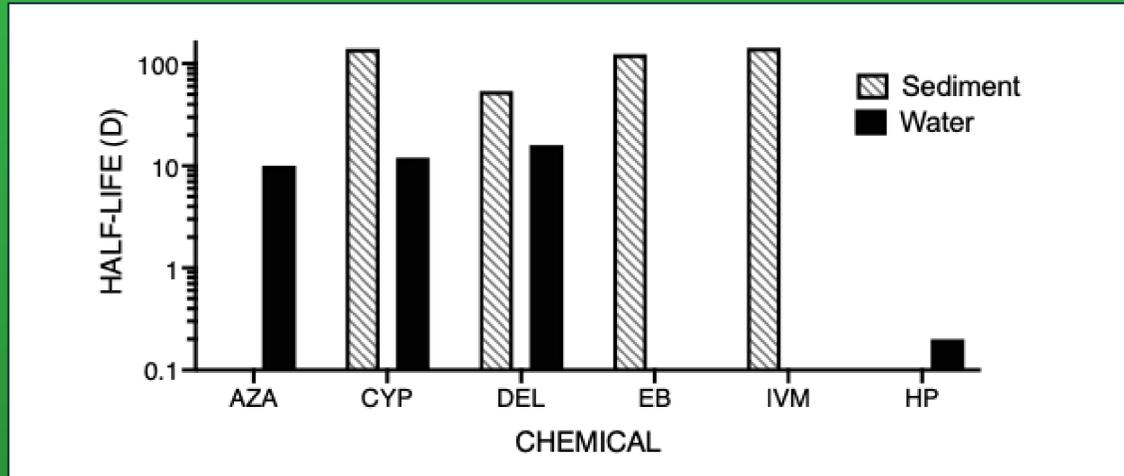


SEA LICE TREATMENTS: MATRIX, PERSISTENCE AND BIOAVAILABILITY SHAPE ECOLOGICAL RISK

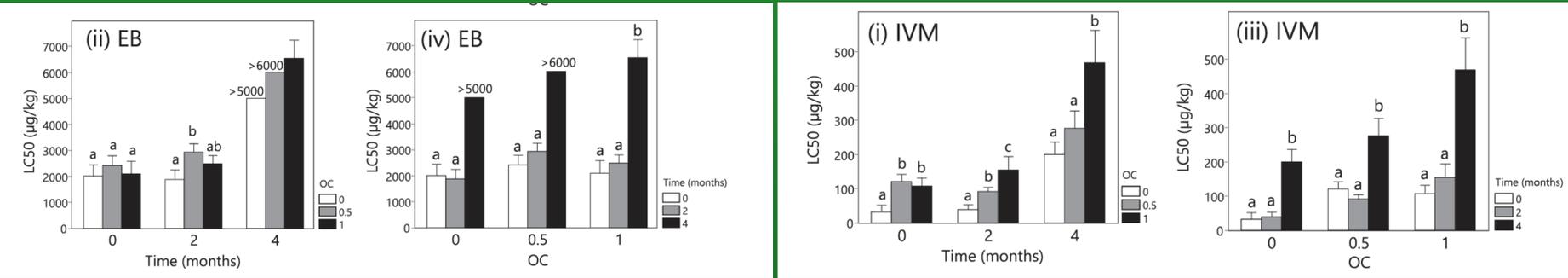
Chris Kennedy, Kate Mill, Lindsay Woof, Steven Barrett, Fauve Strachan and Charanveer Sahota
Simon Fraser University

Toxicity alone does not determine ecological risk. Consider these:
Where chemicals reside — and for how long?



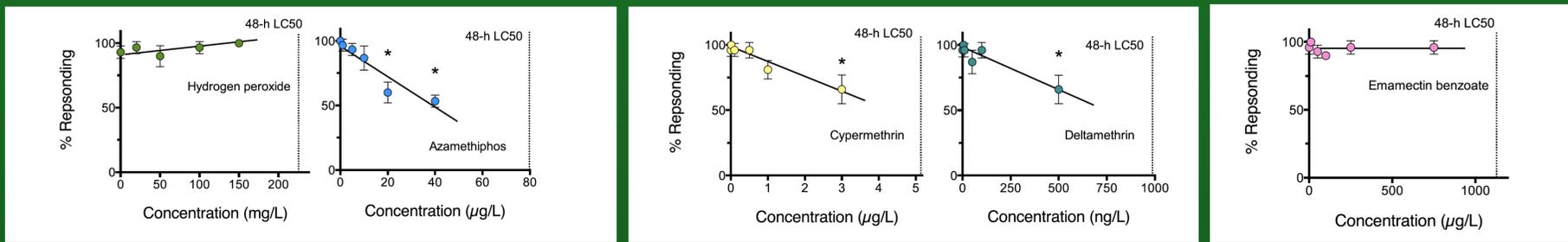
Half-lives of chemotherapeutants in water and in sediment. Some treatments remain in water. Others accumulate in sediment for years.

Persistence does not equal constant toxicity



EB and IVM LC50 values as influenced by changing Organic Carbon and residence time in sediments. Sediment properties modify bioavailability: OC and aging reduce toxicity — but exposure remains

Functional impairment occurs well before mortality



Pink salmon olfactory responses to odorants occur well below lethal thresholds. Sublethal effects dominate ecological relevance.

Conclusions

Exposure pathways and bioavailability matter more than mortality alone. Risk assessments based solely on lethality underestimate ecological impact.

Future Direction

Linking laboratory thresholds to field exposure and repeated treatments will improve sustainable sea lice management.

