



# SEAFARM PULSE GUARD (SPG): PROTECTING FARMED SALMON FROM SEALICE

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- A structure of insulated conducting netting circulates a cage or a site.
- Electronic control system sends out electronic pulses.
- The system deactivates copepodites of salmon lice.

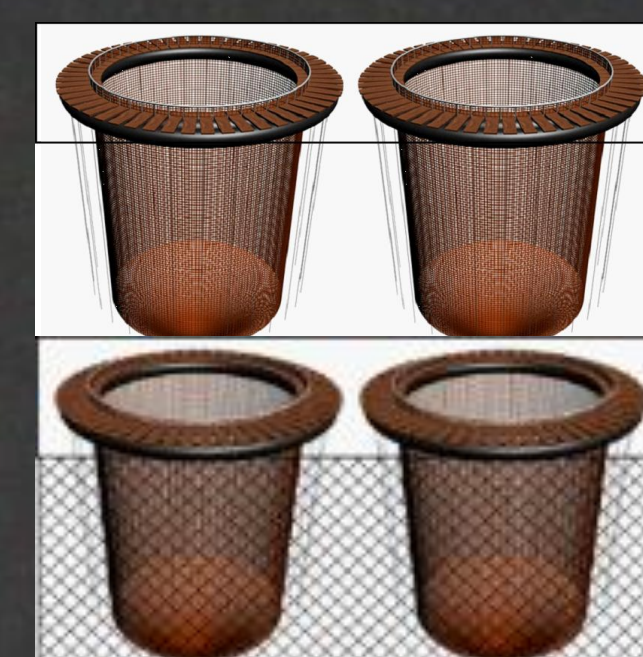
## Materials and Methods

### Objectives:

Assessing tolerance of the system to natural conditions (currents, waves, seawater). Conduct long term experiment (6 months), to evaluate the efficiency of the system and potential effects on the salmon.

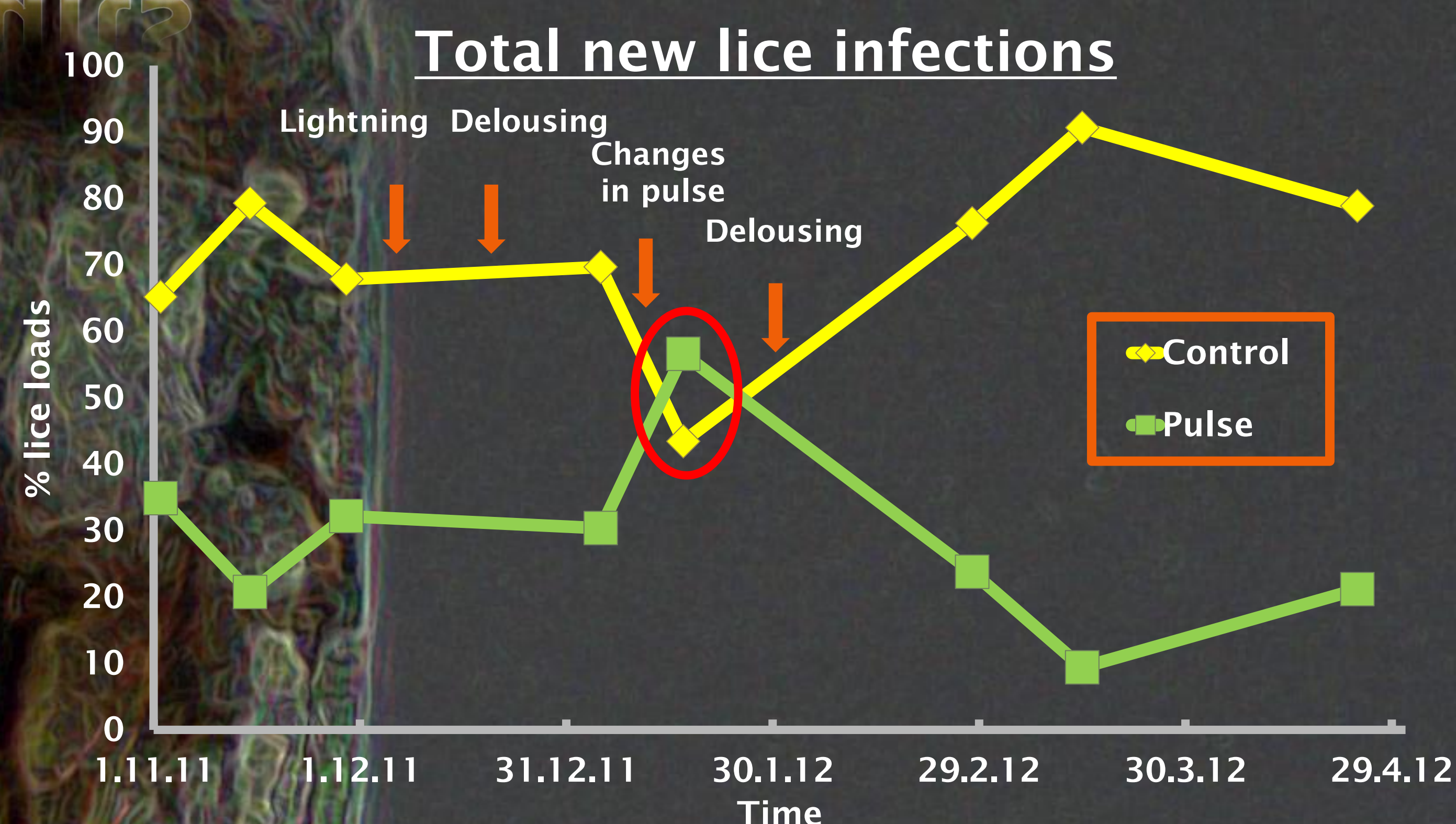
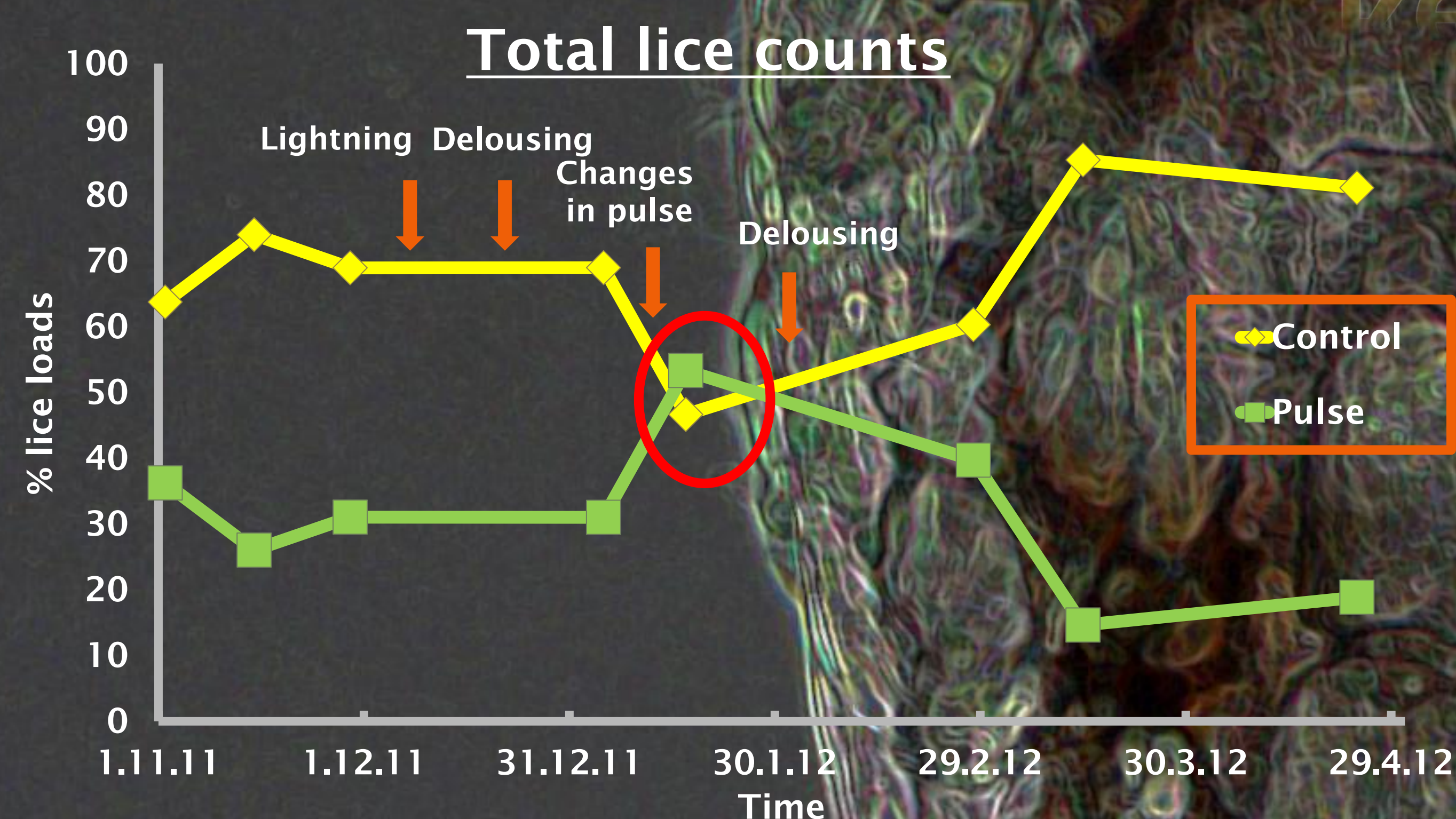
### Setup:

Two micro-pens, no electric skirt (control). Two mikro-pens with electric skirt (pulse). Each cage 1,5m ø, 6m deep, 100 fish. Daily feeding and treatment identical. Potential sealice infections occurred naturally.

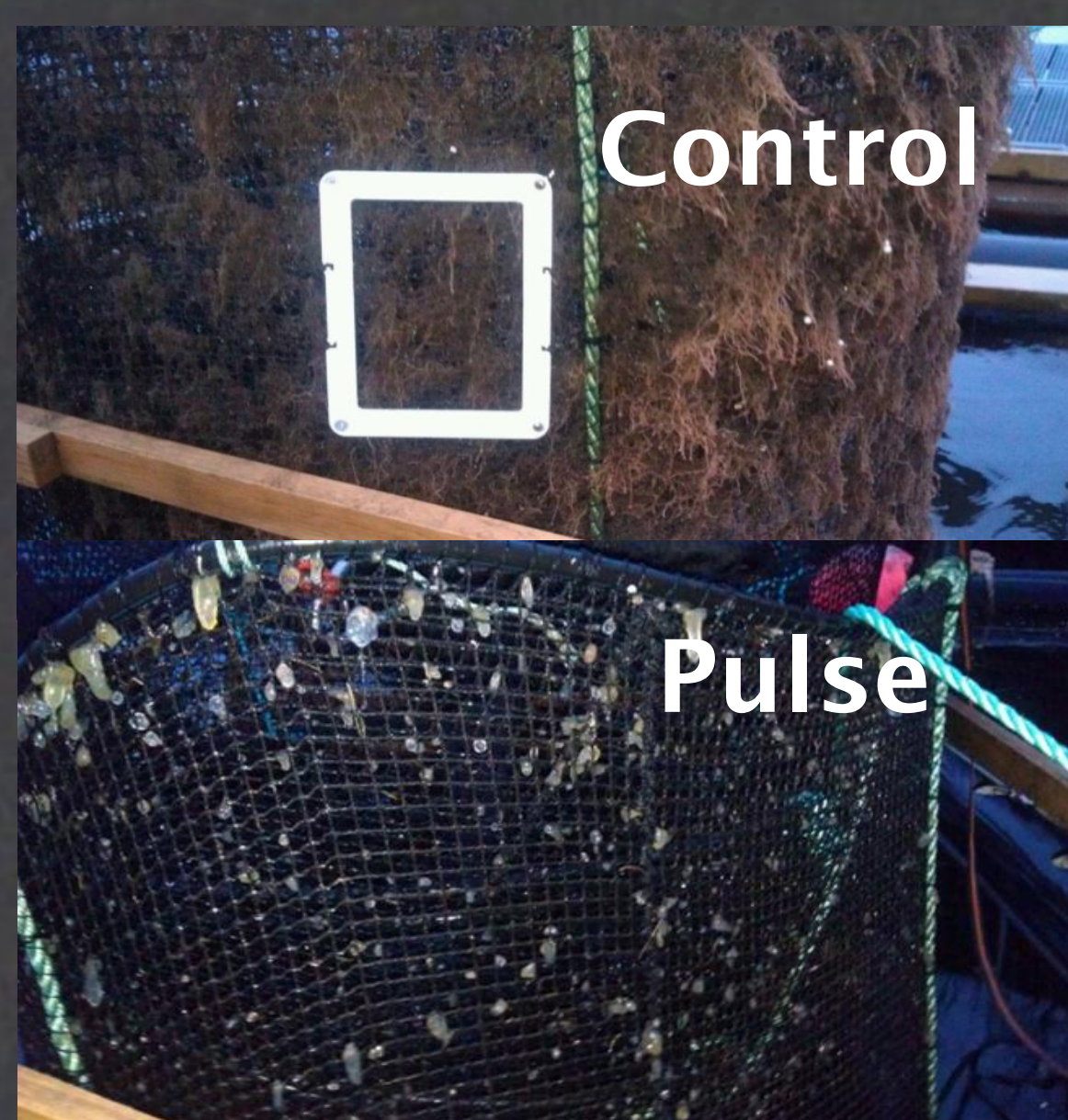


**Analysis:** Sealice infections/condition (every other week). Condition index, Proteomics, Glucose, Cortisol (5 x during experiment). Histology (3 x during experiment).

## Results



Total lice infections during the first 2 months were 60-75% on control fish and 25-40% in the pulse. Better results were found for new infections with 70-80% of lice on the control groups and 20-30% on pulse groups. The pulse generator was hit by a lightning and needed rebuilt in December. All groups were deloused thereafter. The new pulse settings were found different from the original and this affected the system efficiency as well as fouling on control nets (red circle). New pulse settings after 30.01.12 increased efficiency in deterring new infections of sealice with only 10-20% of the lice found on the pulse group.



## Conclusions

- The SPG-system had significantly lower lice loads for both total and new infections.
- There are no signs that the system has either acute or chronic negative biological effects on the fish.
- The fish in the pulse treatment was consistently in better condition than the control fish throughout the experiment.
- The electrical pulses reduced fouling (hydroids/tunicates) on the nets drastically.

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