

Commercial catch data – can it add something to HELCOM coastal fish monitoring in the BS?

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Should we be more interested in commercial catch data of coastal fishery?

- Commercial catch data is used in national reportings of coastal fish stocks (e.g. in Finland and Sweden), not in HELCOM assessments
- Baltic Sea wide overviews of costal catch data (I have not seen any) could provide better understanding of:
 - importance of various catch species for fishery in BS scale
 - distribution of catches around the BS → important areas for various species
- In addition, commercial catches/landings tell something about abundance as well



Commercial landings vs. abundance?

- "In a way, coastal fishermen act like cormorants"



Photo: Tapio Gustafsson



- Both are involved in "mixed fishery"
- Partly different selection of species and size classes, but both focus on species which are easily available (reasonable commercial / nutritional value per effort) and both can change target species
- Fishermen are even more flexible. Effort can be increased if there is a lot of fish available. On the other hand, part-time fishermen can seek for other incomes during periods with low abundance of fish.

Commercial landings vs. abundance?

Increasing coastal stock (e.g. pikeperch) →

- Fishermen increase effort
- They start fishing also in areas/sites where it was not profitable earlier
- More fishermen involved in the fishery
- → Increased landing

- Naturally, the opposite happens when the stocks are decreasing
- The above mentioned factors are known to cause problems to CPUE calculations (hyperstability), landings might emphasize changes??

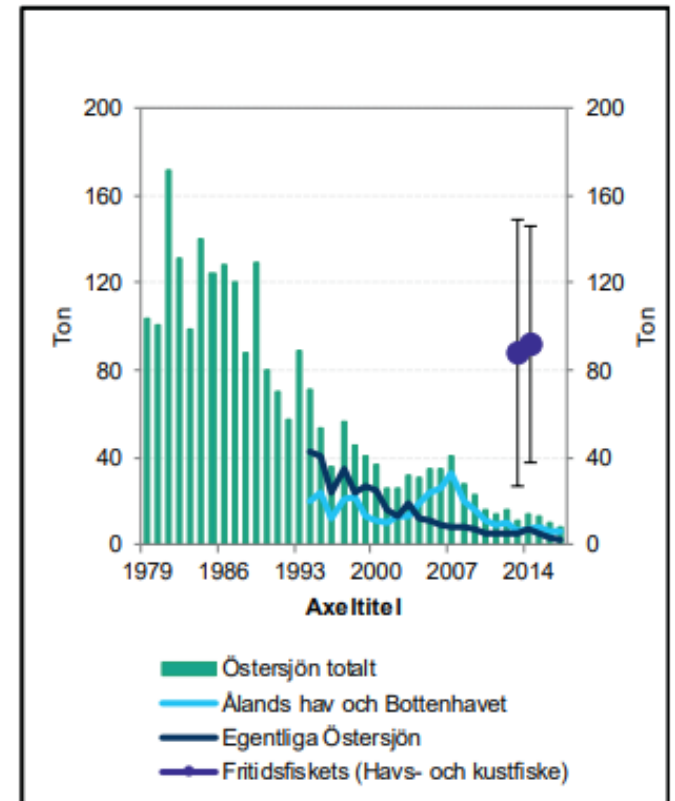
Changes in commercial landings of coastal species might reflect changes in fish stocks quite well (in large or medium geographical scale)

Commercial landings vs. abundance?

Selected example 1. Pikeperch in Swedish coast

- Swedish commercial landings of pikeperch in the BS have decreased
- "Coastal stocks have decreased since year 2000."

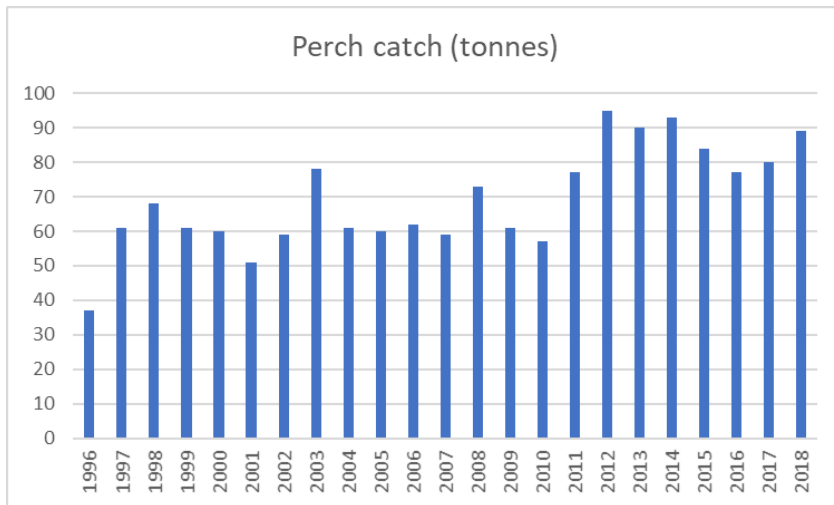
(From report: Fisk- och skaldjursbeståndet i hav och sötvatten 2018)



Commercial landings vs. abundance?

Selected example 2. Perch in the Finnish coast of the Bothnian Bay

- There used to be problems in reproduction due to acid runoff 15-20 years ago. Not anymore.
- Number of coastal fishermen, in general, have decreased
- Landings have increased, it is likely that production (abundance) has increased as well



Good news: Commercial data compiled by ICES

<http://ices.dk/marine-data/dataset-collections/Pages/Fish-catch-and-stock-assessment.aspx>

Datasets

➤ Official Nominal Catches 2006-2017

Catches in FAO area 27 by country, species, area and year as provided by the national authorities. Source: Eurostat/ICES data compilation of catch statistics - ICES 2019, Copenhagen. Format: Archived dataset in .xlsx and .csv formats. Version: 16-09-2019

➤ Historical Nominal Catches 1950-2010

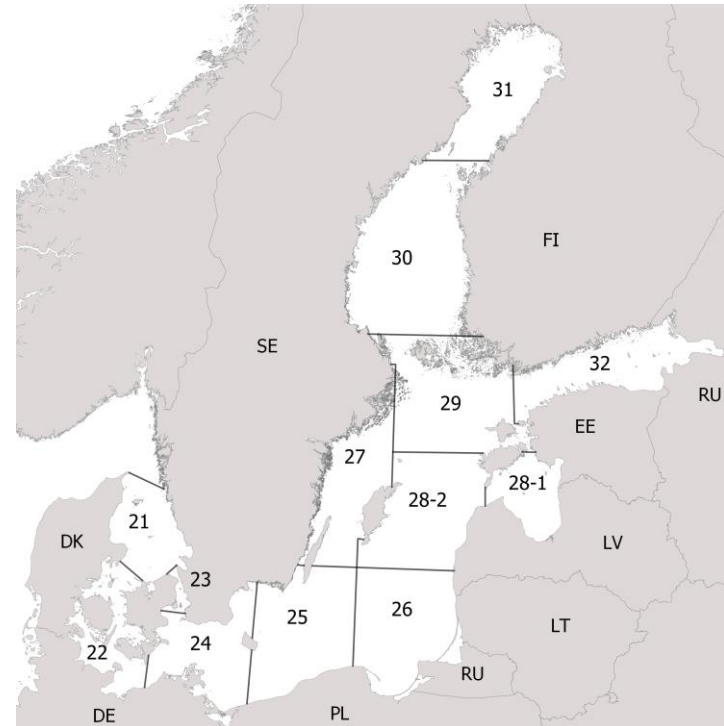
Catches in FAO area 27 by country, species, area and year. Source: Eurostat/ICES database on catch statistics - ICES 2011, Copenhagen. Format: Archived dataset in .xls and .csv format. Version 26-06-2019

➤ ICES Historical Landings 1903-1949

Catches in FAO area 27 by country, year, area, and species. Source: Bulletin Statistique. Format: Archived dataset in .xlsx and .csv formats. Version: 28-10-2014

➤ Preliminary Catch Statistics

Data by country and ICES sub-area



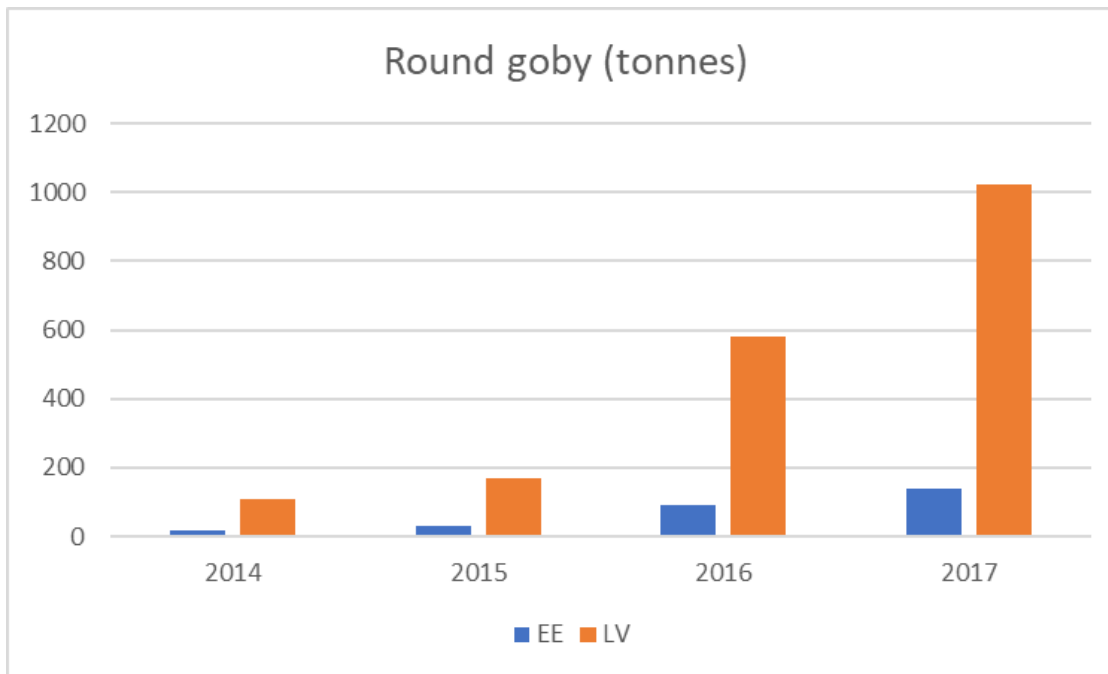
Some examples of the data

Commercial landings (in tonnes) of Estonia (Baltic Sea)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Perch	1 117	777	715	819	911	796	550	1 217	1 567	1 523	1 374	1 291
Eel	9	6	5	4	4	2	2	2	1	1	1	1
Pike	20	14	17	15	23	32	35	66	65	52	42	40
Flounder	352	335	324	336	285	280	190	284	313	239	201	187
Sprat	46 689	51 007	48 582	47 299	47 862	34 976	27 697	29 805	28 498	23 954	23 687	26 546
Pikeperch	94	99	65	67	73	111	147	122	173	83	107	56
Smelt	435	550	741	773	452	200	406	517	234	435	699	411
Bream	0	0	0	0	0	0	0	0	13	8	7	8
Salmon	6	6	8	8	4	4	5	7	5	6	7	9
Whitefish	28	31	37	28	16	15	20	26	26	19	18	16
Herring	23 192	26 108	31 843	33 168	28 862	25 325	22 047	21 941	23 130	32 317	33 769	35 153
Roach	61	63	54	62	64	83	78	71	93	95	111	86
Ide	8	9	12	10	6	6	4	7	12	16	27	36
Trout	12	17	15	18	12	13	17	15	15	16	20	17
Cod	703	946	973	822	796	1180	689	249	165	183	2	1

Some examples of the data

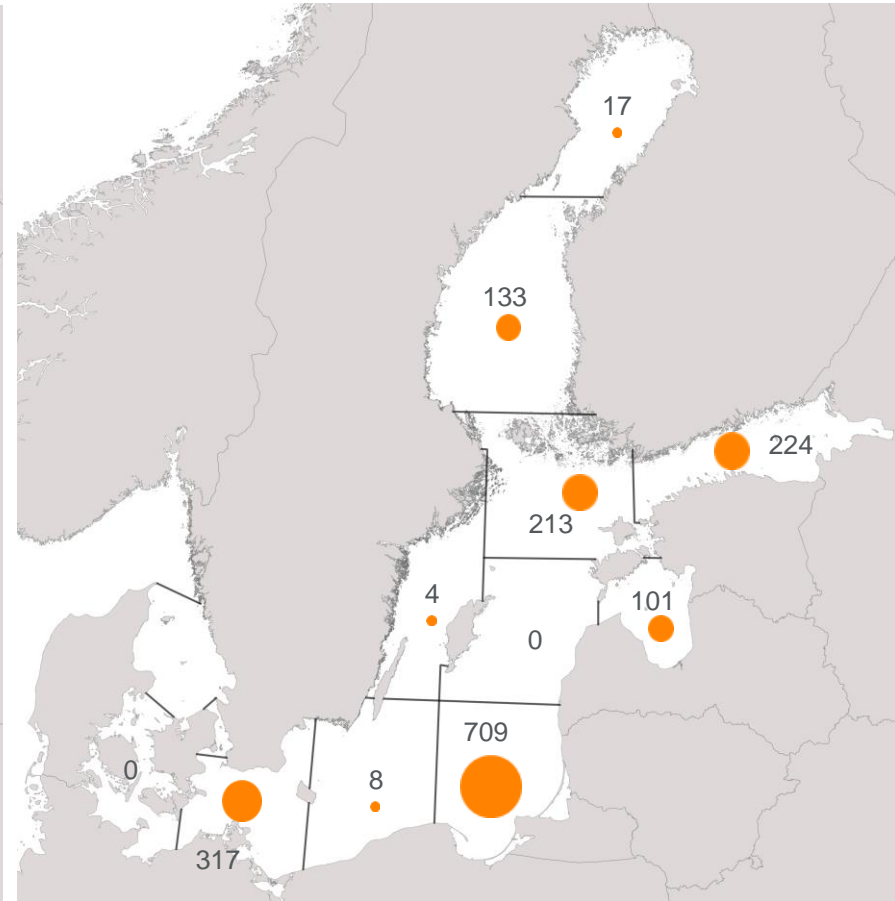
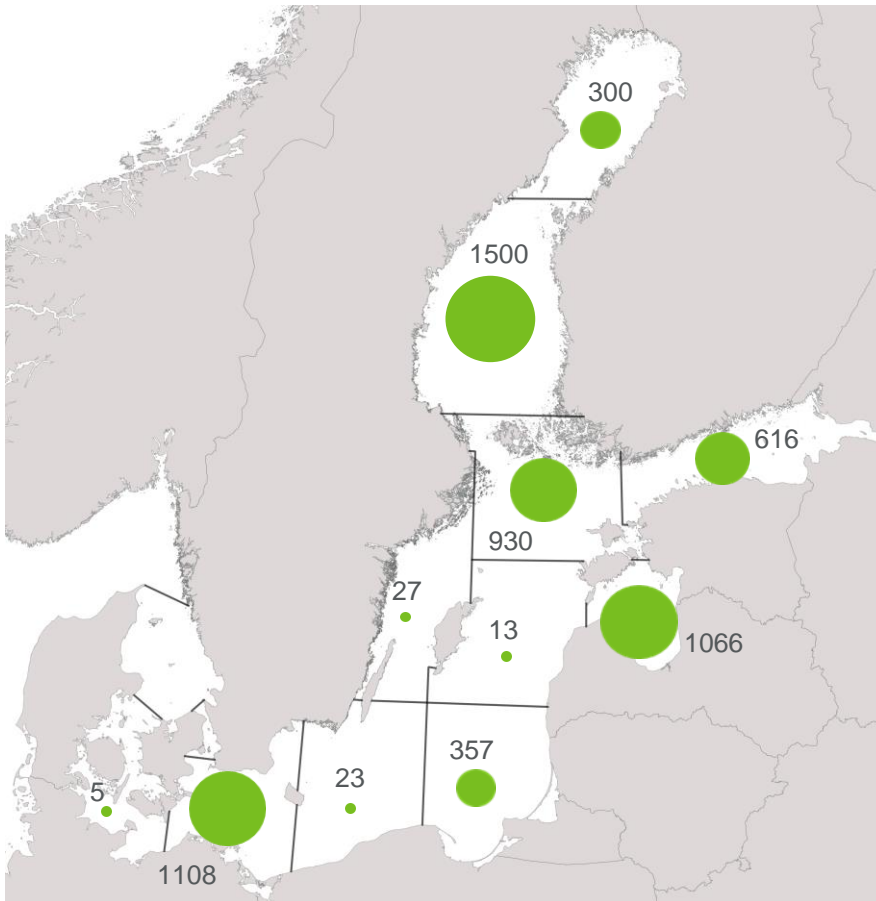
Commercial landings of round goby



Some examples of the data

Commercial perch catch 2016 (tonnes)

Commercial pike-perch catch 2016



Conclusions

- Commercial landing data around the entire BS data is nowadays easily available from ICES www-pages
- The data could be utilized also in HELCOM Fish Pro -work, taking into account the characteristics and shortages of the data

Pauly et. al. 2013. Fisheries: Does catch reflect abundance? Nature 494:303-306

Thank you!

