



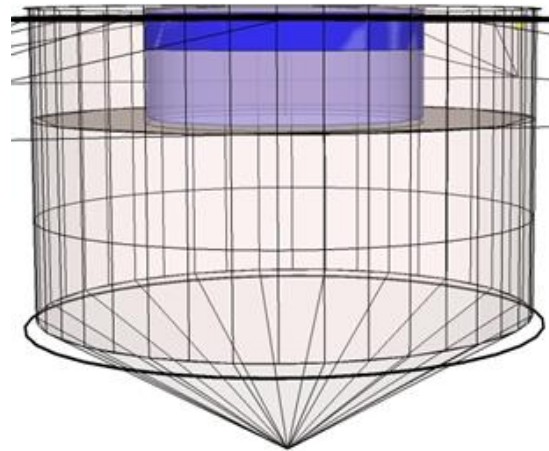
Seeking alternative lice and AGD control: FW snorkel cages

Daniel Wright

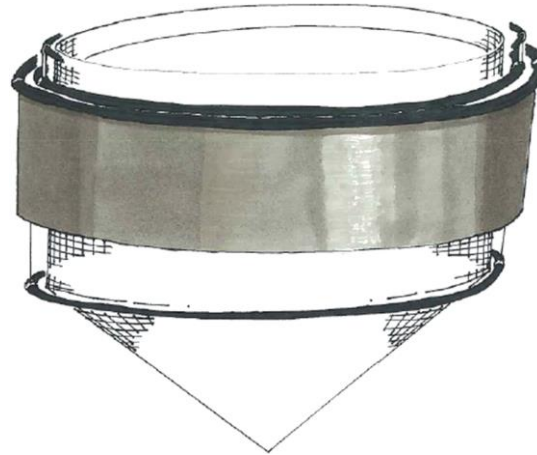
Frode Oppedal, Tim Dempster, Lars Stien, Lena Geitung, Egil Karlsbakk

Institute of Marine Research | University of Melbourne | University of Bergen

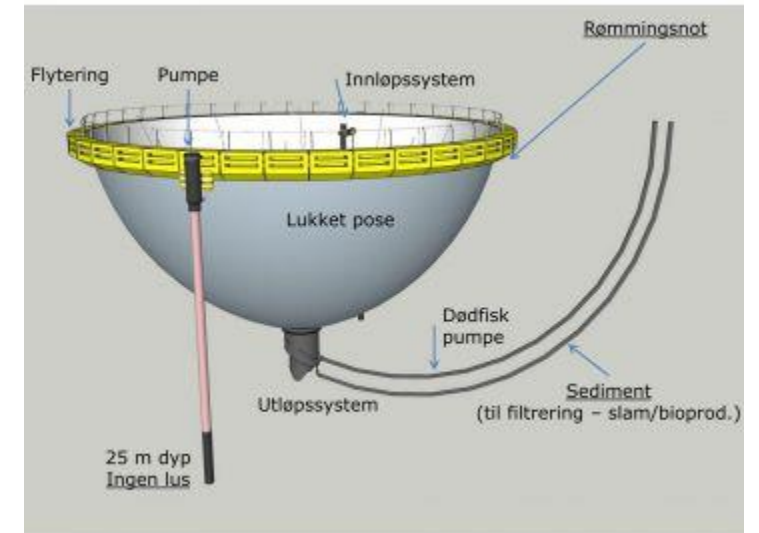
Chemical-free lice barrier cages are here



Snorkel cage



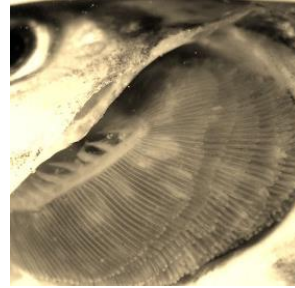
Skirt cage



Enclosed cage

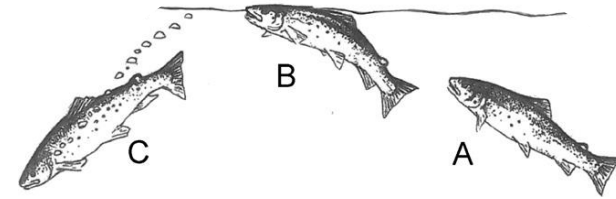
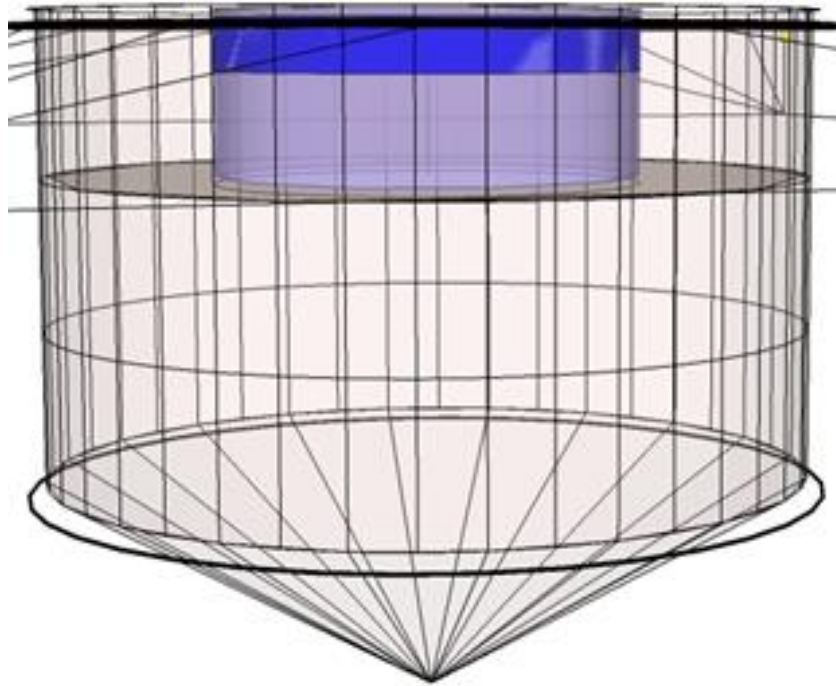
Stien et al. (2012) Aquac Eng
Stien et al. (2016) Aquaculture
Nilsen et al. (2016) Aquaculture

But barriers may worsen AGD outbreaks

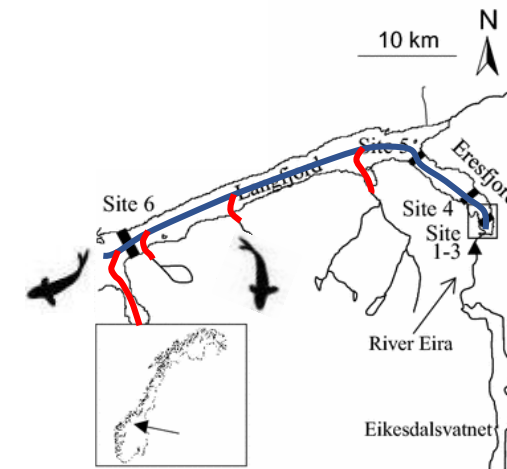


AGD scores ≥ 1:	Control	Snorkel	Control	Snorkel
	0%	100%	14%	100%

FW snorkel an option to control lice and AGD

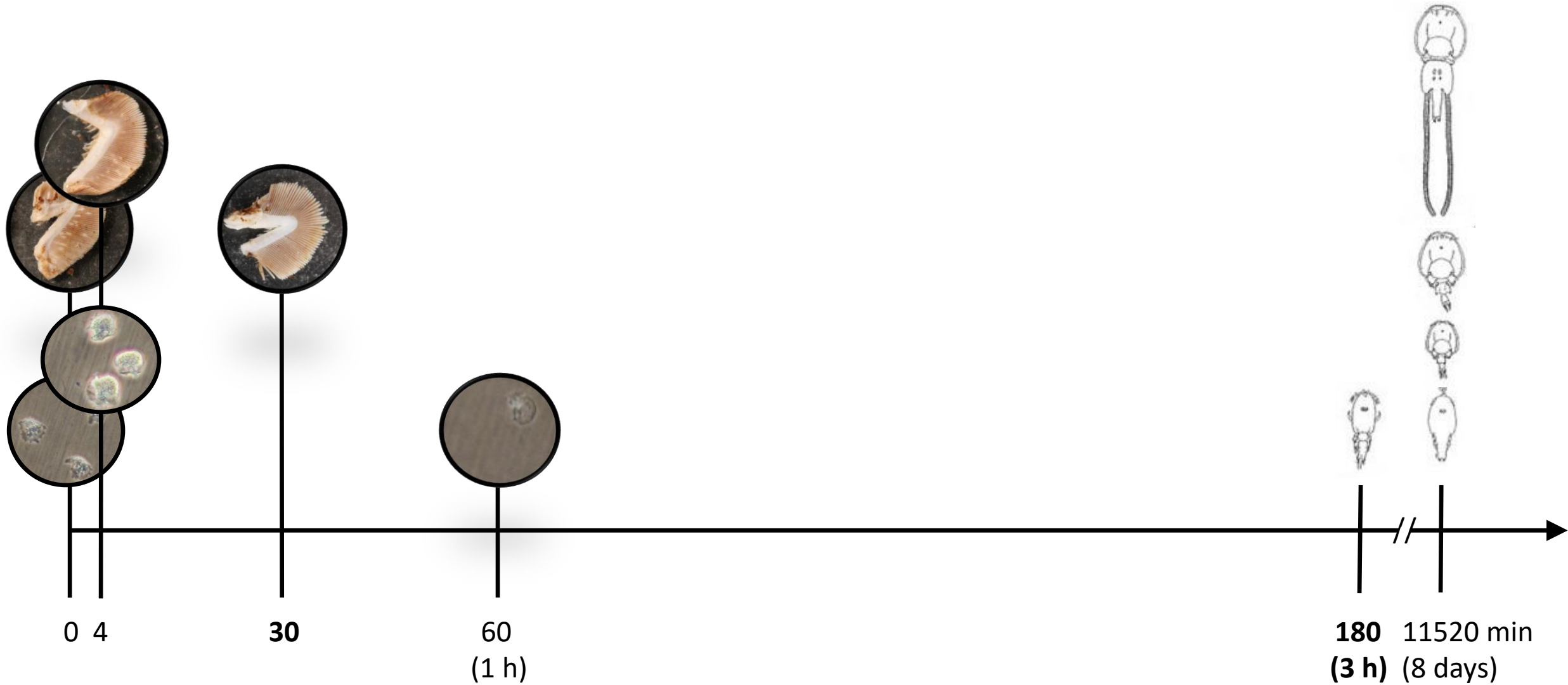


Korsøen et al. (2012) Aquac Eng

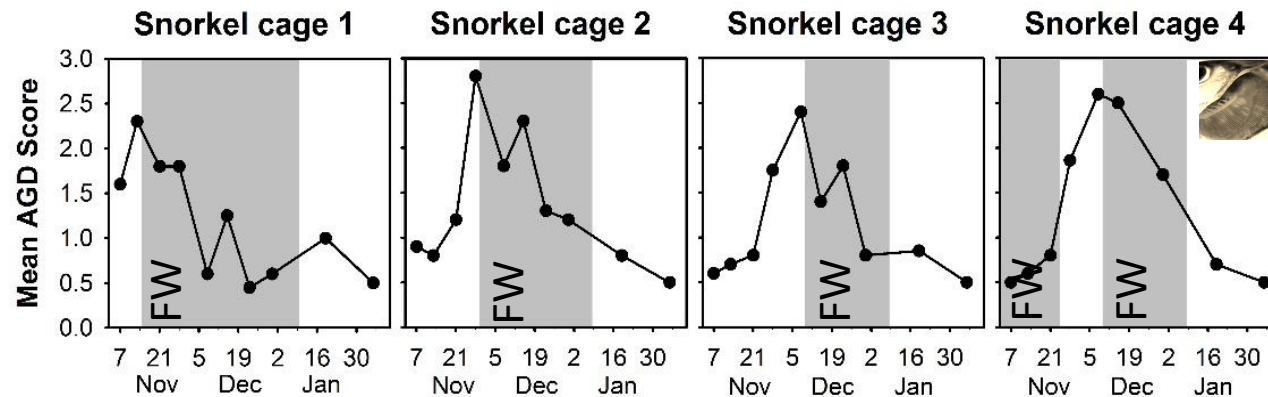
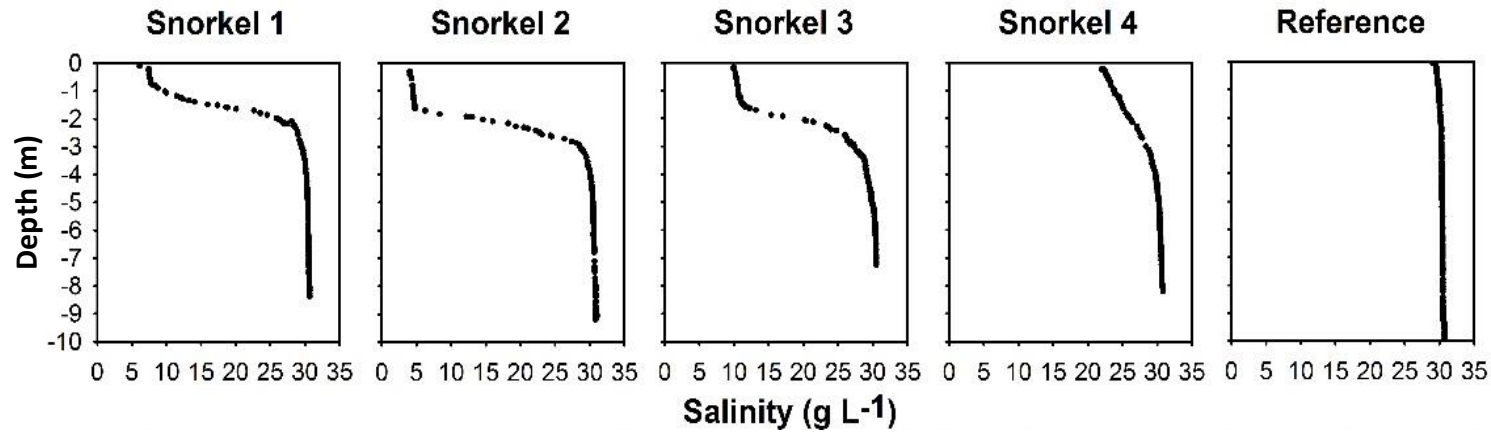


Mitamura et al. (2017) Anim Biotelem

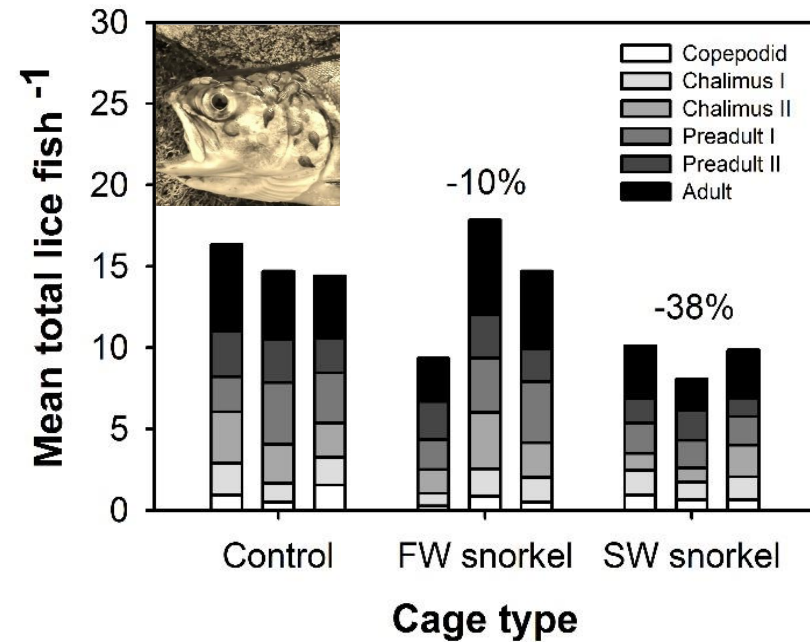
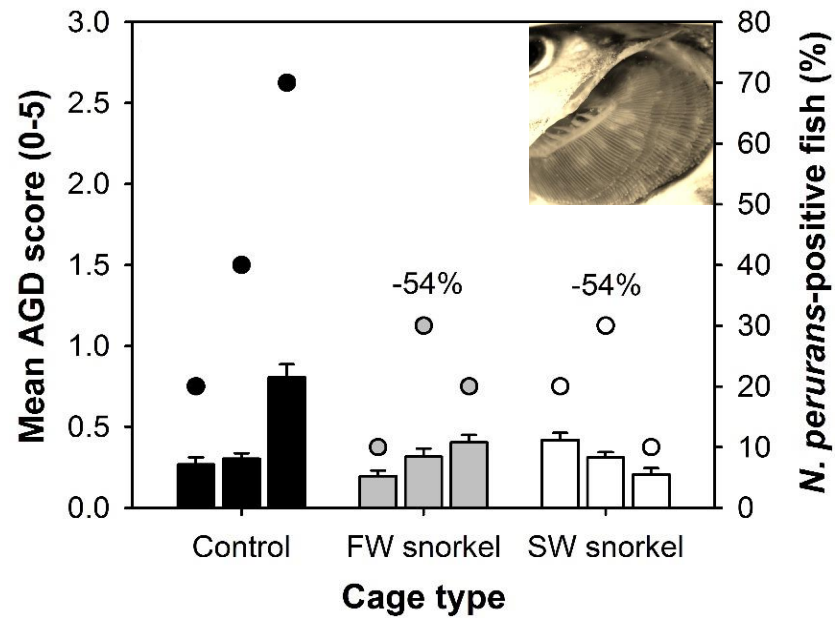
AGD and lice in freshwater



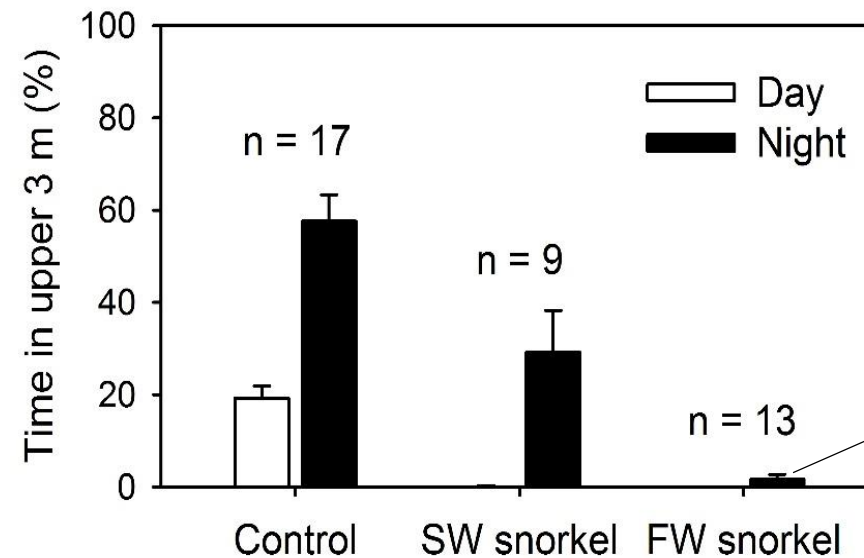
Commercial cages: FW snorkel testing



Research cage experiment: AGD and lice

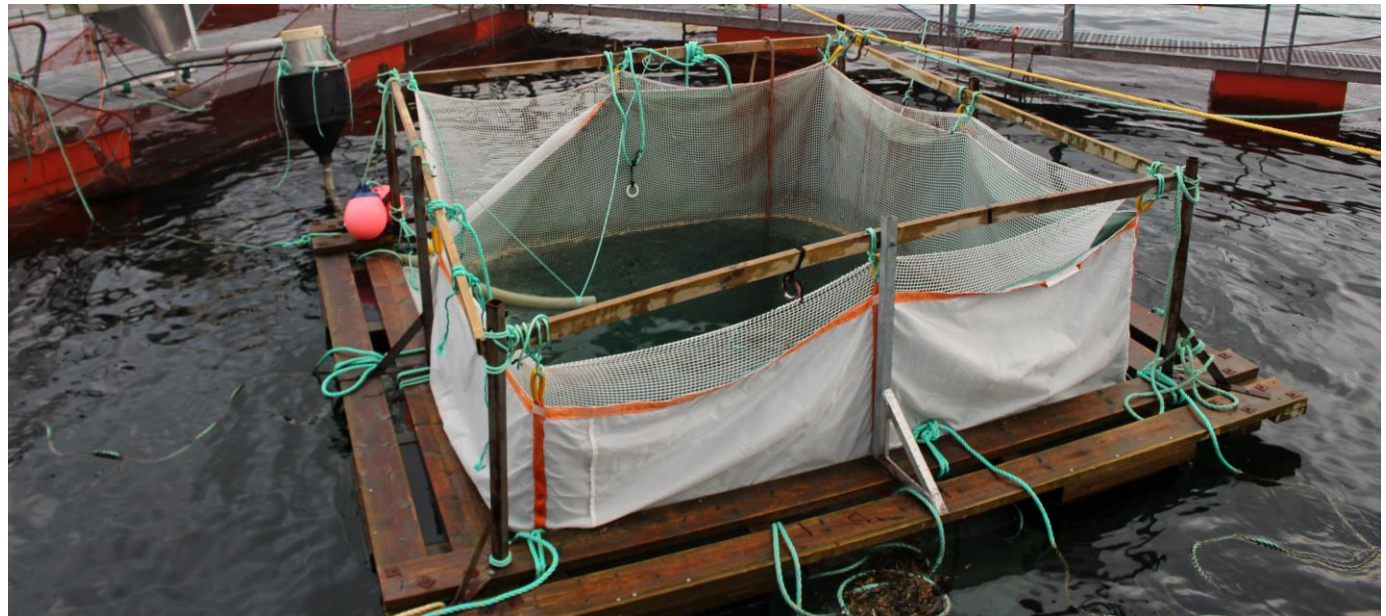
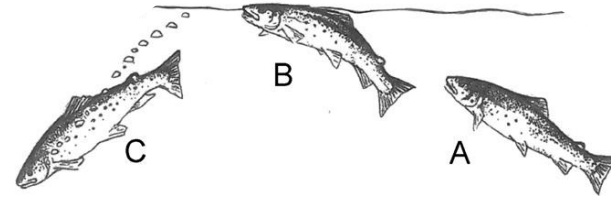
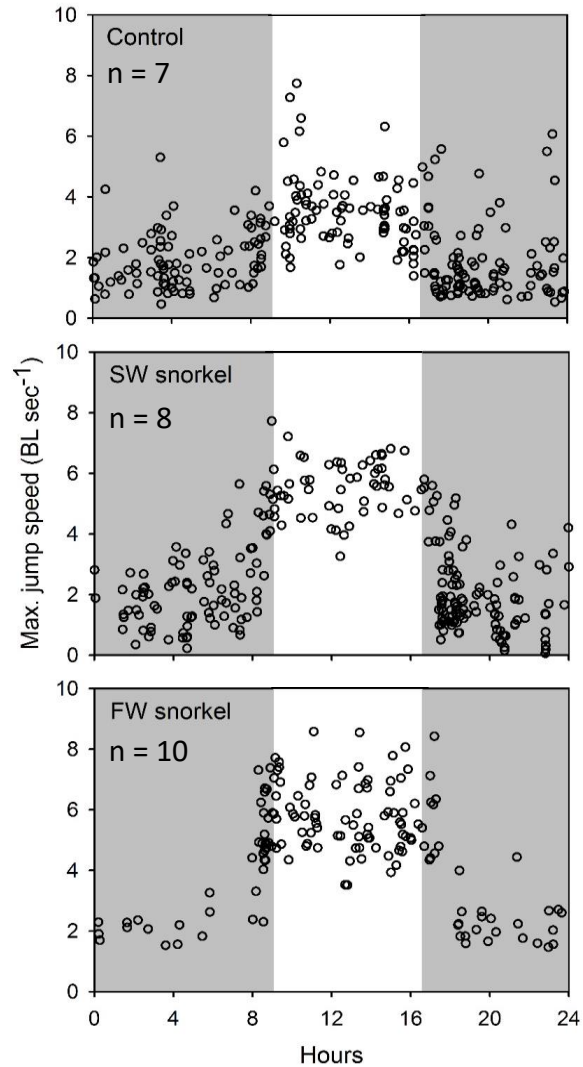


Research cage experiment: Fish depth



17 min day⁻¹
(or 7 min day⁻¹
if excluding 1 fish)

Research cage experiment: Fish jumps



Conclusions and future directions

- Short, frequent FW doses are a viable alternative
- FW avoidance is a thing
- May force salmon below snorkels, increasing lice infestations
- FW snorkel effects may depend on cage scale

