



Importance of grey mullets on coastal food webs in a context of omega-3 deficiency: from sub-individual level to trophic dynamics

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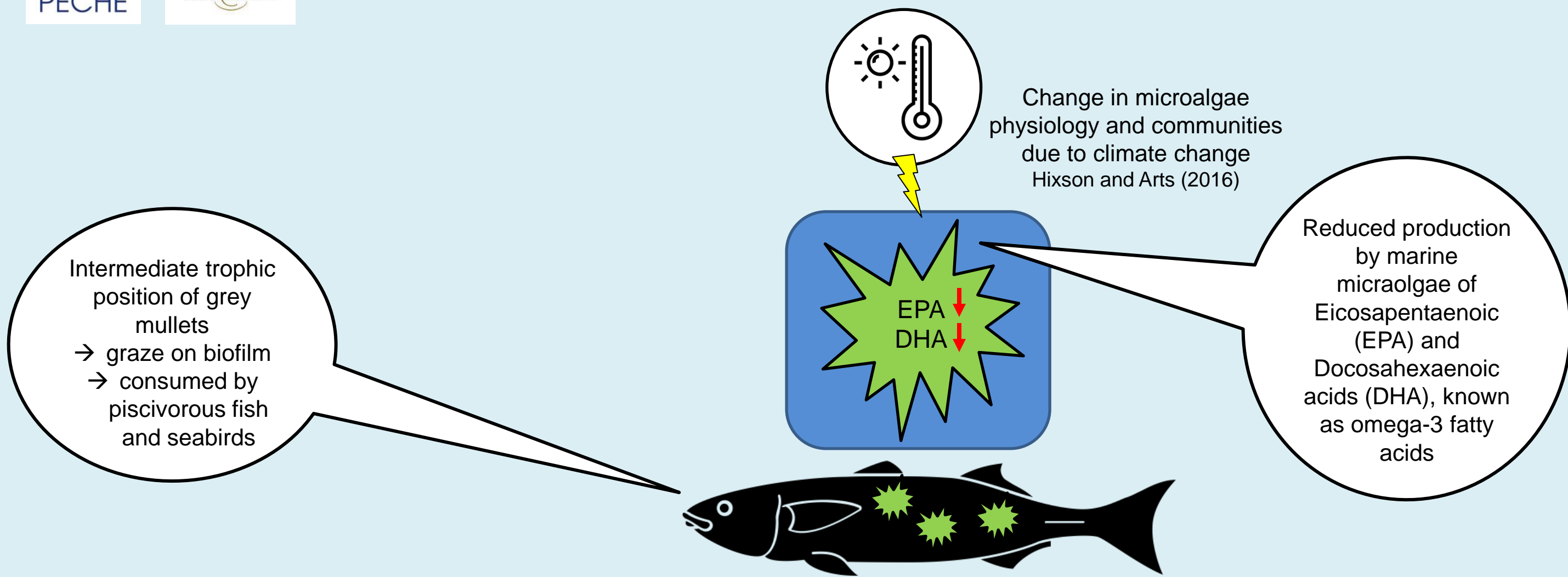
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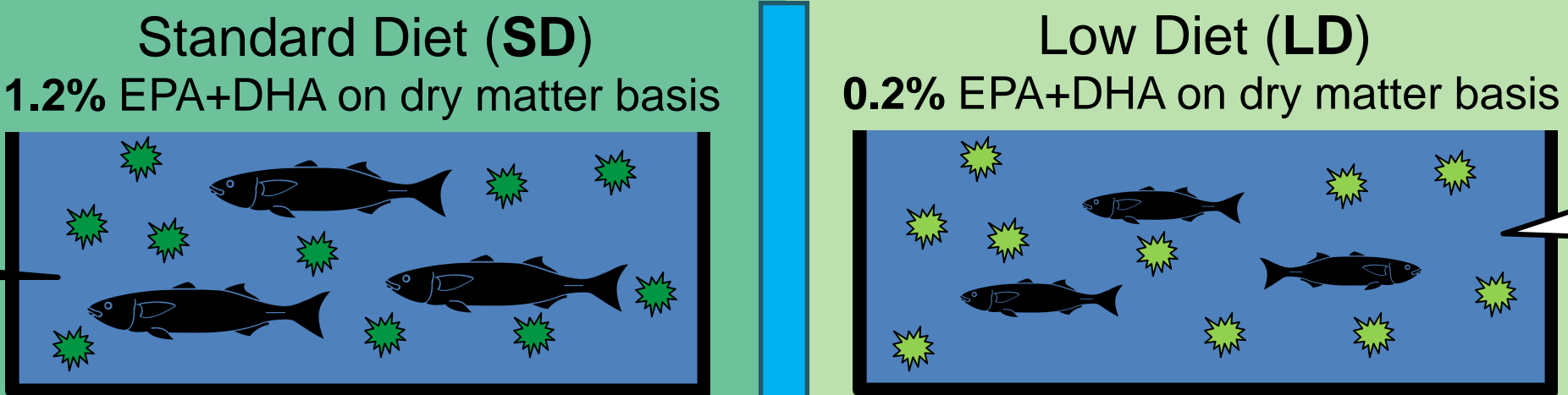
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What effects on the individual fish physiology?
What consequences on the food web functioning?

Experiments

Individual & sub-individual



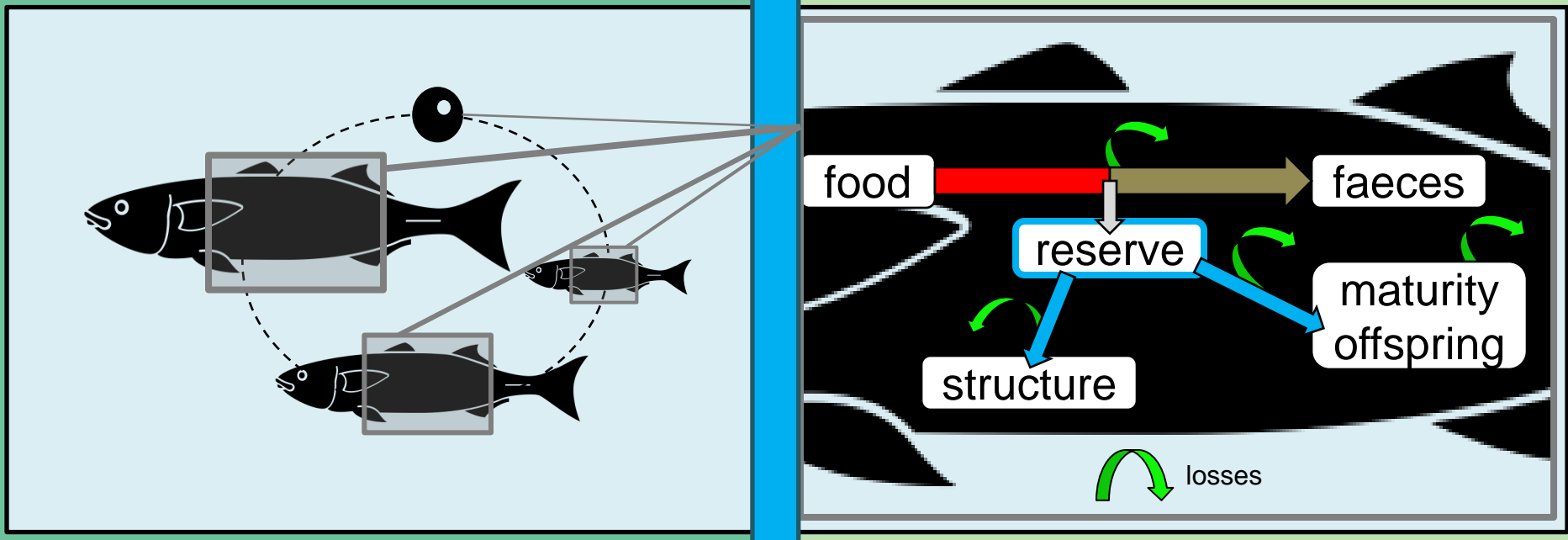
6 months at 20°C

→ Reduced growth
→ Similar weight / length ratio
→ More efficient use of energy for activities
Vagner *et al.* (2014)

DEB modeling

Individual

Full life cycle and internal energy flows

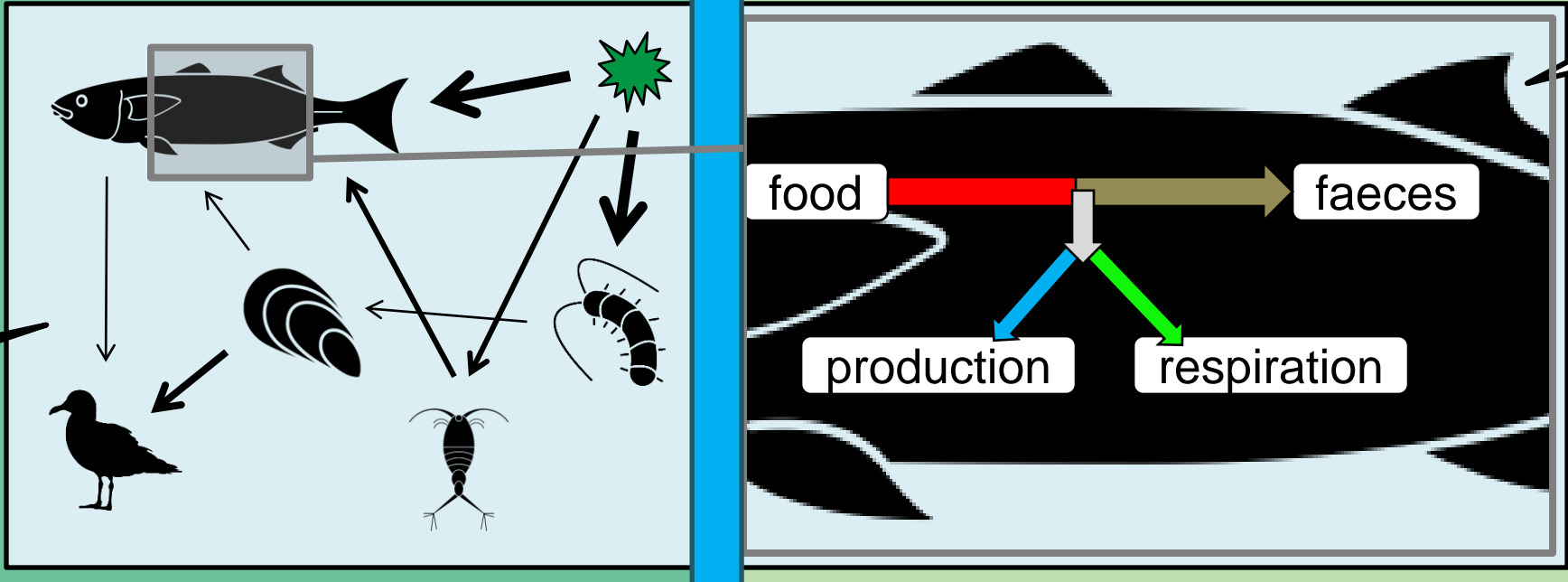


Reduction of metabolism and growth by modification of:
→ volume-specific somatic maintenance (-25%)
→ energy conductance (-24% ; altering the mobilization of energy from the reserves in the organism)

LIM modeling

Trophic Network

Static mass-balanced trophic flows with uncertainty



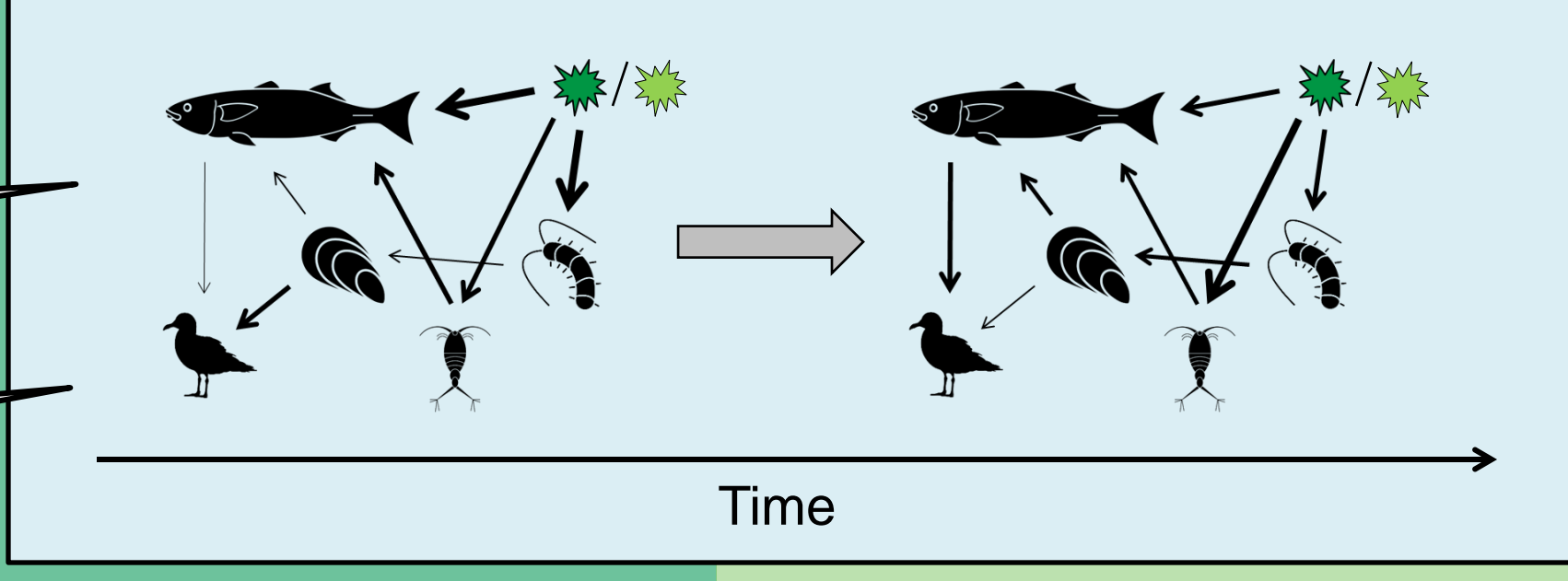
Definition of flows similar in all LIM trophic groups

No LIM simulation of the ecosystem state with LD because it would consider the different biomasses as static

CaN modeling

Dynamic Trophic Network

Dynamic trophic flows with uncertainty



DEB outputs used on CaN constraints:
→ Consumption: -14%
→ Production / Consumption: +6%
→ Respiration: -21%

Comparisons of biomasses, exports of Carbon and Ecological Network Analysis

Work in progress...