



Taskforce salmon lice

Anna Solvang Båtnes – coordinator/researcher

Strategic Research Area 2014–2023

NTNU OCEANS





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Taskforce Salmon Lice

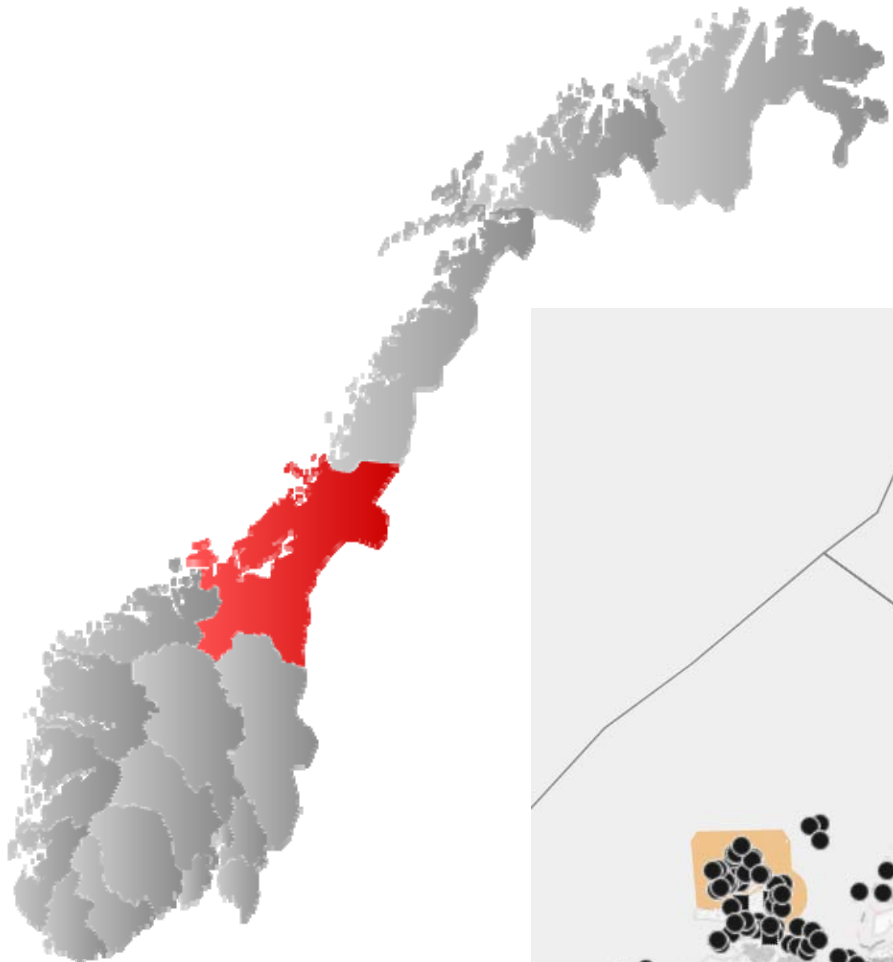
Taskforce salmon lice: spread and infection mechanisms of sea lice within and between farmed and wild populations of salmonids

- R&D project at NTNU – PhD program

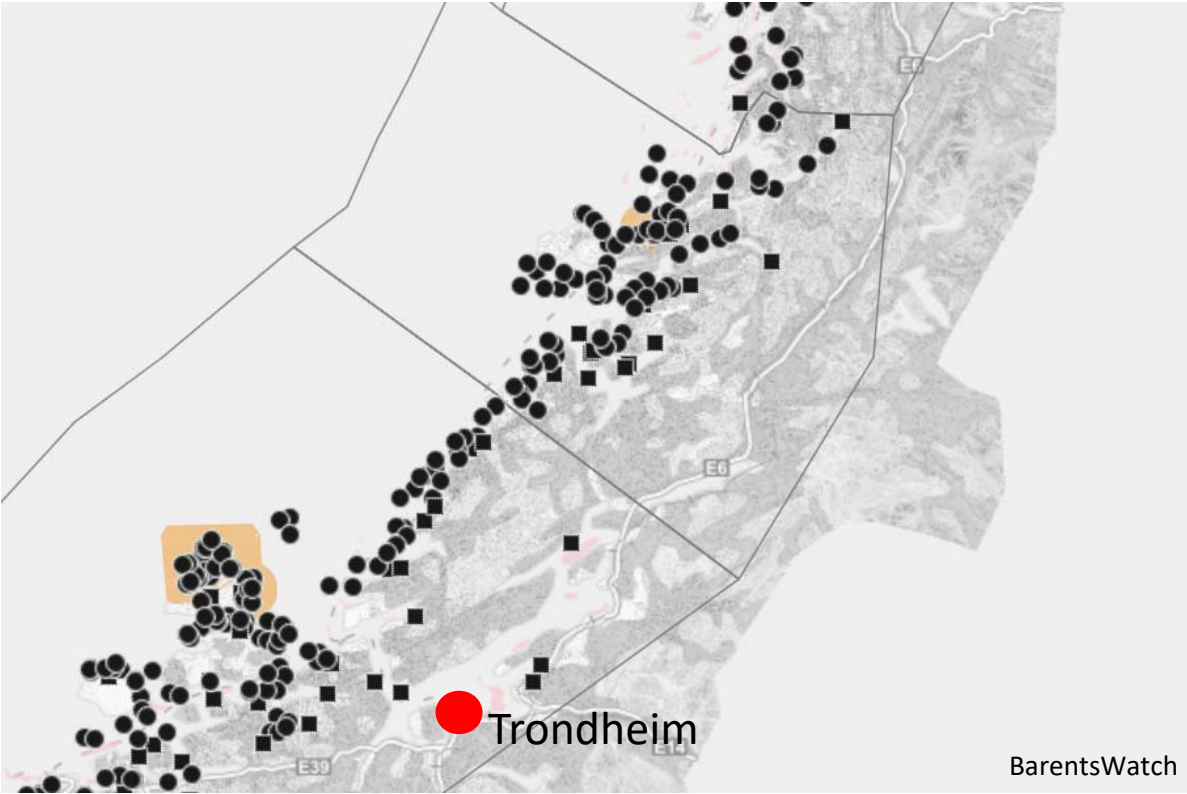


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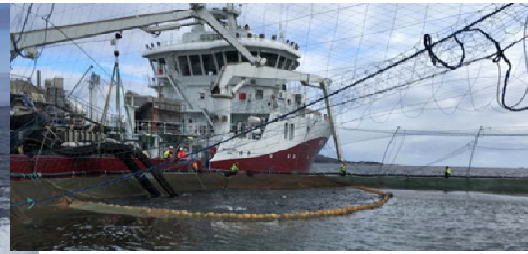


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Taskforce Salmon Lice

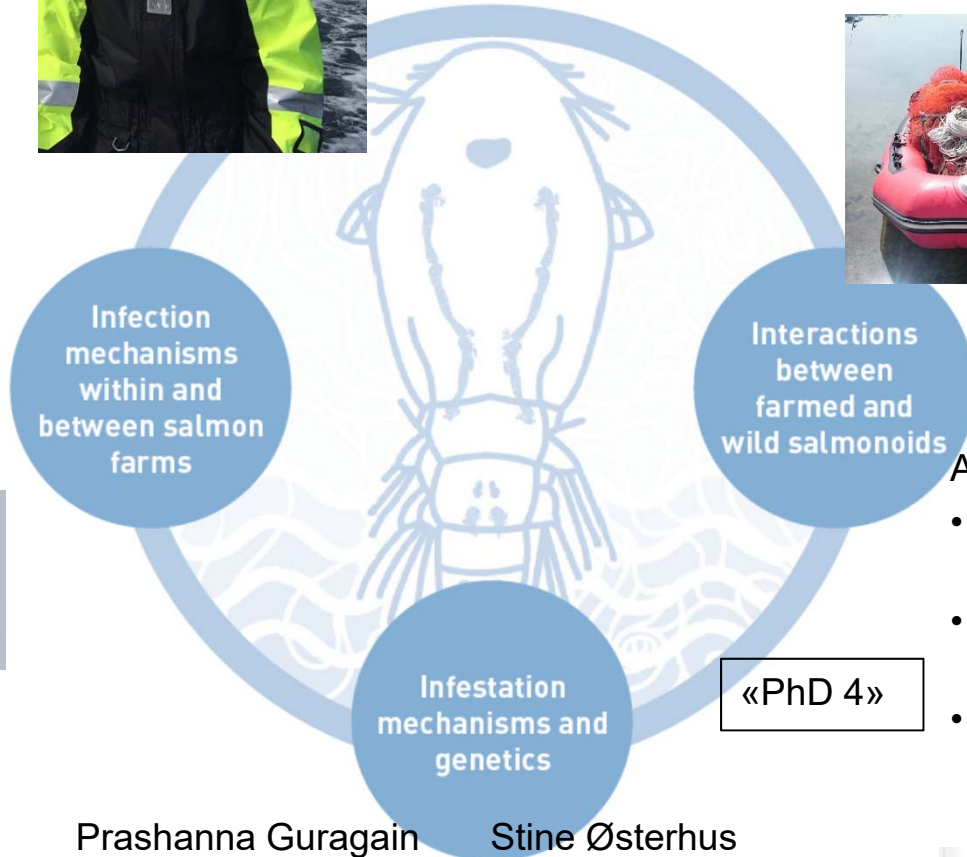
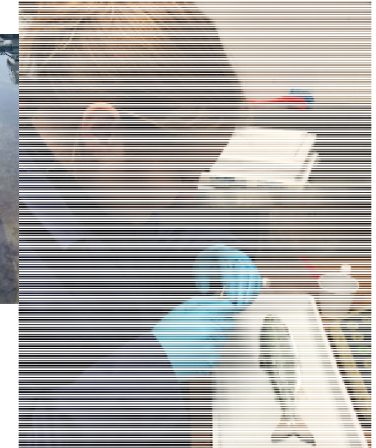
Lone S. Jevne

- Density of sea lice larvae around farms over production cycle
- Data analyses of salmon louse infections, production data, delousings, temperature, weather, currents...



Maria Guttu

- Salmon farm operations
- Salmon lice dynamics during crowding, delousing
- Freshwater delousing



Ane V. Nytrø

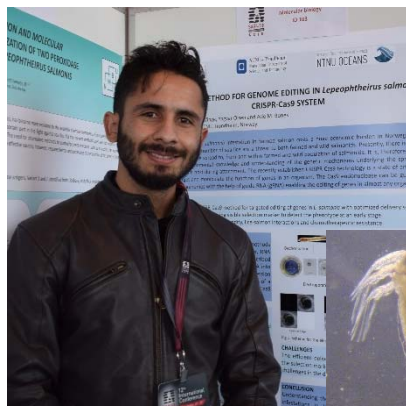
- Interactions wild and farmed fish
- Data set on wild salmon returning to the coast
- Sea lice during and after crowding

Prashanna Guragain

- Gene editing of sea lice - CRISPR
- Genetic tracing, categorization

Stine Østerhus

- Chemical ecology of the sea lice
- Immunology, genetic responses
- Energy/lipids in larvae



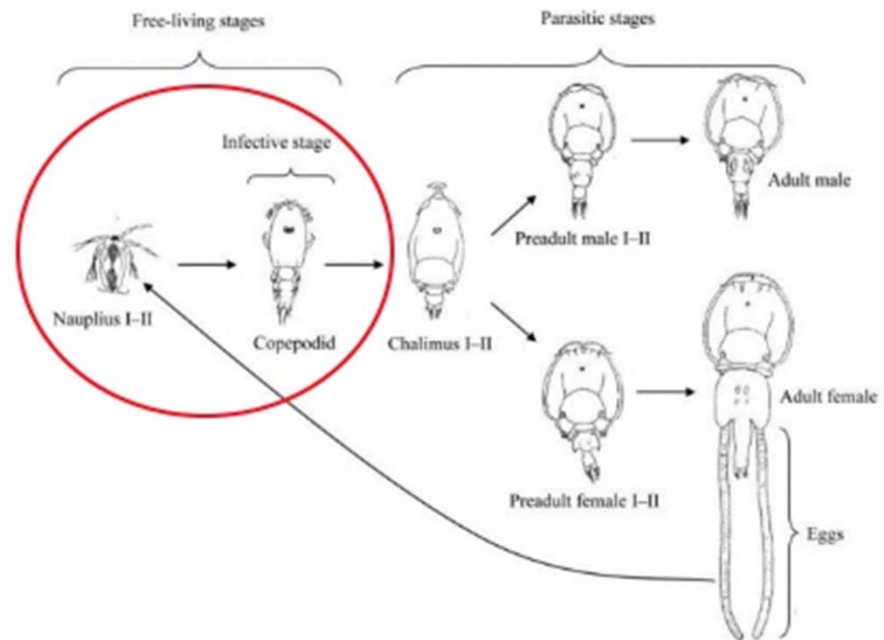
Characterization of seasonal variations in planktonic sea lice abundance in association to fish farm installations at Frøya.

Øystein Vågen Dimmen

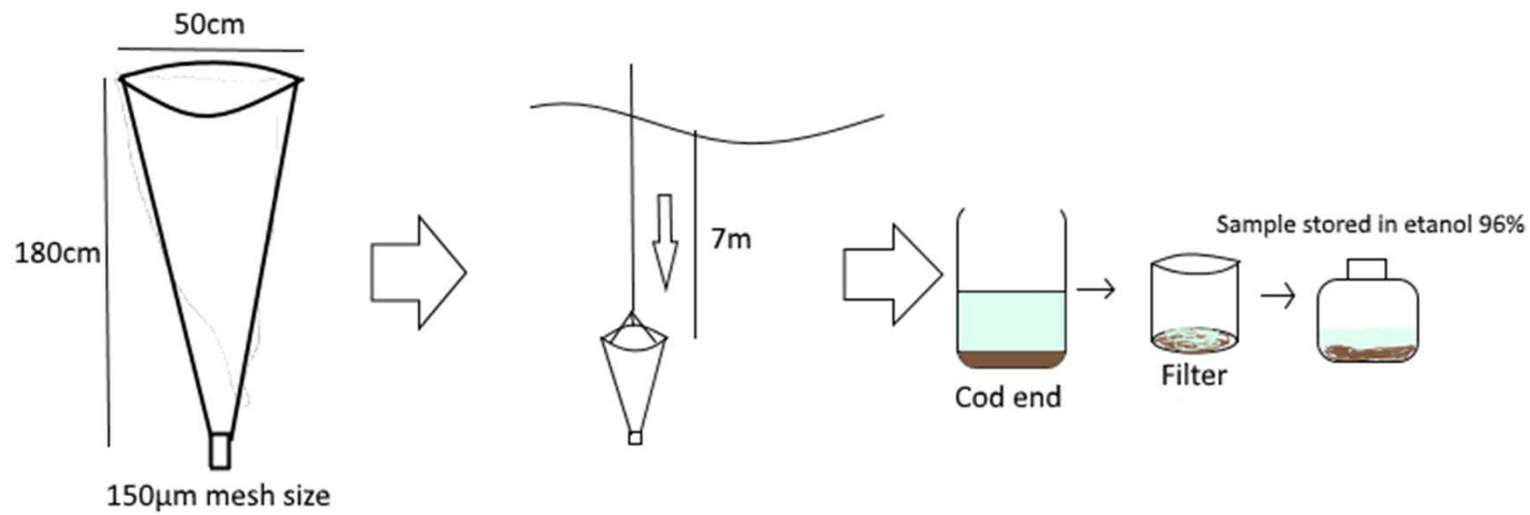
Supervisor: Kjell Inge Reitan

Co-supervisor: Lone Sunniva Jevne

Lepeophtheirus salmonis



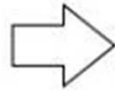
Method - Fieldwork



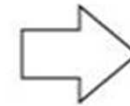
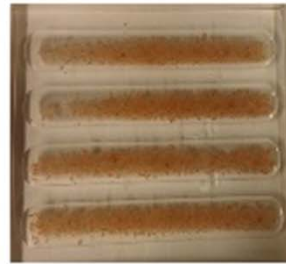
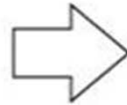
Method - Lab



Sample



Filter 100 μ m



Leica M205 C (0.78- 16.0x)

Nauplii 1

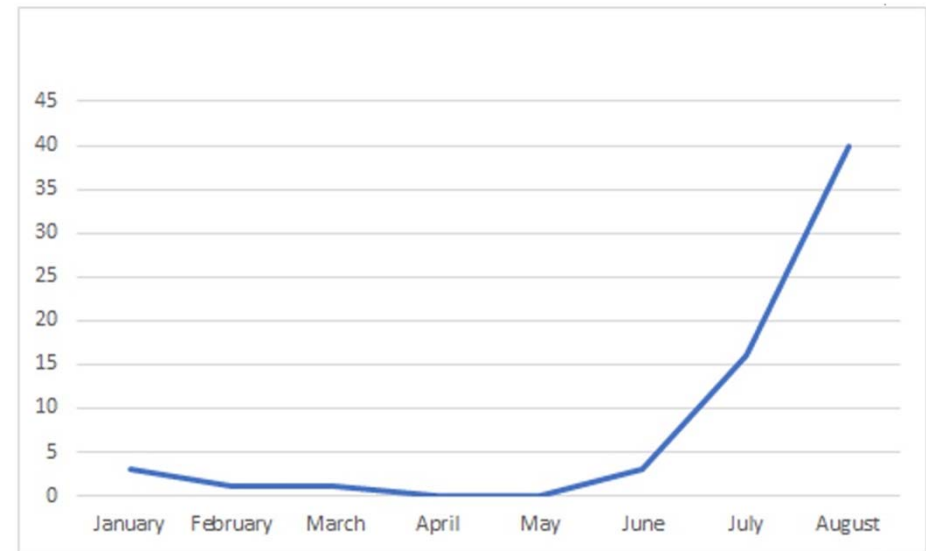
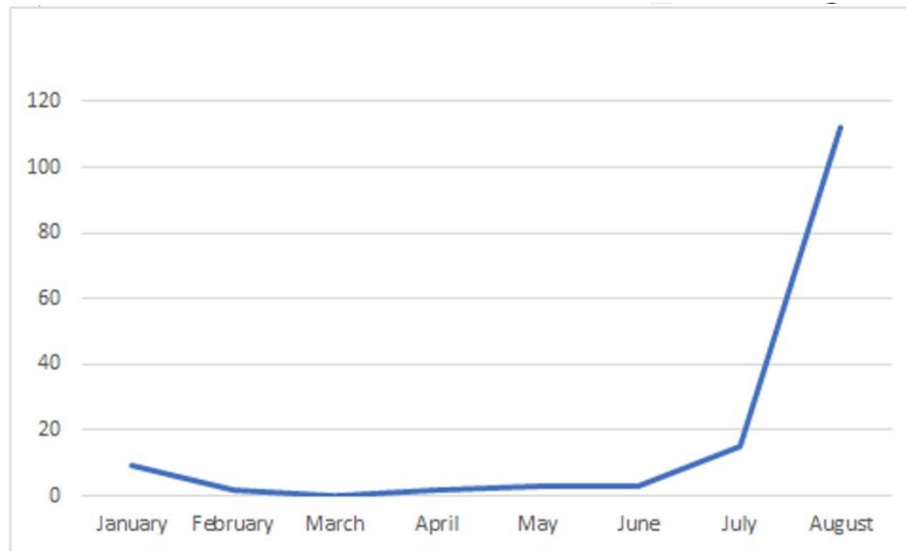


Nauplii 2



Results

Farm 1



Salmon Lice during freshwater treatment

MARIA GAASØ

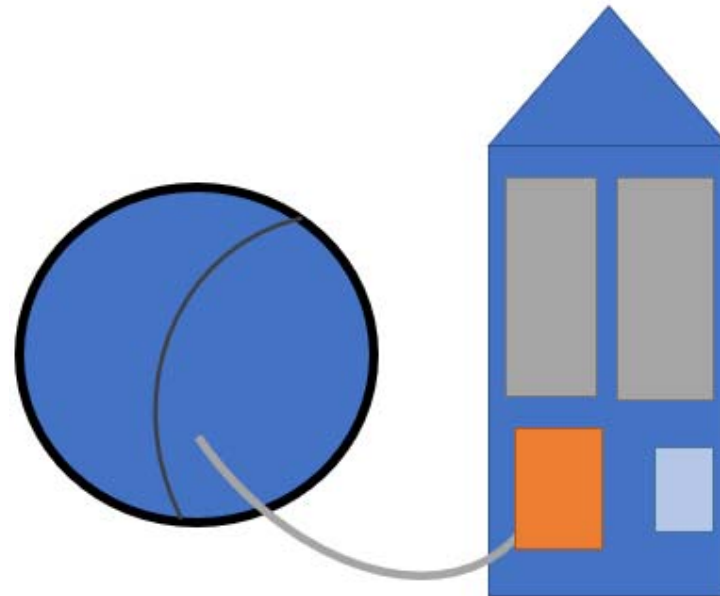
OCEAN RESOURCES, NTNU TRONDHEIM

SUPERVISOR: YNGVAR OLSEN



Freshwater treatment

- Freshwater from a known reservoir
 - Quality
 - Temperature
- Loading
- Treatment (up to 8h)
 - Surveillance of water chemistry
- Unloading



The project

What to look at

- When do the different stages drop from the salmon?
- Resistance against treatment?
- Will the egg strings hatch?

Where and how

- Well boat - Northern Frøya
- Two wells; five counting's, 20 salmon
 - Weight and length

So far – one pilot trip

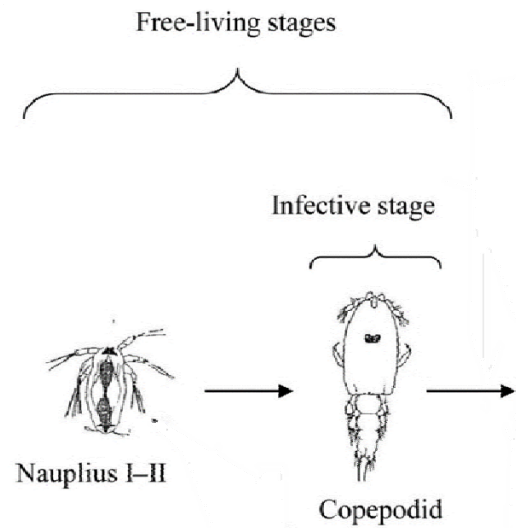
- 12/13 November



Energy availability of
Salmon lice
(*Lepeophtheirus
salmonis*) in the free
living stages

Elisabeth Fotland
Master student
NTNU

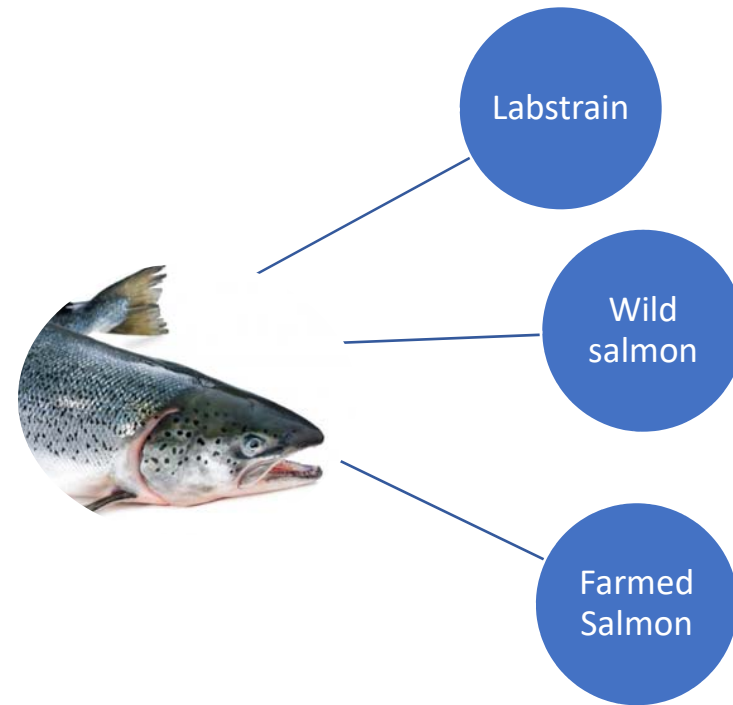
Background



- Free-living stages (planktonic)
- Endogenous feeding – energy storage
- Temperature - Limited time

Aim

- Obtain more **knowledge** about energy availability in the a early life stages.
- Compare the energy storage of sea lice from **wild salmon** and **farmed salmon** to salmon lice **laboratory strains**



Analyzes



Lipid analysis

Staining
phospholipids and
neural lipids

Pixel counting

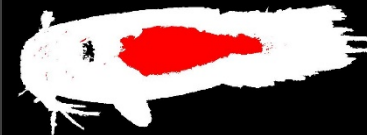


Carbon/nitrogen

Ratio
Decline



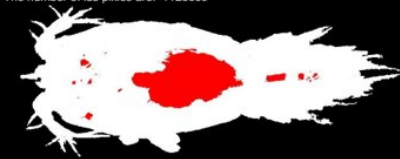
The area with lipid in the lus is: 17.42 %
The number of lipid pixels are: 164685
The number of lus pixels are: 945568



Day 6: 17% lipid



The area with lipid in the lus is: 13.19 %
The number of lipid pixels are: 148485
The number of lus pixels are: 1125689



Day 9: 13% lipid

