

Stakeholder conference on mussel farming and water quality in the Baltic Sea

Mussel farming in Schleswig-Holstein, current situation, research activities and gaps

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Interreg
Baltic Sea Region



EUROPEAN
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Baltic Blue Growth



Schleswig-Holstein
Ministry for Energy Transition,
Agriculture, Environment,
Nature and Digitalization

Mussel farming in Schleswig-Holstein, current situation, research activities and gaps

1. Intro - a short view into the North Sea mussel business
2. A short retrospection – traditional use of blue mussels in the Baltic Sea in Schleswig-Holstein
3. Current situation in mussel farming in the Baltic Sea, Schleswig-Holstein
4. Future trend and gaps
5. Research activities
6. Summary



Yes, Schleswig-Holstein has a prospering mussel business! *In the North Sea...*

Harvest in the last years:

2012:	4,925.239 kg
2013:	3,192.485 kg
2014:	5,333.376 kg
2015:	8,114.128 kg
2016:	19,150.575 kg
2017:	14,383.594 kg
2018:	13,900.707 kg

for 2,19 € / kg = **30,4 Million €!**

For human consumption only!



Very well organized... (1)

Erklärung von Teilen der Küstengewässer zu Muschelkulturbezirken

Gl.Nr. 793.21

Bekanntmachung des Ministeriums für Energiewende, Landwirtschaft, Umwelt und ländliche Räume vom 17. März 2017 – V 214/14931-2017 –

Aufgrund des § 41 Abs. 1 des Landesfischereigesetzes (LFischG) vom 10. Februar 1990 (Schl.-H. S. 211), zuletzt geändert durch das Gesetz vom 26. Oktober 2011 (GVORBl. S. 103), werden folgende Teile der Küstengewässer der Nordsee begrenzt durch die Verbindungslinien der angegebenen geographischen Positionen, zu Muschelkulturbezirken (MKB) erklärt:

MKB Nr. 2 Nordöstlich Liinsand IV (verändert)

54°46,77'N	8°27,91'E
54°46,97'N	8°27,76'E
54°47,06'N	8°28,24'E
54°46,88'N	8°28,29'E

54°42,62'N	8°35,58'E
54°42,62'N	8°35,46'E

MKB Nr. 12 Nördlich des Wyker Hafens II (verändert)

54°42,34'N	8°35,39'E
54°42,61'N	8°35,47'E
54°42,61'N	8°35,56'E
54°42,61'N	8°35,56'E
54°42,46'N	8°35,67'E
54°42,34'N	8°35,57'E

MKB Nr. 13 Im Eidumtief VI

54°46,66'N	8°19,50'E
54°46,79'N	8°19,90'E
54°46,58'N	8°20,04'E
54°46,46'N	8°19,72'E

MKB Nr. 14 Nordöstlich Liinsand V (verändert)

54°47,02'N	8°26,36'E
54°46,92'N	8°26,44'E
54°46,67'N	8°25,60'E
54°46,76'N	8°25,53'E

Referring to the fisheries law, we have special designated areas – so called „mussel cultivation districts“ (published in the official register)

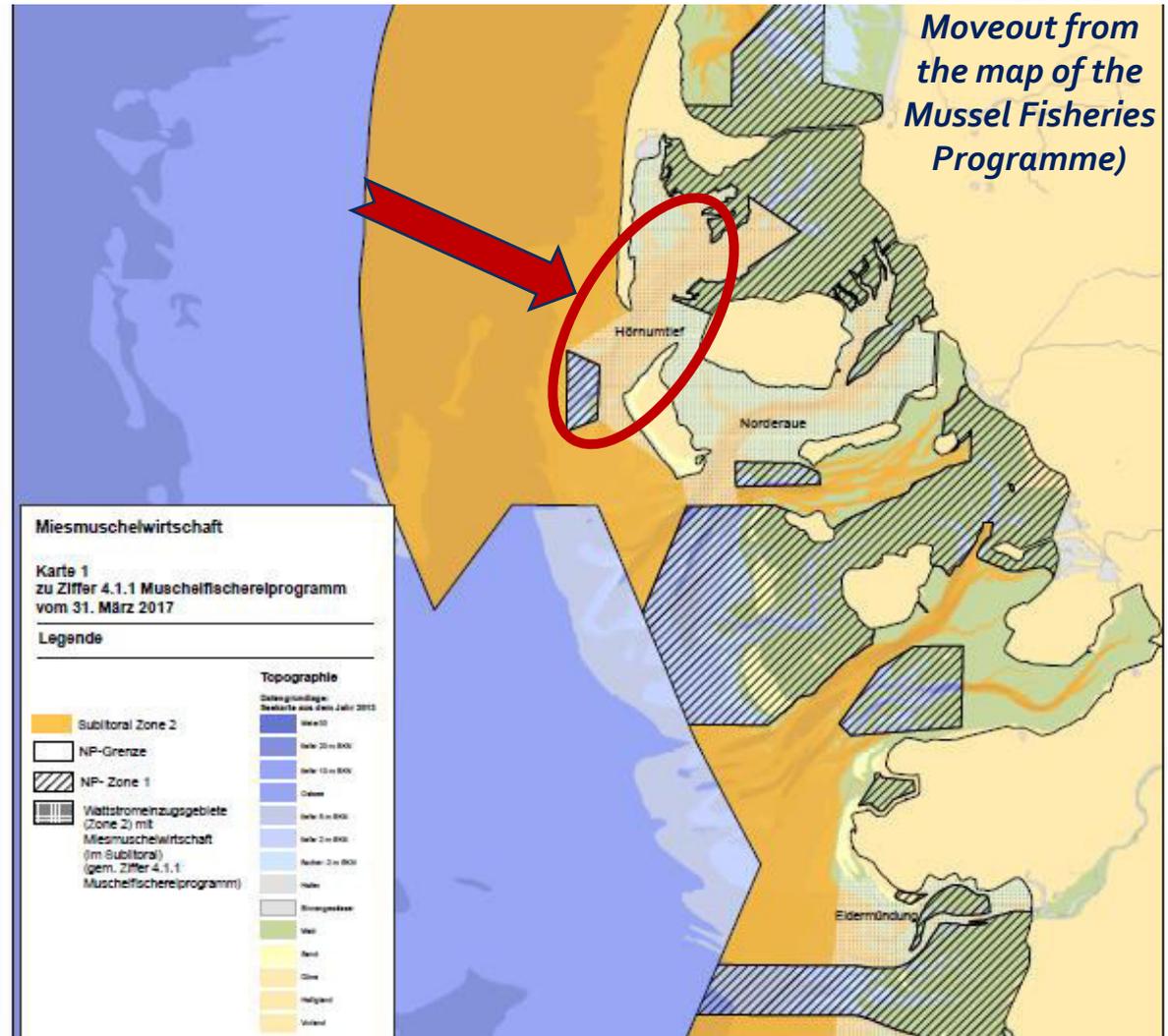


Very well organized... (2)

We have an official „Mussel Fisheries Programme“

(a governmental strategy how to develop the mussel business, especially under the requirements of the Wadden Sea National Park)

In total, an area of 1,700 ha is allowed to use for mussel farming





Very well organized... (3)

Based on the Mussel Fisheries Programme, we have a contract by public law with the companies and the mussel producers association (setting the rules for mussel cultivation in the National Park)

Referring to the contract, the mussel producing companies have long term licences (run-time 15 years ; on the basis of fisheries law, nature conservation law and others)

Since October 2016, the mussel cultivation at the North Sea is certified as „sustainable“ by the MSC



At the moment, the North Sea mussel business in Schleswig-Holstein is prospering...



Foto: LLUR SH



Some pictures from mussel cultivation at the North Sea... (1)



Seed mussel cultivation,
„Smart Farm“ System





Some pictures from mussel cultivation at the North Sea... (2)

Mussel fishing vessels





Some pictures from mussel cultivation at the North Sea... (3)



**Harvesting with
dredges...**





Some pictures from mussel cultivation at the North Sea... (4)



Perfect growing conditions to
collect seed mussels...



Coming to the Baltic Sea...

North Sea



14,383 tons in 2017...

...the current business is
"somewhat smaller"

Baltic Sea



about 3 tons in 2017...

*...this is not a result of bad growing
conditions!*

Coming to the Baltic Sea...

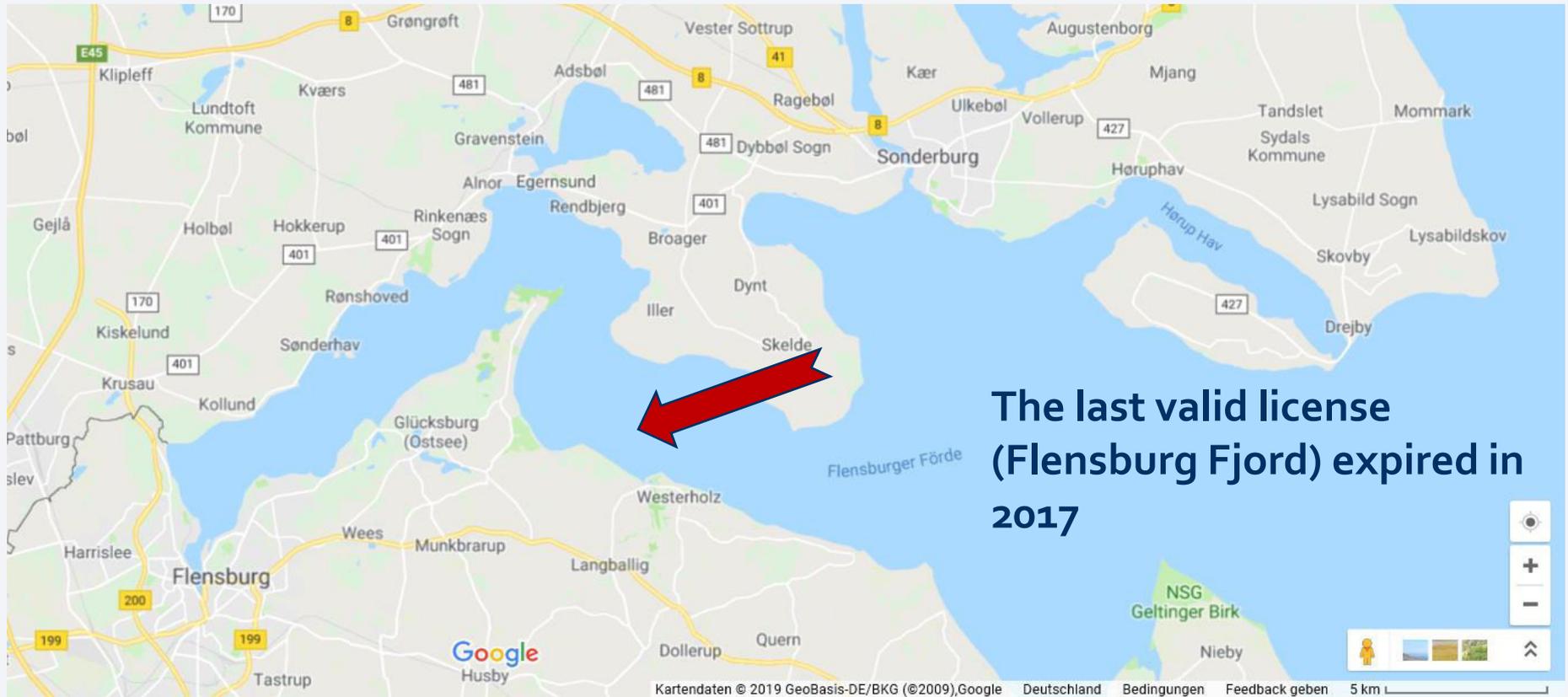


<https://www.ostsee.de/schon-gewusst/salz.html>

<https://de.wikipedia.org/wiki/Beltsee#/media/File:Belte.png>



Schleswig-Holstein had a tradition in fishing for „wild“ blue mussels...





Mussel fishing at the Baltic Sea – the history...



Mussel fishery in the
Flensburg Fjord with
dredges



Fotos: LLUR SH



The current mussel farming at Schleswig-Holstein's Baltic coast (1):



*The „Kiel Marine Farm“,
a very small scale
mussel producer
(3 – 5 tons per year)
in the Kiel Fjord*



The current mussel farming at Schleswig-Holstein's Baltic coast (2):



...is currently the only producer of blue mussels in the Baltic Sea, Schleswig-Holstein (since five years)

...and is also one of the project farms in „Baltic Blue Growth“ with a regular part in several studies in the project!



Production study;



Suitability of different substrates





The current mussel farming at Schleswig-Holstein's Baltic coast (3):



Foto: R. Schulz; Botanik CAU

...and logging of several
economical data for the
development of business plans
(boat hours, installation of
buoys and so on...)

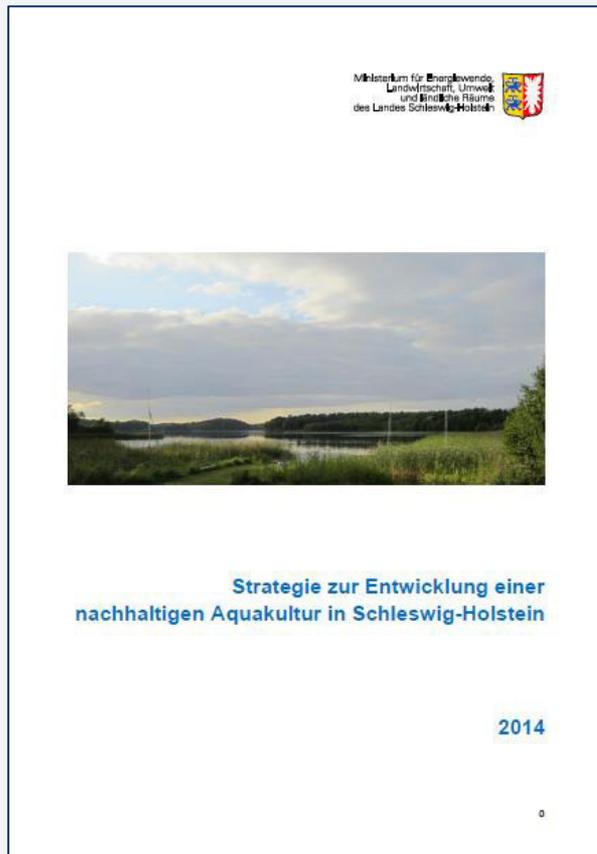




The mussel farming at Schleswig-Holstein's Baltic coast – future prospects (1)?

Our Aquaculture-Strategy (2014) – the Baltic Coast of Schleswig-Holstein has some potential for marine aquaculture:

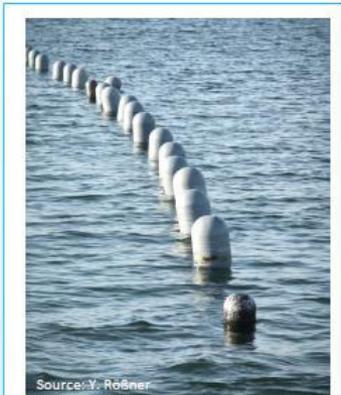
- **nutrient extractive cultures are conceivable** (mussels and algae!) – permission needed
- **fin fish aquaculture only with full compensation of nutrient discharges in relation to an IMTA-concept**, with the first step of a pilot project – permissions for different parts of the IMTA needed
- approaches related to **compensation must meet the obligations stemming from EU-legislation (e.g. compensation within waterbodies in terms of the WFD)**





The mussel farming at Schleswig-Holstein's Baltic coast – future prospects (2)?

A study by Kiel University



Source: V. Rößner

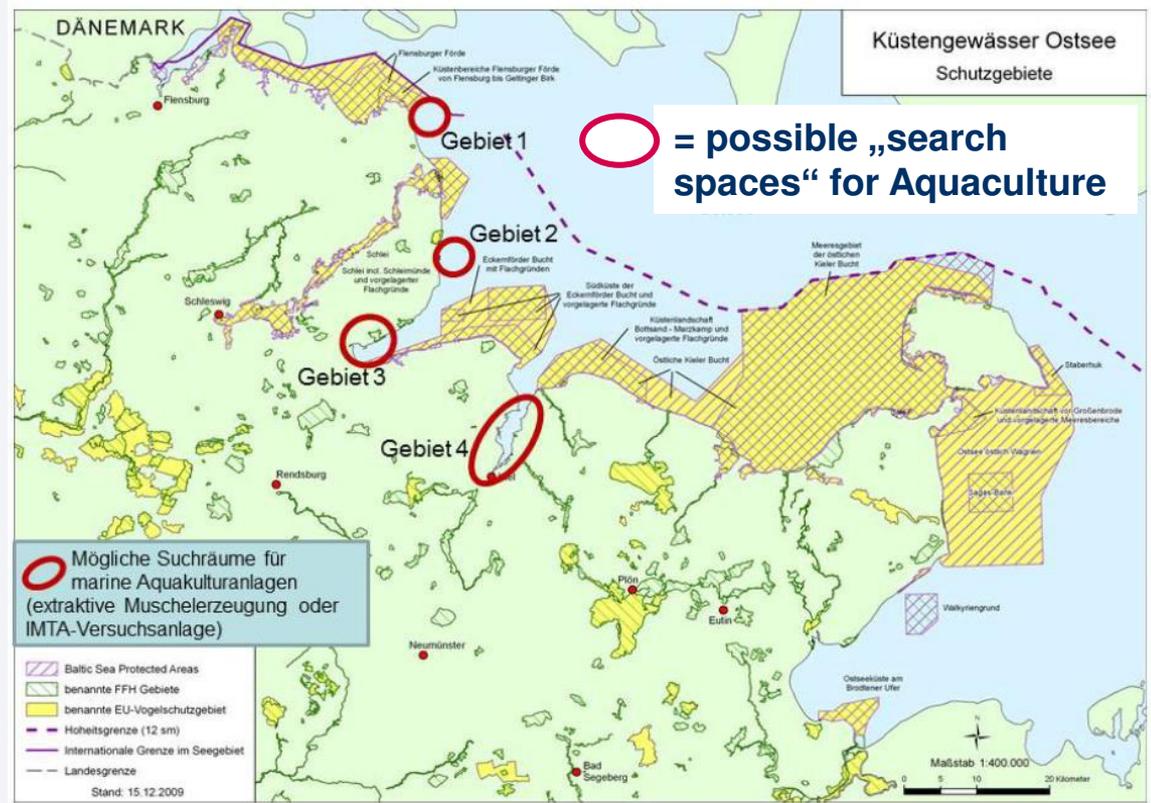
Information for investors

Establishment of environmentally compatible, marine aquaculture in the coastal Baltic Sea in Schleswig-Holstein

Funding by the European Union-European fisheries fund (EFF) and the state of Schleswig-Holstein



...to support potential investors (2015):





The mussel farming at Schleswig-Holstein's Baltic coast – future prospects (3)?

Landesentwicklungsplan Schleswig-Holstein 2010

(moveout from the
main map)

Challenges and gaps (1):
Space? There are several competing uses
(fisheries, tourism, shipping, navy, munition
contamination, nature conservation,...)

– hard to find a suitable site!





The mussel farming at Schleswig-Holstein's Baltic coast – future prospects (4)?

Challenges and gaps (2):

Lack of established business –

first mover problems...

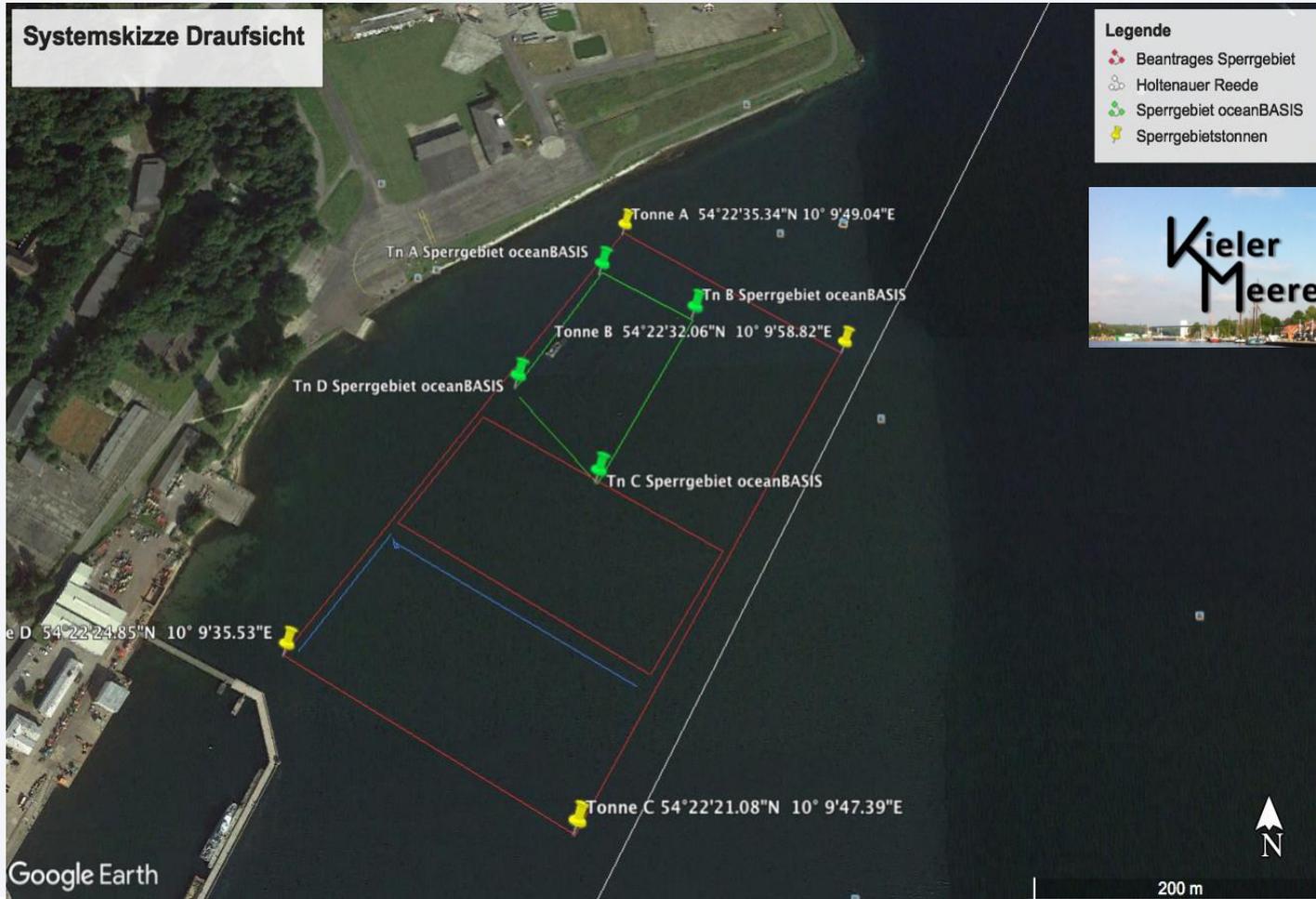
...no cooperation, no common marketing opportunities;

May be, the intended BBG-follow-up-project can help?

(establishment of (maybe cross-border) cooperation between farms, for instance concerning the expensive harvesting technique; collective marketing,...)



The mussel farming at Schleswig-Holstein's Baltic coast – future prospects (5)?



They are willing to expand!

The application procedure is ongoing.



Mussel farming at Schleswig-Holstein's Baltic coast – research activities (2)

The Kiel Marine Farm is „not only“ a mussel-producer, but even a scientific player.

An implemented IMTA would be a suitable place to conduct applied research!

The Kiel Marine Farm is currently involved in several application procedures; some ideas with direct links to mussel aquaculture are:

- Replace plastics in mussel-collectors with wooden fiber
- Extract rare chemicals from mussels and mussel-shells
- Multi-use-concepts in offshore windparks, prospects for mussel, algae and Co.



Mussel farming at Schleswig-Holstein's Baltic coast – research activities (3)

The „habitat“ Kiel Marine Farm is also suitable to work on other questions, like:

- Local reduction of nutrients and creation of new habitat by reed-islands
- Breeding of micro-algae in floating green-houses





Mussel farming at Schleswig-Holstein's Baltic coast – research activities (4)

Some impressions of terminated research activities at the Kiel Marine Farm



Cultivation of macro-algae

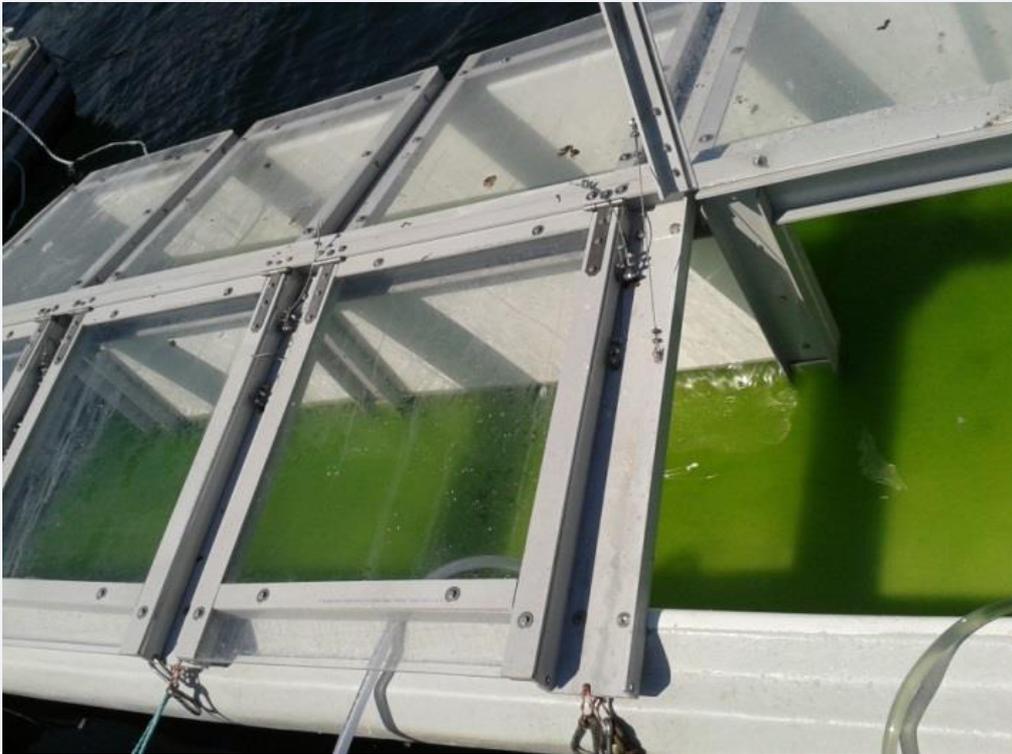


Fotos: R. Schulz; Botanik CAU



Mussel farming at Schleswig-Holstein's Baltic coast – research activities (5)

Some impressions of terminated research activities at the Kiel Marine Farm



*Floating cultivation of
micro-algae*

*Foto: R. Schulz;
Botanik CAU*



Summary

The potential of mussel business at the Baltic Sea in Schleswig-Holstein is not explored completely yet.

The Kiel Marine Farm, located at an urban site in the Kiel Fjord, is currently the only commercial mussel producer in the Baltic Sea in Germany.

The Aquaculture strategy of Schleswig-Holstein in principle welcomes investors in extractive cultures and specifies particular requirements for marine aquaculture, incl. compensation of nutrient discharges in the case of fish aquaculture.

The Kiel Marine Farm is applying for evolving current plant into an IMTA, medium-term.

Apart from the mussel production, such a Baltic IMTA would be a good place for research. Several projects were already realized, and further projects are intended in the future, e.g. to test the performance of an IMTA and other multiple use concepts.