32nd NSHC Conference

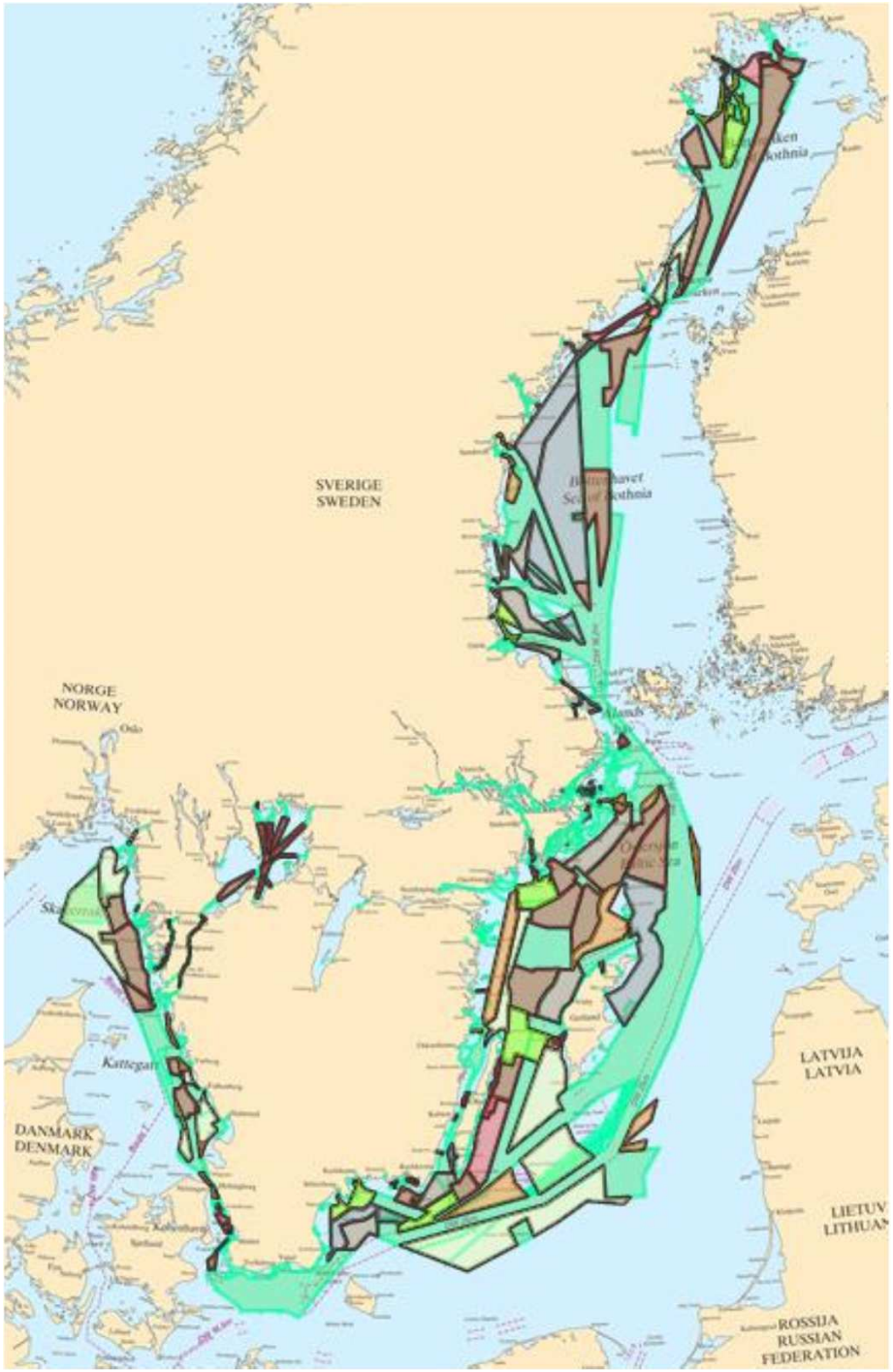
Agenda item C5.1

Shallow water surveying

SWEDISH MARITIME ADMINISTRATION

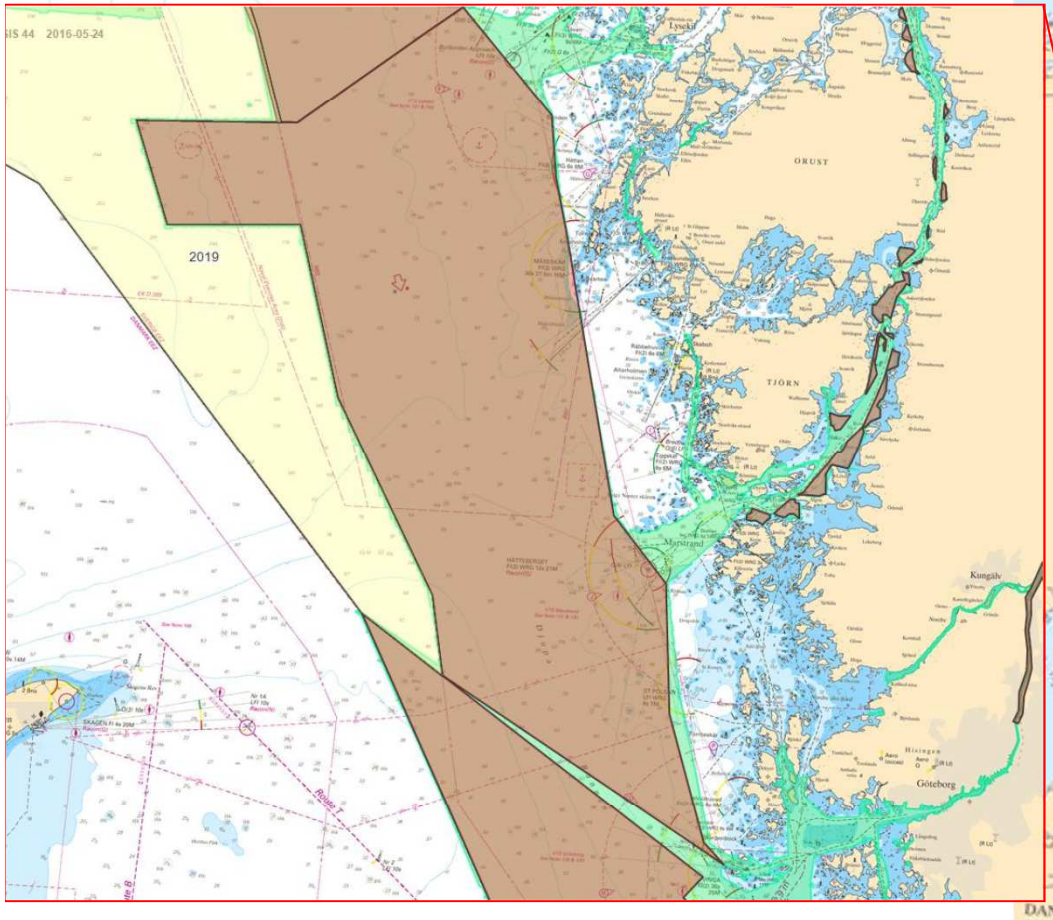
Status Swedish waters

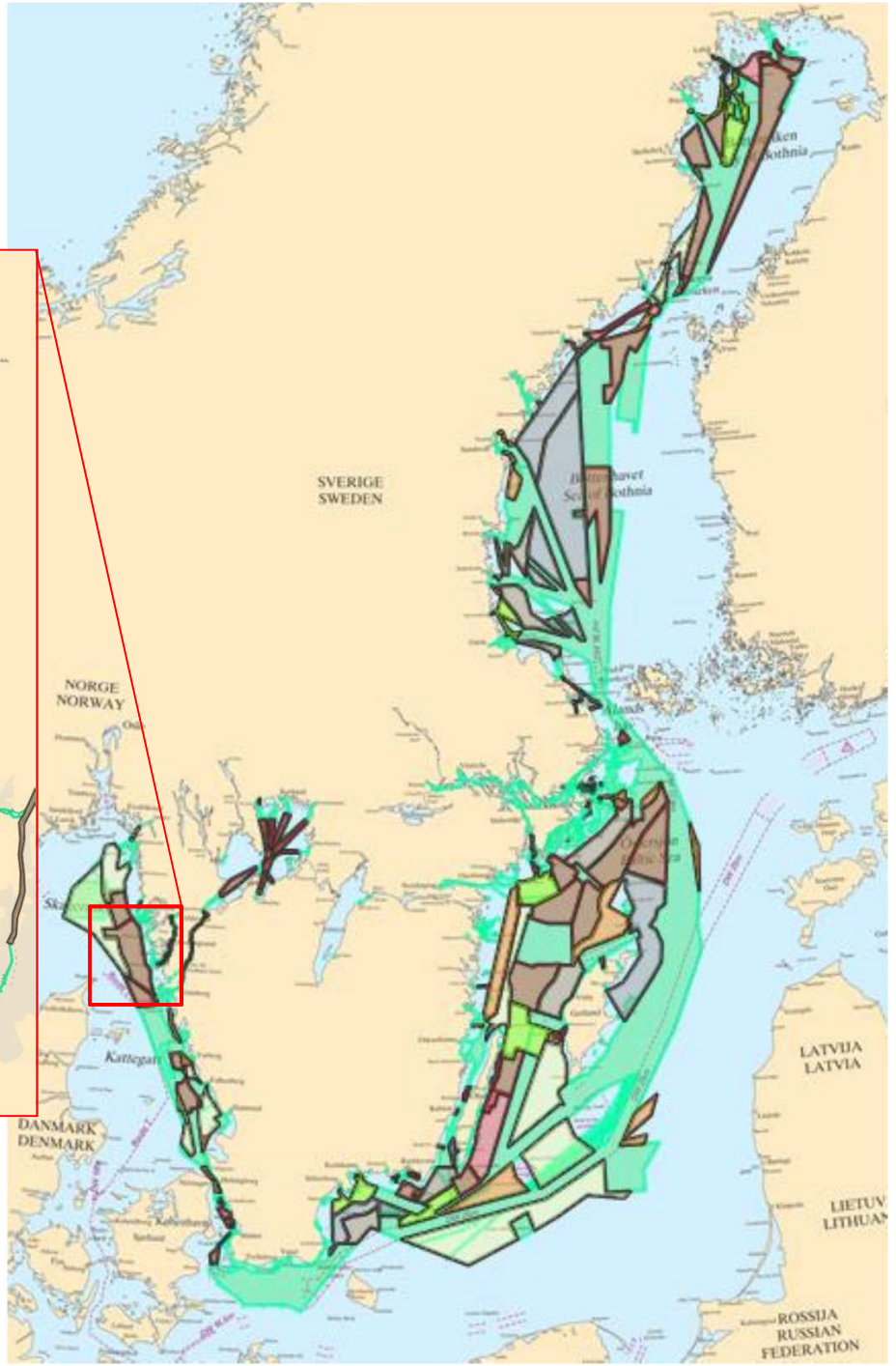
- Total 165 000km2
- 2016 52% FSIS-44
- Re-survey plan covers only the most important commercial shipping routes
- 2020 75% FSIS-44



SWEDISH MARITIME ADMINISTRATION

Much work still to be done…





SWEDISH MARITIME ADMINISTRATION

The coastal zone is of great interest for many stakeholders

Need for high resolution data in the shallow area, 0-10m depth

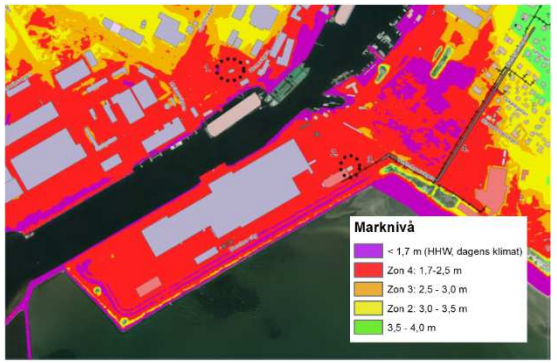
Swedish Civil Contingencies Agency together with 20 other agencies initiated a study to;

- *find cost-effective tools for surveying the shallow areas*
- *propose a national plan for surveying the shallow water and*
- *calculate the cost for such a national programme*

The task was given to SMA and the Geological Survey of Sweden (2014-2015)

A final report was published April 2016

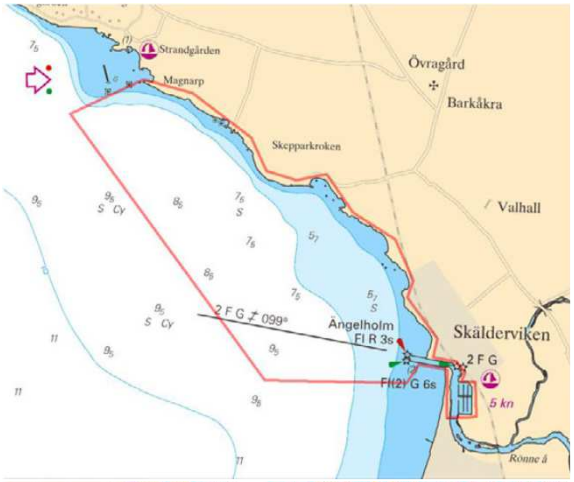
SWEDISH MARITIME ADMINISTRATION

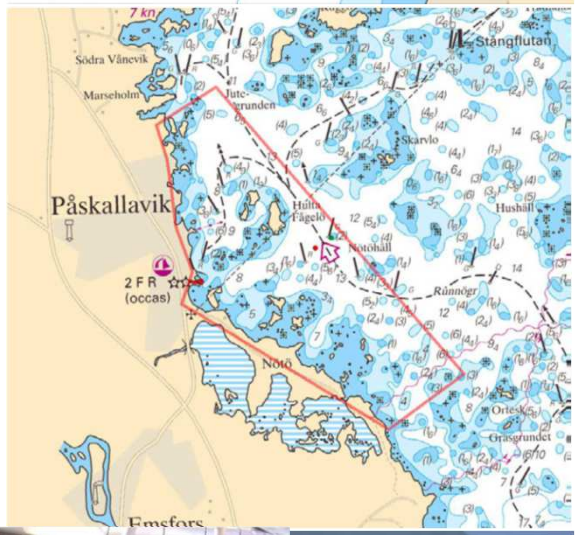


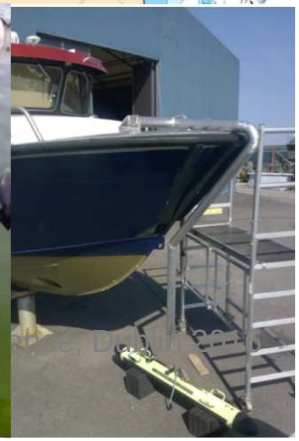
Performed work

- We asked 120 stakeholders what type of data and resolution they need
- Field tests using several acoustic methods including interferometric sonar, in different kind of waters and physical conditions
- Analysed results from existing LIDAR tests;
  - Sweden Skåne 2012-2014
  - Germany: 2012-2014
  - Norway: TopoBaty 2014
  - France: Litto3D

  as well as satellite derived bathymetry..
- LIDAR bathymetry feasibility study for Sweden’s coastline (0-10m)







SWEDISH MARITIME ADMINISTRATION

Final results (in brief)

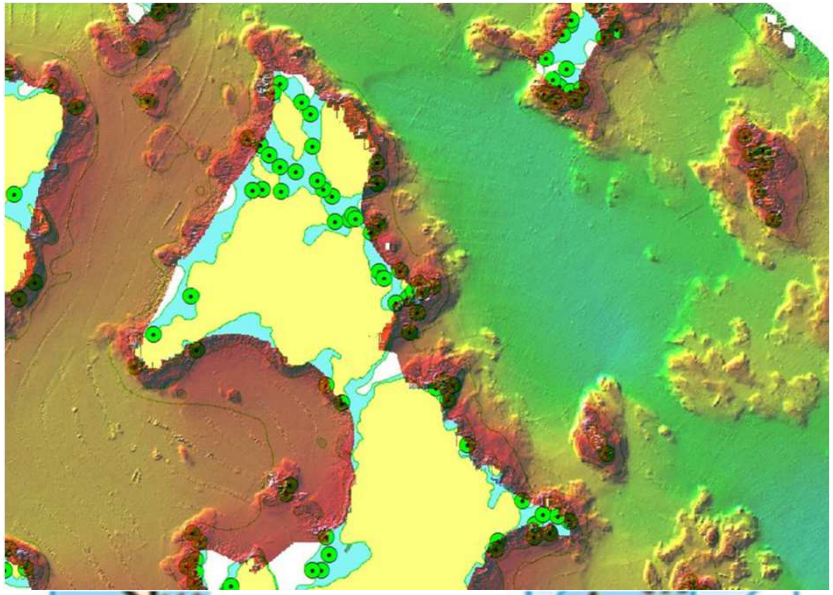
In order to meet the needs for very high resolution data in the shallow areas 0-10m we need to;

- *use a combination of LIDAR and acoustic methods*
- *update the FSIS-44 in regard of resolution and object detection outside the "fairway areas"*
- *include both MB-backscatter as well as Sub Bottom Profiler-data.*
- *include Multispectral photogrammetry and LIDAR reflectivity as separate datasets.*

Cost calculations for surveying the shallow coastal waters including the great lakes

LIDAR (0-10m): 34MEuro

Boat MB/SBP (10-3m): 92,5-114MEuro



Now we just have to convince our Government to fund a national survey programme for the shallow waters…