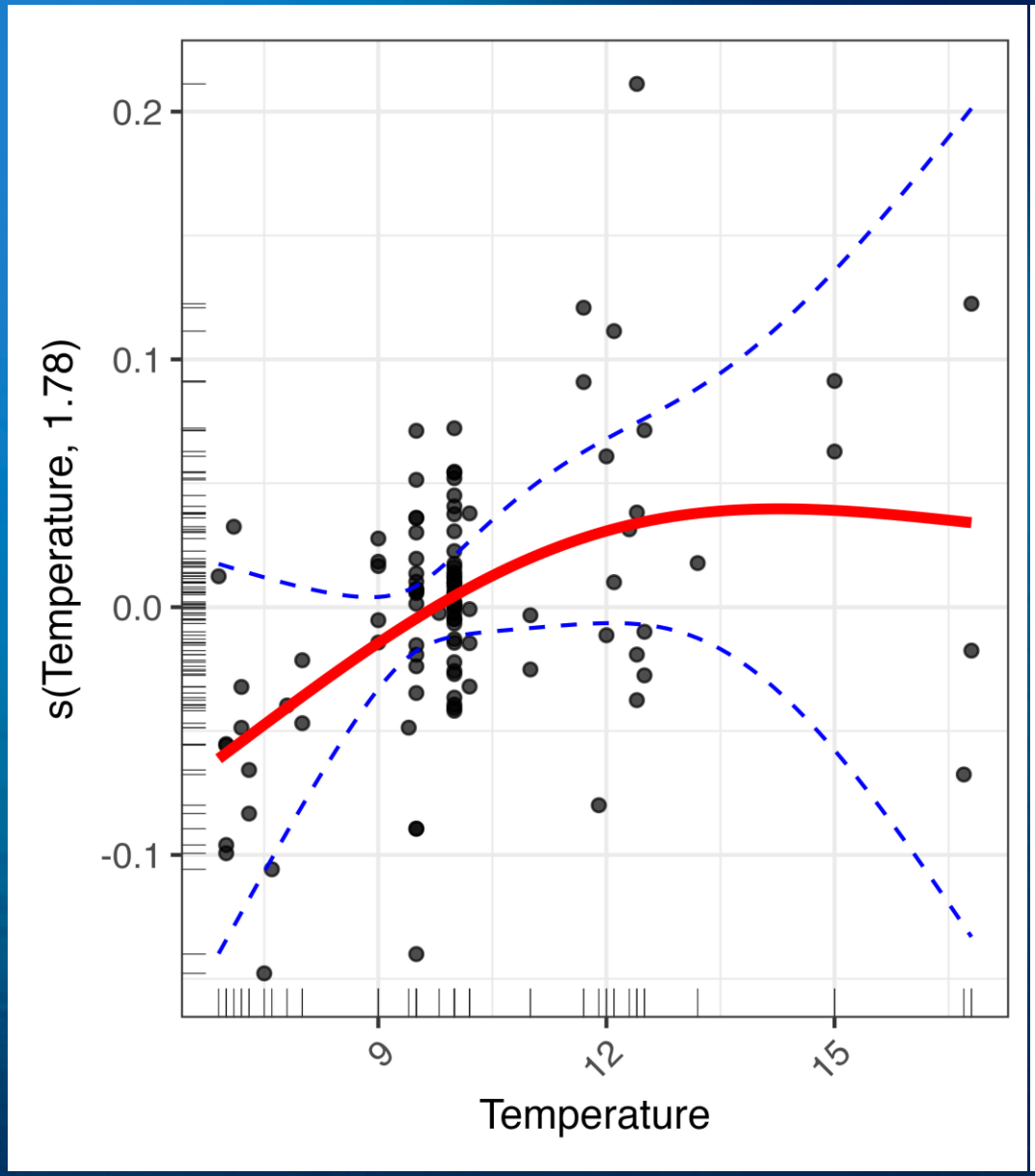
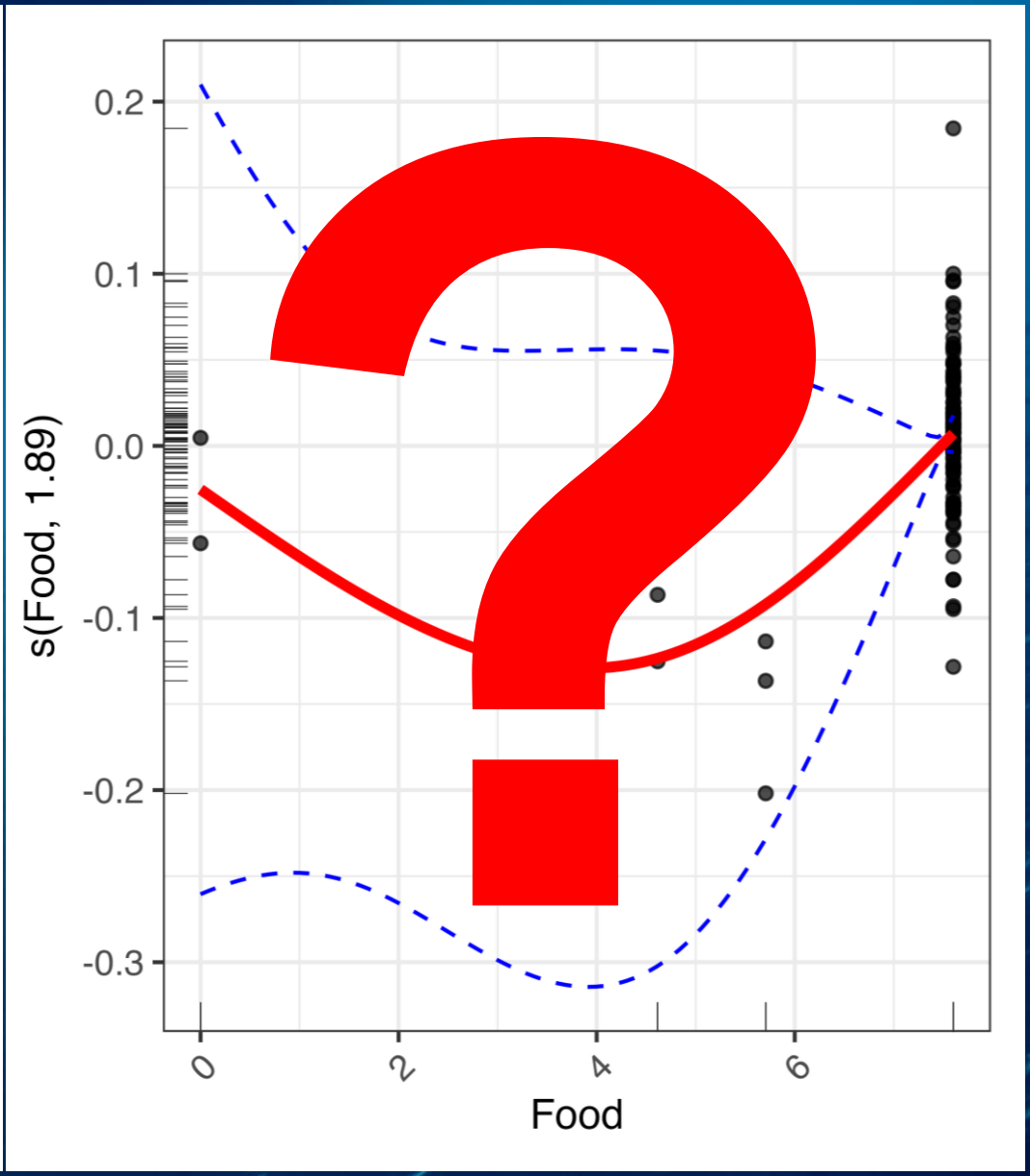
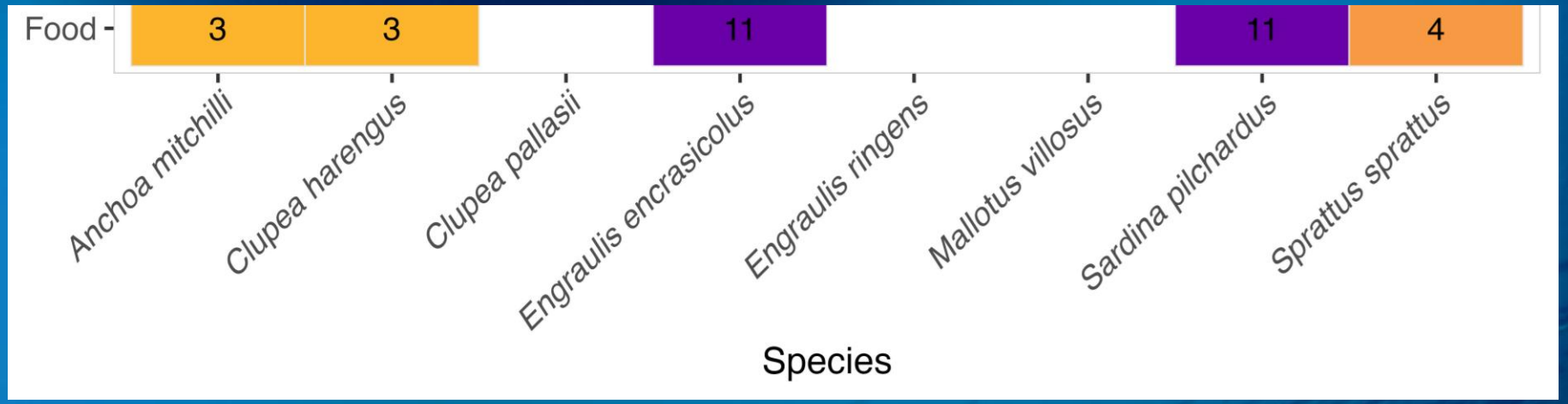




Food as experimental variable



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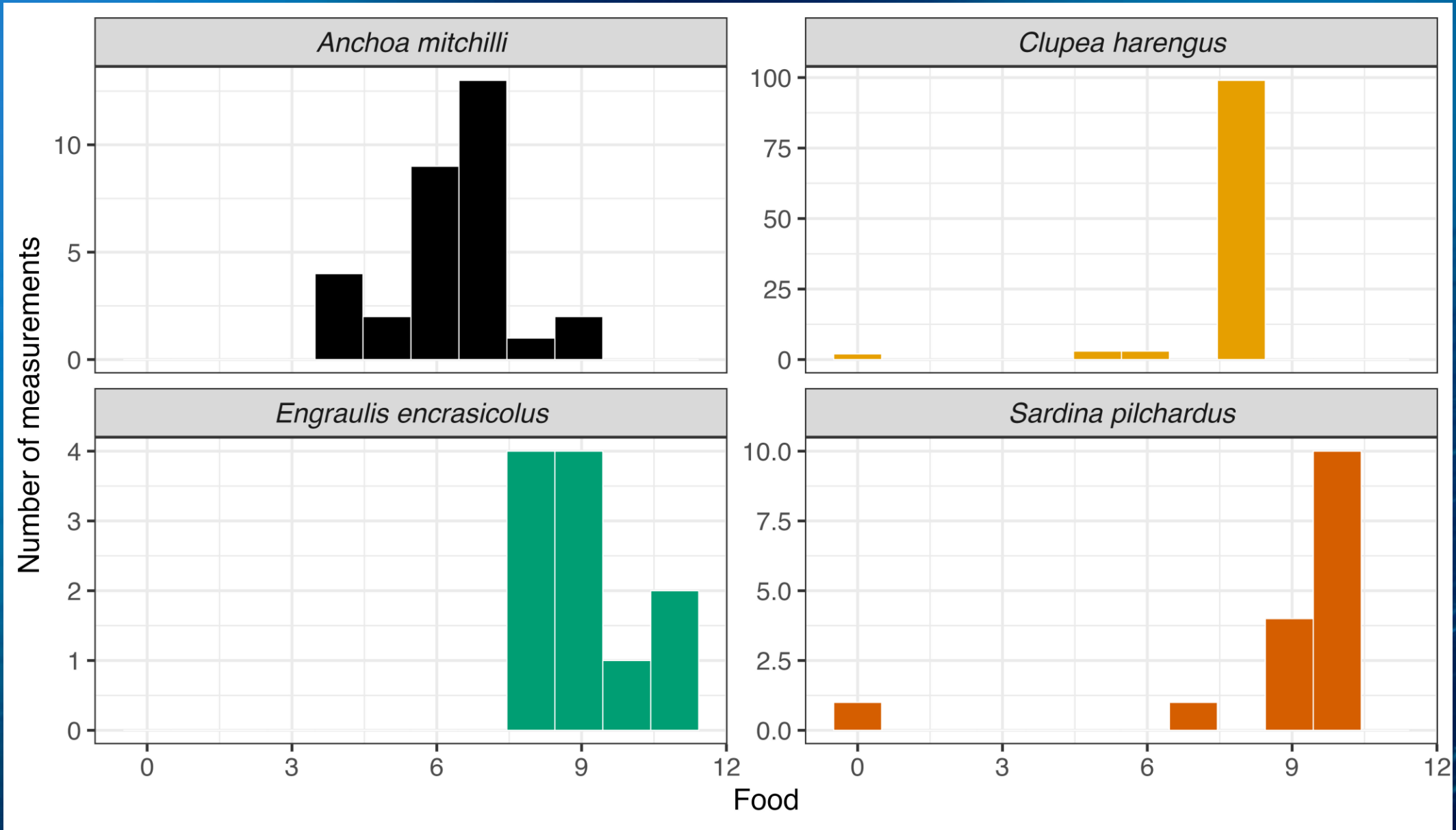

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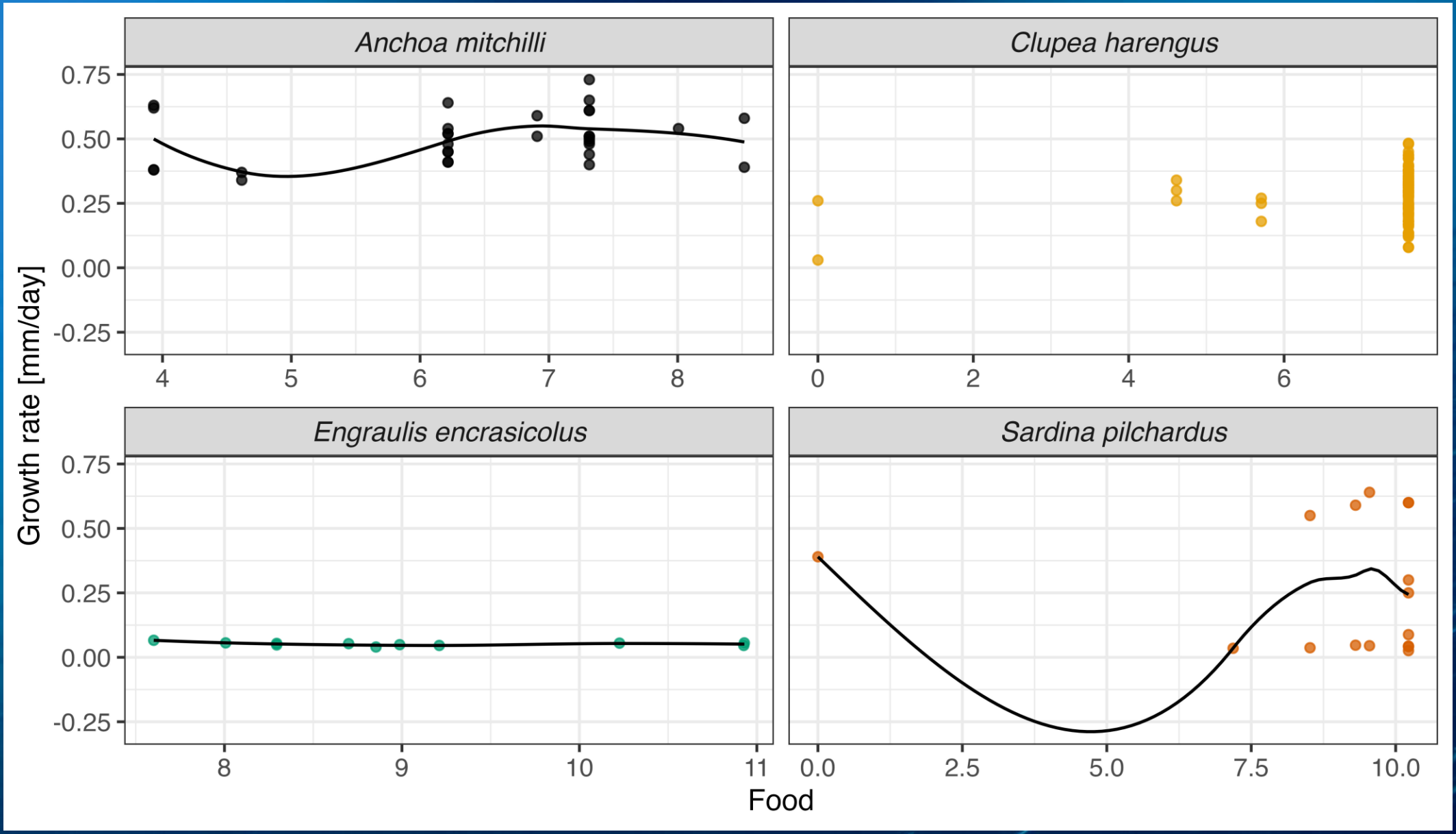

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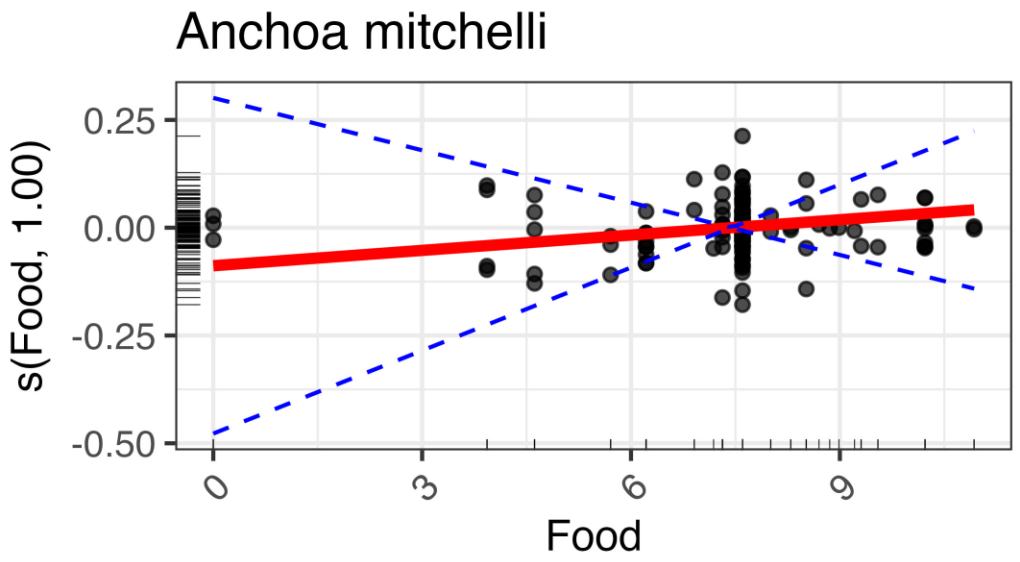

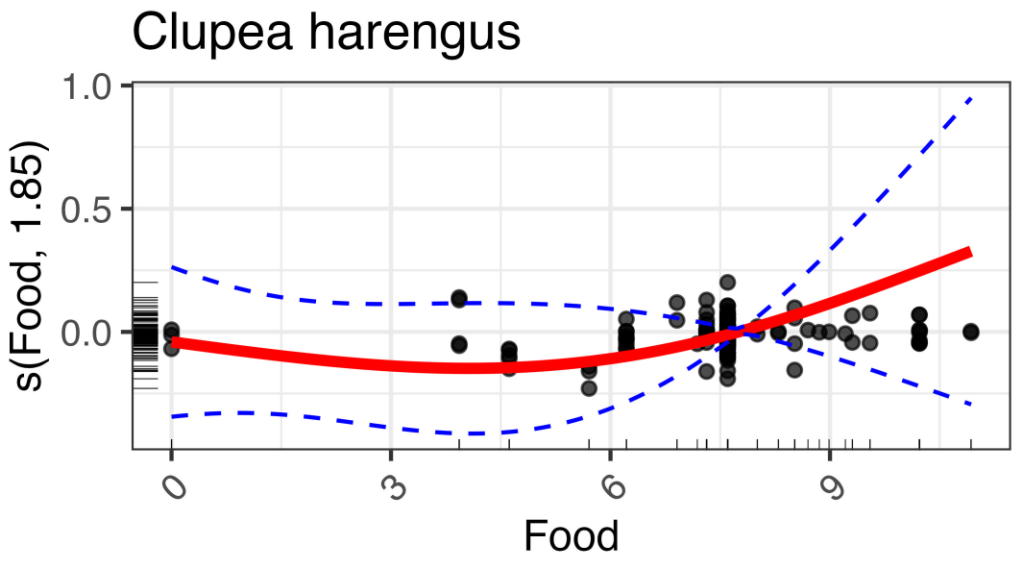

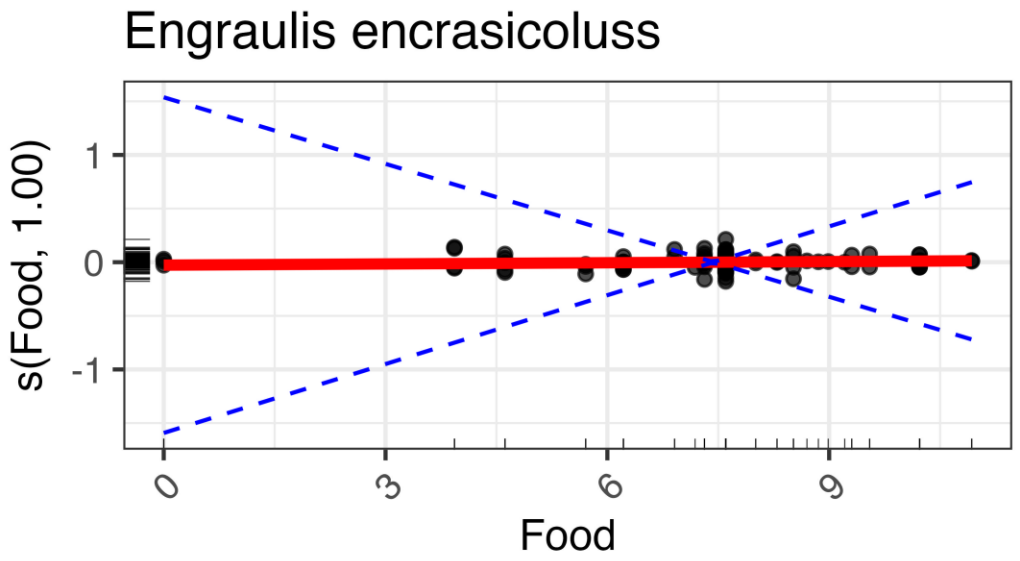

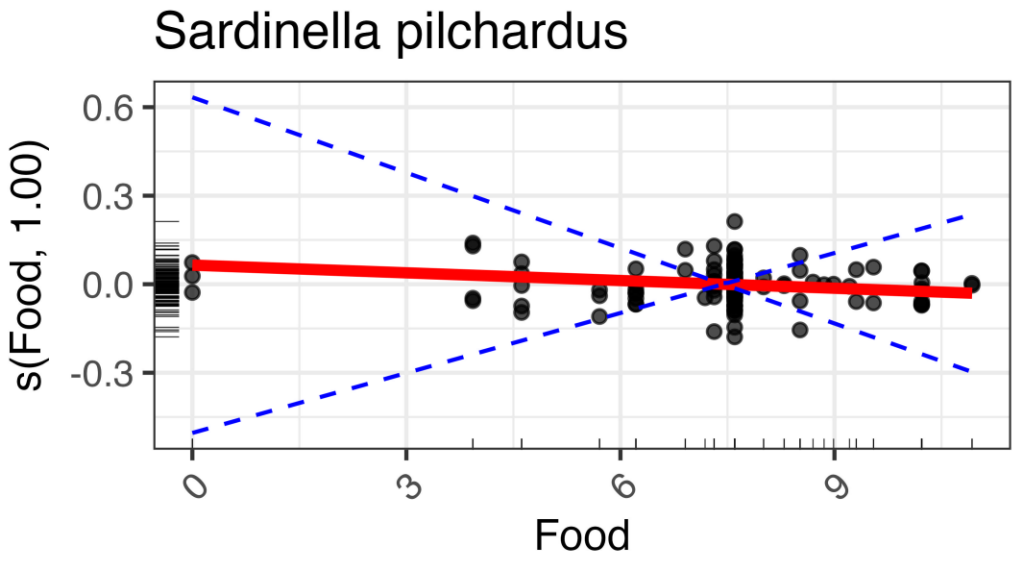

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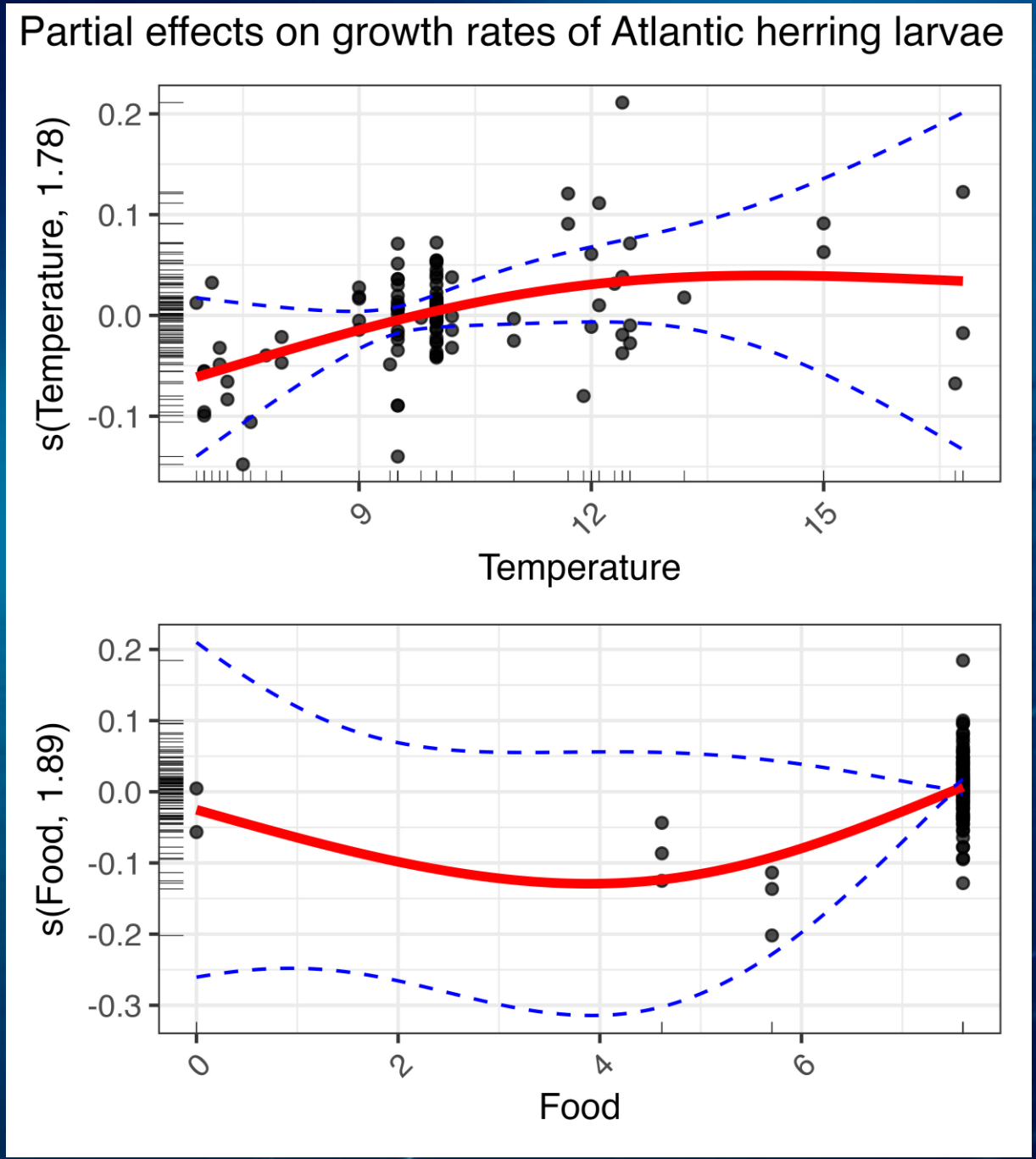

Questions

Please feel free to contact me:

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