

Reconciling the conflict between cormorants and fisheries

Quantification of predation effects

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How to use the site

CLOSE TO REVEAL MAP

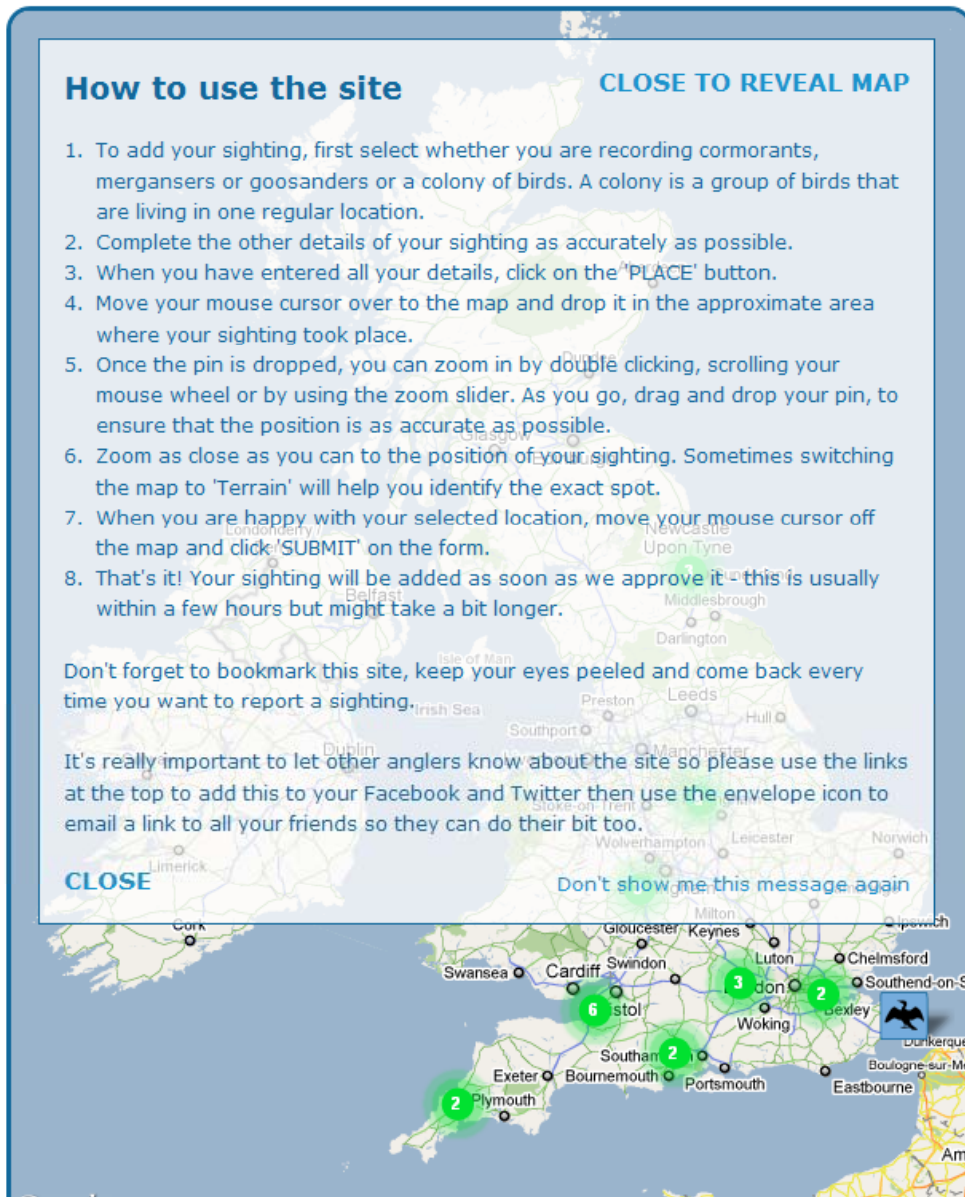
1. To add your sighting, first select whether you are recording cormorants, mergansers or goosanders or a colony of birds. A colony is a group of birds that are living in one regular location.
2. Complete the other details of your sighting as accurately as possible.
3. When you have entered all your details, click on the 'PLACE' button.
4. Move your mouse cursor over to the map and drop it in the approximate area where your sighting took place.
5. Once the pin is dropped, you can zoom in by double clicking, scrolling your mouse wheel or by using the zoom slider. As you go, drag and drop your pin, to ensure that the position is as accurate as possible.
6. Zoom as close as you can to the position of your sighting. Sometimes switching the map to 'Terrain' will help you identify the exact spot.
7. When you are happy with your selected location, move your mouse cursor off the map and click 'SUBMIT' on the form.
8. That's it! Your sighting will be added as soon as we approve it - this is usually within a few hours but might take a bit longer.

Don't forget to bookmark this site, keep your eyes peeled and come back every time you want to report a sighting.

It's really important to let other anglers know about the site so please use the links at the top to add this to your Facebook and Twitter then use the envelope icon to email a link to all your friends so they can do their bit too.

CLOSE

Don't show me this message again



I SAW A CORMORANT

Step 1: Fill the form

Species seen: PLEASE SELECT

Number of birds seen:

Date recorded: TIME

Main behaviour: PLEASE SELECT

Type of watercourse seen near: PLEASE SELECT

Name of watercourse (if known):

First name:

Surname:

Email address:

Confirm email address:

Angling Trust member? Yes No

If you don't want to be sent information about the Angling Trust, please untick the box

Please tick to receive information from selected fishing companies that we think you'll like

Step 2: Place the marker

PLACE

Step 3: Submit

SUBMIT



LANDESFISCHEREIVERBAND BAYERN E.V.

Kormoran und Fischbestand— eine unendliche Geschichte?



Oktober 2009

Mellemskarven

- en gigantisk miljøpolitisk skandale?



Ifølge den svenske debattør Christer Olburg er mellemskarven – som er den skarvart, der yngler i Danmark – en invasiv kinesisk art, der truer den oprindelige europæiske storskarv og som derfor burde udryddes på linie med andre invasive arter.... se baggrunden og argumenterne her!

Af Jens Ulrik Høgh

Intet dansk dyr har vakt mere debat i nyere tid end skarven, der bredte sig nærmest eksplosivt i landet fra omkring 1970 og indtil for ganske få år siden, hvor bestanden stødte mod loftet for, hvor mange skarver de danske kyster og søer kan brodføde. I processen fik de sidste danske bundgarnsfiskere, der havde overlevet overgødskning og bundvendinger, det endelige dødsstød. Konkurrencen mod skarven, der udnyttede fiskeredskaerne effektivt i sin egen fødesøgning, var en ulige kamp. Debatten delte befolkning i to lejre: Skarvelskerne og skarvhaderne. Førstnævnte gruppe omfattede

FISKEVÅRD



Nr 4 December 2005

Sveriges fiskevattenägareförbund



Skarvjakt som
fiskevård

Ny fiskevårdsavgift • Samförvaltning på Gotland

VGH Mannheim: «Kaltei-Aktion» zur Kormoranbekämpfung am Bodensee im Jahr 2008 war unzulässig

zu VGH Mannheim, Urteil vom 16.03.2011 - 5 S 644/09

Kaltei-Aktion zum Schutz der Äschenbestände nicht plausibel dargelegt

Dagegen war es laut VGH nicht von vornherein ausgeschlossen gewesen, eine Befreiung mit Blick auf den Schutz der Äschenbestände im Untersee zu treffen. Diese Fischart sei dort unabhängig vom Kormoran in ihrem Bestand bedroht; die Restbestände würden zusätzlich aber durch den Fraßdruck der Kormoranpopulation im Radolfzeller Aachried gefährdet.

Allerdings habe das Regierungspräsidium im konkreten Fall ***nicht plausibel darlegen können, dass die durchgeführte Kaltei-Aktion einen effektiven Beitrag zum Schutz der Äschenbestände leisten könne.***

- Population status - brief
- Previous studies of cormorant predation in DK
- The specific problem with predation on smolts
- Recent increase in predation on grayling
- Management: the Danish management plan



From 1980 a sharp increase in numbers

First conflicts evident in mid- 80'ies

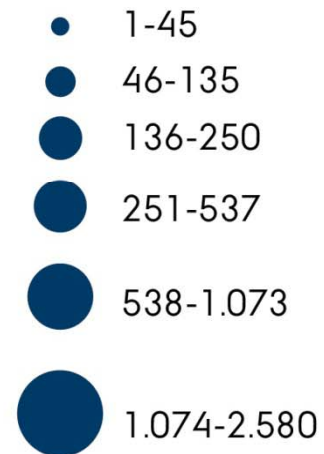
First Management Plan in 1994

In 1980: 800 pound-net fishers

Now: < 50

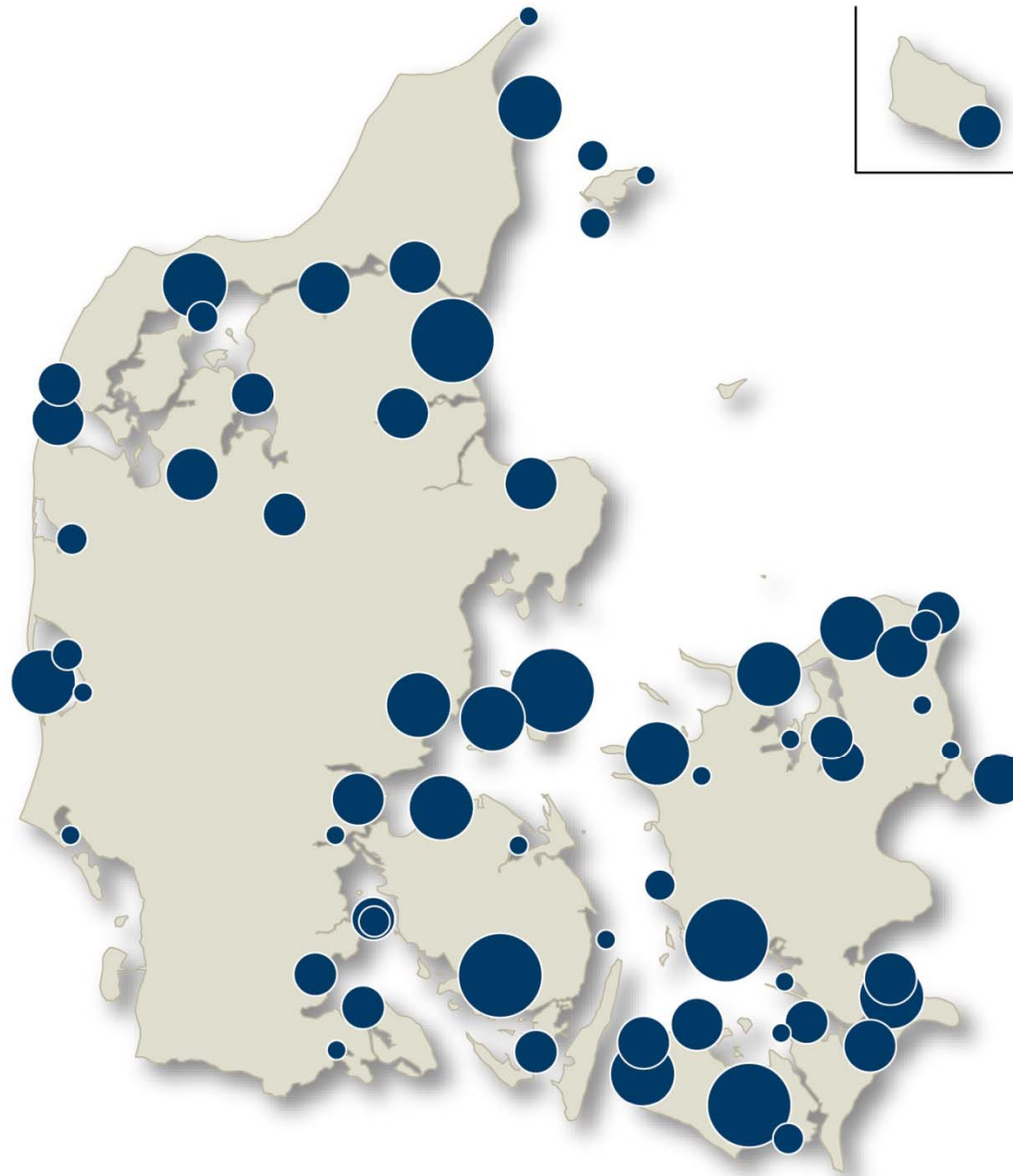
Colonies 2010

Antal reder 2010



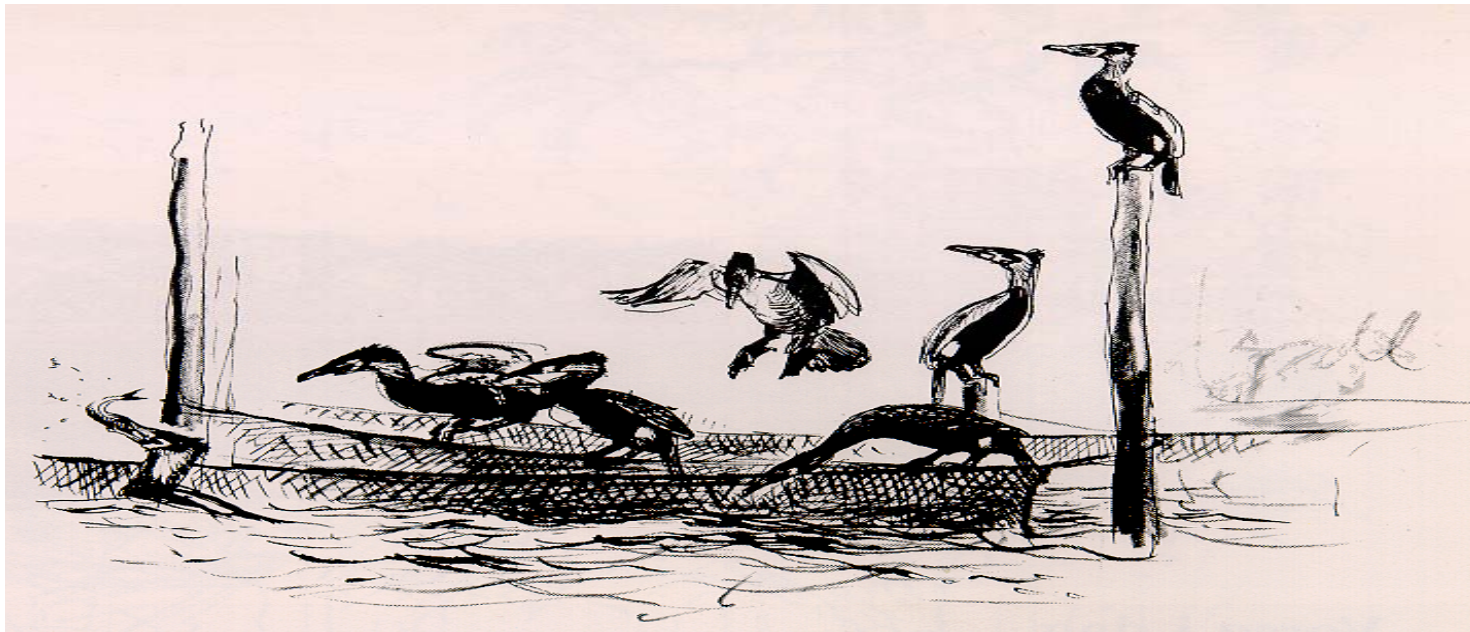
Current max number
of birds: 250.000

Current min number
of birds: 3000



Who has the problems?

- Pound-net fishers
- Recreational net fishers
- Anglers
- Biodiversity?



Earlier studies

Large damage for pound-net fishing

Several cases of high predation on tagged trout and salmon smolts

Food (pellet) analyses concluded that the cormorant only had a very limited influence on fish populations

Generally: Many meetings, much talk – but very little documentation

Adult cormorants eat 300 – 600 gram fish per day

Cormorants eat almost any species of fish in different sizes

Cormorants have been shown to damage the pound net fisheries

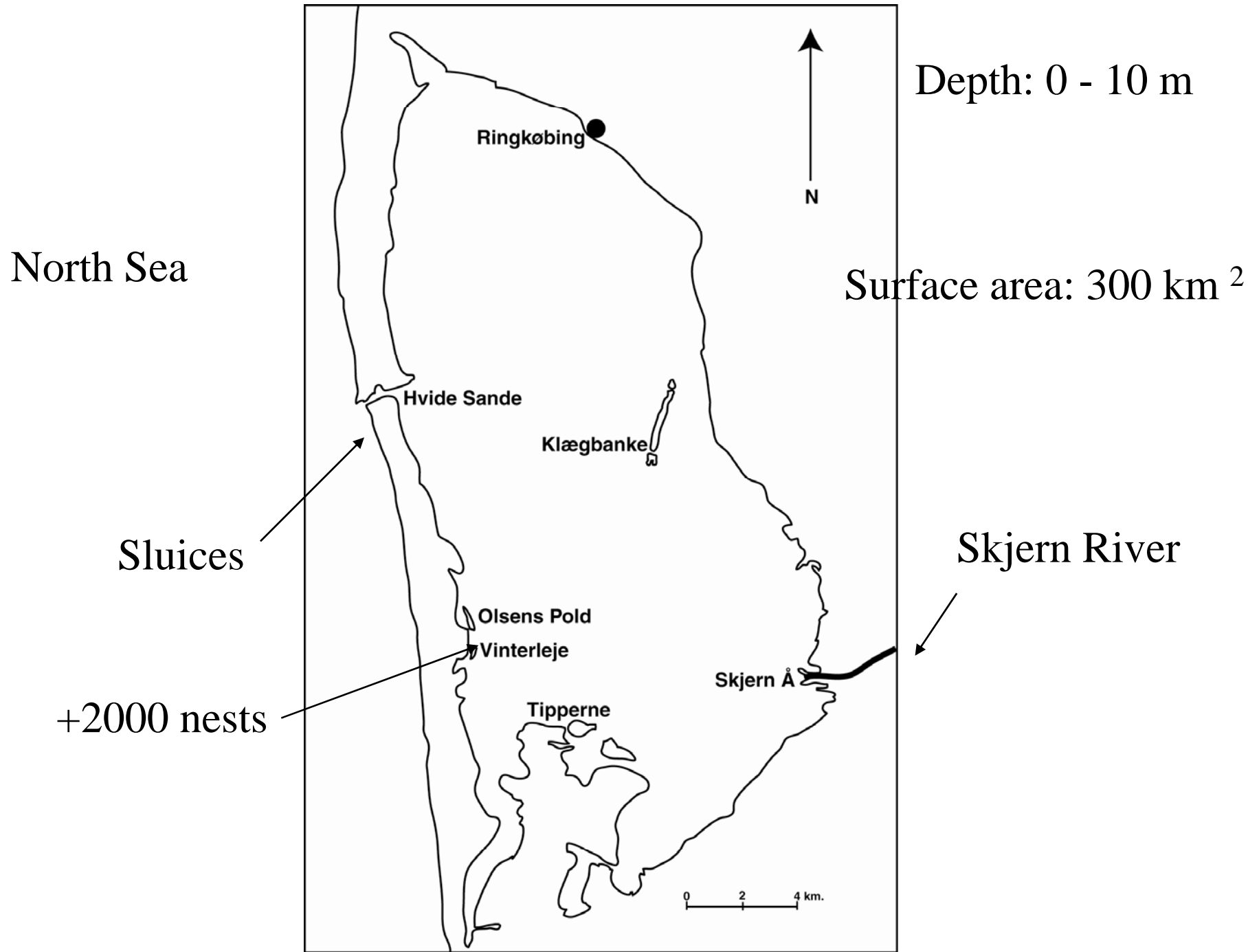
Also problematic for salmon and trout smolts

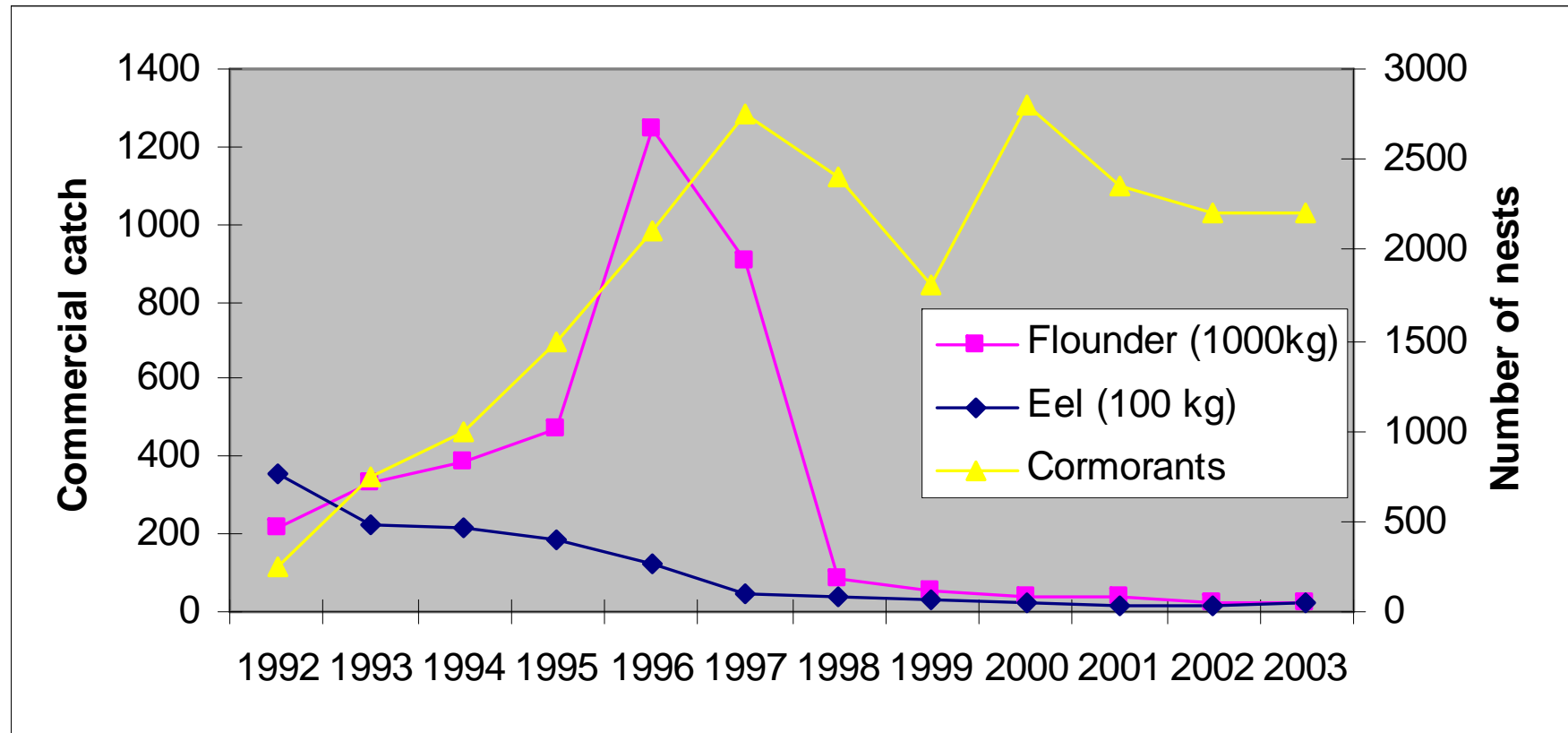
Cormorants may negatively impact recruitment of coastal fish

Ringkøbing Fjord

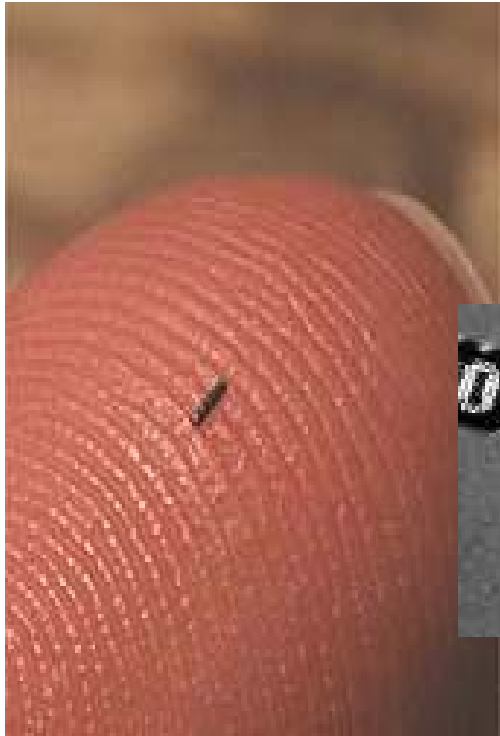
2002 – 2006: Collaboration between DFU, DMU, Skov og
Naturstyrelsen og Ringkøbing Amt

Partly funded by the FP 5 Project FRAP





Commercial catch statistics from Ringkøbing Fjord and cormorant counts



10,000 eel were cw-tagged and released in the Fjord

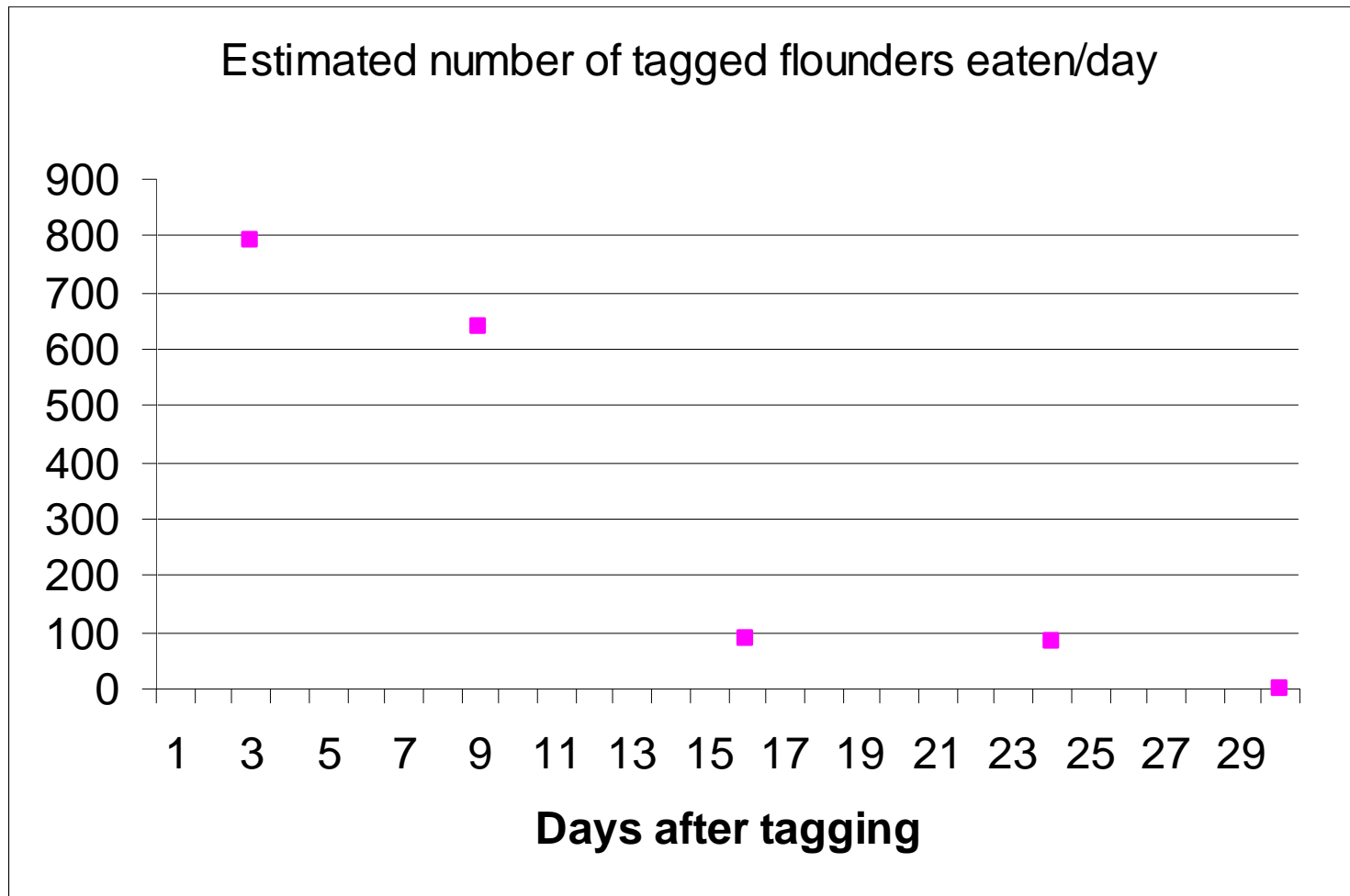
Food for cormorants



4,000 flounders (7 – 20 cm) were caught and cw-tagged in 2004
65,000 1-year salmon were cw-tagged and released in Skjern River



Pellet collection



Calculations of the daily predation of 4000 tagged flounders
Based on recovery of cw-tags from cormorant pellets



Radiotagged salmon smolt

Year	Number tagged	Dead in the river		Reached the estuary	Recovered in Cormorant colony
		Pike	Cormorants		
2000	26	2 (8 %)	-	24 (92 %)	10 (42 %)
2002	51	3 (6 %)	8 (16 %)	40 (78 %)	15 (38 %)
Total	77	5 (7 %)	8 (10 %)	64 (83 %)	25 (39 %)

Fate of radiotagged salmon smolts in Skjern Å
(Koed et al. 2006)

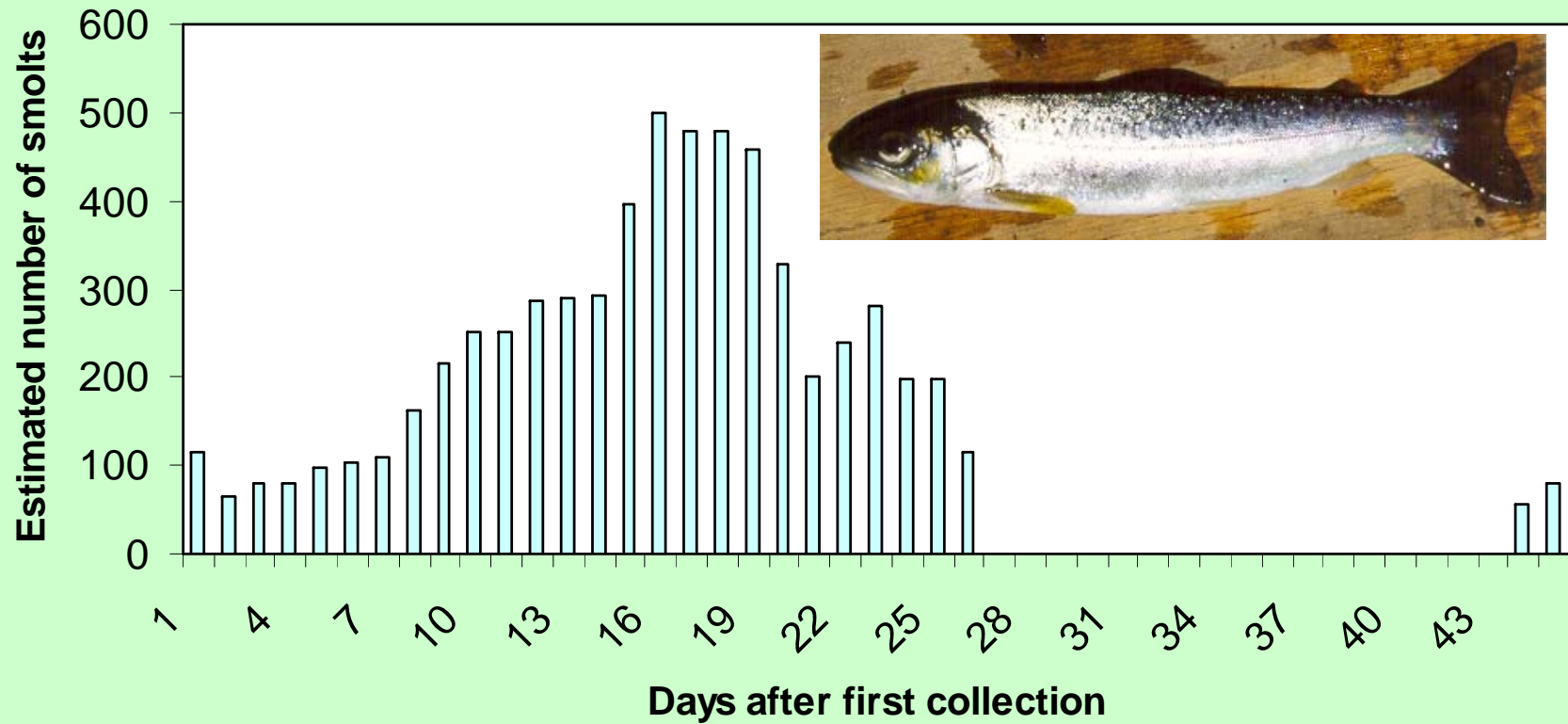
64.000 CW tagged 1-year salmon were released in Skjern River

Of these 40 % were assumed to smoltify and migrate in 2003

A total of 25.000 CW-tagged smolts were then available for predation

During the smolt period we collected thousands of pellets

Predation of salmon smolts 2003



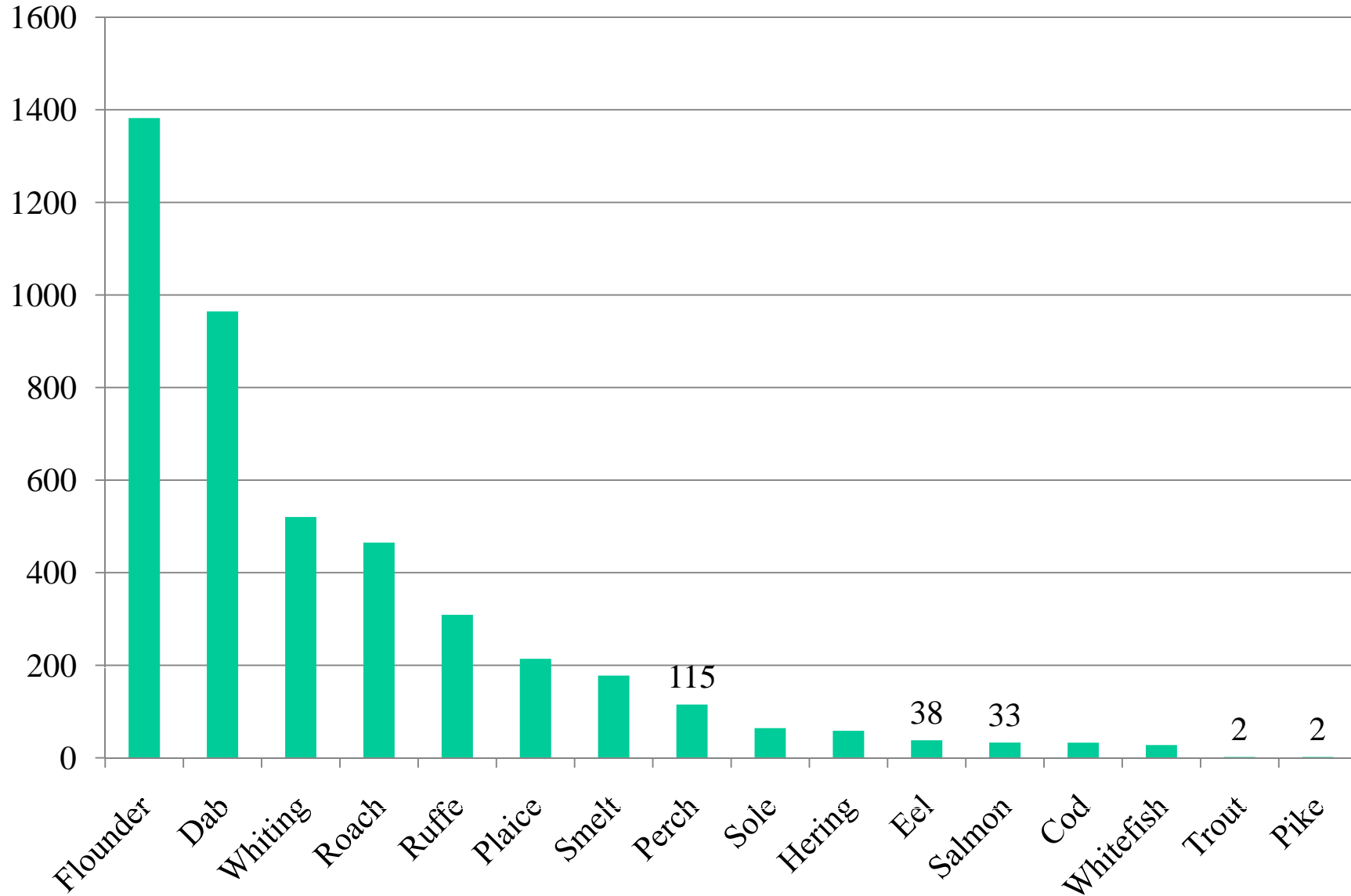
Recovery of cw tags from salmon smolts from cormorant pellets collected April through June 2003

Not many survive to this size!



Results from otolith analyses

x 1000



Results from Ringkøbing Fjord 2000 – 2004

Radiotagging (2000, 2002): Salmon smolts 40 – 50 % of tags were recovered from one colony.

CW-tagging (2003): 25 % of the available tagged salmon smolts were eaten during the 3-weeks smolt migration period.
40 – 50 % of tagged eel were eaten in one year.

CW- tagging (2004): All (100%) of tagged flounders eaten in 15 days,
again: 25 % of the tagged salmon smolts were eaten

Pellet analyses: 30,000 salmon smolts were eaten, 1.4 million flounders, 38,000 eel and presumably a significant part of the recruitment of several other species.

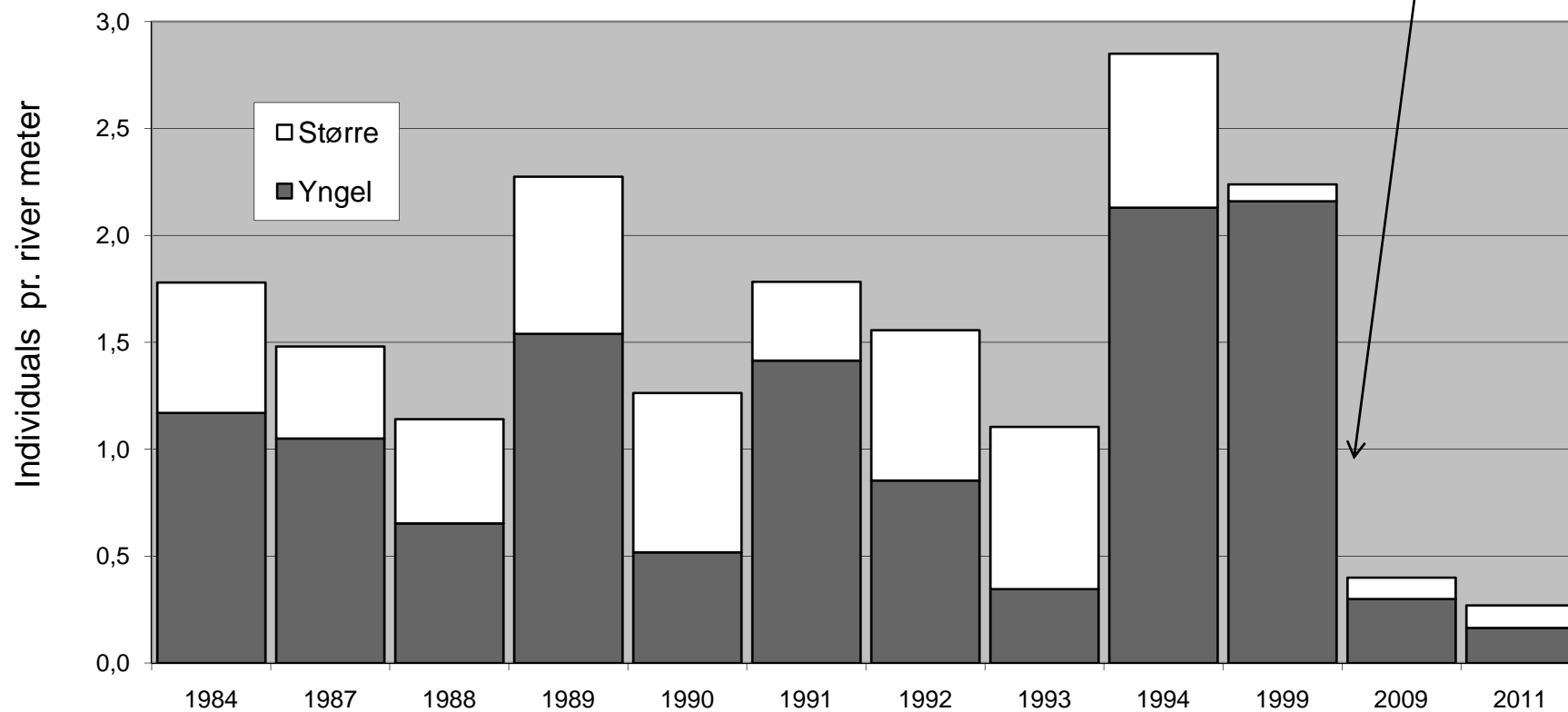
Recent PIT studies of lake fish

	Loldrup Sø					Viborg søerne	
	2005	2006	2007	2008	2009	2008	2009
Roach	19%(58)	0% (29)	32% (44)		17% (90)	30% (211)	24% (178)
Bream	11% (45)					33% (63)	33% (33)
Br*sk hybrid	43%(58)	20%(30)					
Perch	41%(22)				46%(24)	70% (37)	45% (11)
Pike				33%(12)	30%(23)		

Minimum estimates, based on *recovered* PIT tags from a Small cormorant colony 9-13 km away! (C. Skov. *in prep*)

Grayling – cormorants; a winter problem?

Stallingbestanden på Vilholt-stryget , Gudenå
Samme strækning undersøgt om efteråret (august-oktober)



Cormorants first observed in 2007

Other studies:

Impact of cormorants on flounder population in Kattegat

Hald Sø lake trout (20 – 50 % of smolts eaten)

Trout and salmon smolts in Randers Fjord (no impact)

The results clearly documented a significant impact on several fish stocks!



What do the authorities do??



Management

Ministry of Environment

Cormorant-group: Stakeholders, managers, experts

National cormorant management-plan: 1992, 2002, 2009.

Egg oiling (dyed vegetable oil)

Prevention of new settlements

Protective Shooting (fishers and aquaculture)

No specific goals, adaptive management, conflict mitigation

Oiling off eggs





Does it work ??

It takes time

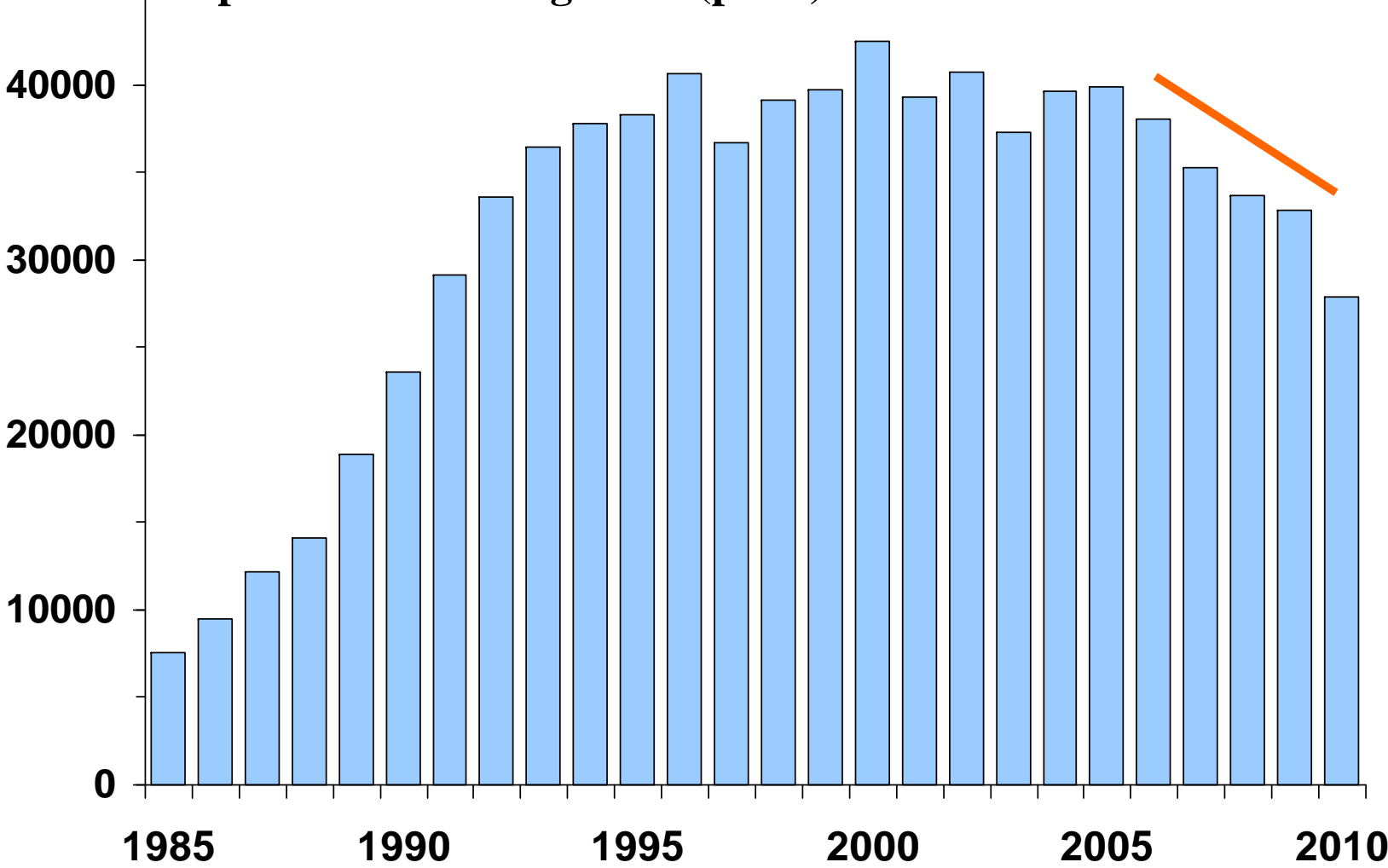
It is costly

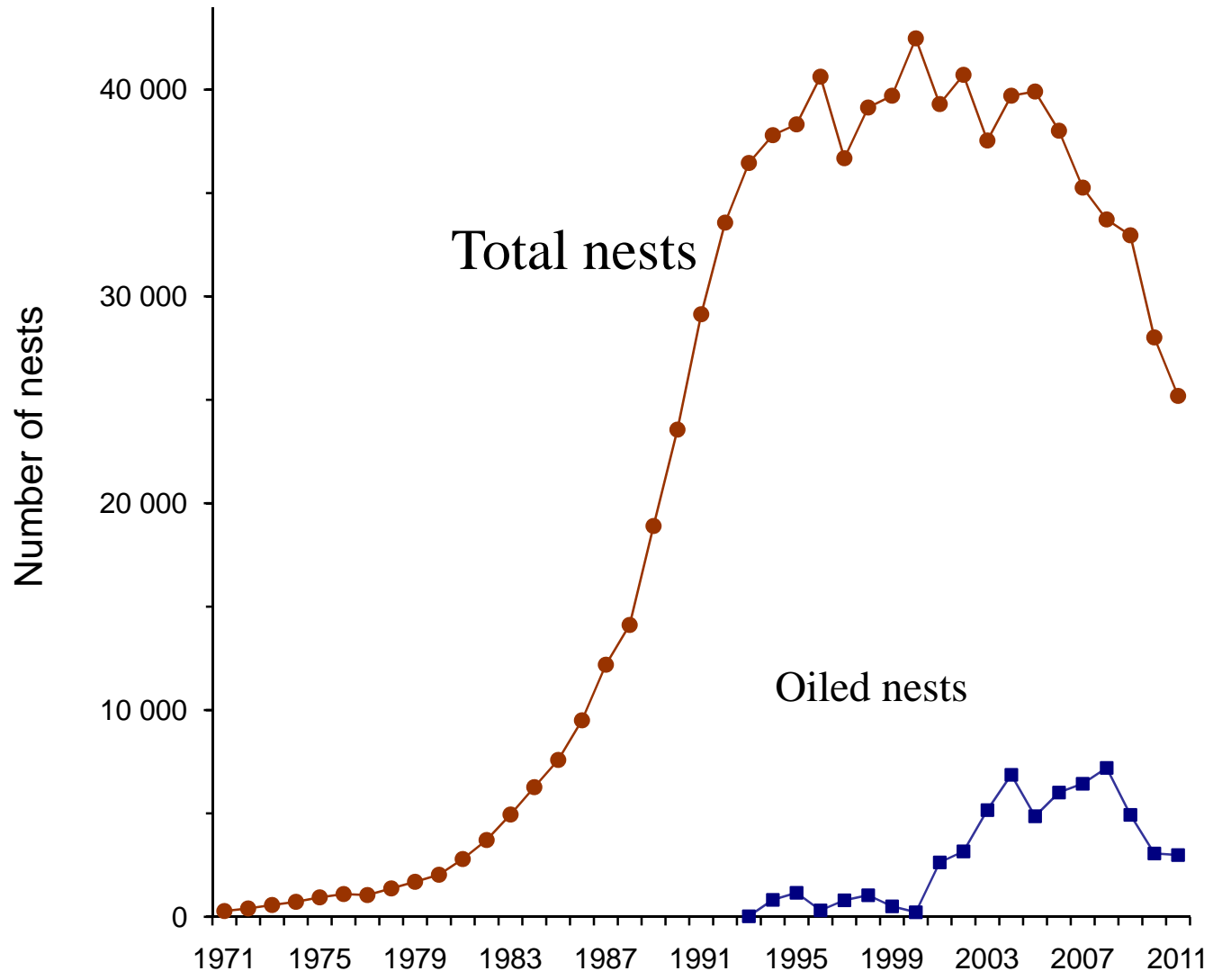
Immigration

EU- birds directive

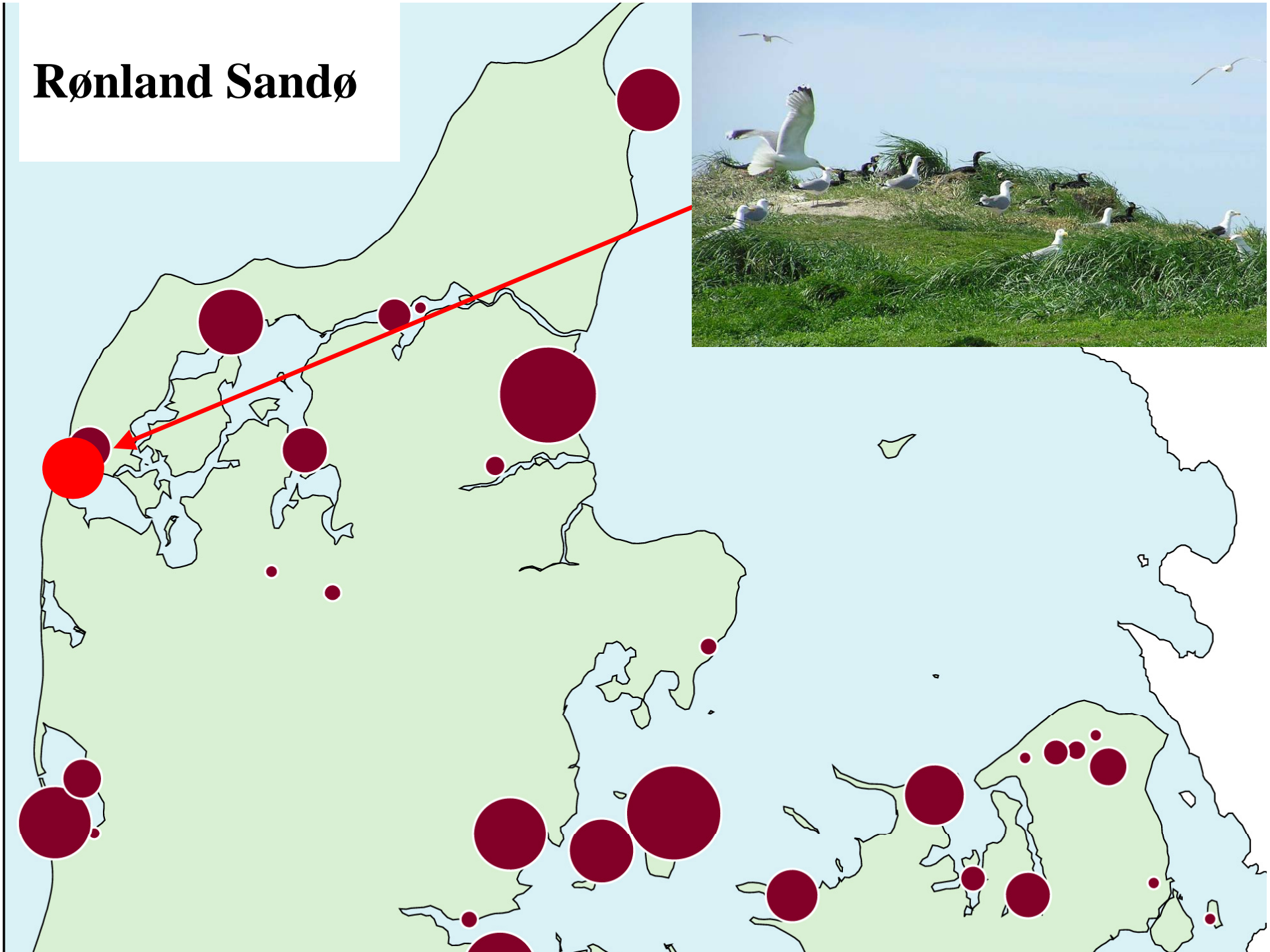


Development in breeding stock (pairs) in Denmark 1985-2010

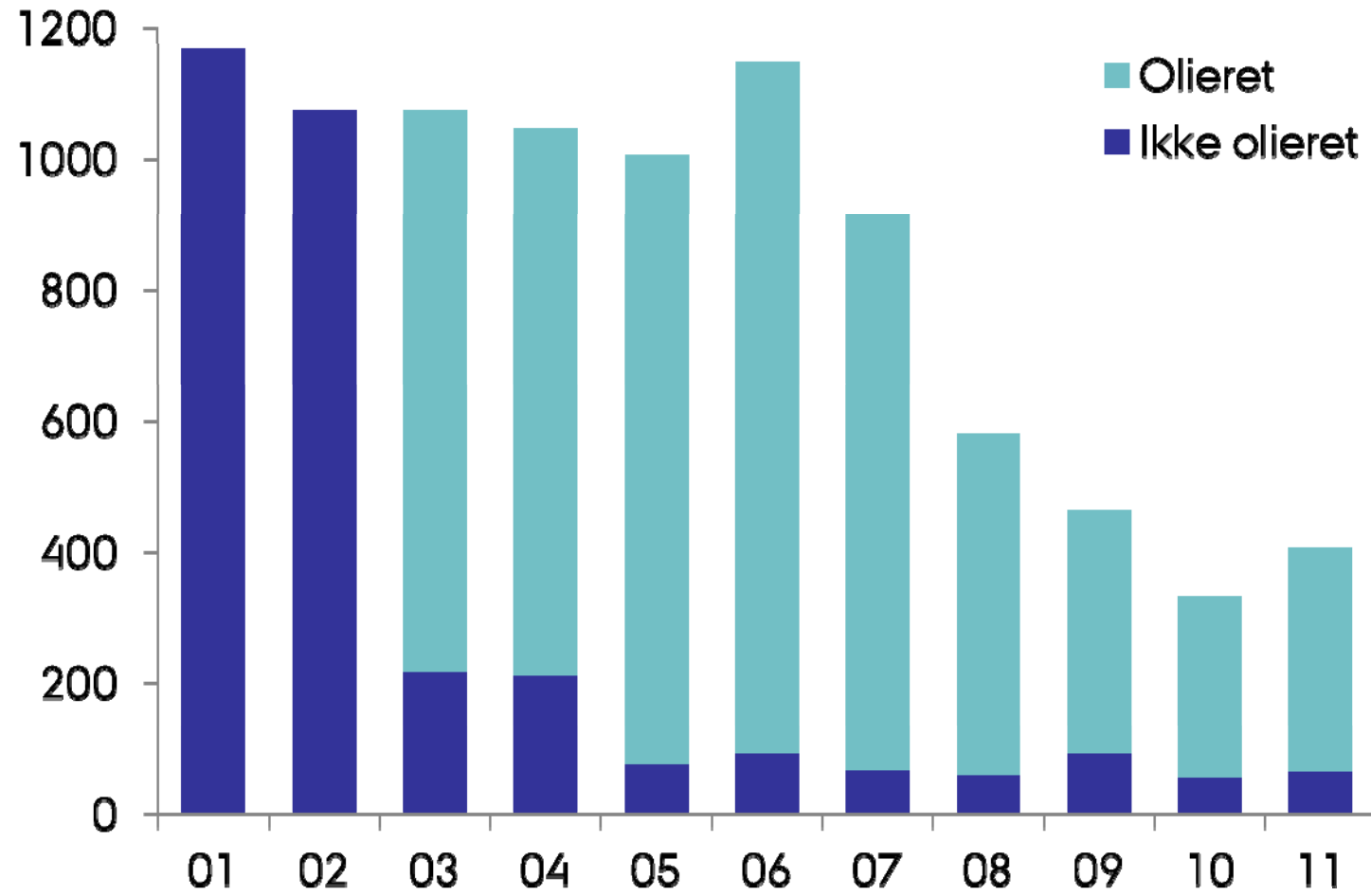




Rønland Sandø

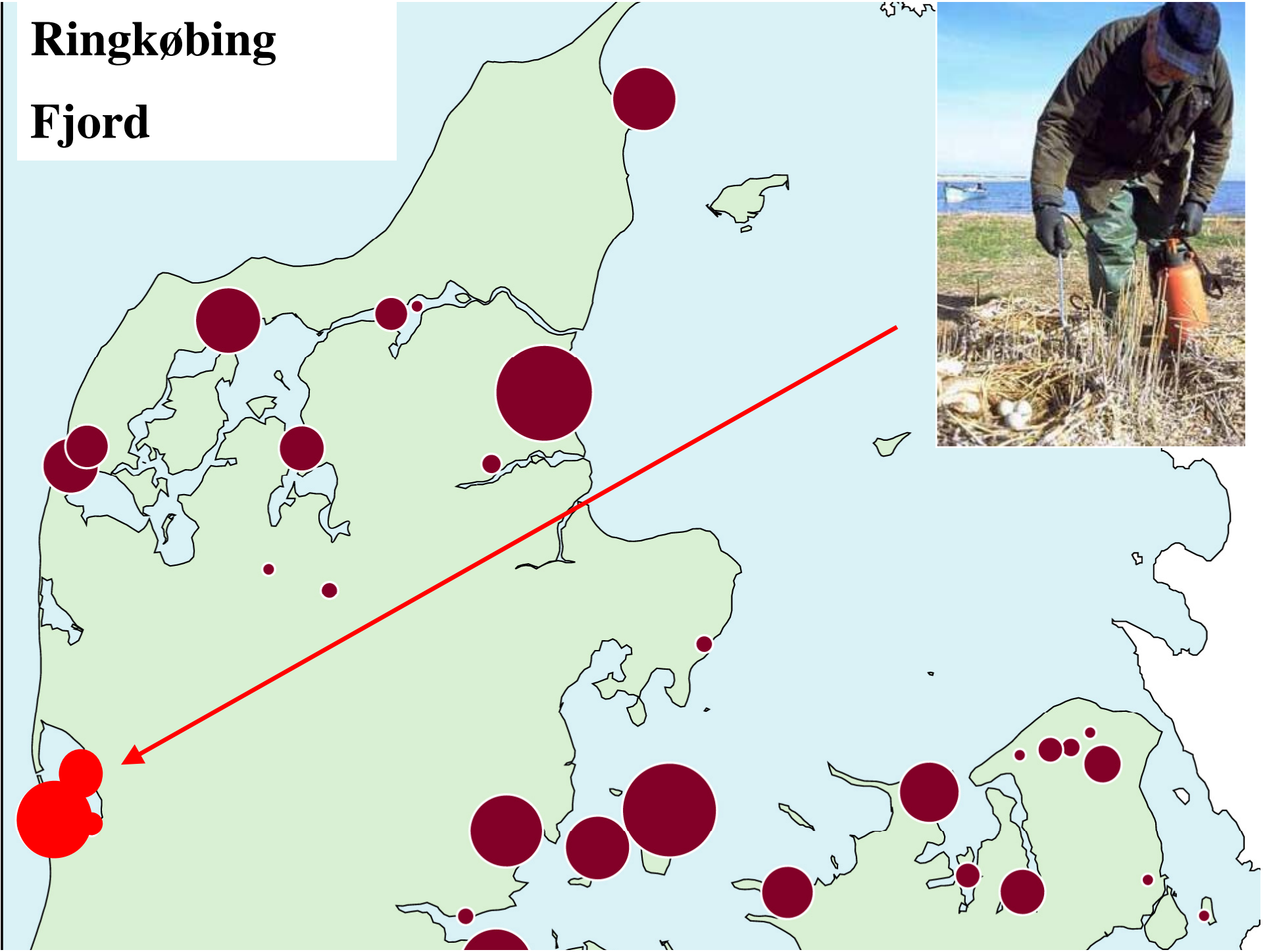


Udviklingen i kolonien på Rønland Sandø 2001-2011

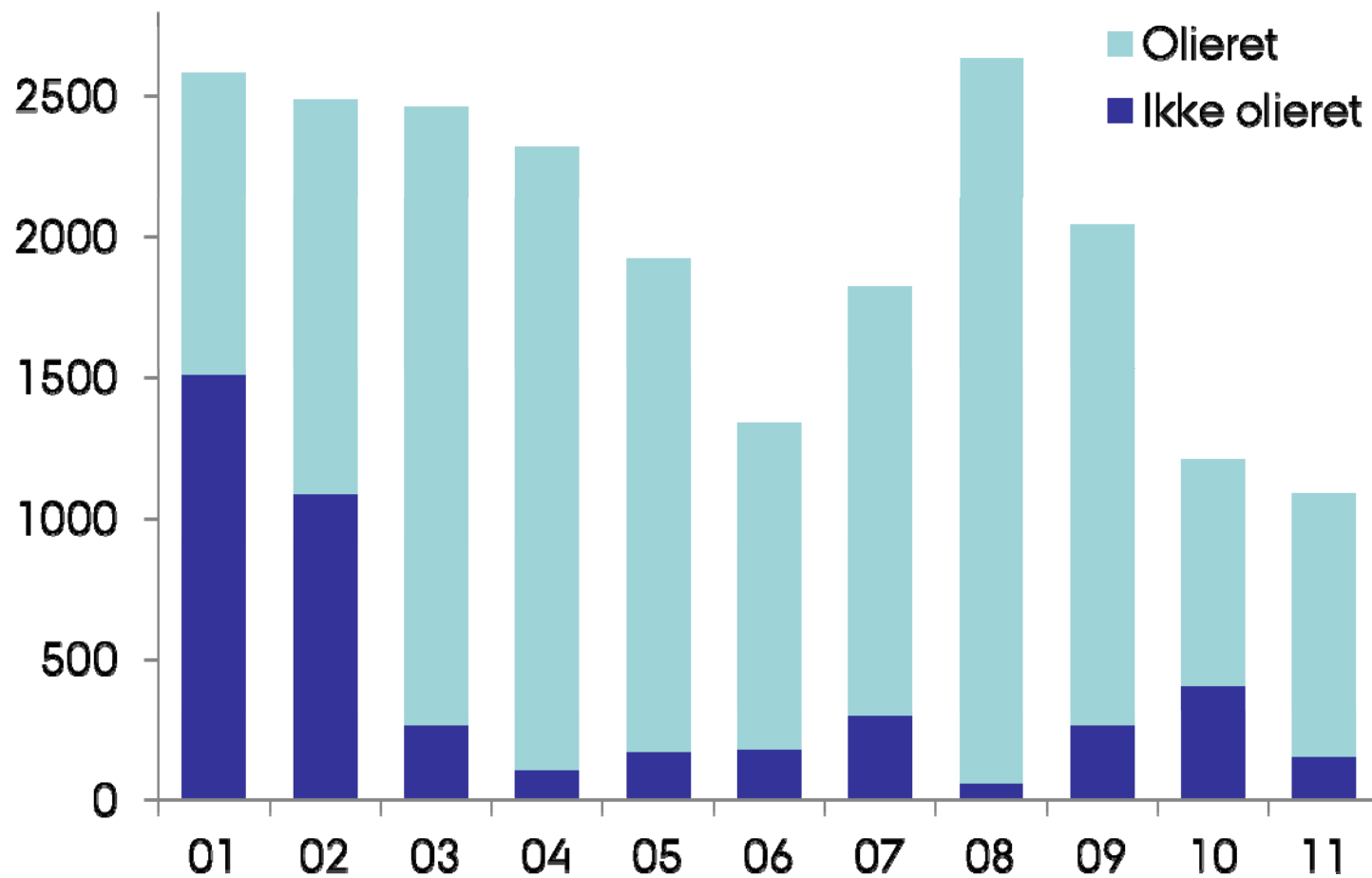


Ringkøbing

Fjord



Udviklingen i kolonierne i Ringkøbing Fjord 2001-2011



Oiling and the prevention of new colonies is NOT

the direct cause of the recent decrease of Cormorant numbers

Food limitation seems to be the main factor





Adaptive management

- MP provides the framework
- Loss in poundnets was documentet – fishermen were permitted to shoot cormorants at nets (1000 m)
- Loss of significant numbers of smolts was documented – anglers were permitted to shoot cormorants during smolt migration
- High numbers of cormorants foraging in the rivers in winter – protective shooting was initiated

Summary

The perceived conflict is based on real problems

High density of cormorants can cause big problems for fish populations

Growing Cormorant populations must be managed to some degree

The Danish MP and the adaptive management has reduced the conflict

- but not solved it!

There is a need for a pan-European cormorant MP!



Future research:

- Validation of the results from other areas
- More electronic tagging (PIT)
- Ecological modelling for ecosystem effect
- Test of new measures to control cormorant population
- **More international cooperation**

Human - Wildlife Conflicts in Europe

Fisheries and Fish-eating Vertebrates as a Model Case

Series: Environmental Science and Engineering

Subseries: Environmental Science

Klenke, R.A.; Ring, I.; Kranz, A.; Jepsen, N.; Rauschmayer, F.;
Henle, K. (Eds.)

1st Edition., 2012, 50 illus.

Hardcover, ISBN 978-3-540-34788-0

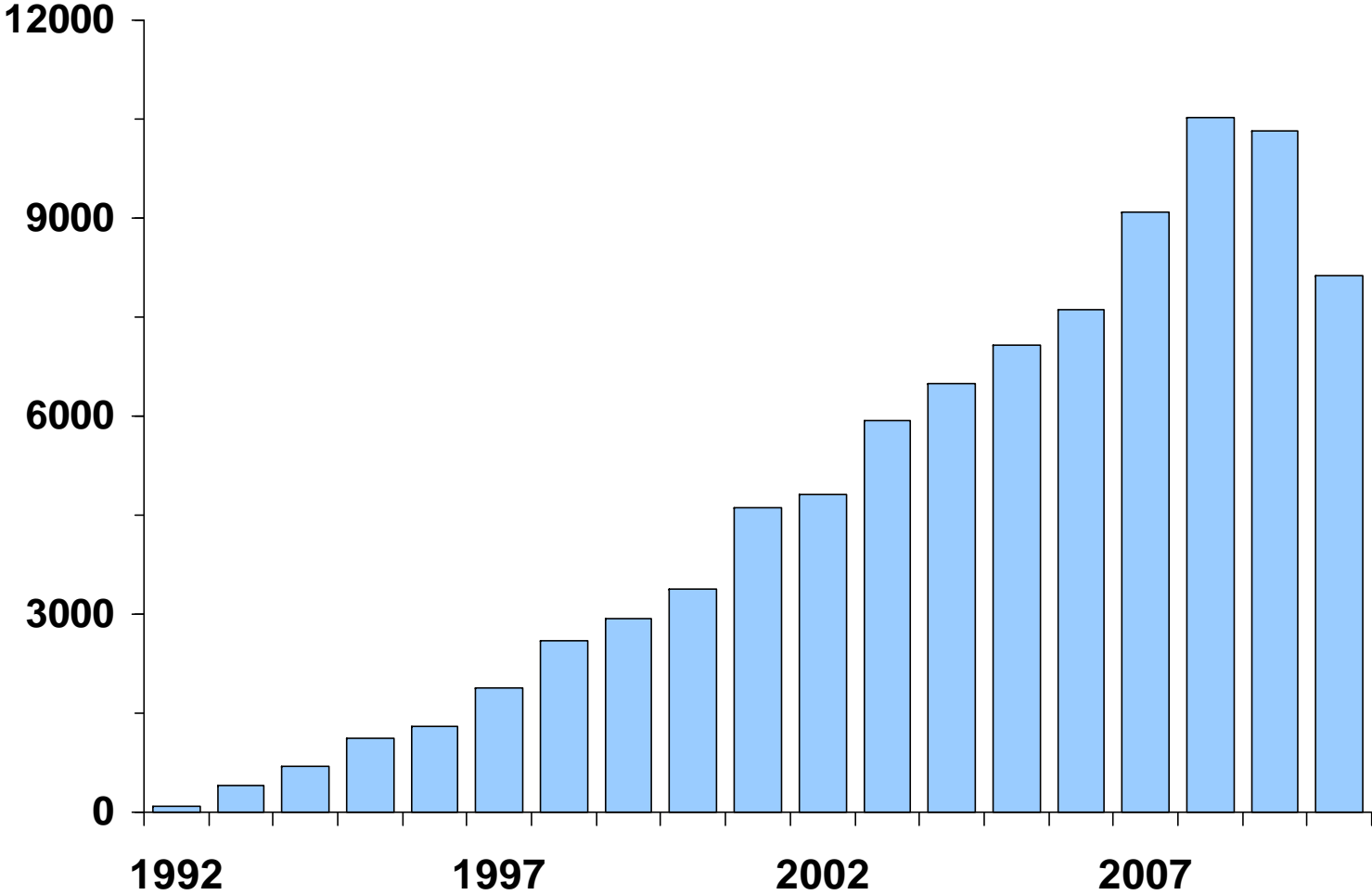
Due: *October, 2011 ??*

See also: Koed et al. (2006), Jepsen et al. (2010)

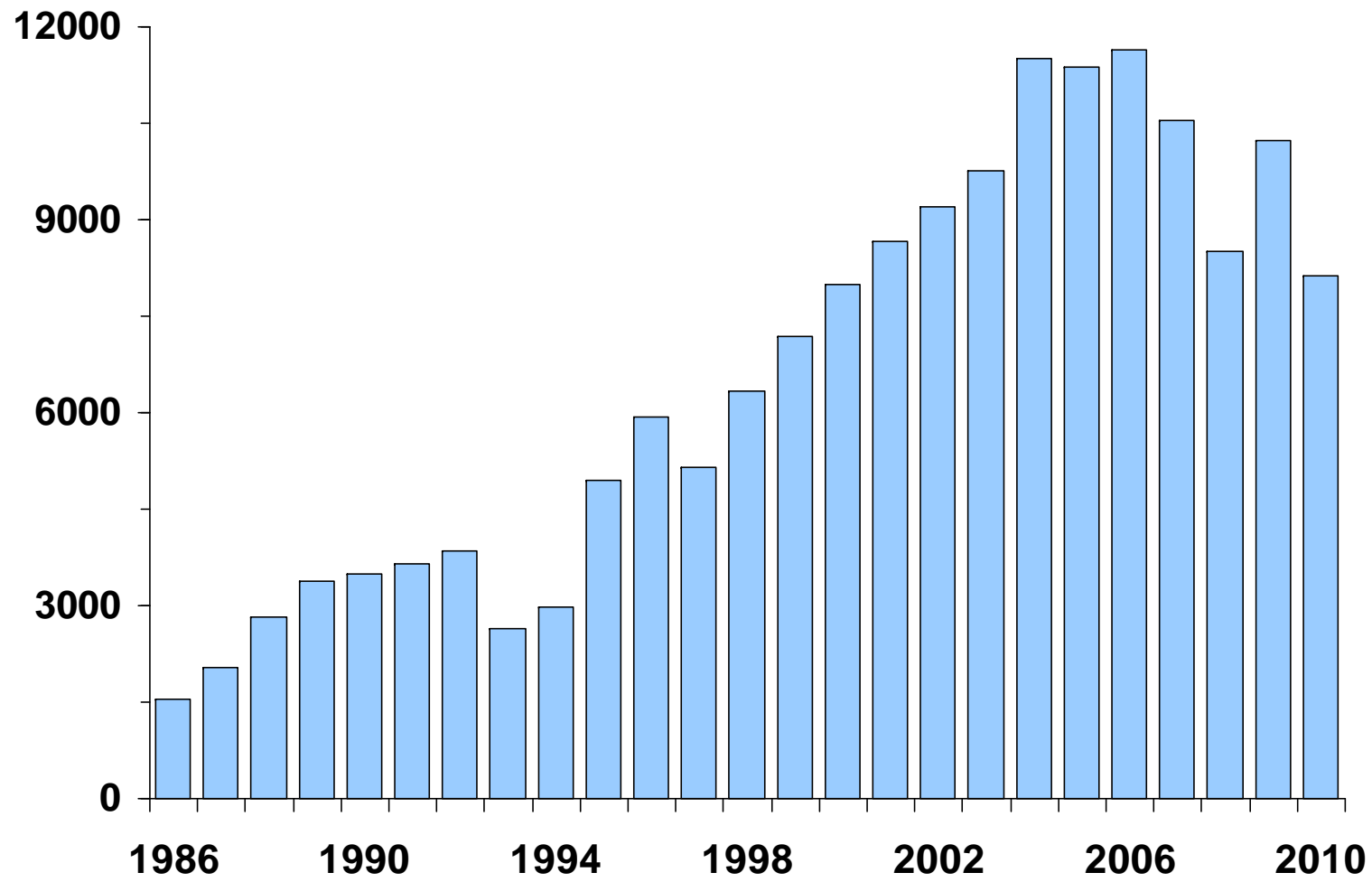


Thank you

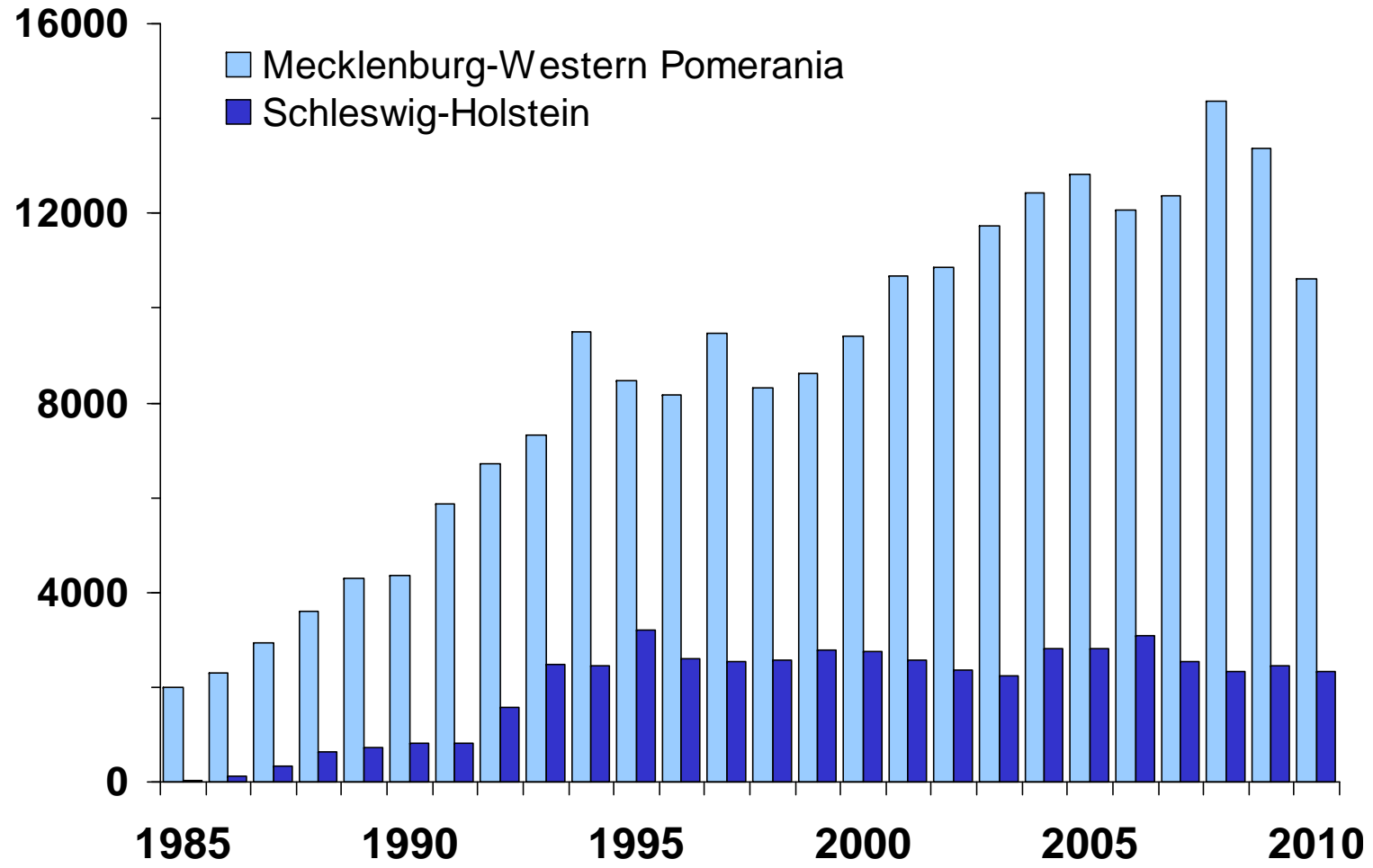
Sweden, Gotland 1992-2010



Katy Rybackie, Poland 1986-2010



Northern Germany 1985-2010



Finland 1996-2010

