



Seaweed cultivation in Norway- ecology and strategy

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SIG Seaweed Trondheim 27.11.19

Important aspects of seaweed cultivation

- High yield



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- Good quality



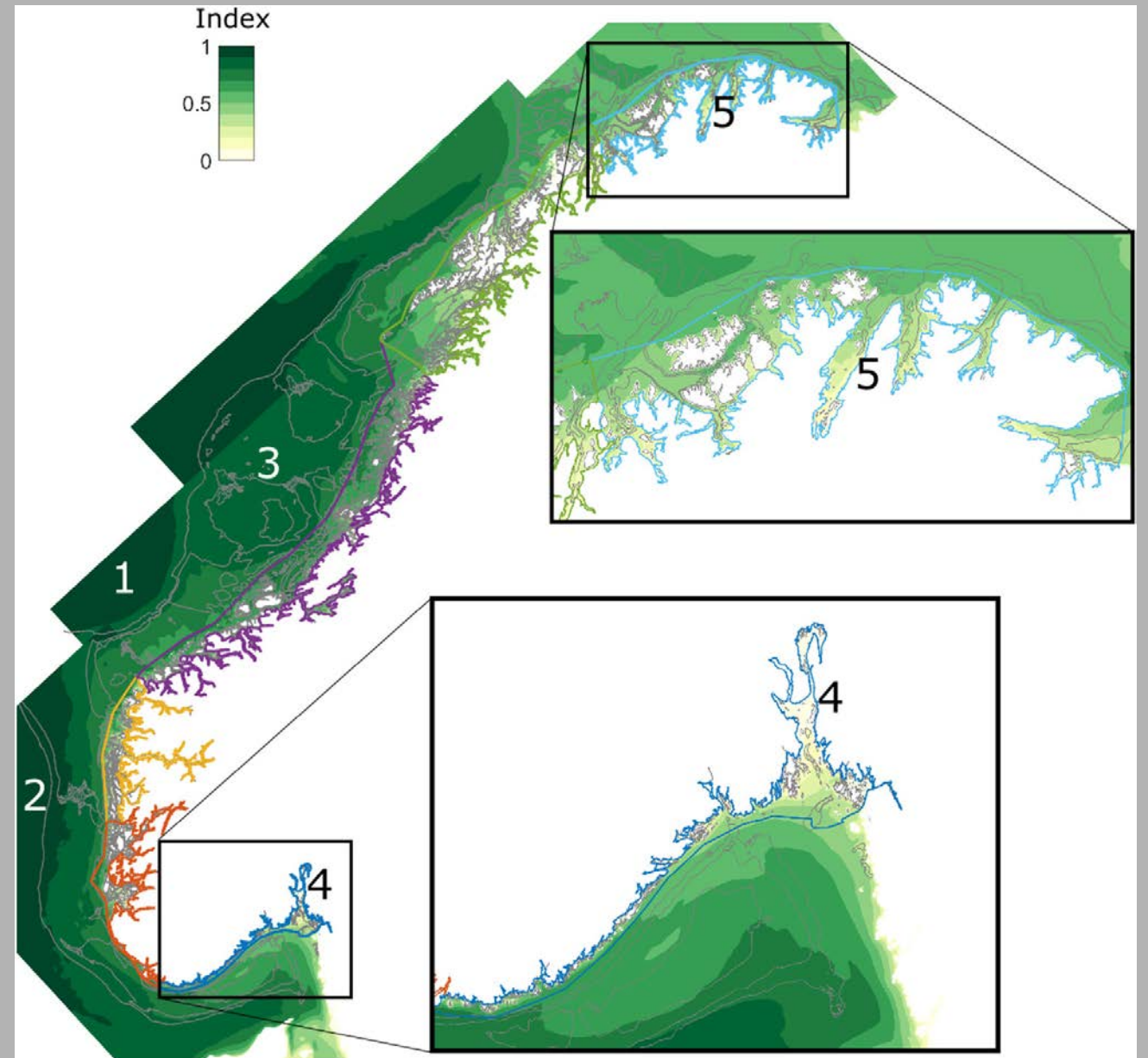
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- High yield
- Good quality
- Right biochemical composition



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- Deployment and harvest time



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- High yield
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- Right biochemical composition

- Site selection
- Deployment and harvest time
- Cultivation depth



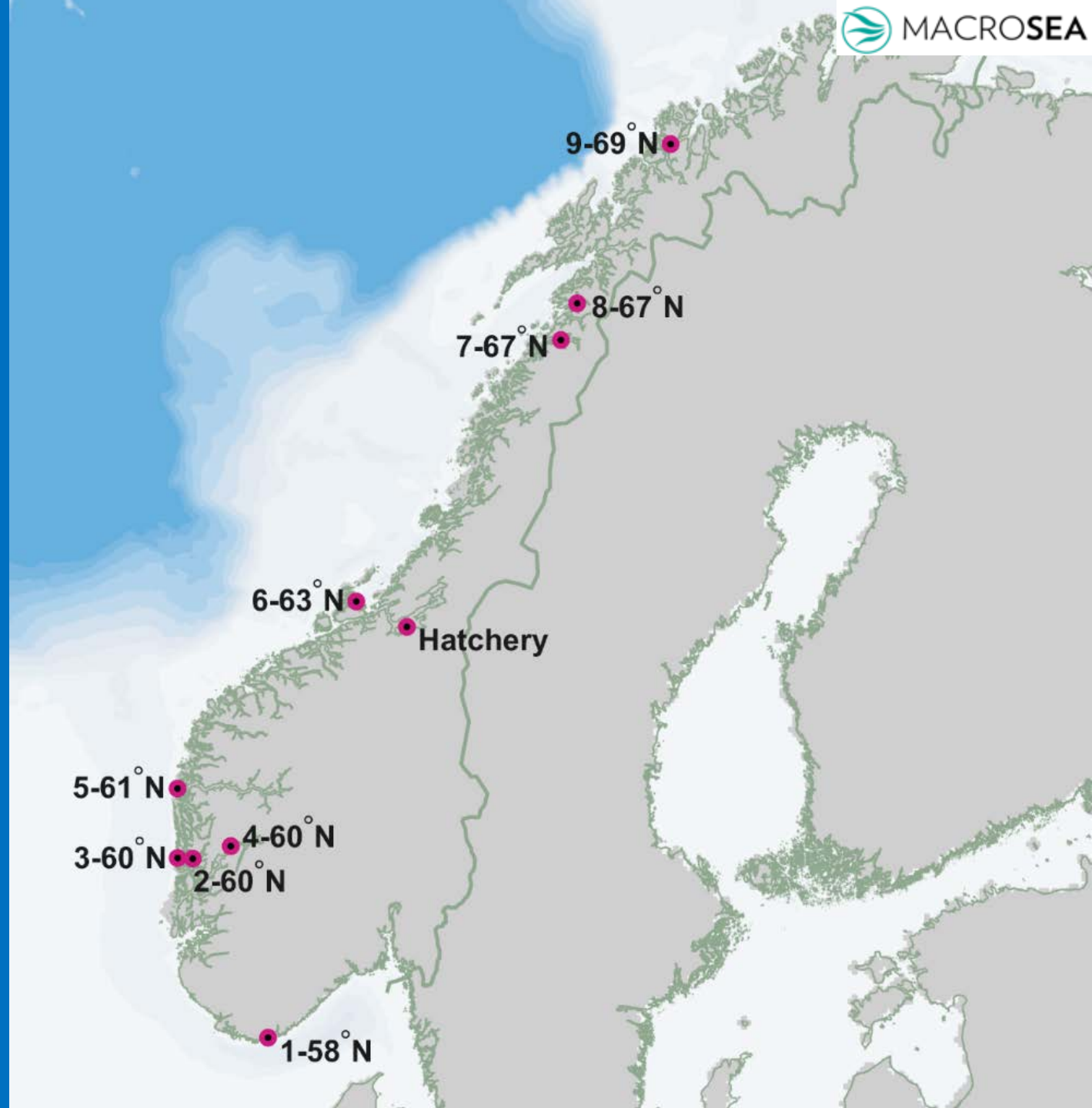
Important aspects of seaweed cultivation

- High yield
- Good quality
- Right biochemical composition

- Site selection
- Deployment and harvest time
- Cultivation depth
- **Seedling size and density**



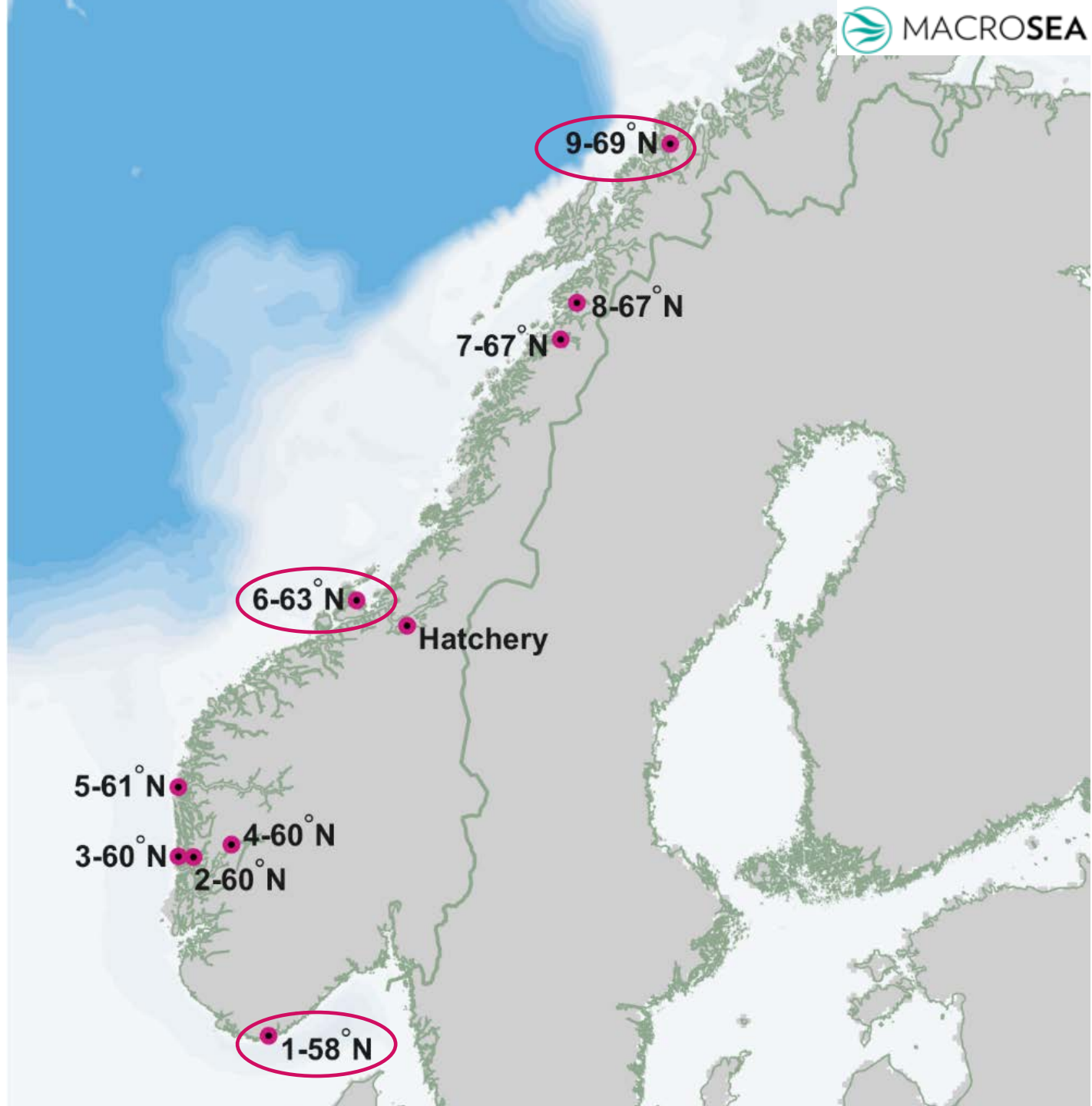
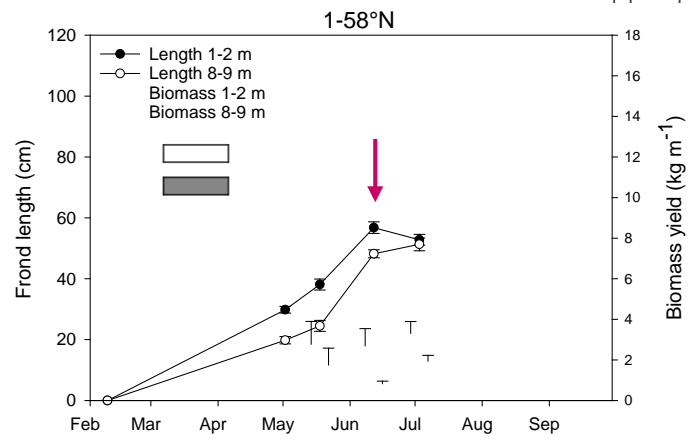
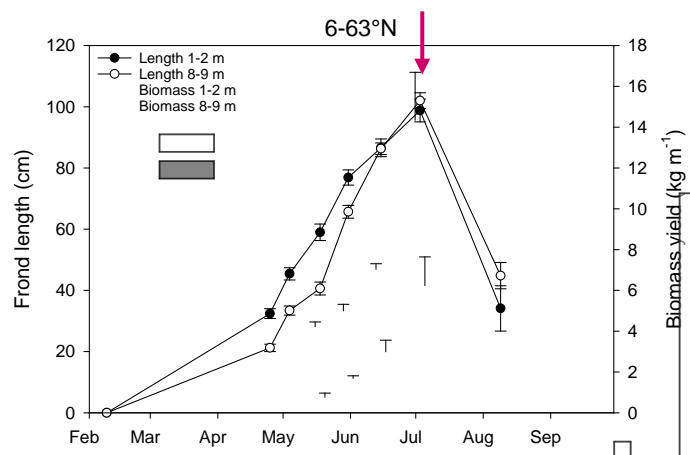
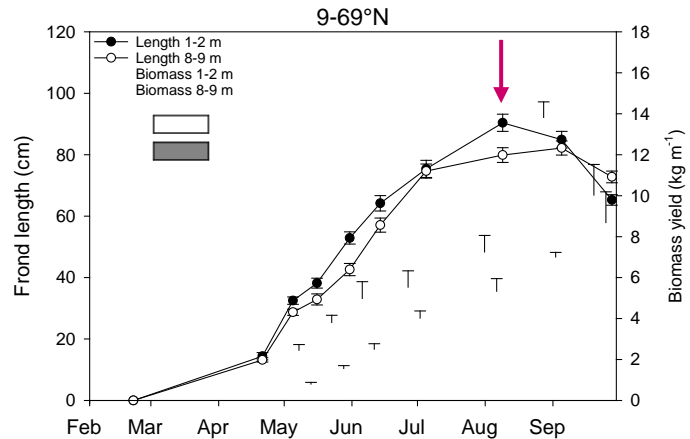
Case 1: Latitude, season and depth



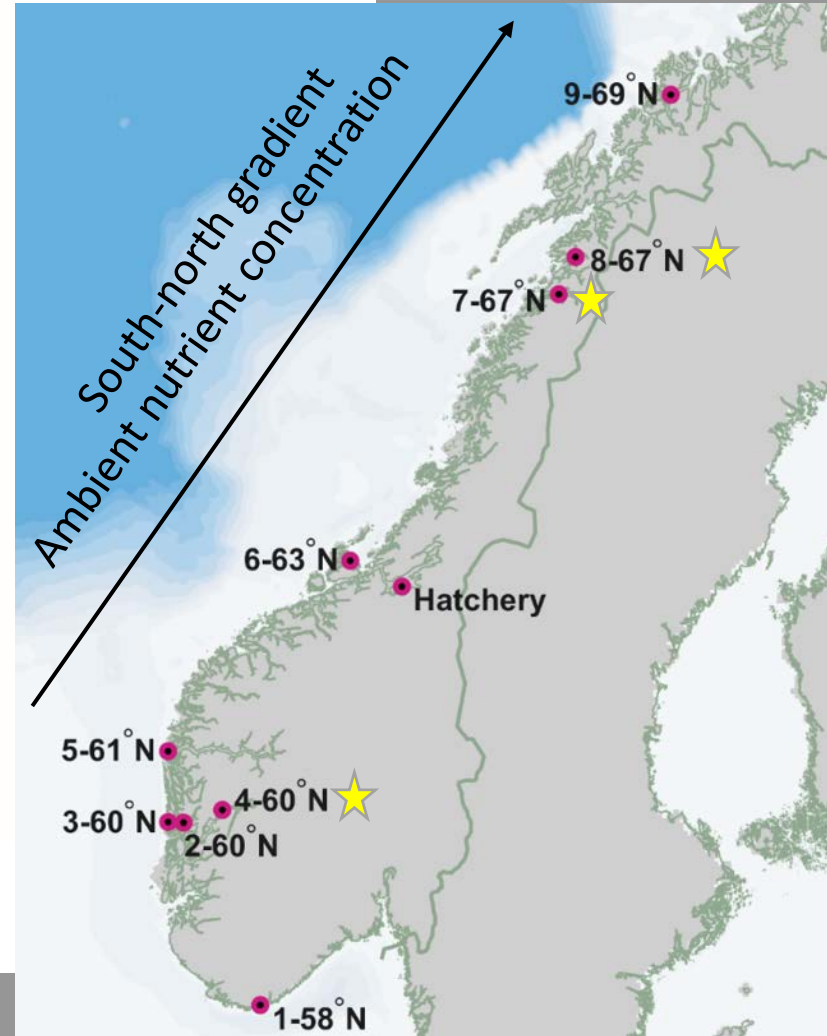
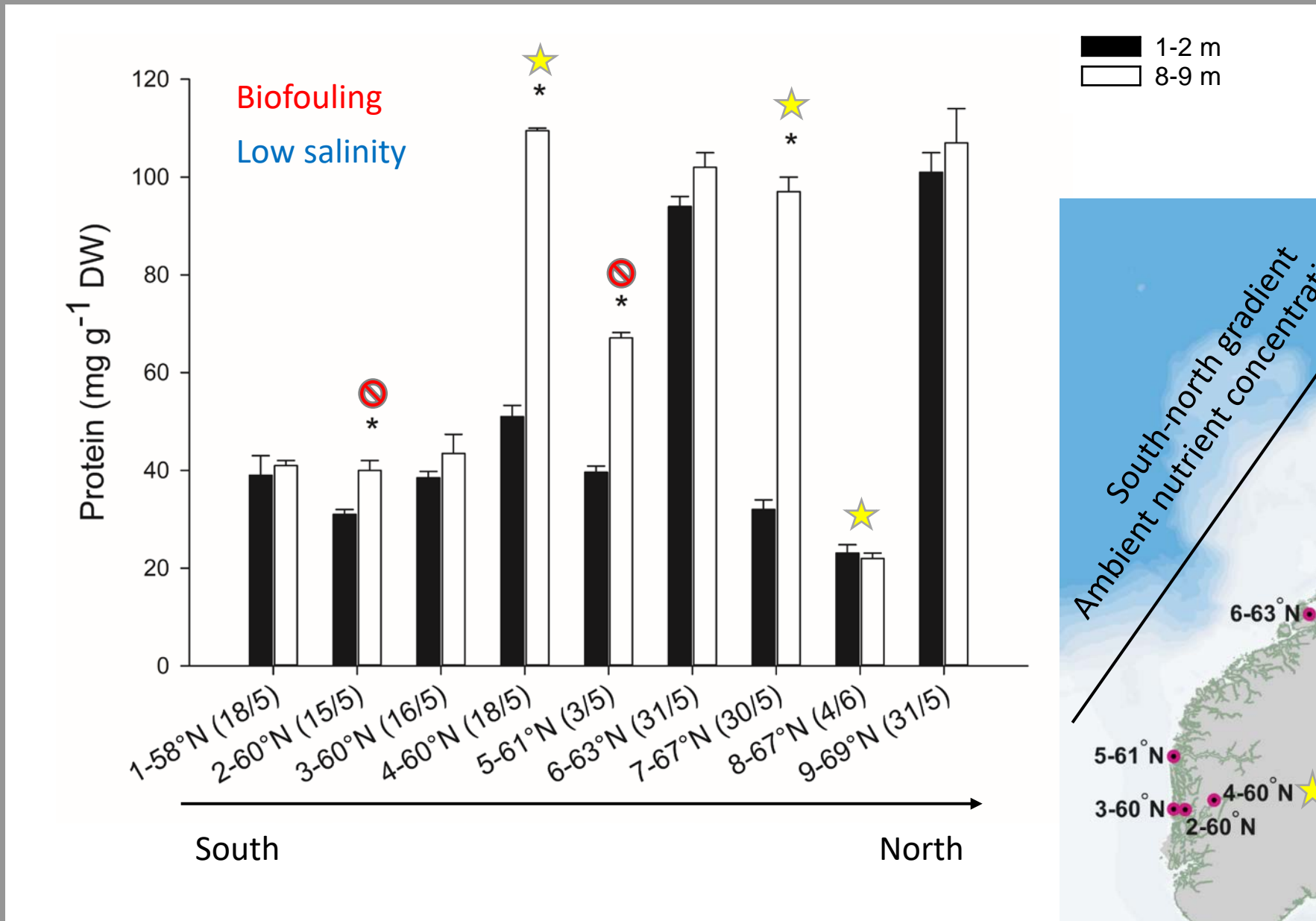
Cultivation and monitoring program

- A selection of commercial farms over 10 degrees in latitude
 - ★ 3 fjord locations
- One hatchery producing seed lines
- Deployment in February 2017
 - 1-2 m and 8-9 m depths
- Sampling from April-Sept
 - Growth
 - Chemical content
 - Biofouling

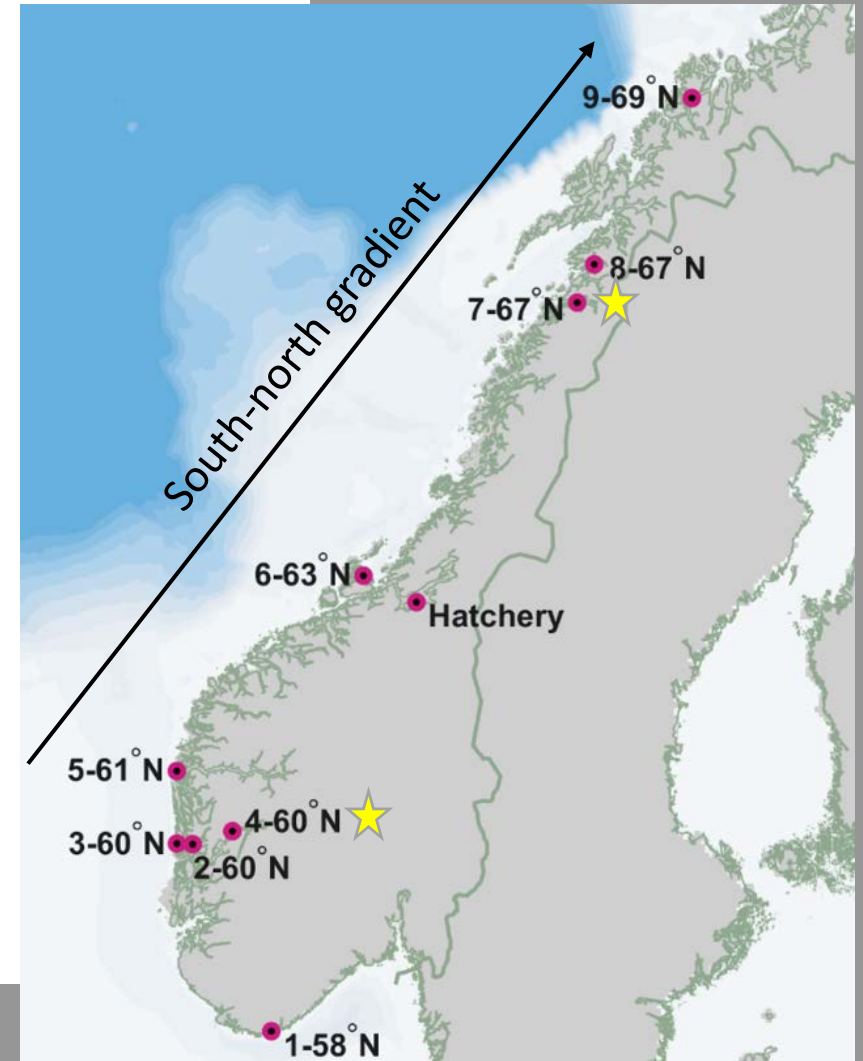
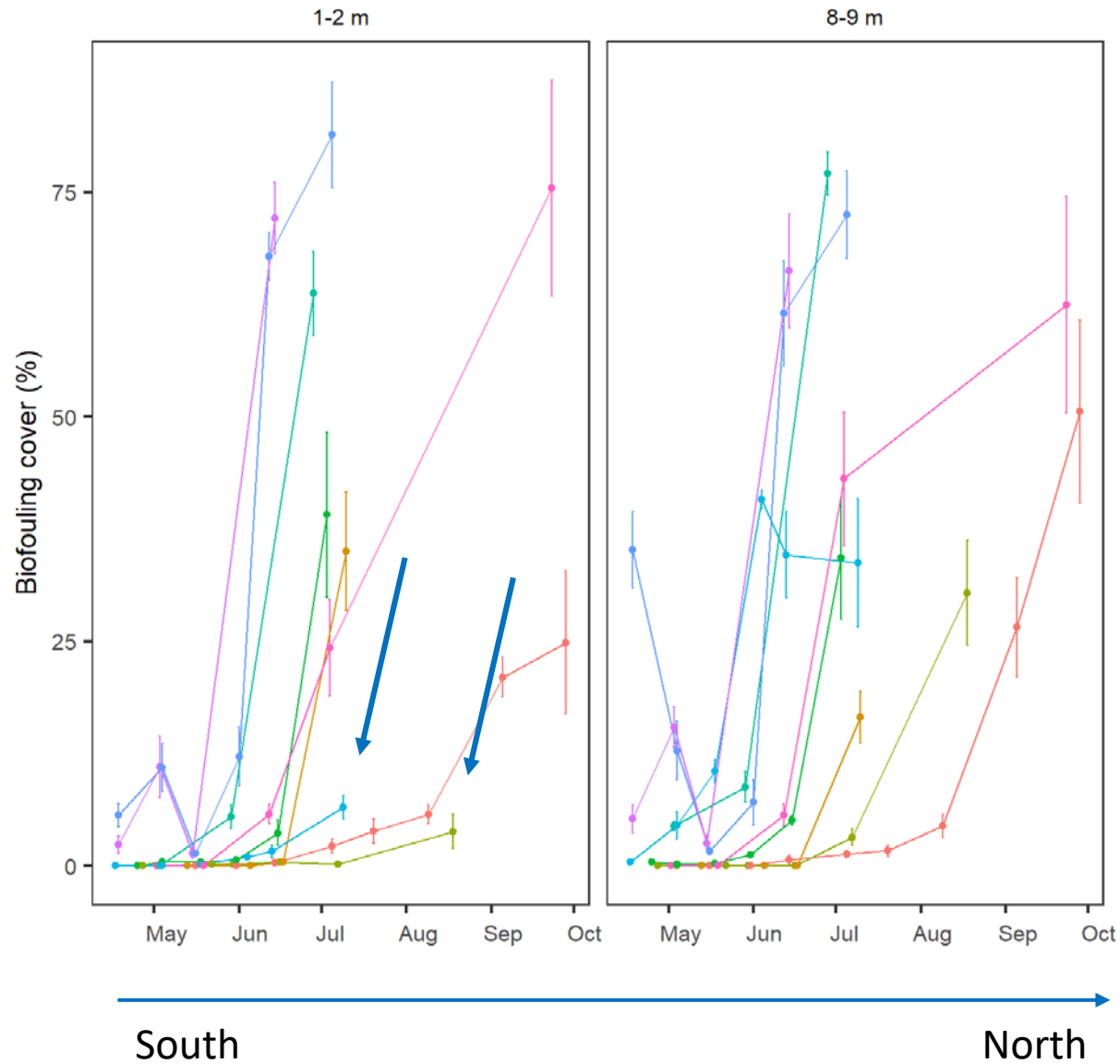




Variation in protein content along a latitudinal gradient

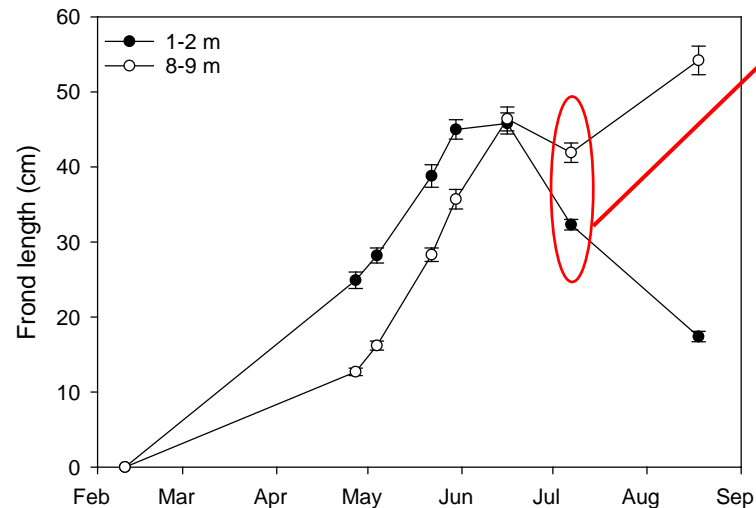


Cover of biofouling



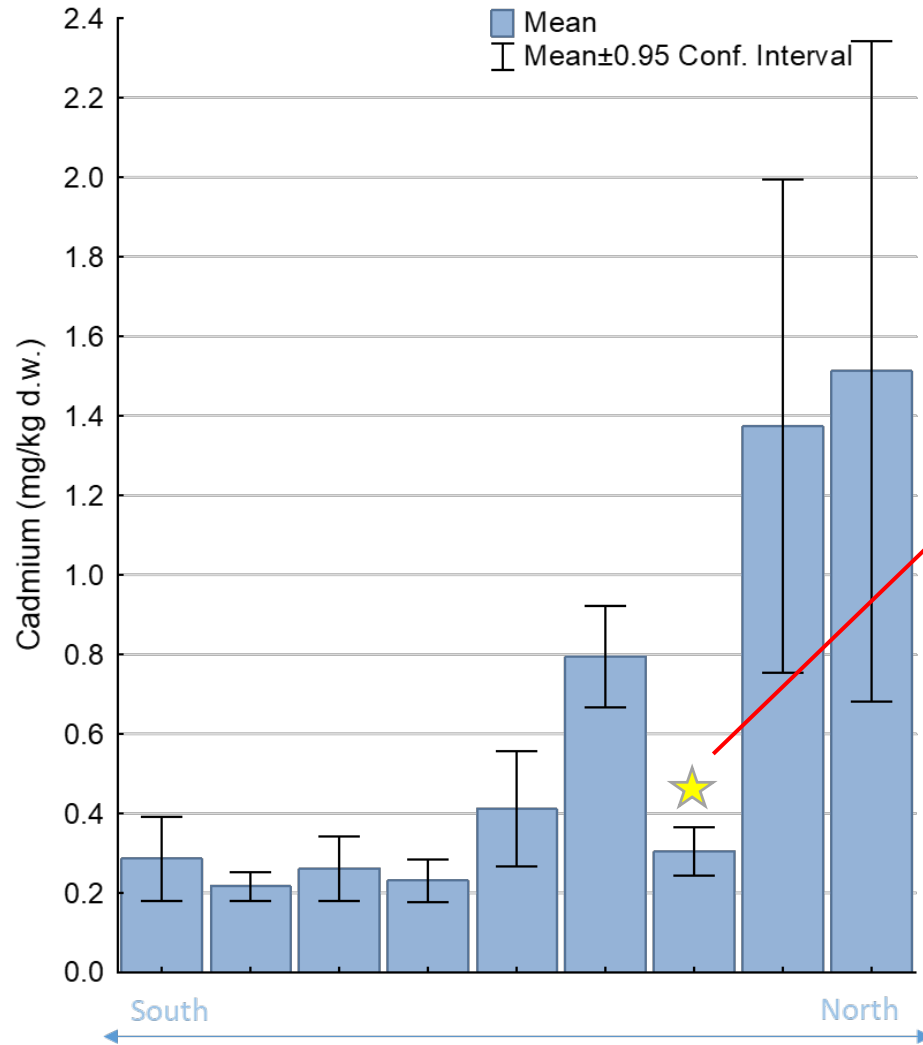
Low salinity strongly influence the biomass

- Low biofouling at 1-2 m cultivation depth
- High protein content at deeper depths
- Poor growth in frond length and biomass yield

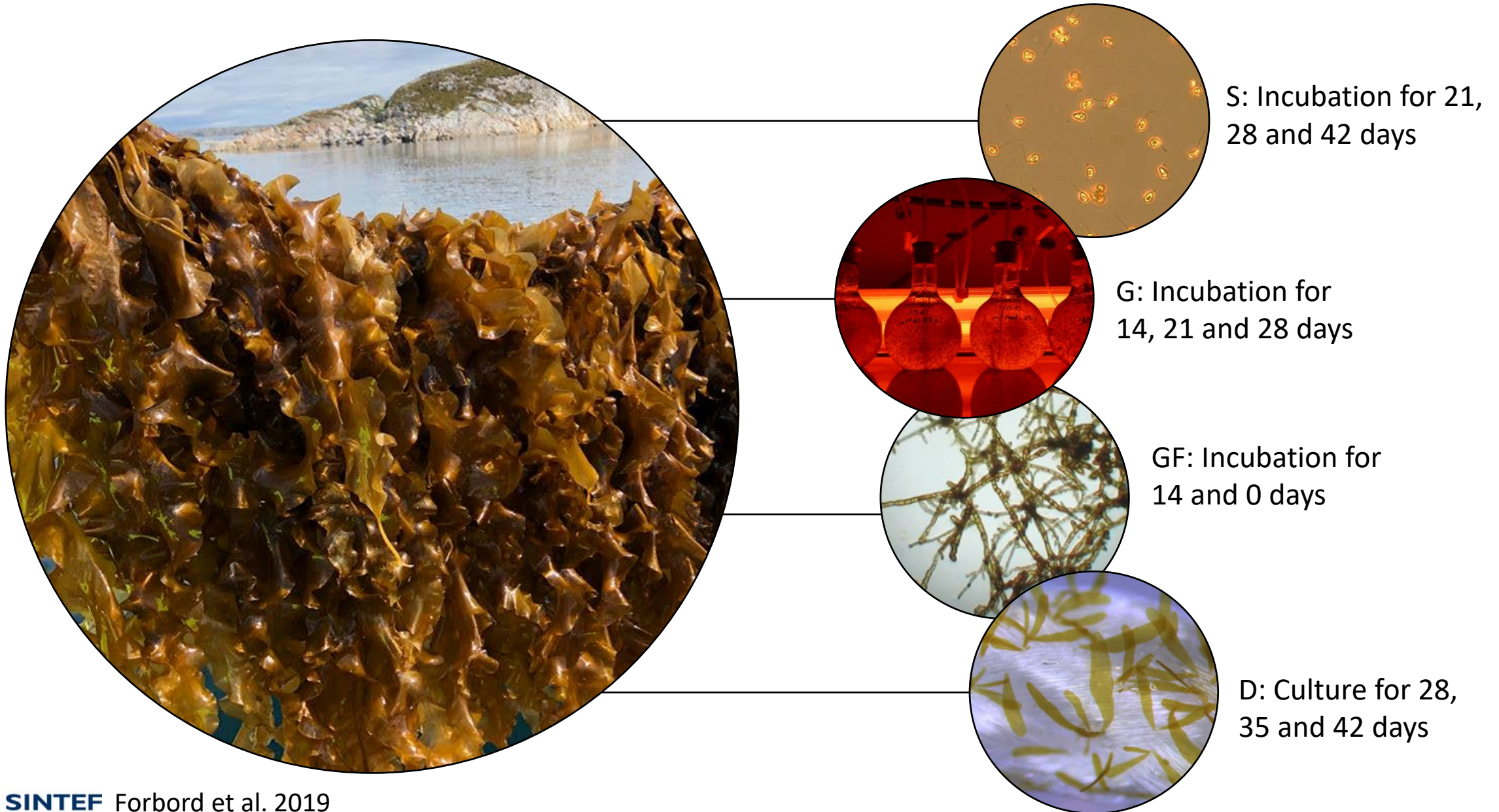


Low salinity strongly influence the biomass

1-2 m cultivation depth, before biofouling settlement



Case 2: Seeding methods and hatchery period

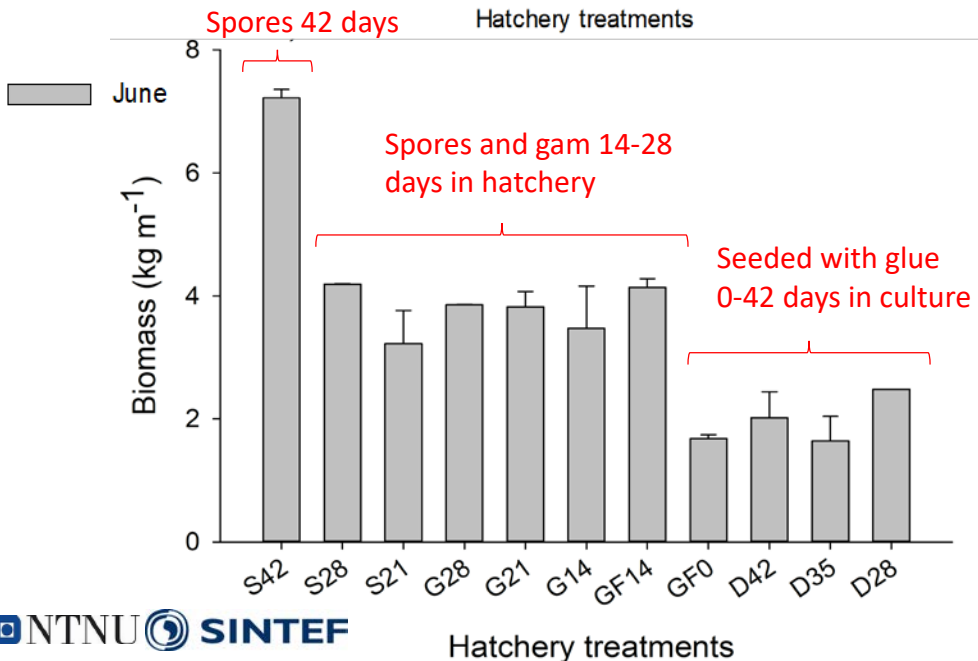
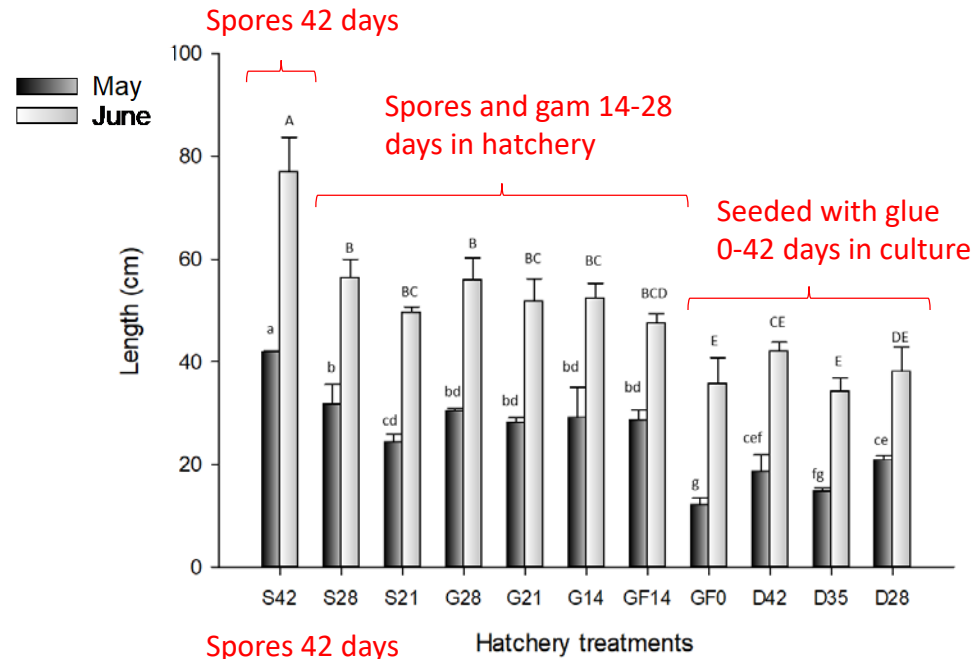




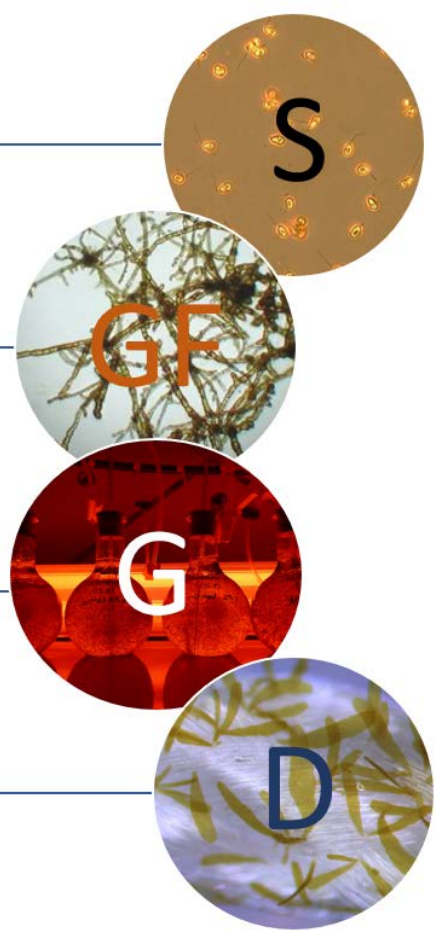
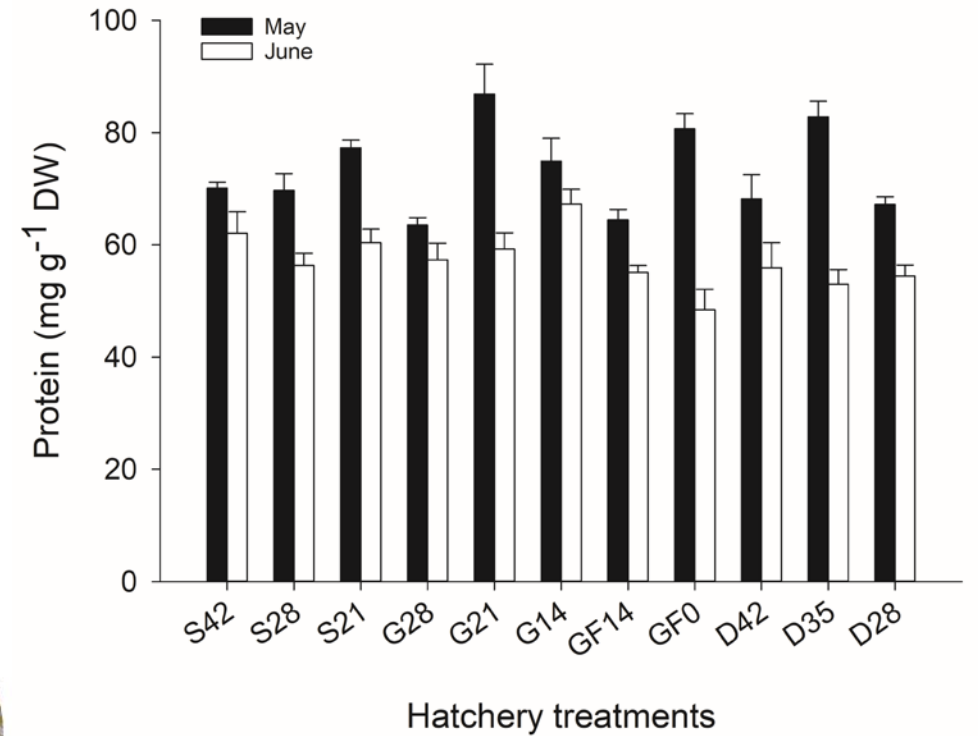
- Deployment in February 2018
- Registrations in May and June
 - Length
 - Width
 - Protein
 - Biomass (June)
 - Density (June)



Can manipulate size and biomass...



But probably not protein content





- Several measures to influence the yield, quality and biochemical composition
- Choose sites with high salinity or cultivate deeper than the freshwater layer
- Know your site!



Thanks to:

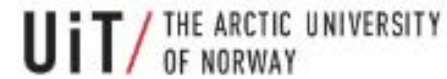
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- Kristine B. Steinhovden (SINTEF)
- Torfinn Solvang (SINTEF)
- Guri E. Brodahl (NTNU)
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BIOKRAFT

