

Case: Compensation VS quoted fish species

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A fish farming company in 2015 submitted an application to utilize improvement surplus in the company's fish farming operations

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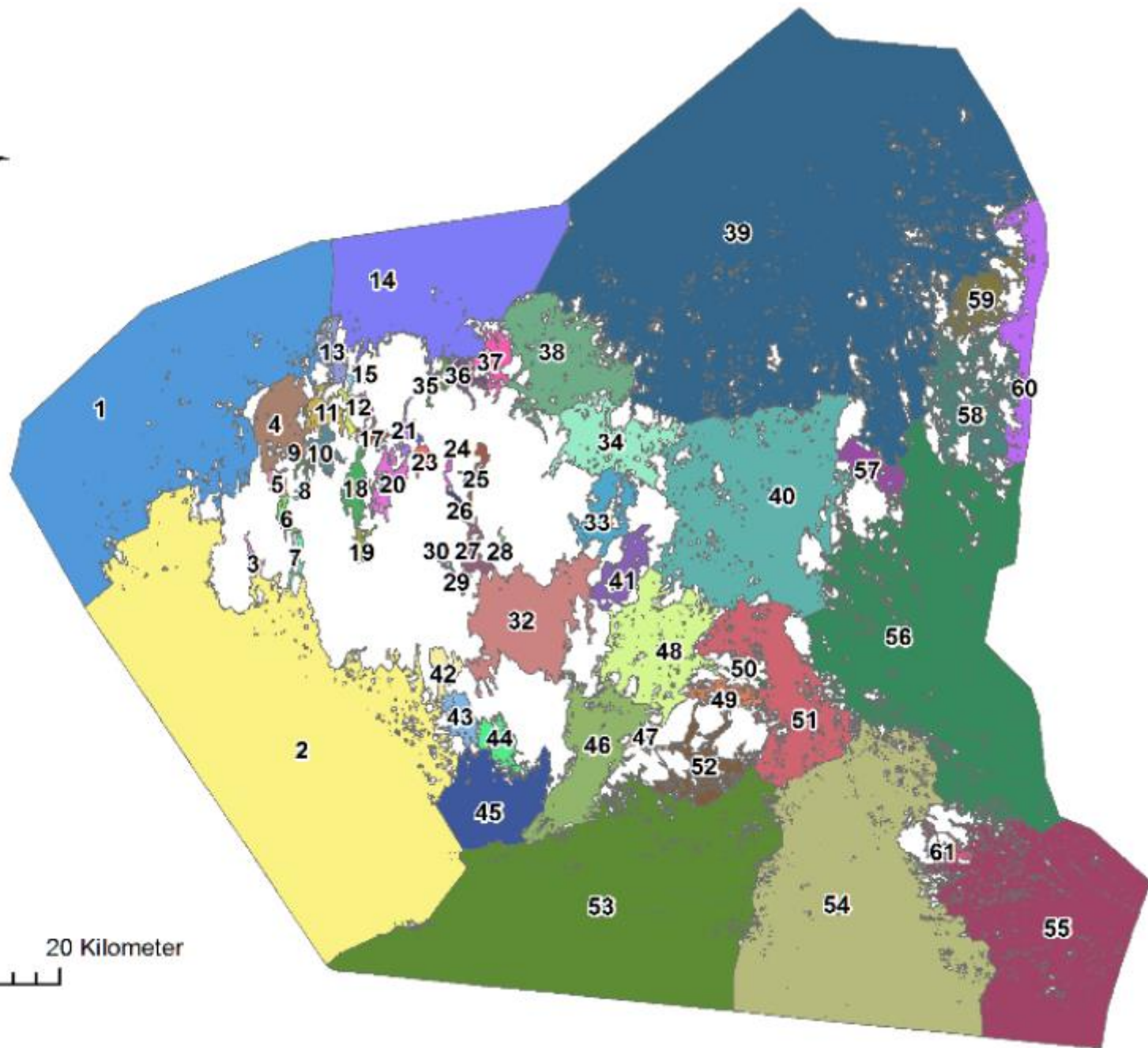
Improvement surplus :

The **extra water quality improvement** which occur when an improvement / compensation measure creates better water quality **than is required by law**

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A local professional fisherman is hired to fish herring and sprat, and at the same time remove nitrogen and phosphorus from the aquatic environment

Fishing shall be conducted exclusively in the Åland Sea, between Åland and Sweden



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A catch of 500 tonnes of herring and sprat removes 1900 kg of phosphorus and 10750 kg of nitrogen.

This can be utilized to two-thirds.

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The Government Decision:

"The purpose of the improvement surplus is that new emissions are allowed if larger emissions disappear simultaneously"

"It is doubtful if an improvement surplus system based on fishing of quoted fish species such as herring and sprat would lead to a reduction in pollution in the long term."

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An uptake of nutrients through quoted fishing, ie. **fishing that to a high degree still would be carried out**, entails a redistribution, not a reduction, of nutrients and of any other negative impact due to the fish.

It is no, or limited, **added value**.

The sum effect would be an increased input.

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New principles for compensation must:

- **be ecosystem-based and environmentally sustainable in the long term**
- **be scientific based**
- **clearly describe how the compensation measures contribute to improved water quality**

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New principles for compensation must:

- consider the basic requirements according to the **Water Framework Directive**, including the Weser judgement
- meet the requirements of the **Marine Directive**
- take into account **Maximum Allowable Input** agreed by **HELCOM** member states the Baltic Sea States for the various sub-basins within the framework of

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If possible, **there should be coordination of principles and regulations between Åland, mainland Finland and Sweden,** to create similar environmental rules and as equal competitive conditions as possible between the actors in the different regions

ÅLR har testat storskalig musselodling



- Slutsats i slutrapporten 2015:
- Det är i nuläget inte ekonomiskt lönsamt att bedriva musselodling som en kompensationsåtgärd så långt norr i Östersjön som Åland.

För att få det lönsamt krävs antingen:

- billigare investerings- och skördekostnader
- inkomst från försäljning av musslor
- stöd för miljöåtgärd
 - jämför t.ex. fångstgröda inom EU:s miljöstödsprogram

Compensation measures —ideas and considerations

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Nutrients
from sea to
field

Positive
biomanipulation:
stickleback harvesting

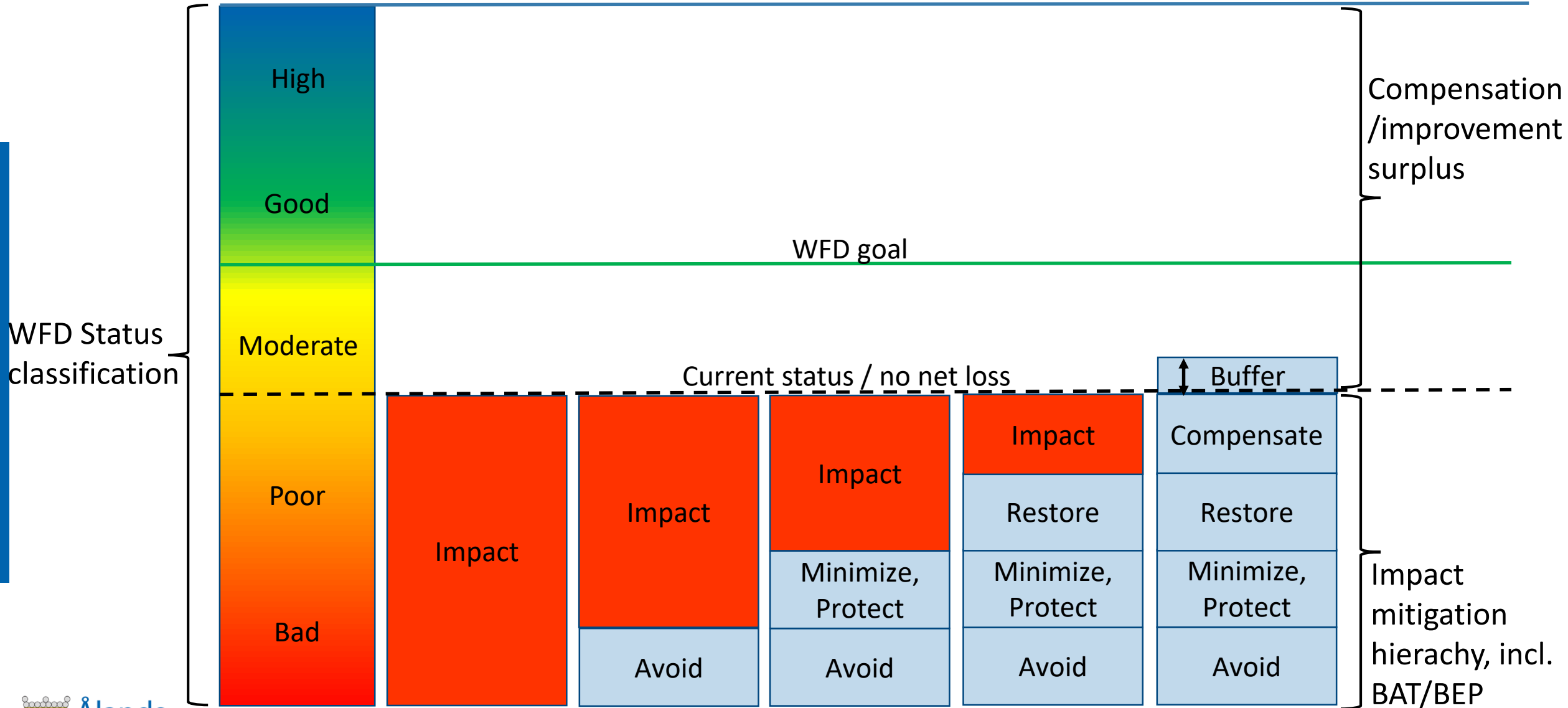
Binding
phosphorus into
sediment

Removal of
top-layer
sediment

Compensation ideas from SEABASED

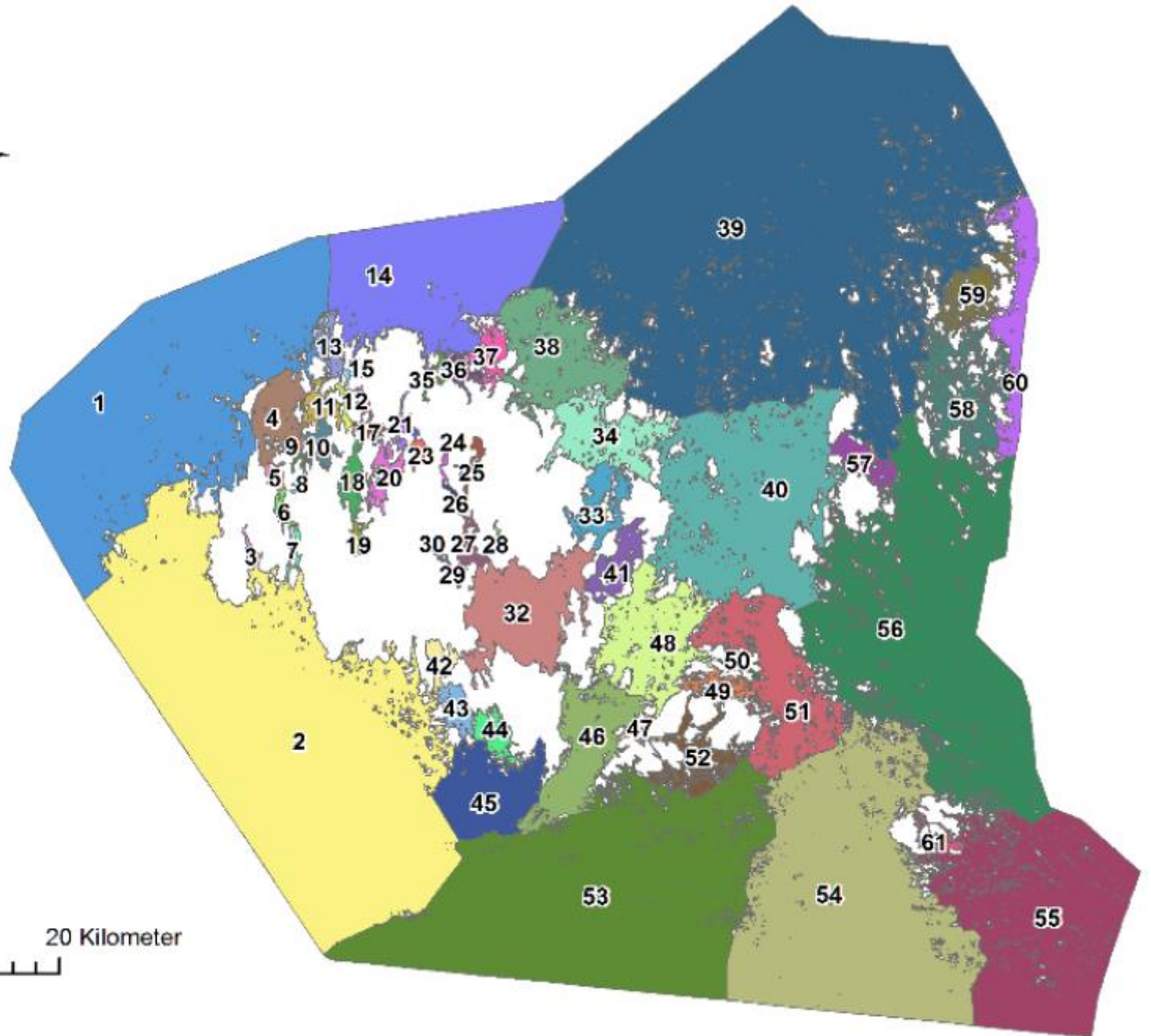
- Nutrients from sea to field (Government of Åland, County administrative board of Östergötland)
- Stickleback harvesting (Åland Fish Farmers' Association)
- Binding phosphorus into sediment (Stockholm University)
- Removal of top-layer sediment (Centre for Economic Development, Transport and the Environment)

Clear terminology



61 water bodies

-> Compensation effect where the activity is located





14 monitoring areas

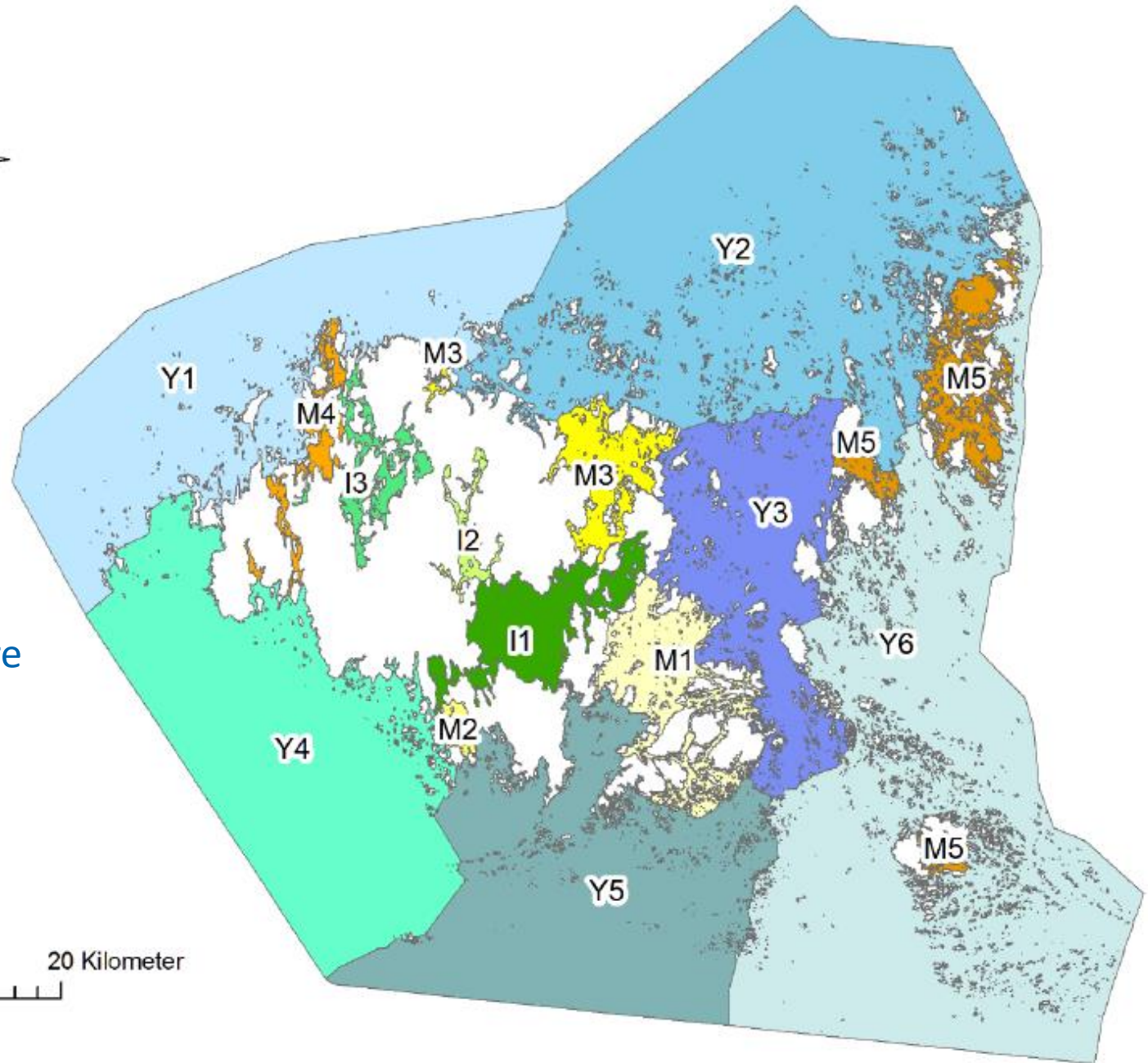
I = inner archipelago

M = middle archipelago

Y = outer archipelago

Compensation implemented in the water body or monitoring area where the water activity is located.

OR: Higher burden of proof of the compensation effect





Considerations

- 1) Clear terminology—are we in agreement?
- 2) Different spatial and temporal scales (nutrient load vs. compensation)
- 3) Feasible, practical and acceptable by stakeholders—suggestions on suitable methods?
- 4) Easy to apply with clear rules—main rules to follow?
- 5) Scientifically viable nutrient calculations; need for standard values—already present/need for further research?



- 6) Load vs. removal; buffer to achieve no net loss—buffer size for different methods?
- 7) Implementation; own compensation/compensation company/water improvement fund?
- 8) Audit process; follow-up by environmental authority—what to include?
- 9) What if compensation fails?
- 10) Other issues?