

➤ Food for models : knowledge on metapopulation functioning and marine use of European shads (*Alosa alosa* and *Alosa fallax*).

Acolas, ML ; Antunes, C; Bardonnnet, A ; Bareille, G ; Baumann, L ; Basic, T; Blaya, M ; Belo, A. P; Boschet, C; Boussinet, E ; Brion, E; Dambrine, C ; Danhiez, F; Cobo, F; **Daverat, F** ; Davidson, D; De Almeida, P R; Dias, E; Geffard, O ; Kerouaz, F ; Jatteau, P ; Lambert, P ; Lassalle, G ; Lepais, O ; Mateus, C; Nachon, D ; O'Leary, C; Paumier, A ; Pecheyran, C ; Poulet, C ; Pico Calvo, A; Quintella, B; Rambonilaza, T ; Rochard, E; Roche, W, Tabouret, H ; Taillebois, L ; Tentelier, C; Viera Lanero, R;

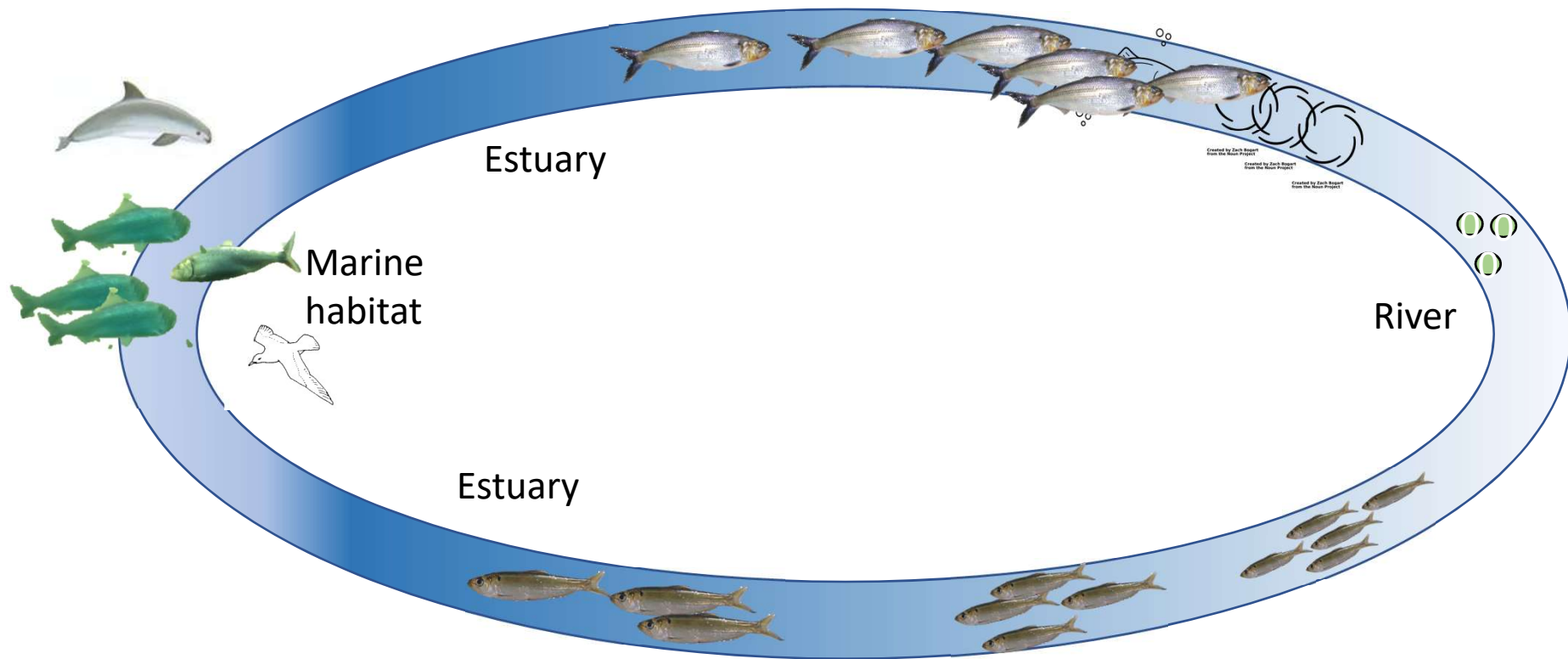
And

Albert, F; Bouyssonie, W; Buard, E; Garnier, D; Gribinsky, M; Postic-Puivif, A



➤ Shads life cycles : *Alosa alosa* and *Alosa fallax*

Context and Threats

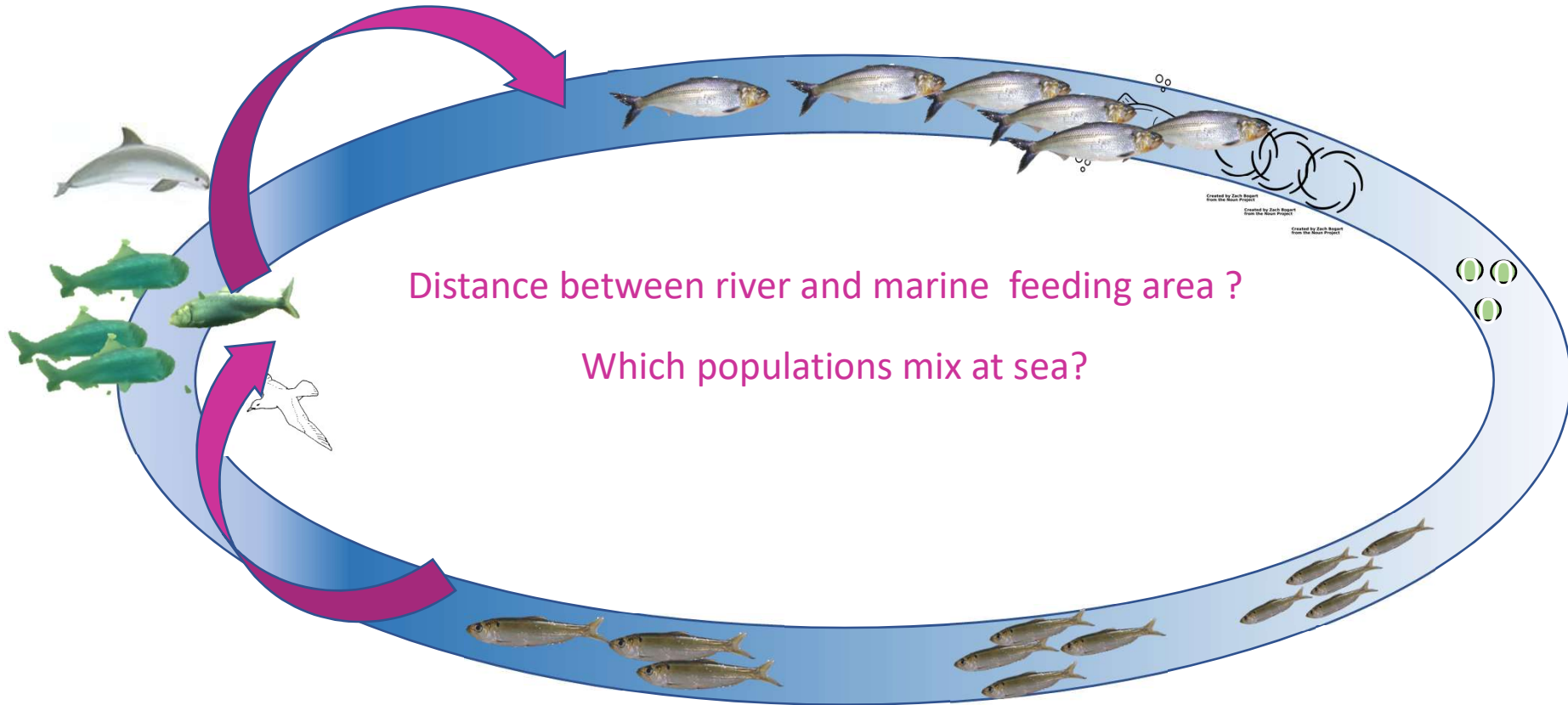


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➤ Marine connectivity // Stock mixing at sea

Context and Threats



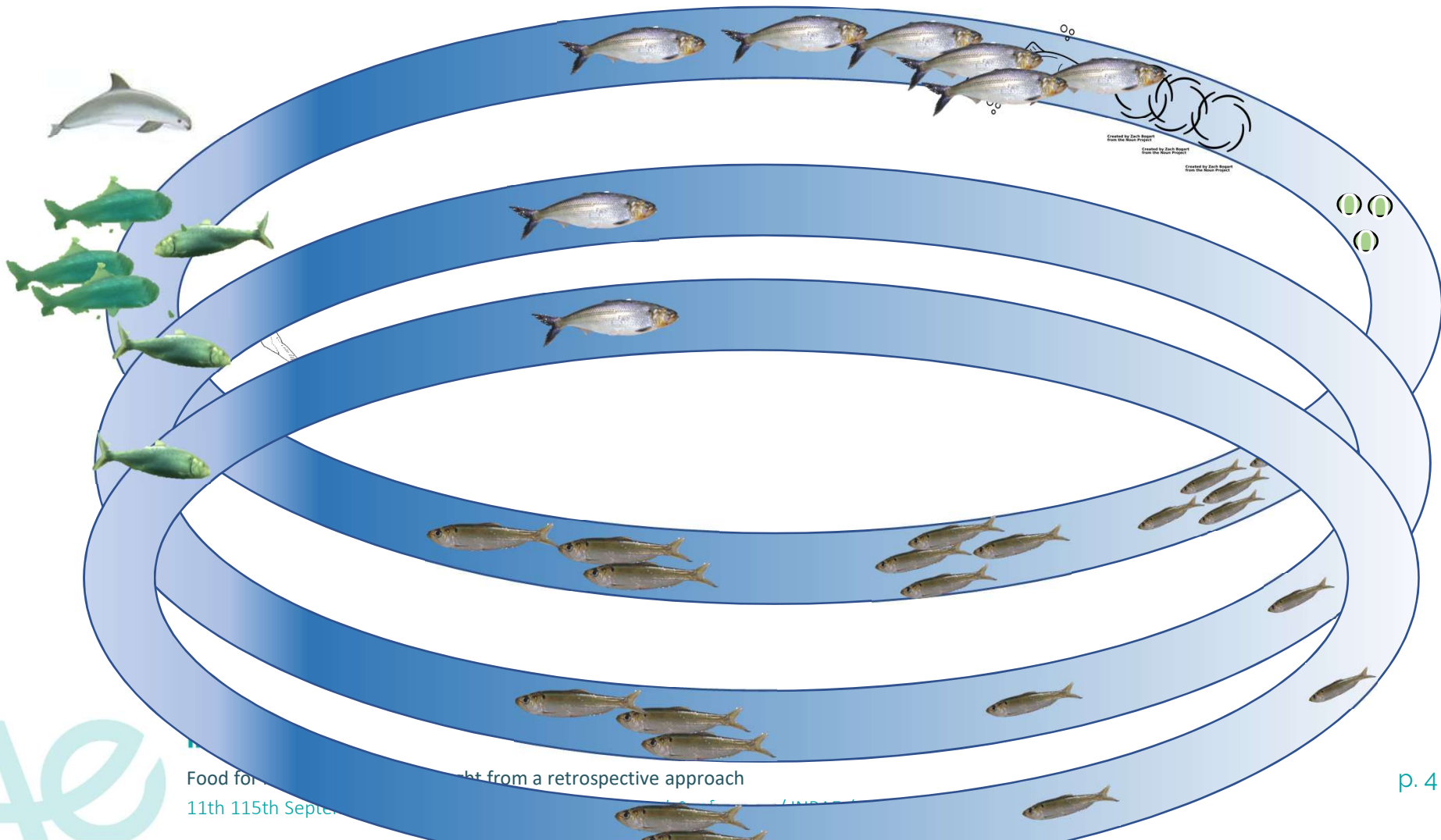
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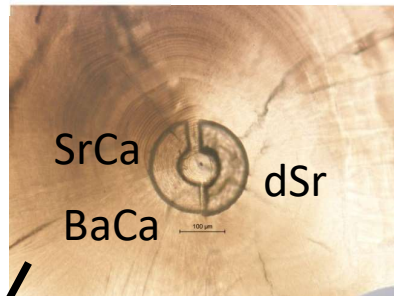
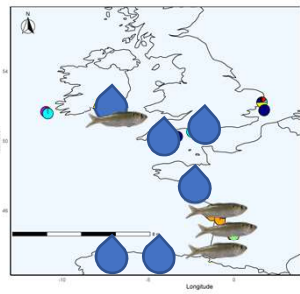
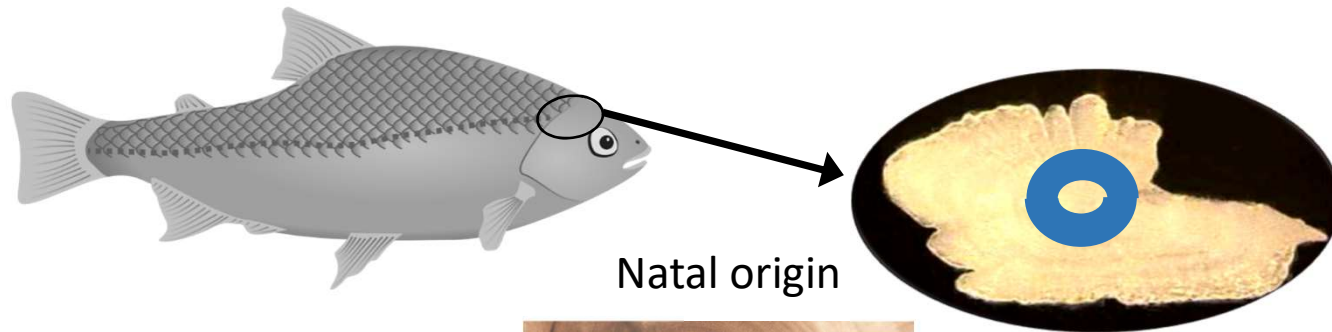
➤ Connectivity between populations, dispersal

Metapopulation functioning ?

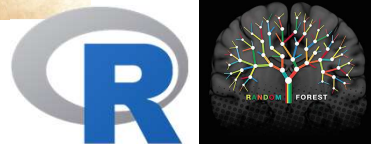


➤ Tools to address shad connectivity

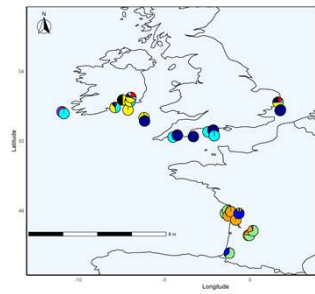
Among others, otolith microchemistry



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Collection of Reference data :
Known origin juveniles/water

Model of allocation of natal origin

Allocation of origin
for
Unknown origin fish



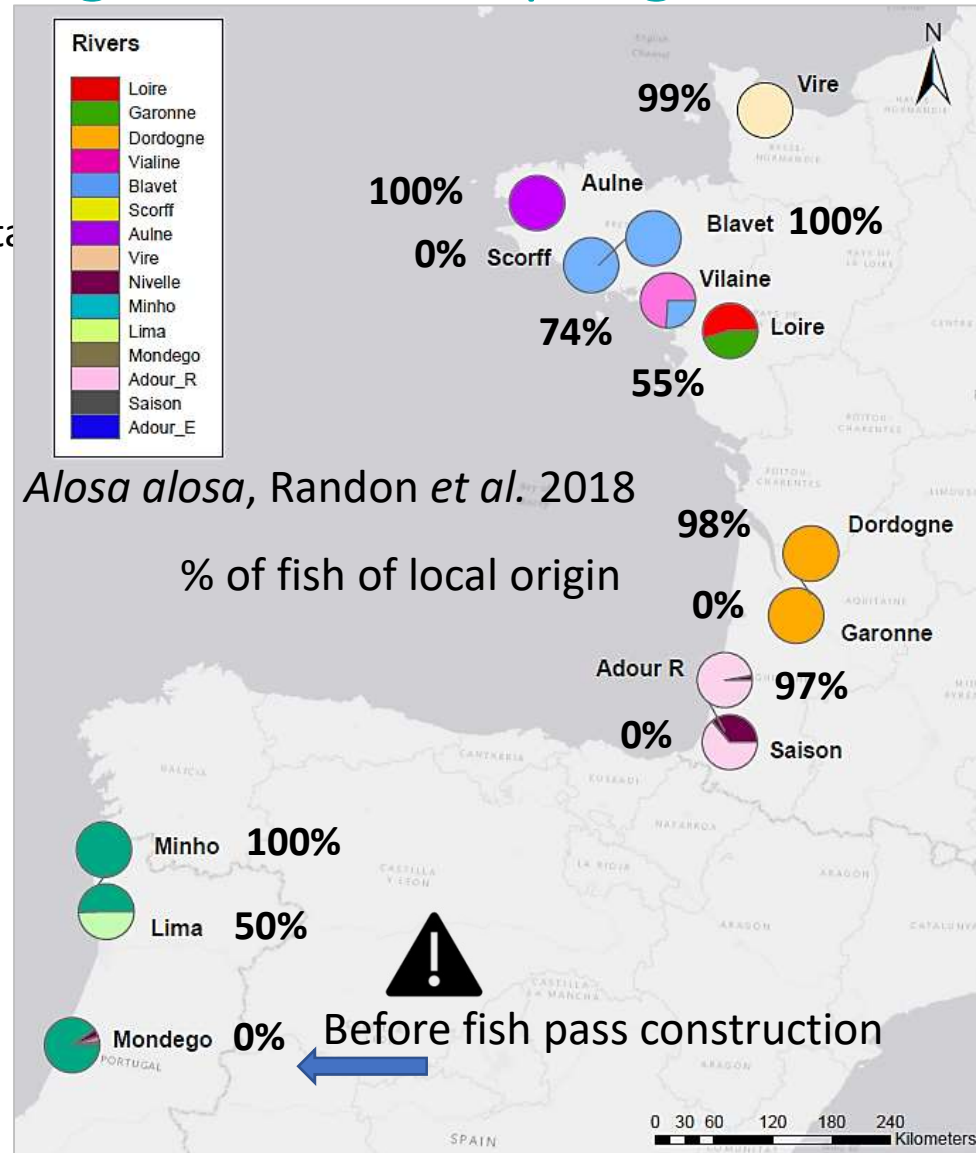
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➤ Insights from natal origins at >< sampling sites

- Natal origins of Mature fish/spawning
⇒ Exchange between pop. Dispersal&Meta
- Natal origins of fish at sea
⇒ Mixing at sea, dispersal



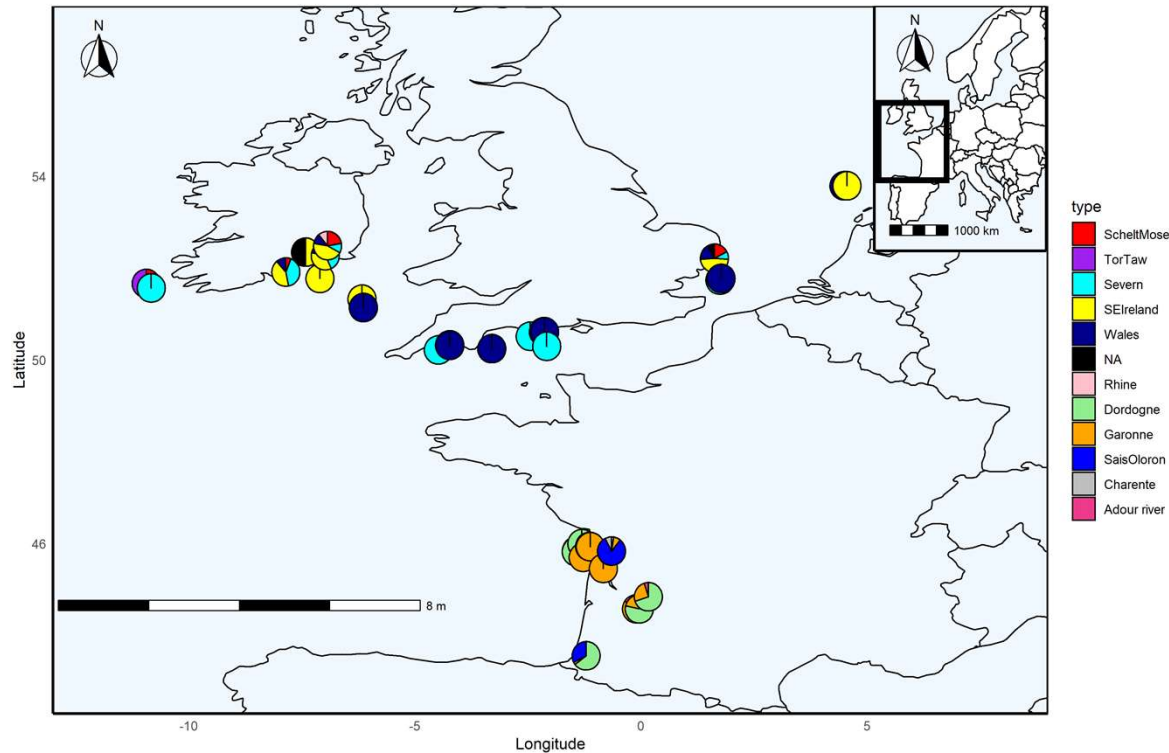
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➤ Natal origins of *A. fallax* at sea UK, IR & FR

Preliminary results:



Origin discrimination

- The discrimination of shad origin was mainly driven by Sr isotopes
- Discrimination issues: French and SE Ireland rivers (relevant groupings), extreme weather
- Specificity of otolith signatures may differ between watersheds due to spawning location
- Overall, main groups of rivers could be discriminated from each other well



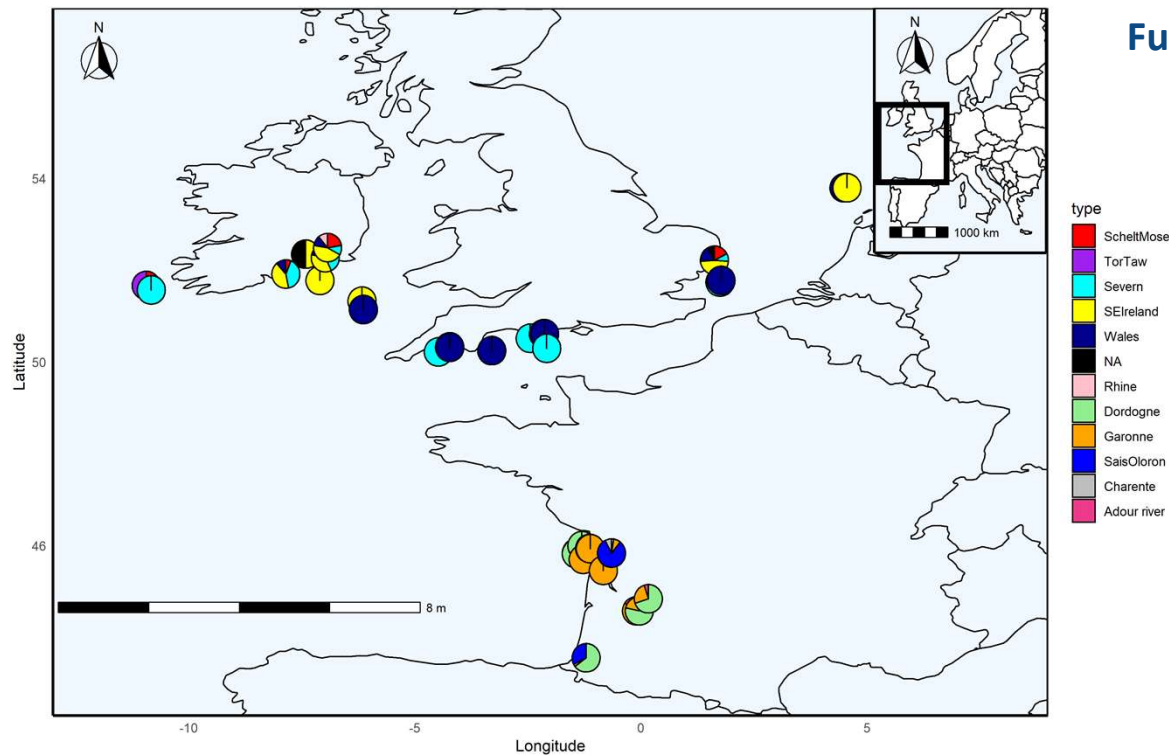
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➤ Natal origins of *A. fallax* at sea UK, IR & FR

Preliminary results:



Further analysis

- Diversity near estuary plumes, in the open sea and at spawning areas?
- Are shads foraging close to their natal river & are fish of same origin gathering?
- Do UK and Ireland fish mix together?
- *Dispersal* in relation to historic data and other species *Alosa sp.*?
- Most relevant management scale?



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Thank you for your attention!



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