Some marine species are smaller in warmer temperatures, but Arctic species can get bigger with intermediate warming

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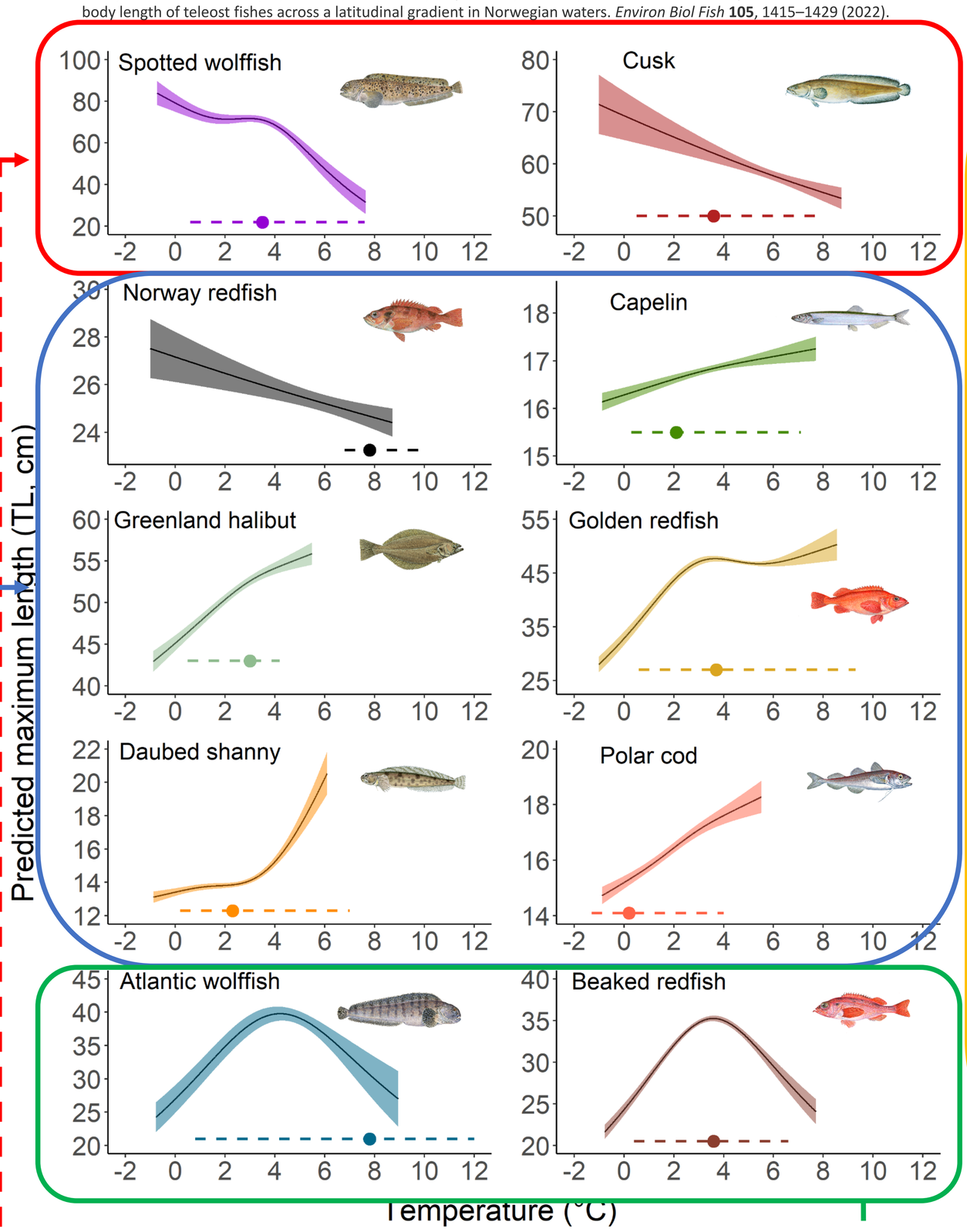
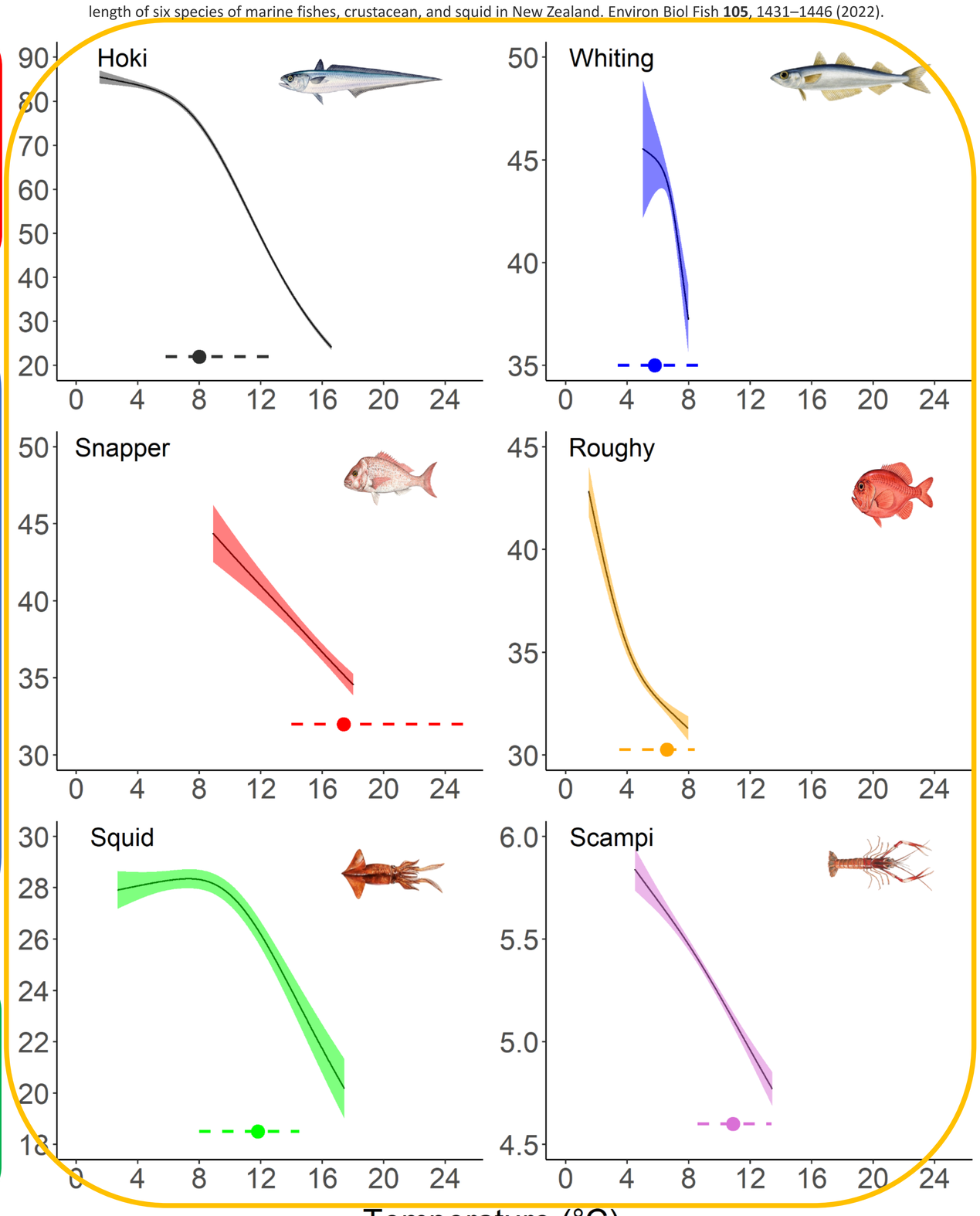
FINDINGS

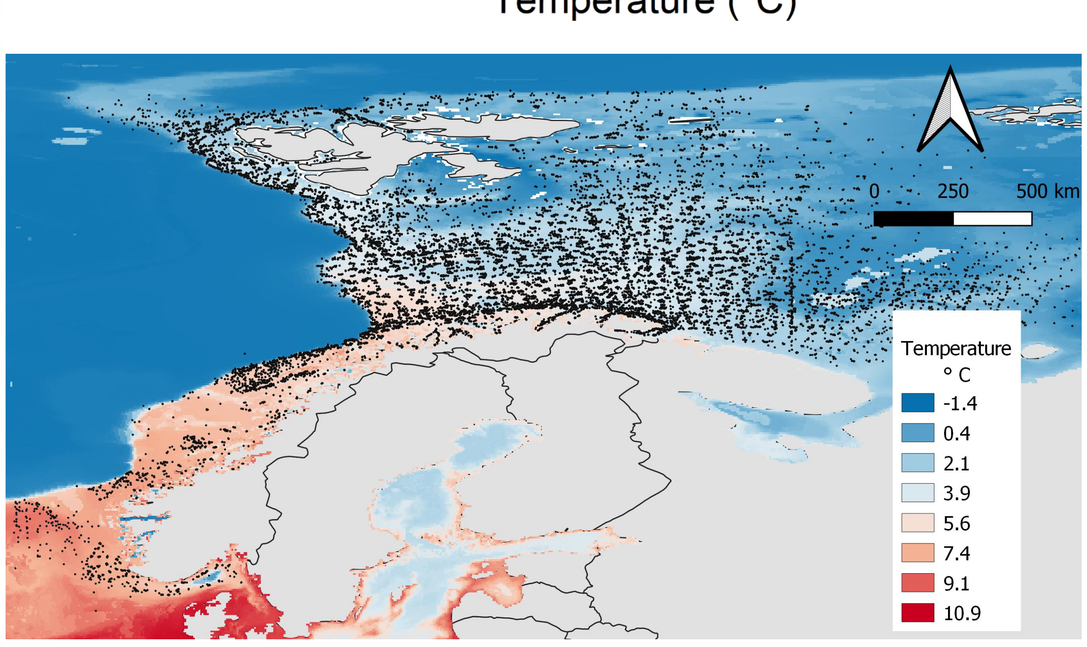
- Larger species, species at relatively lower latitudes experience stronger maximum size reductions with warming temperatures versus smaller species or higher-latitude species
- Smaller Arctic species can increase in maximum size with intermediate warming, but will eventually reduce as they approach their species' specific thermal maxima (which some do not yet experience in the present study area)

Lavin, C.P., Gordó-Vilaseca, C., Costello, M.J., Shi, Z., Stephenson, F., Grüss, A. Warm and cold temperatures limit the maximum body length of teleost fishes across a latitudinal gradient in Norwegian waters. *Environ Biol Fish* **105**, 1415–1429 (2022).

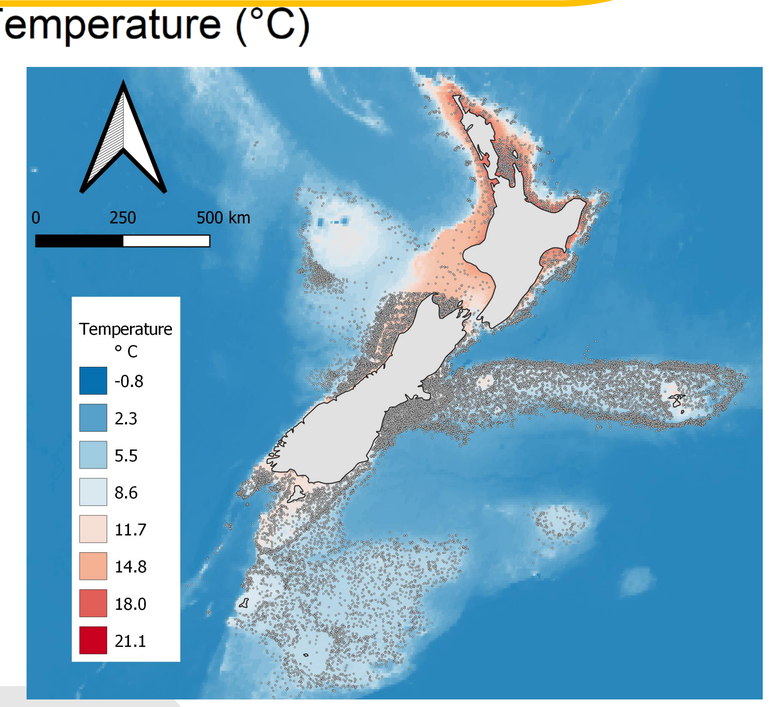
Lavin, C.P., Gordó-Vilaseca, C., Stephenson, F., Shi, Z., Costello, M.J. Warmer temperature decreases the maximum length of six species of marine fishes, crustacean, and squid in New Zealand. Environ Biol Fish **105**, 1431–1446 (2022).







We predicted max. length of several spp. across their observed temp. and dissolved oxygen ranges in Norway and New Zealand waters using GAMs



- Largest spp. in both areas display strongest negative temperature-size response
- Some spp. experience positive temperature-size response, including Arctic daubed shanny and polar cod
- Some spp. limited in max. size by both min. and max. temperatures
- All spp. in warmer, lower-latitude New Zealand waters experience negative temperature-size responses

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