NTNU

Kunnskap for en bedre verden

NTNU

Taskforce lakselus

Taskforce lakselus

Anna Solvang Båtnes – forsker/koordinator

Tematisk satsingsområde 2014–2023

NTNU HAVROM

EMILSEN FISK AS

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Taskforce lakselus: mekanismer for spredning av lakselus

- Oppdrettsnæringen i Midt-Norge
- FHF (Fiskeri- og havbruksnæringens forskningsfond)
- NTNU

FoU-prosjekt ved NTNU

PhD-program – 5 (6) doktorgrader

5 doktorgradsstipendiater

Internsmitte – prøvetaking

- Undersøke omrørt dyp – CTD (saltholdighet, temperatur…)
- Planktonhåvtrekk

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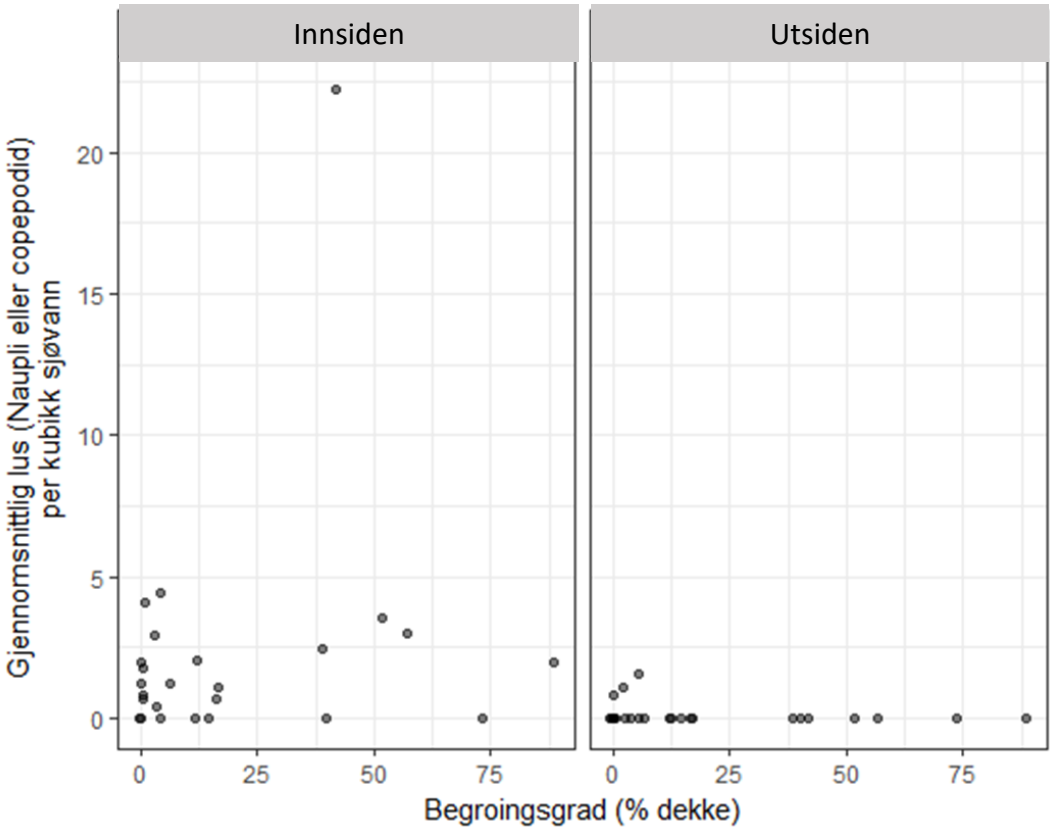
Resultater

Pilotstudie 2016 - notvask

- Merder med luseskjørt
- Planktonhåvtrekk (nedstrøms)
  - Før, rett etter og 1 dag etter vask
- Begroingsgrad

Fant ingen signifikante forskjeller mellom før, rett etter og 1 dag etter vask

Høyere konsentrasjon på innsiden enn på utsiden av merd (med luseskjørt) – hva betyr dette?



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Feltarbeid 2017

- Sesongforsøk
  - Med og uten luseskjørt
- Notvask (not med skjørt)
- Notbytte (not uten skjørt)

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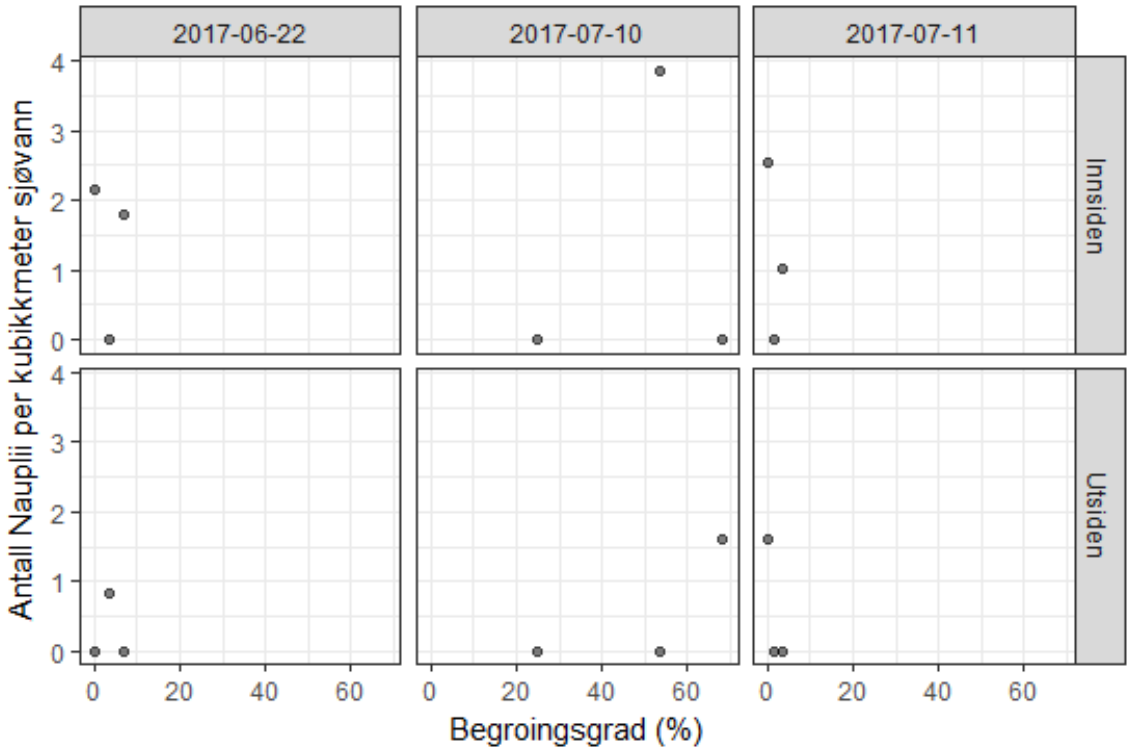
Resultater

- Med luseskjørt



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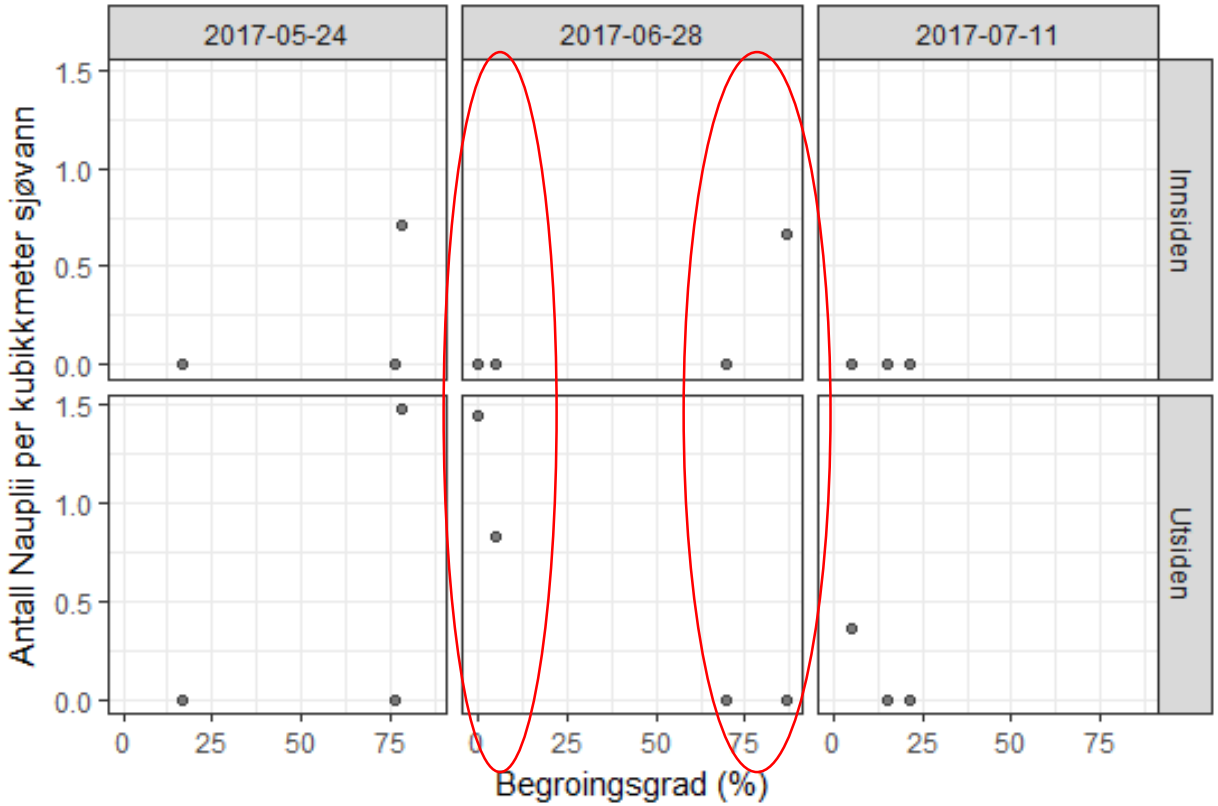
Resultater

- Uten luseskjørt



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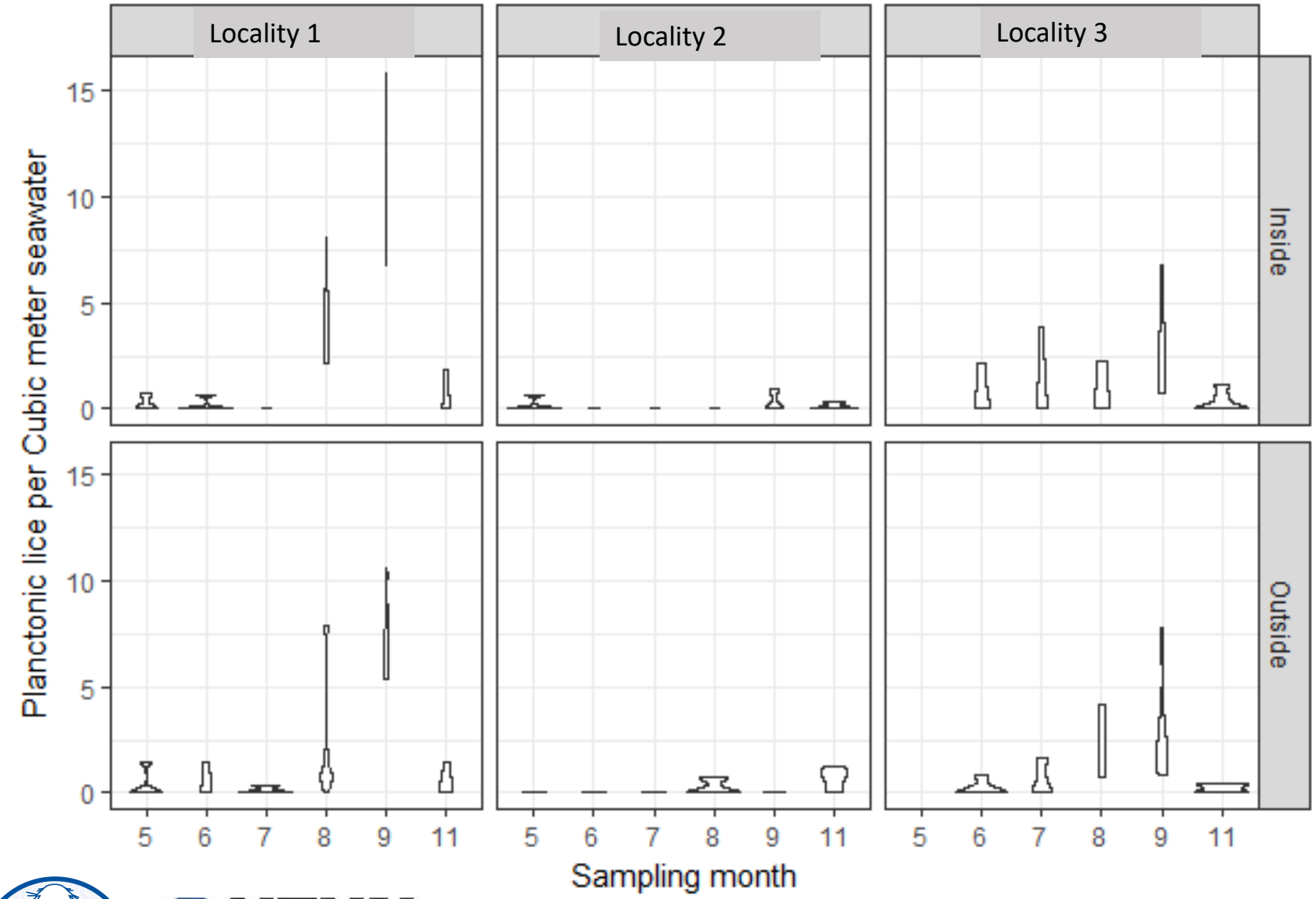

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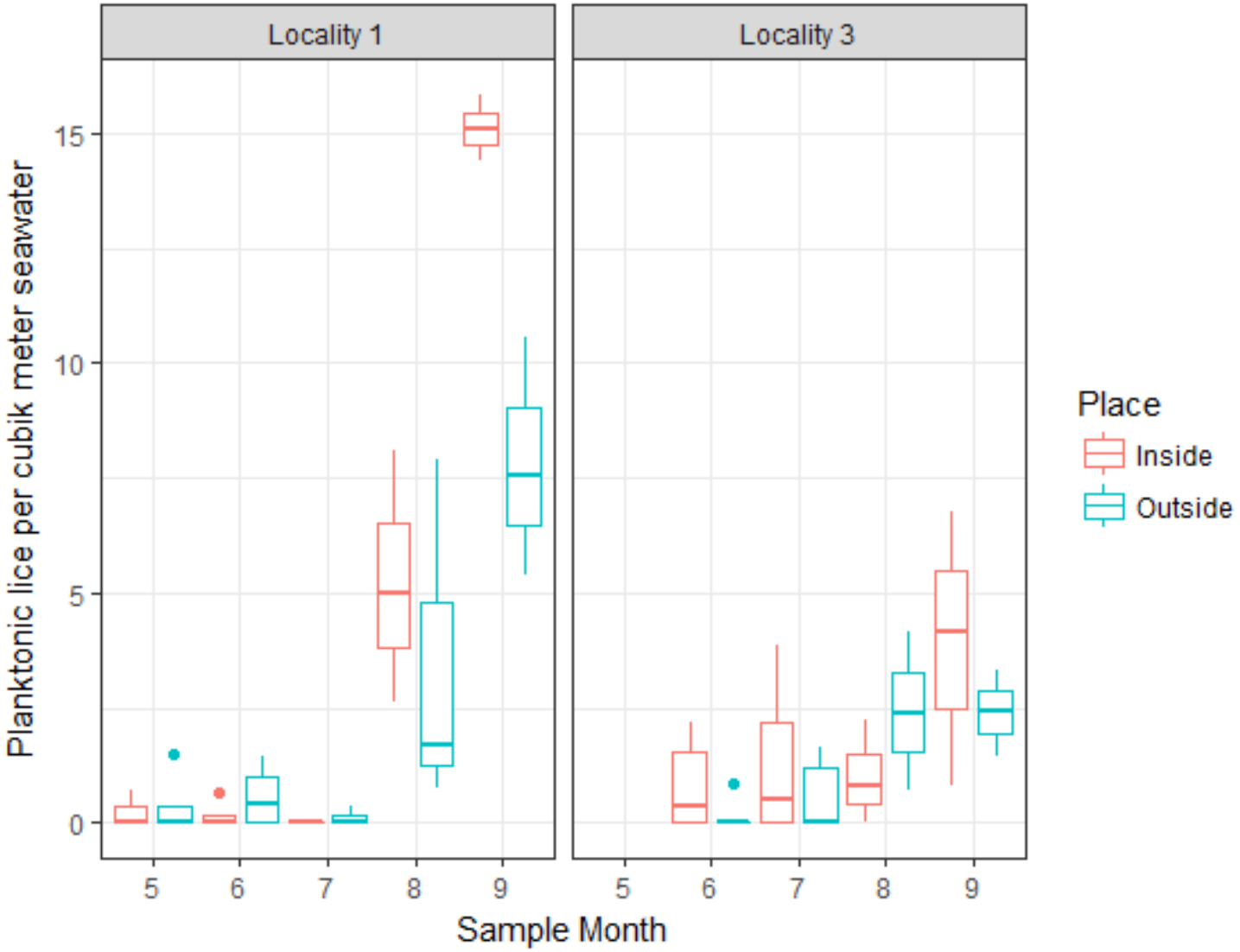
Lokalitet 1 og 2 har ikke luseskjørt
Lokalitet 3 har luseskjørt



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Trenging, avlusing – hva skjer med lusa?

Pilotforsøk av en masterstudent og en PhD-stipendiat

- Planktonhåvtrekk i løpet av trengingsprosess

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Effects of the salmon crowding on the spread of the sea lice

A brief approach to the sampling methods and initial results

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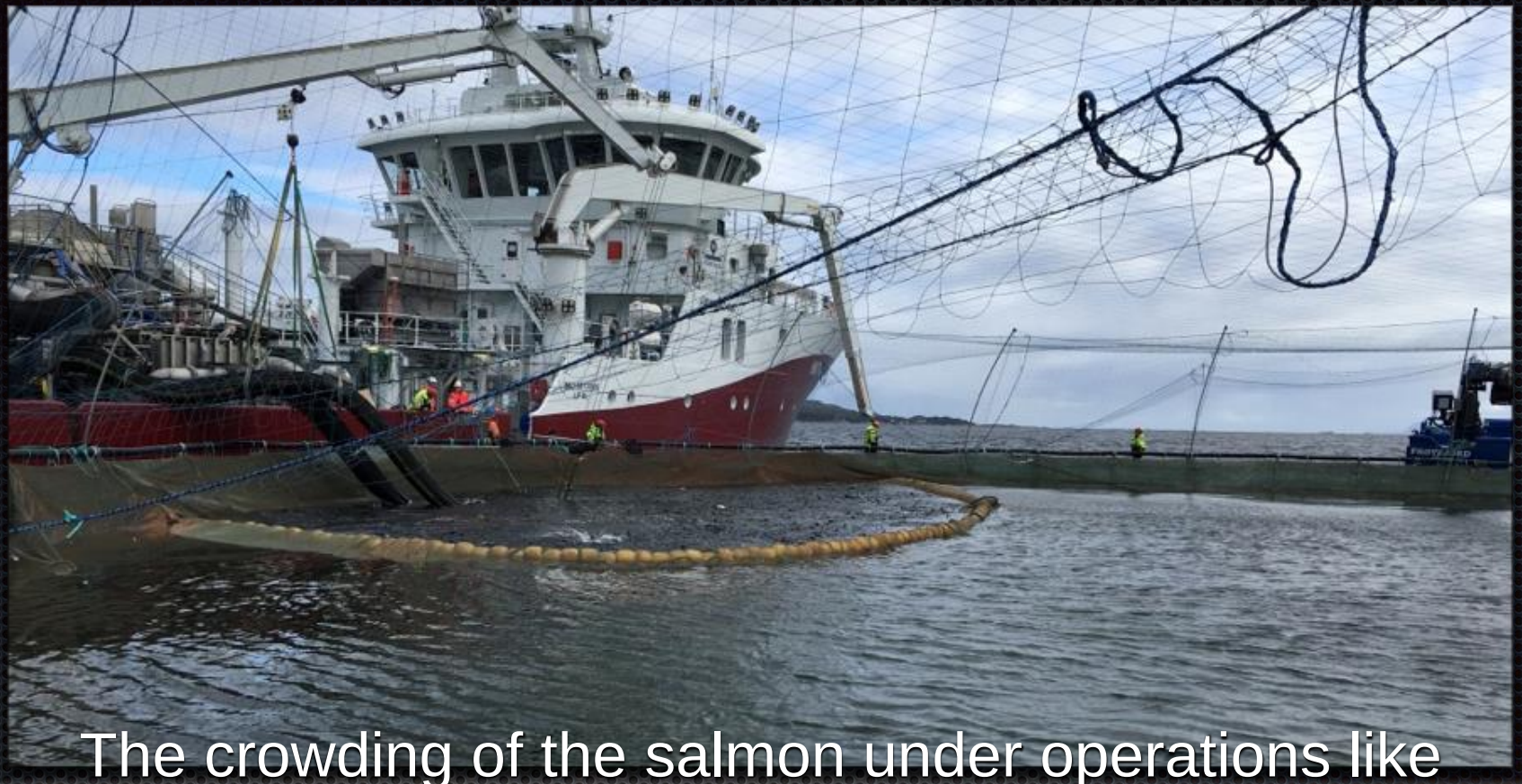
Taskforce Salmon Lice

Juan Carlos Torres
DTU´s Master Student



The crowding of the salmon under operations like delousing and sorting of the fish makes it is easier to pump the fish on board the boat.

Does it have an effect on the spread of the sea lice?

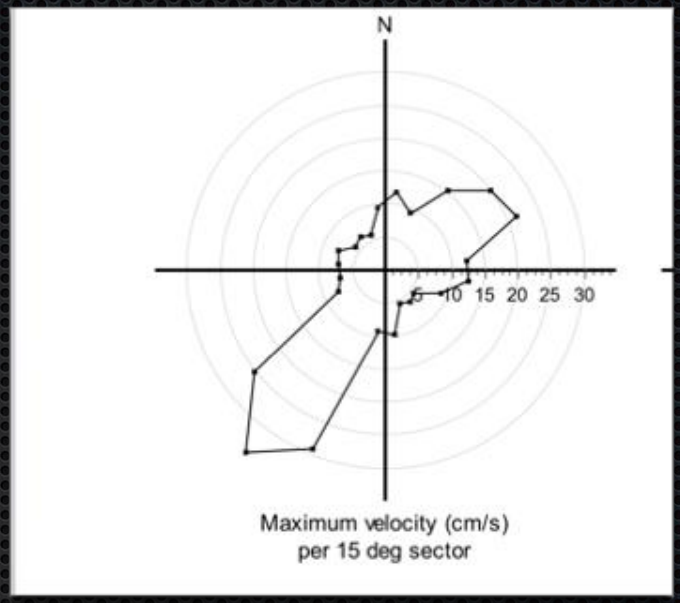
Two different farms were chosen

Mulingen

Two different farms were chosen

Oksbåsen

Salmons farms are normally placed following the main currents



Methodology

Salmon lice presents a planktonic life during the early stages of its development


Out-flow
In-flow

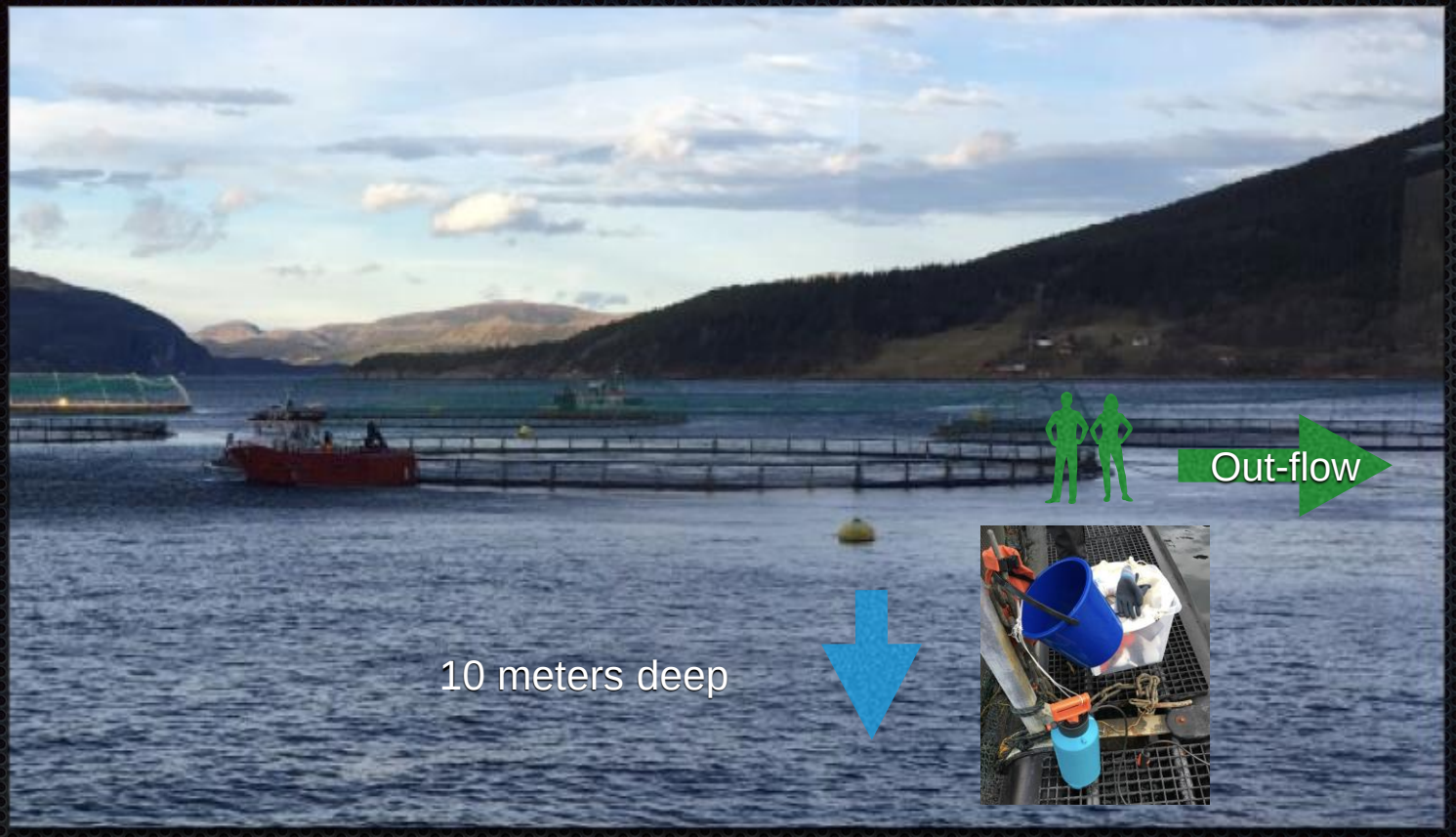

Out-flow
In-flow
Water-flow
Water-flow


In-flow
Out-flow
Water-flow
Water-flow


In-flow


In-flow

3 In-flow replicates



3 Out-flow replicates

D-1 Early crowding

D-2 Late crowding

End Post crowding

D-1 Early crowding

3 In-flow replicates

3 Out-flow replicates

D-2 Late crowding

3 In-flow replicates

3 Out-flow replicates

End Post crowding

3 In-flow replicates

3 Out-flow replicates

D-1 Early crowding

3 In-flow replicates

3 Out-flow replicates

3 different cages

D-2 Late crowding

3 In-flow replicates

3 Out-flow replicates

End Post crowding

3 In-flow replicates

3 Out-flow replicates

D-1 Early crowding

3 In-flow replicates

3 Out-flow replicates

3 different cages

D-2 Late crowding

3 In-flow replicates

3 Out-flow replicates

2 different farms

End Post crowding

3 In-flow replicates

3 Out-flow replicates

D-1 Early crowding

3 In-flow replicates

3 Out-flow replicates

D-2 Late crowding

3 In-flow replicates

3 Out-flow replicates

End Post crowding

3 In-flow replicates

3 Out-flow replicates

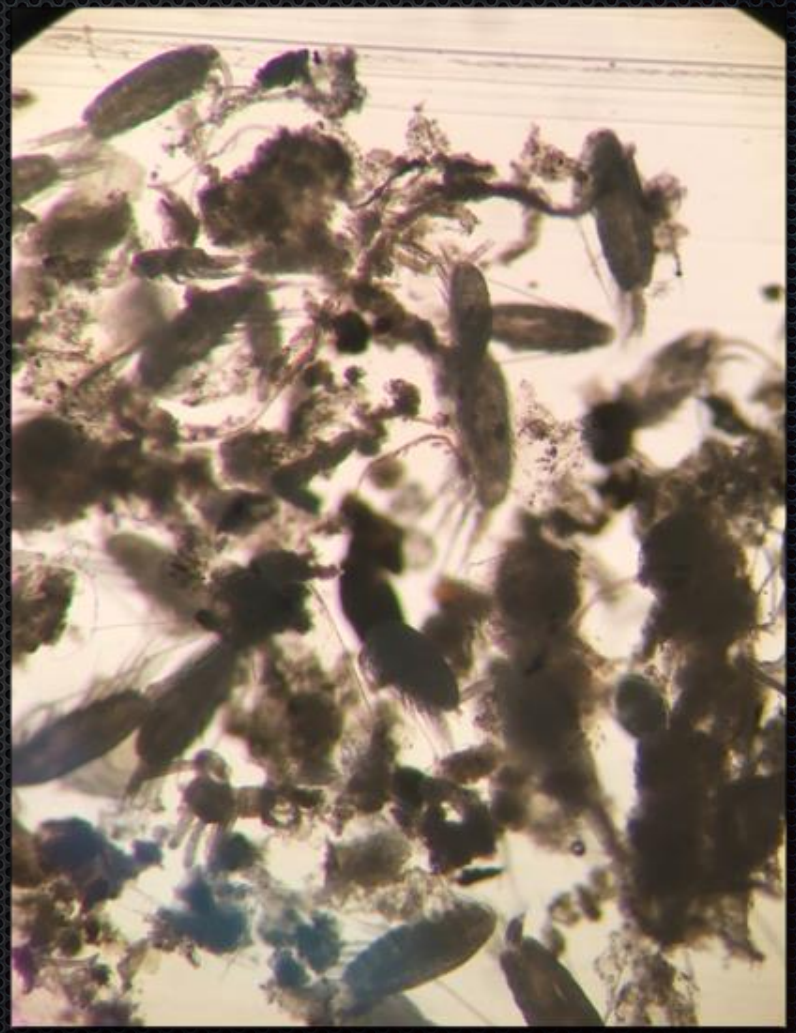
3 different cages

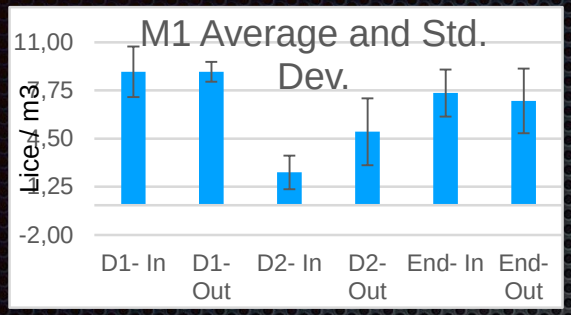
2 different farms

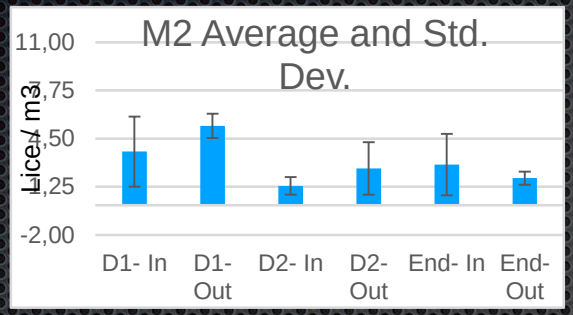
18 samples per cage

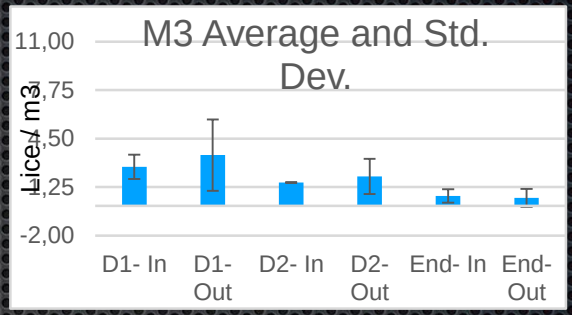
54 samples per farm

Each sample was analyzed on the microscope by visual counting




M1 Average and Std. Dev.
Lice / m3
11,00
-2,00
D1- In
D1- Out
D2- In
D2- Out
End- In
End- Out


M2 Average and Std. Dev.
Lice / m3
11,00
-2,00
D1- In
D1- Out
D2- In
D2- Out
End- In
End- Out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Lice / m3
11,00
-2,00
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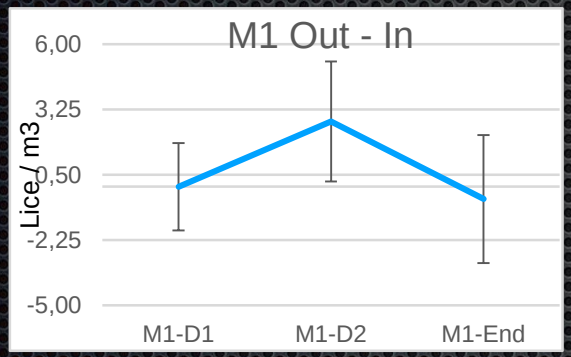
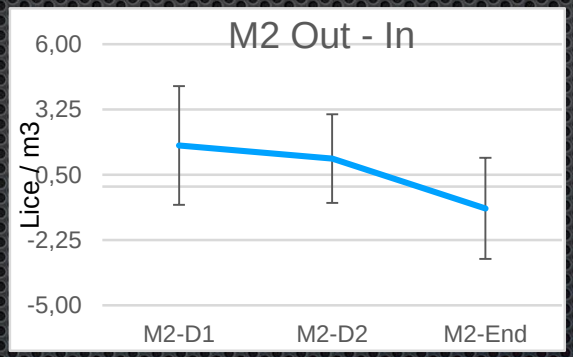
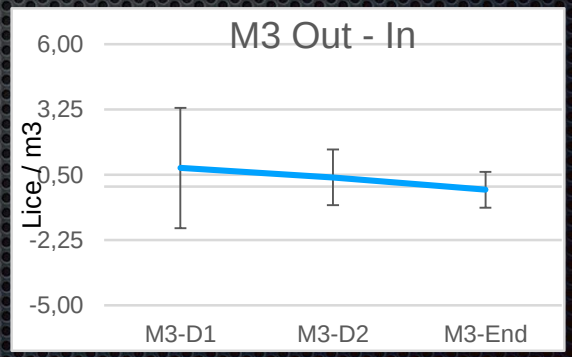
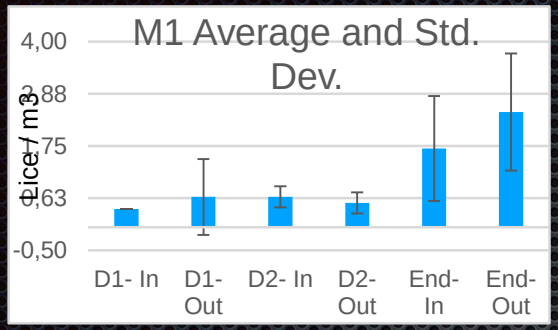
D1- Out
D2- In
D2- Out
End- In
End- Out

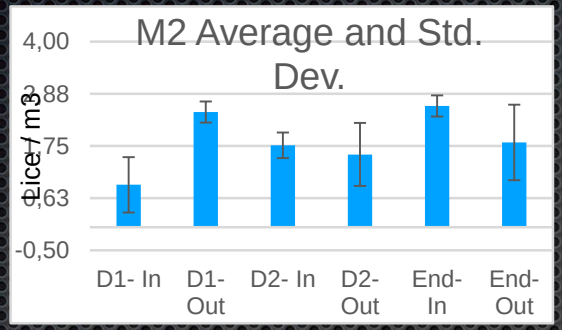
Mulingen


M1 Out - In
Lice / m3
6,00
3,25
0,50
-2,25
-5,00
M1-D1
M1-D2
M1-End


M2 Out - In
Lice / m3
6,00
3,25
0,50
-2,25
-5,00
M2-D1
M2-D2
M2-End


M3 Out - In
Lice / m3
6,00
3,25
0,50
-2,25
-5,00
M3-D1
M3-D2
M3-End


M1 Average and Std. Dev.
4,00
1,88
0,75
-0,50
Lice / m3
D1- In
D1- Out
D2- In
D2- Out
End- In
End- Out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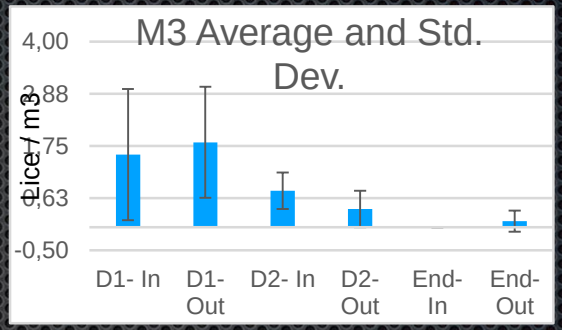
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4,00
1,88
0,75
-0,50
Lice / m3
D1- In
D1- Out
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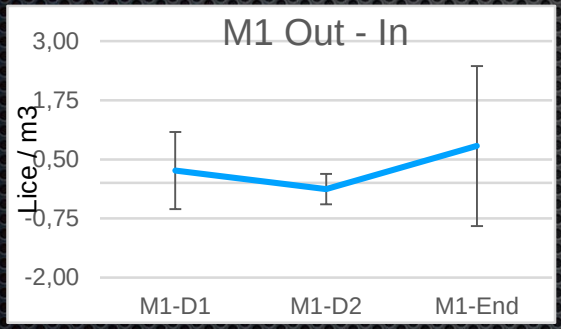
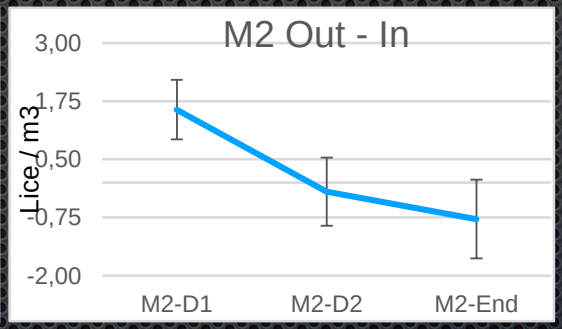
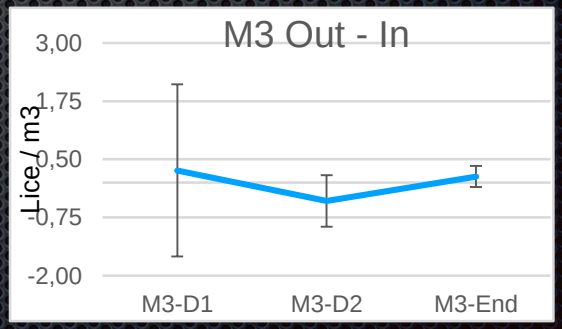
D2- Out
End- In
End- Out

Oksbåsen


M1 Out - In
3,00
1,75
0,50
-0,75
-2,00
Lice / m3
M1-D1
M1-D2
M1-End


M2 Out - In
3,00
1,75
0,50
-0,75
-2,00
Lice / m3
M2-D1
M2-D2
M2-End


M3 Out - In
3,00
1,75
0,50
-0,75
-2,00
Lice / m3
M3-D1
M3-D2
M3-End

Conclusions

- Larvae concentration in the water column remains stable even though the number of female adults decreases during the crowding
- More sampling and replicates are necessary during different stages of the crowding to achieve conclusive results
- Error due to sampling practices would be decreased by including oceanographical devices to measure accurately the currents and the water flow

Tusen takk for your attention

Questions?