



Aquaculture solutions

Flåter
Fôring
Båter
Mærer
Software
Engineering
Kamera
Sensor
Settefisk
Hygiene
Lys

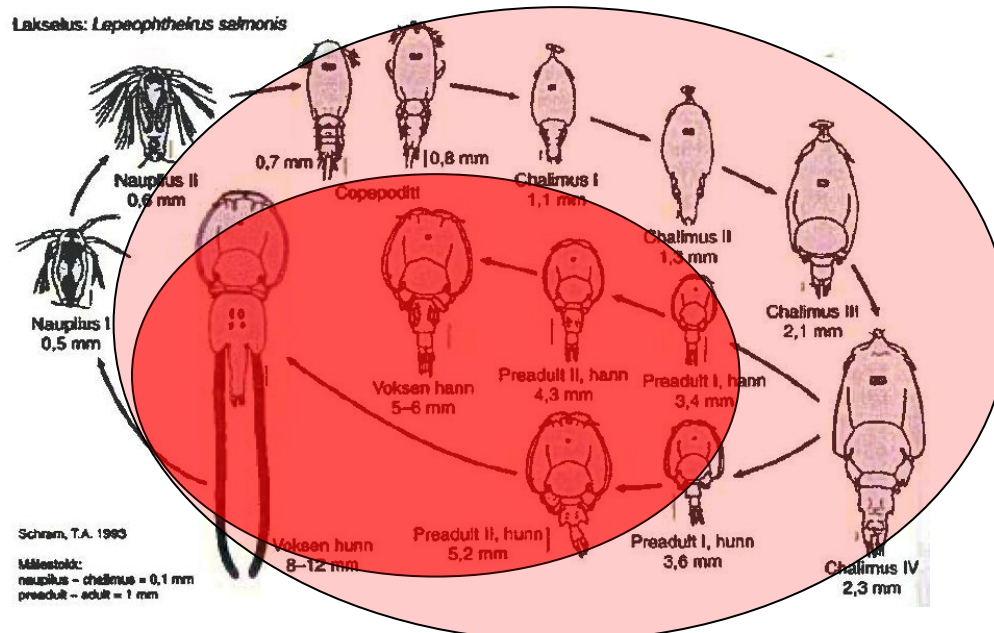
Presentation of Ocea Delouser

Björgolfur Havardsson



Warm water as treatment method

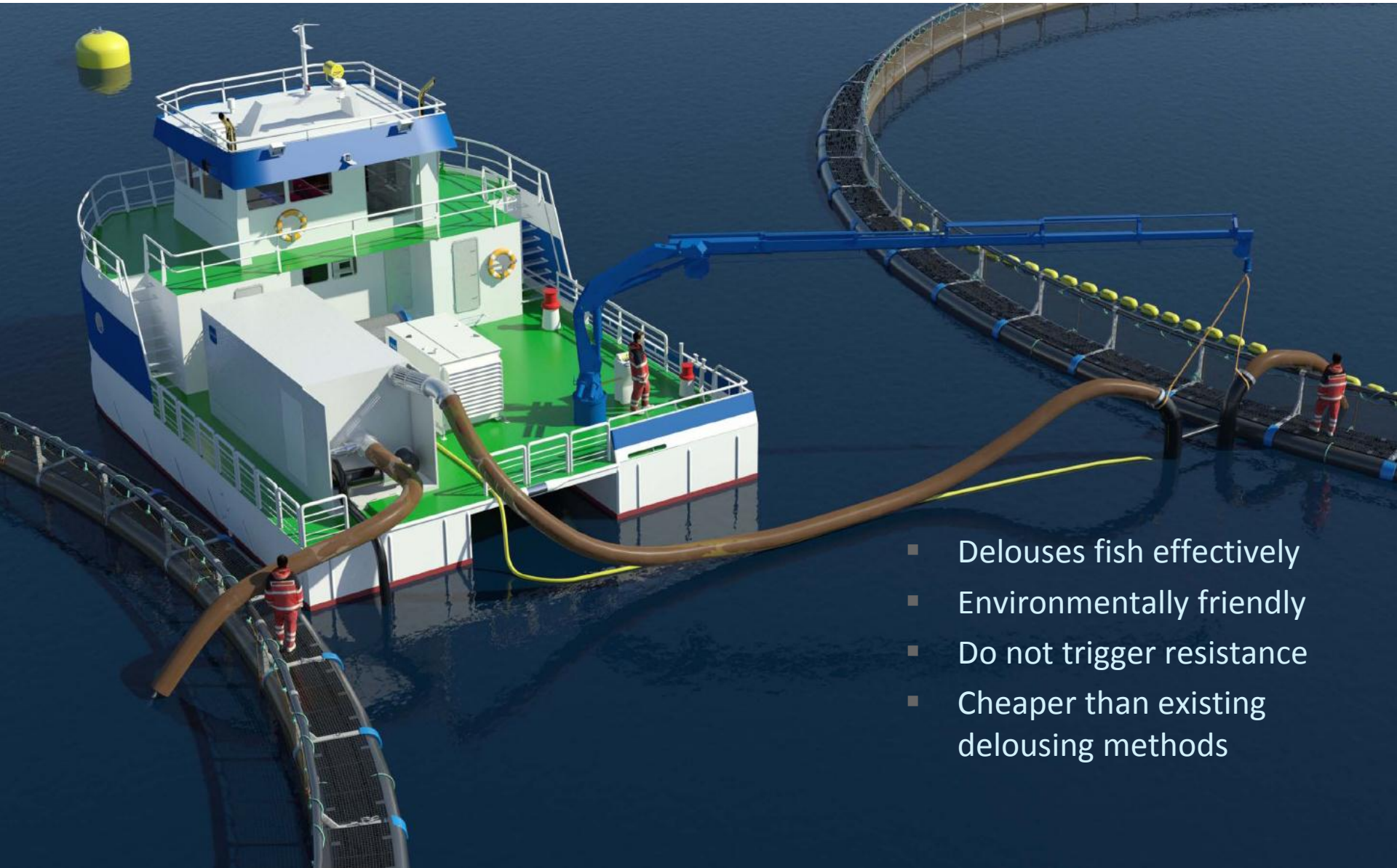
- The method benefits from the salmon louse's bigger surface to volume ratio than the salmon, hence bigger sensitivity to changes in temperatures. By treating the fish in a short period of time, 25-30 seconds, in a temperature of 30-35 degrees lice will be removed from the fish.
- Ocea and sub supplier discovered this principle during development of other methods.
- Data base searches resulted in one expired Japanese patent of the principle and reports from work done on this method in Norway in the 90's.





Thermal delousing

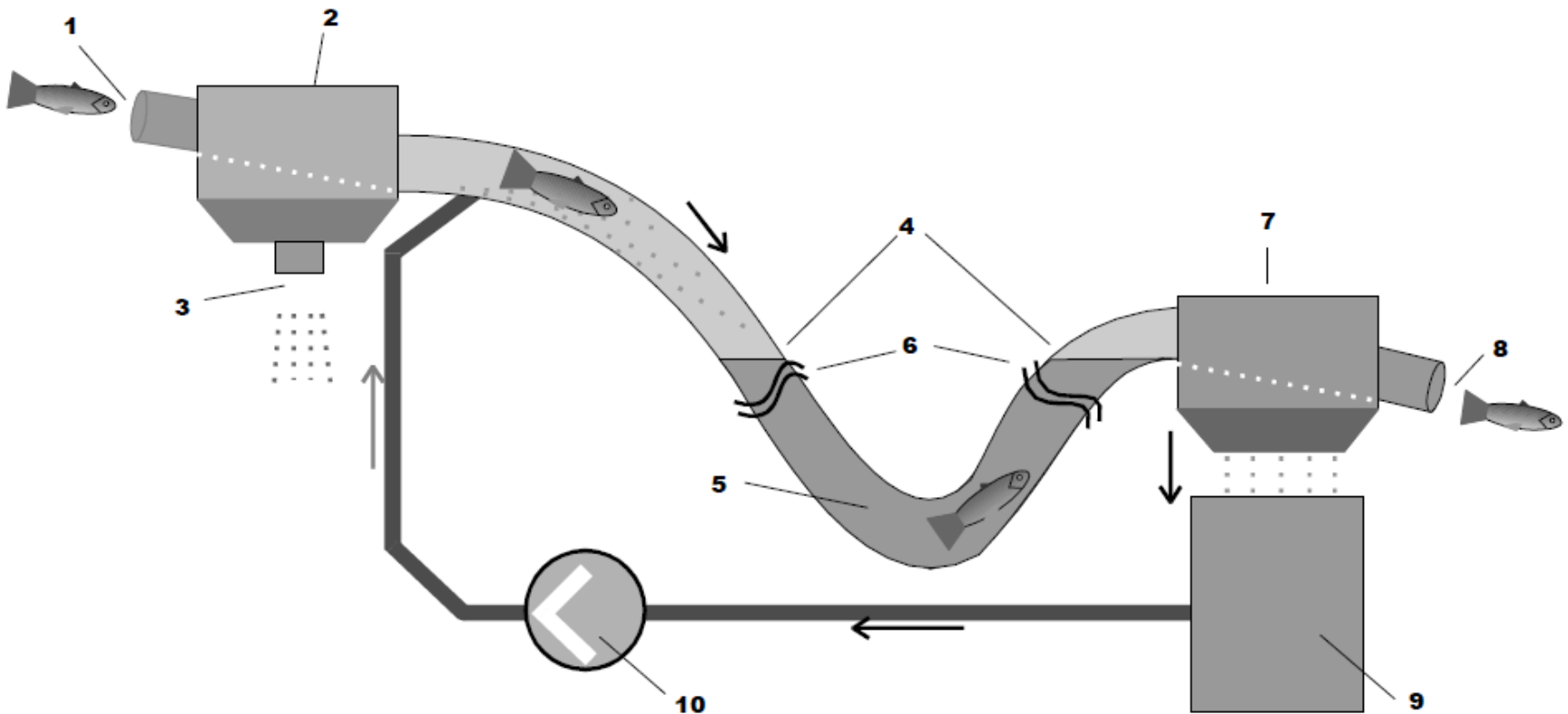
oceo



- Delouses fish effectively
- Environmentally friendly
- Do not trigger resistance
- Cheaper than existing delousing methods

Principle thermal delousing

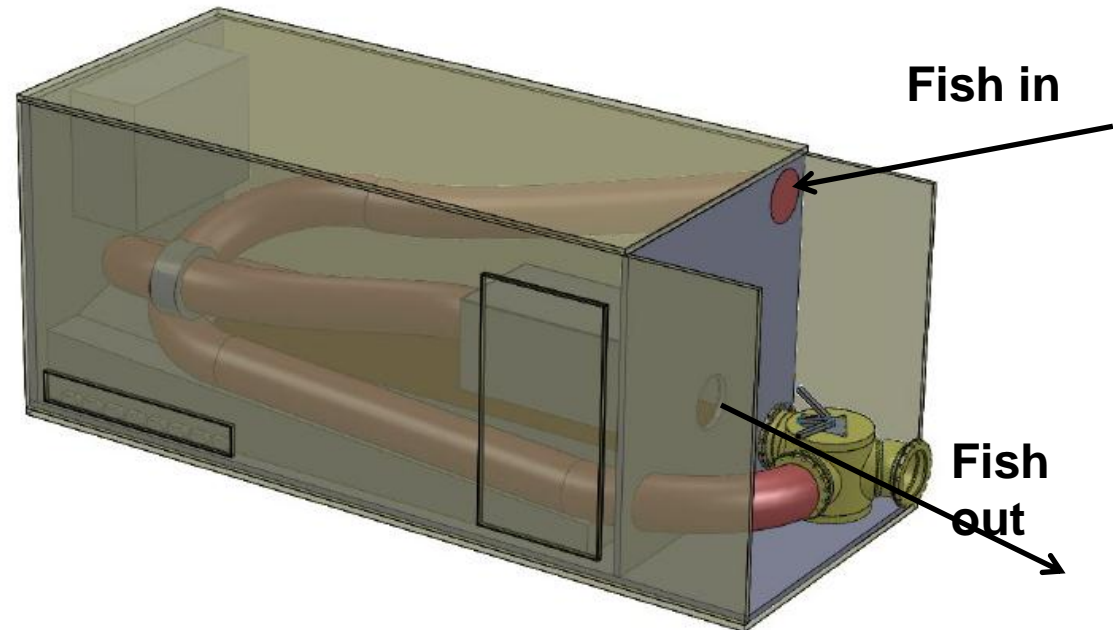
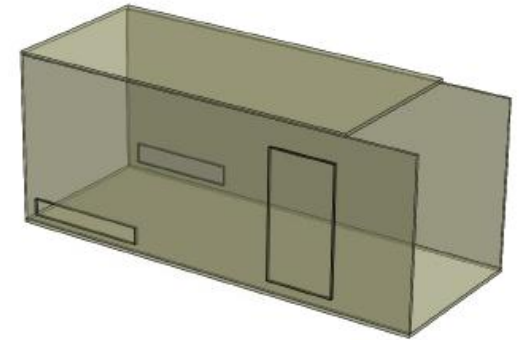
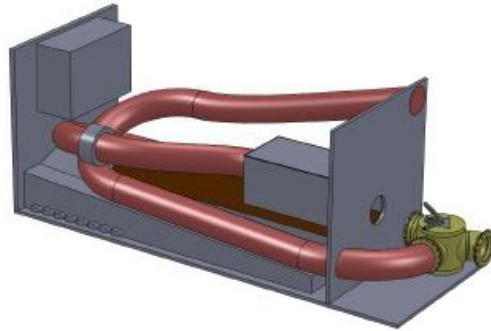
1. Fish is pumped in. 2. Separation fish and water. 3. Cold water outlet. 4. The fish are flushed with warm water. 5. The fish are pumped with warm water in a v-shaped tube. 6. Solid water surface. 7. Separation warm water and fish. 8. Fish is pumped out. 9. Warm water is lead into a tank and reheated to correct temperature. 10. Treatment water is pumped back to treatment tube.





Prototype 2012

- Reduced lifting height
- Less bending of tubes
- Bigger pipe dimension
- Increased heating capacity
- Isolated cabinet to prevent heat loss





Test results imply

- Delousing effect on a given temperature vary with initial sea temperature. Sufficient treatment temperature varies with sea temperature.
- Affect on fish in 35°C must be identified and documented
- Correct handling of fish is crucial to avoid fish welfare problems
- A water treatment system is needed for delousing a whole site
- Capacity 45 ton per hour