

The North Sea Sprat Box Origin, evaluation and results



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Box origin

- Herring stock collapse in the late 1970's mainly driven by an excessive fishery on recruits
- Industrial sprat-fisheries have been associated with high juvenile herring by-catches, especially in certain nursery areas, e.g. near the coast of Jutland.
- In 1984 herring stocks had increased substantially and it became impossible to keep the bycatch of herring below the 10% limit.
- Random sampling showed that 90% of the herring bycatch took place within the current sprat closed area.
- As a result, the 'Sprat box', was established

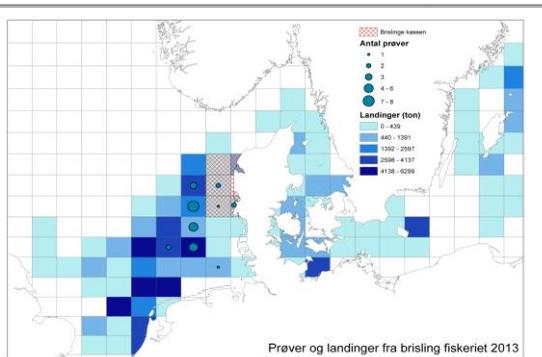
Evaluations performed

- Baron (2002):
 - No clear evidence that the establishment of the sprat box resulted in decrease of annual mortality of age-0 herring in the North Sea
 - In contrast, there was a significant increase in the catches and mortality of age-0 herring after 1996 coinciding with the introduction of the sprat fishery for the small meshed fishery
 - The observed increase in catches during the 1990's after the establishment of the sprat box could not be explained by variations in recruitment or herring biomass.
- STECF (2007):
 - Analysis based on the current placement of the sprat box
 - However, the relationship between the indices and the expected bycatch of herring in the sprat fishery is unclear, as is the impact of the bottom-trawl survey for assessing sprat abundance

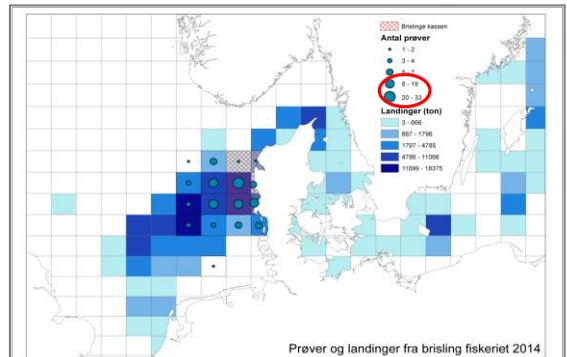
North Sea sprat box evaluation

- Experimental fishing inside and outside the box
- 15 vessels allowed to fish in the box on the condition that they fish 2 days in the box followed by no less than 2 days outside
- One sample from each haul was taken and no slipping/discarding was allowed

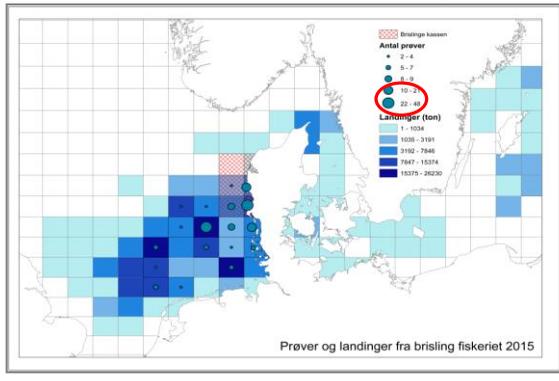
Collected samples and catch (shading) 2013



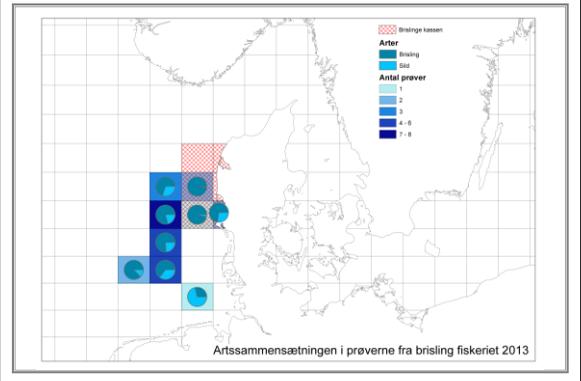
Collected samples and catch (shading) 2014



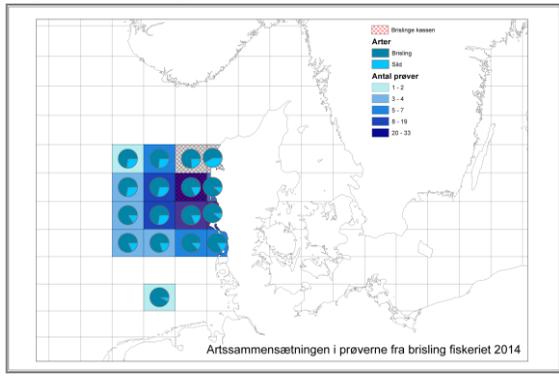
Collected samples and catch (shading) 2015



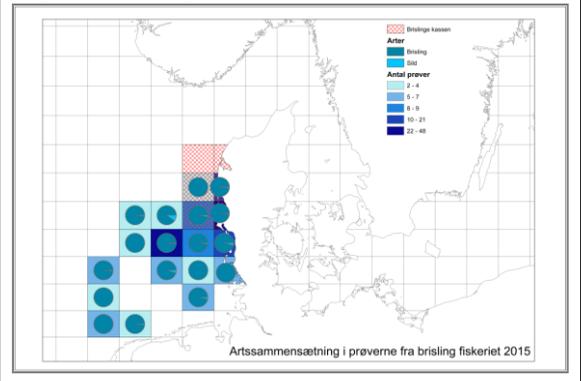
Species composition 2013



Species composition 2014



Species composition 2015



Results

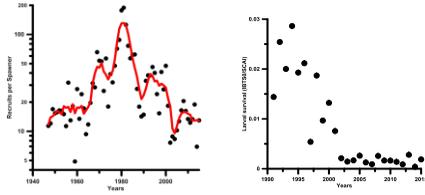
- No sign of misreporting in collected samples (a few samples with almost entirely herring)
- Significant difference in the weight of herring/weight of sprat in the samples inside and outside the box (31%-32% less herring per kg sprat inside the box)
- Less herring (in numbers) per kg sprat inside the box (45-47%)

Conclusions

- Herring bycatch is not decreased by having the sprat box in place; the box is not a useful technical regulation
- Denmark have initiated the formal work to get it out of the regulations (probably take months)
- Effects of changing dynamics of the NSAS and sprat stocks in combination with the landing obligation will shape the future bycatch issues

Things change...

- NSAS: High SSB, low recruitment due to low larval survival. Causal effects difficult to disentangle



The herring soup 'stock'

