

# Optimal salinity during postsmolt stage

## HYPOTHESIS:

Salinity under 20ppt causes lower frequency of early maturation and least osmoregulatory disturbance in smolt and post-smolt and mortality during salt water transfer.

**DURATION:** 2020-2021

**FISH SIZE TESTED:** 40-800 g

**SALINITIES TESTED:** Brackish water, fresh water, salt water

## HIGHLIGHTS:

- Effects of salinity on smolts are complex: impact on growth-related and osmoregulation related challenges are intermingled.
- No positive effect of salinity level during smoltification.
- Salinity level has minimum impact on growth in smolts and postsmolts.
- Larger smolts have better osmoregulatory homeostasis.
- Salinity above 20ppt prior to transfer may cause high mortality.
- Salinity above 20ppt together with continuous light and high temperature (>14°C) during post-smolt period have a higher risk of triggering maturation.
- Higher temperature (> 16°C) together with salinity above 20ppt pose osmoregulatory challenge and triggers mortality.

## RECOMMENDATION:

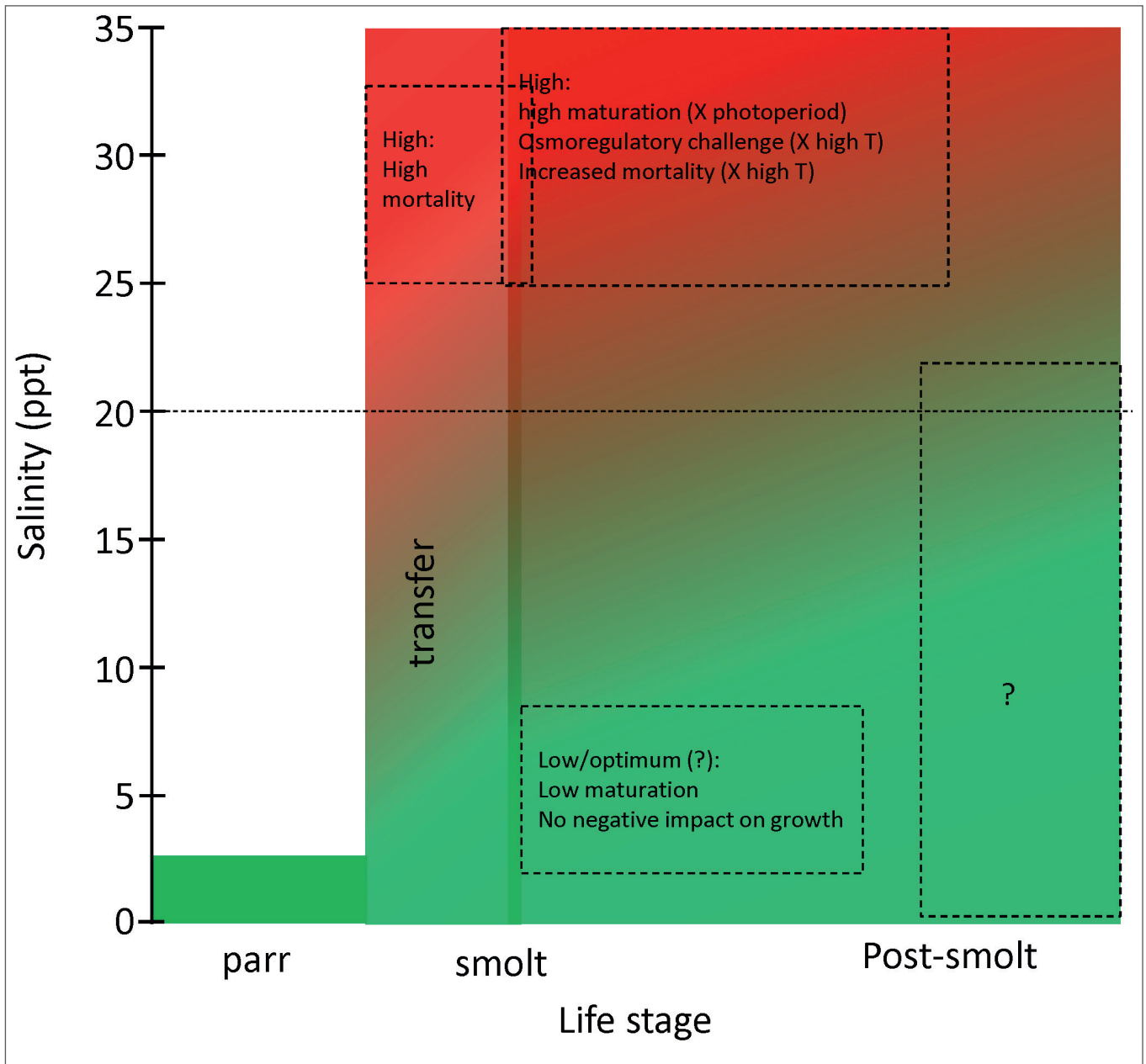
- In general, to avoid maturation and osmoregulatory challenges, and to promote growth, salinities below 20ppt are recommended for posts-molts before transfer.
- If higher salinity is used during post-smolt stage in tanks, temperature below 14°C and photoperiod with dark period of 6 hours should be used.

## READ MORE:

Lal, P., Tang, P., Tronci, V., Gharbi, N., Nilsen, T.O. (2023) Impact of environmental conditions on growth and post-smolt performance of Atlantic salmon (In revision)



The factsheet is ready for implementation, but with the note that the testing has not been done for all industrial relevant conditions.



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