PROJECTS

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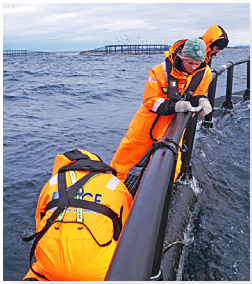
ACE
AquaCulture Engineering

Main project areas in ACE



Exposed farming

The industry moves towards more exposed areas and thereby new challenges. ACE provides sites, instrumentation and personnel to projects addressing problems linked to the effects of factors such as waves and currents, EHS issues, operational processes, sea cage construction, and communication in exposed areas.

Project example:

» Sea currents at site
» Sea currents influence on structures and operations

Monitoring

Since accidents may have major health-related, environmental and economical consequences, the monitoring sites, fish and the facilities themselves is vital. Physical fatigue on mooring equipment and nets, environmental conditions, both within and in the vicinity of cages and EHS issues, are some of the problems which the industry is working to improve.

Project examples:

» Telefish
» Wireless O2

Escapes

The industry and regulatory authorities continue to operate with a target of zero escapes, and a focused and wide-ranging effort is being made to achieve this. The problem of escapes involves an interplay between a variety of important biological, technological and external environmental issues, as well as human factors. ACE offers facilities for testing new systems and equipment which will support the zero escapes target to be met.

Project example:

» Forces effecting cages and mooring systems at exposed sites.

Feeding

Feed is more than 50% of the cost in sea based aquaculture. Correct feeding of the fish is further essential to fish growth and fish welfare. Hence it has a substantial impact on the economy as well as on the environment. Optimising feeding techniques in large cages are therefore an important issue and a priority.

Project examples:

» Feed spread & control
» Centralised remote feeding

Fish welfare

The salmon louse (Lepeophtheirus salmonis) is the most common parasite infecting Norwegian farmed salmon. Solving the problems linked to salmon lice is today the most important challenge facing the Norwegian aquaculture industry. Many methods are trying to combat the salmon louse such as avoiding the lice by forcing the fish to deeper layers of or killing the lice by different methods.

Project examples:

- StingRay
- Lice and Light

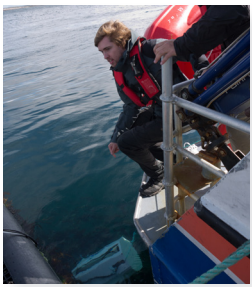
Biofouling

A major challenge facing today's marine and maritime industries is biofouling. A combination of algae, shellfish and hydroids exploit nets, cages and mooring equipment as habitats. They create negative effects like deformation of nets due to increased resistance to waves and currents, oxygen deficiencies inside the nets, and increases in weight.

Project example:

- Foultech1 & 2

Biomass



Knowing the exact amount of fish regarding weight distribution and numbers inside each cage are important for managing the feeding as well as for the sales. Using different methods such as photos, sonars, ecco sounders etc. increases the precision.

Project examples:

- Biomass frames in combination with sonars
- Improving representative selection of fish through fish trap

EHS issues

ACE is currently working closely with aquaculture operators, suppliers and R&D centres to test new technologies linked to communications, work-alone monitoring, and alarm systems and procedures.

Project examples:

- Static electricity in feed pipes
- SustainFarmEx
- Protex

- TECHNOLOGY FOR THE FUTURE

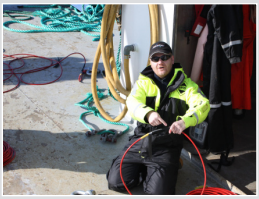
ACE is a hub connecting R&D instituttuons, suppliers and producers. Our projects are focusing on the main challenges in the aquaculture industry by using technology and how this effects people, fish and environment.

Large-scale facilities at ACE are designed to develop and test new aquaculture technologies. Researchers are conducting practical experiments and tests both under optimally controlled and realistic conditions.

ACE has offices in Trondheim and on the island of Frøya. Research activities are carried out in mid-Norway depending on the aim of the project. Main research facility, vessel and equipment are located at Frøya.

AQUA EXCEL

ACE er deltager i AquaExcel, et EU prosjekt som forener ulike forskningsinfrastrukturer i flere land. ACE tilbyr i dette prosjektet sine fasiliteter til andre forskningsinstitusjoner i Europa gjennom TNA (Trans National Access).

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