

***The offshore wind farms have
only a small impact on migration
waterfowl***

- a Swedish study

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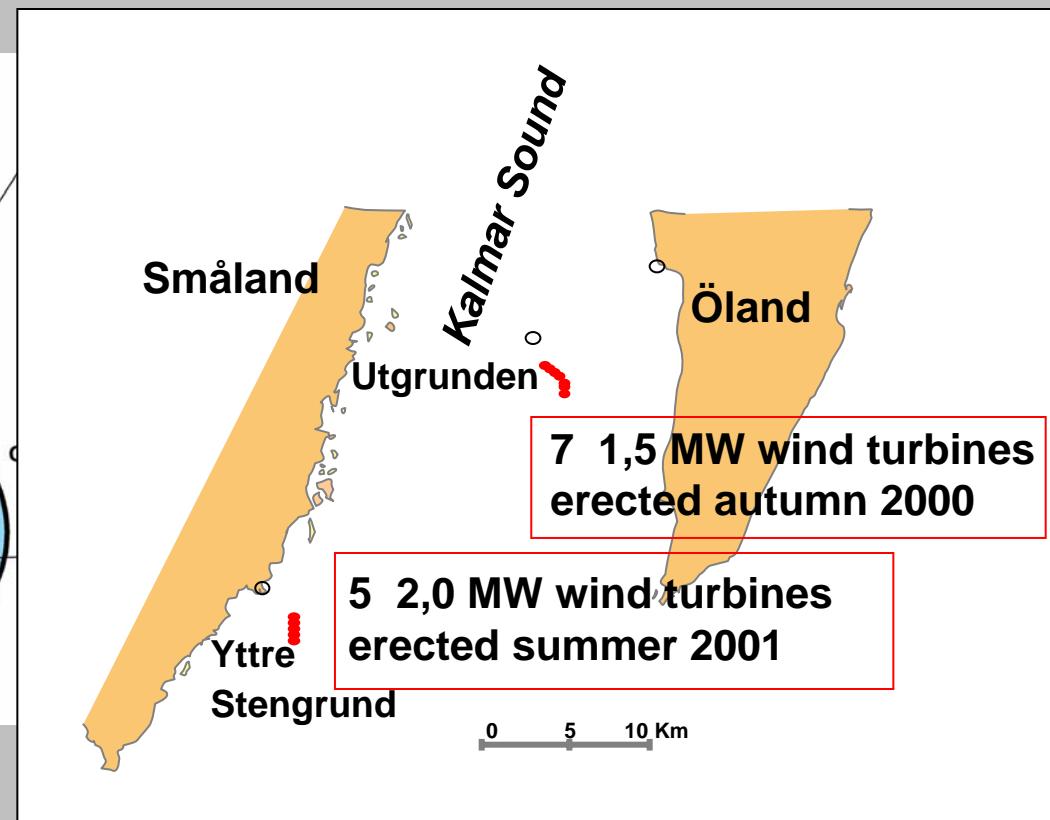
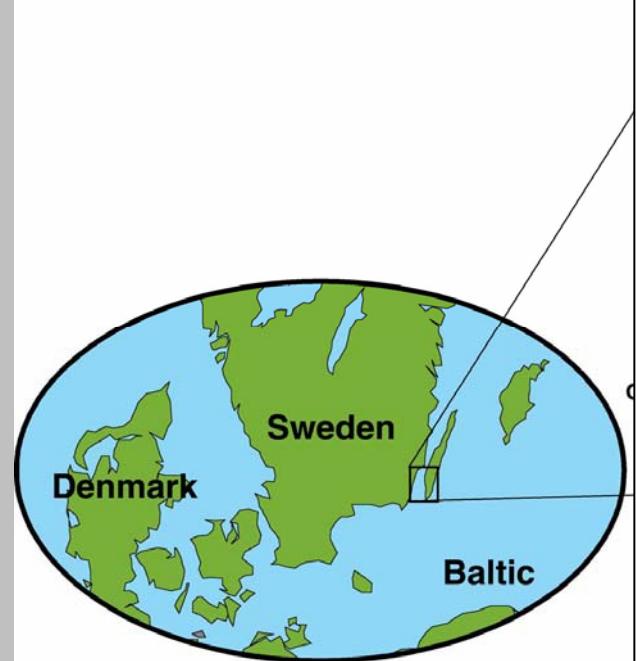
JP Fågelvind

Latest results

**Results up to today
New vindpark
New results**

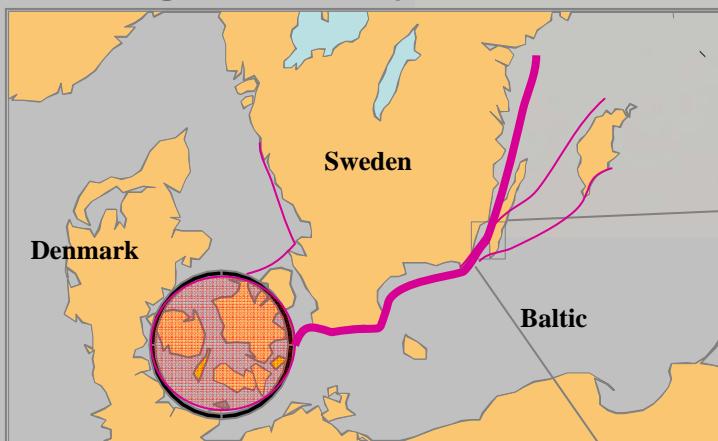


Southern Kalmar Sound or Kalmar Straits



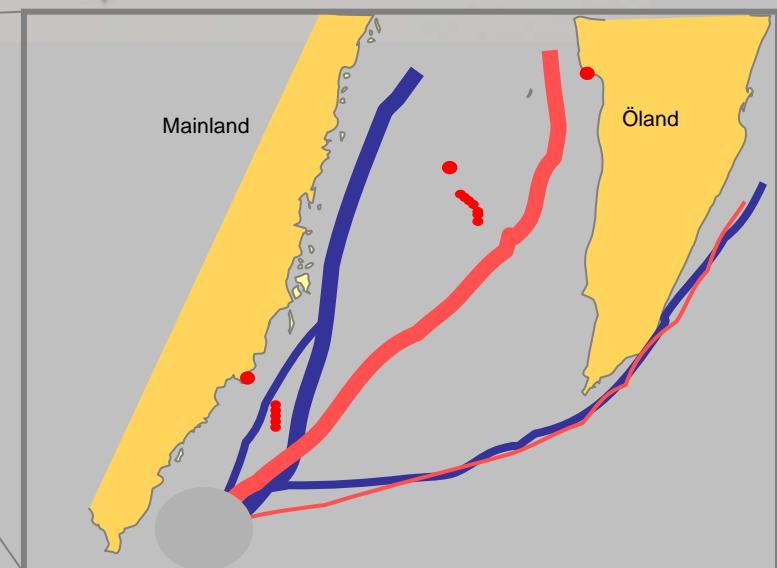
Mass migration of waterfowls in Kalmar Sound

Offshore windframes on
the migration way.



Eider

In spring more than 500 000 waterfowl
In autumn more than 800 000 waterfowl



Methods

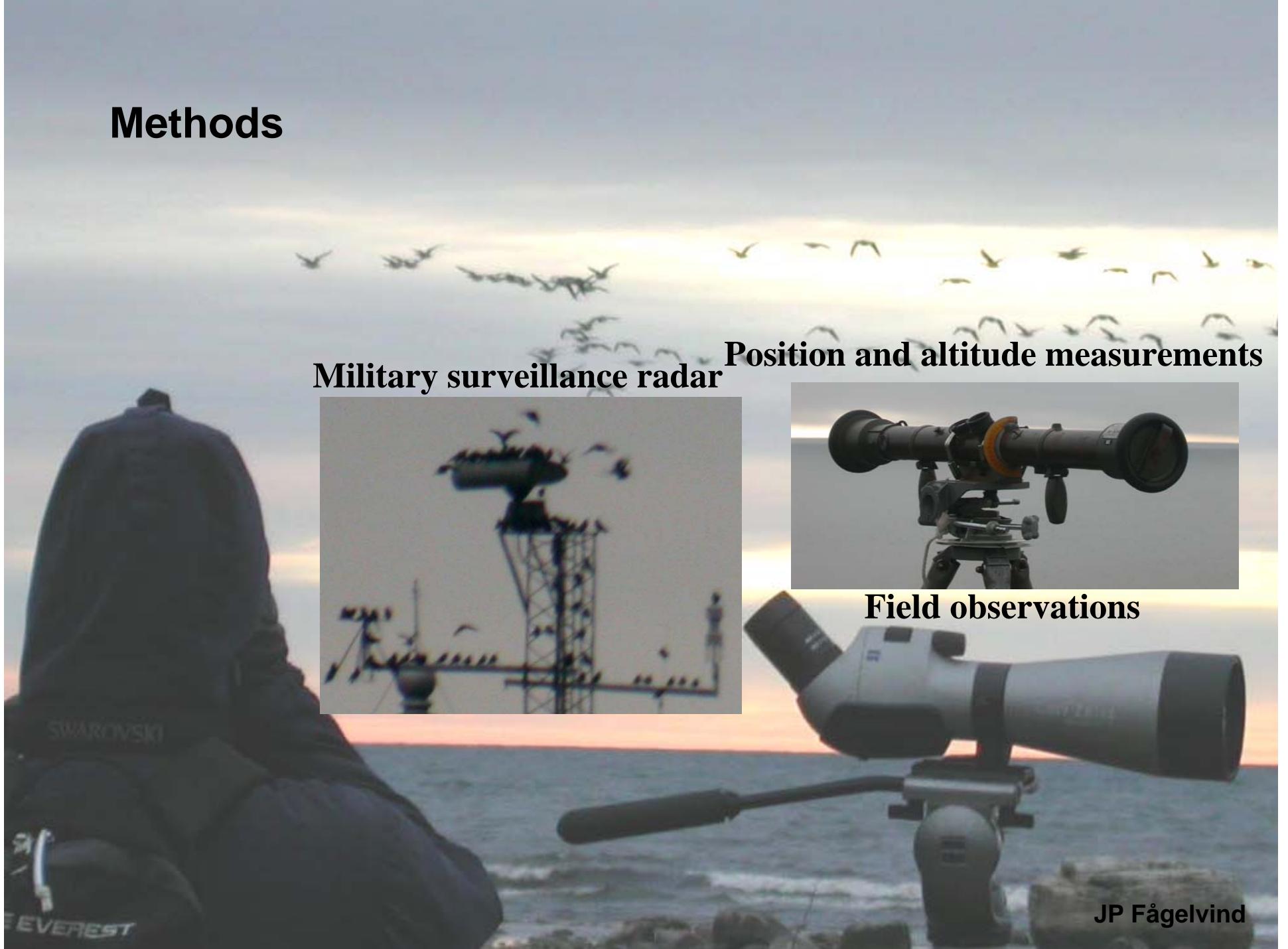
Military surveillance radar



Position and altitude measurements



Field observations

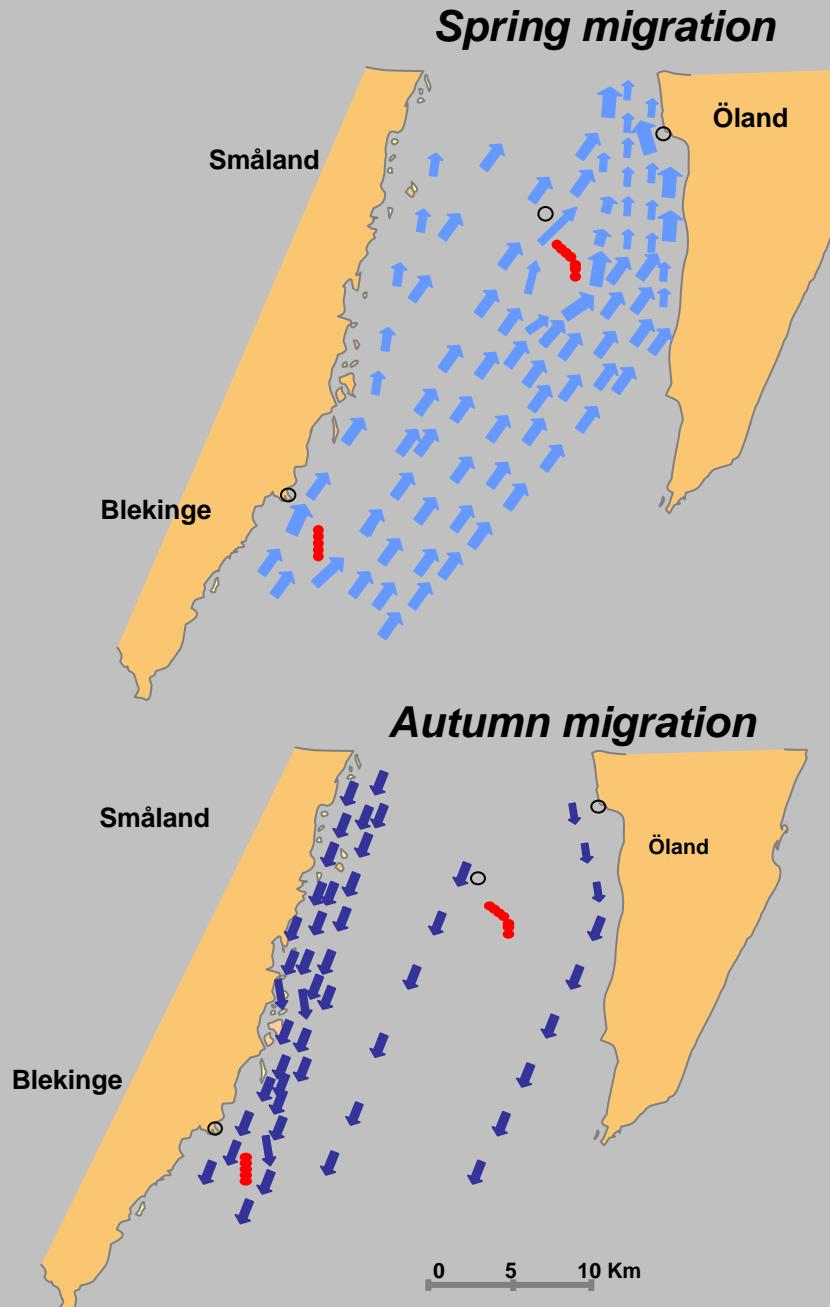


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Results

The total number of migrating bird observed in southern Kalmar Sound during the study period 1999-2003

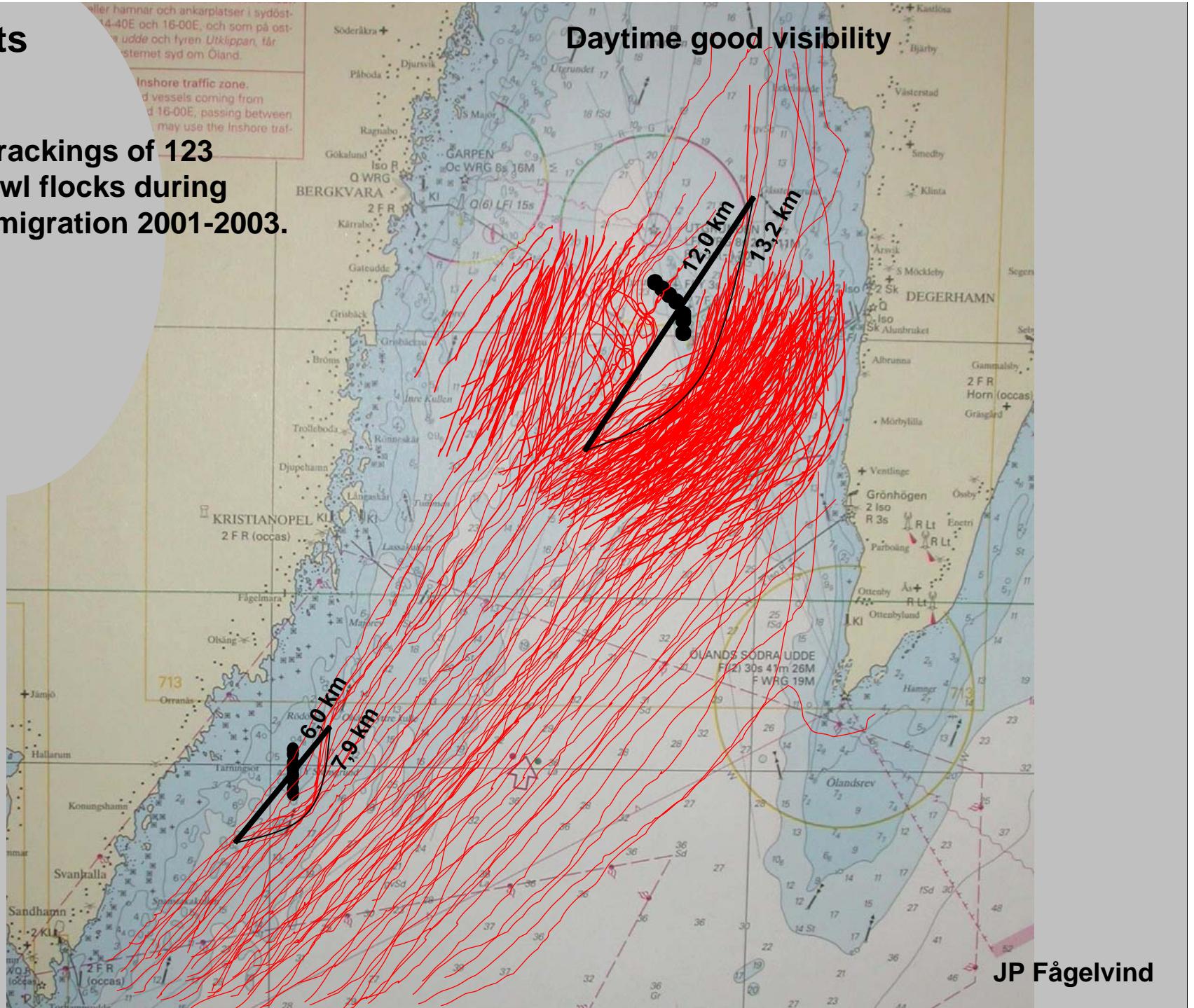
Species	Spring	Autumn
<i>Eider</i>	820 000	444 000
<i>Comorant</i>	7 700	17 000
<i>Barnacle Goose</i>	3 500	84 000
<i>Wigeon</i>	1 700	23 000
<i>Brent Goose</i>	30	21 000
<i>Other species</i>	23 000	85 000
Total	857 000	674 000



Results

Spring

Radar trackings of 123 waterfowl flocks during spring migration 2001-2003.



Results Spring Observations

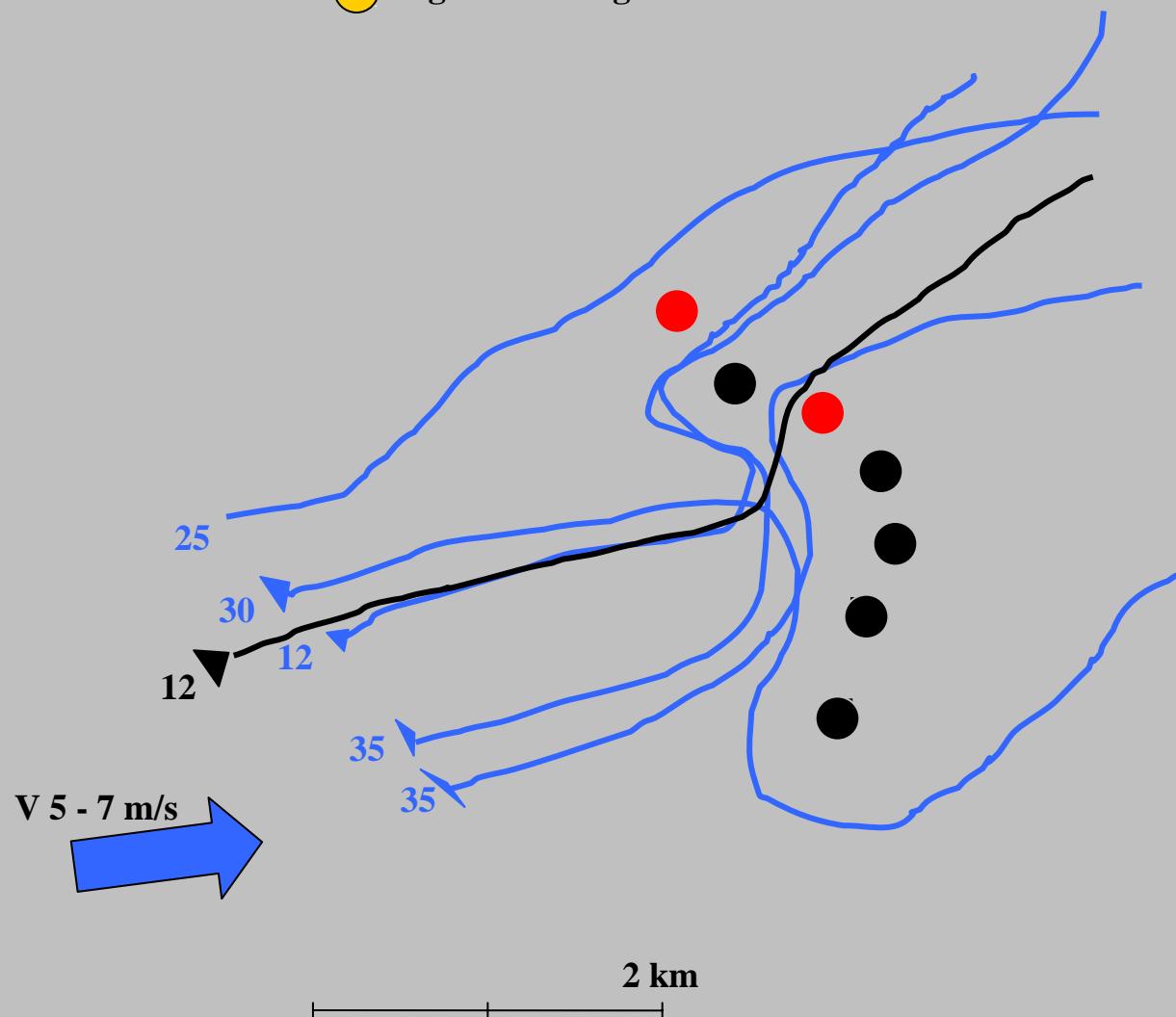
● Lighthouse Utgrunden



Utgrunden
4 April 2003
09.30 – 12.15

Nr 5 and 7 out of
operation.

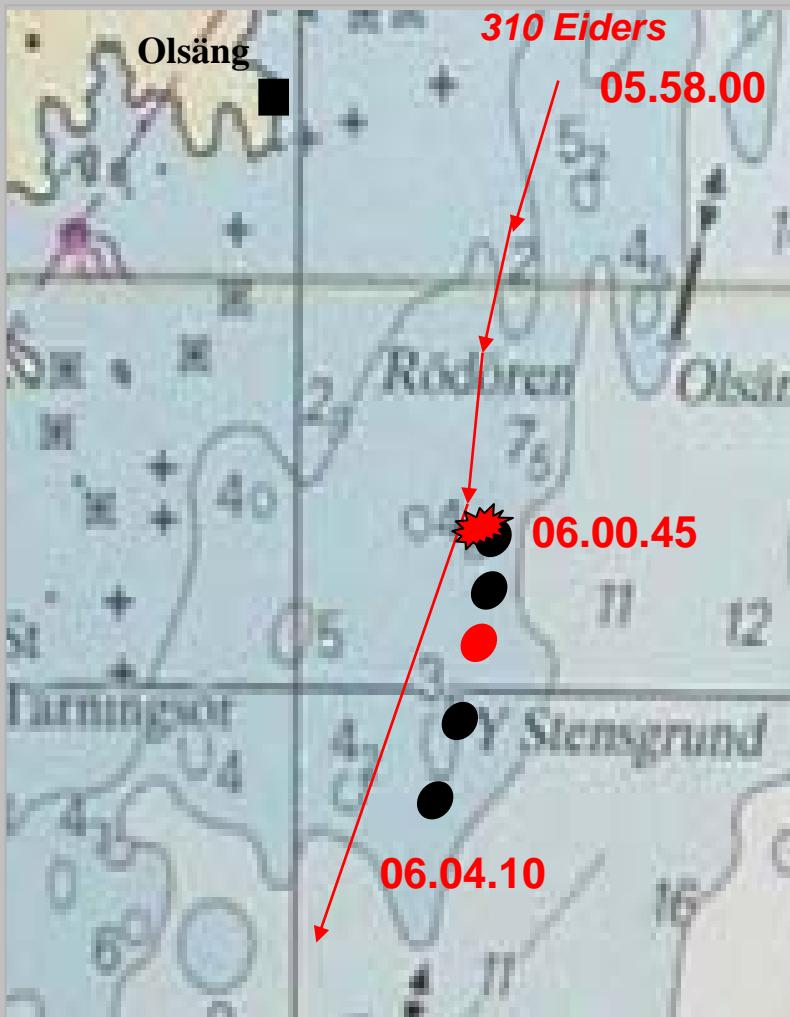
6 Eider flocks
1 Comorant flock



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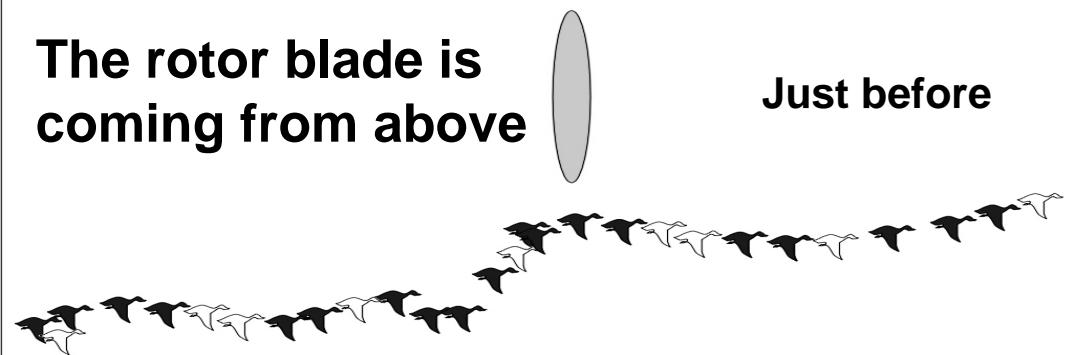
Bird collision

Olsäng Sept. 29th 2003
Cloudy, wind N 3-4 m/s
Obs. Jan Pettersson

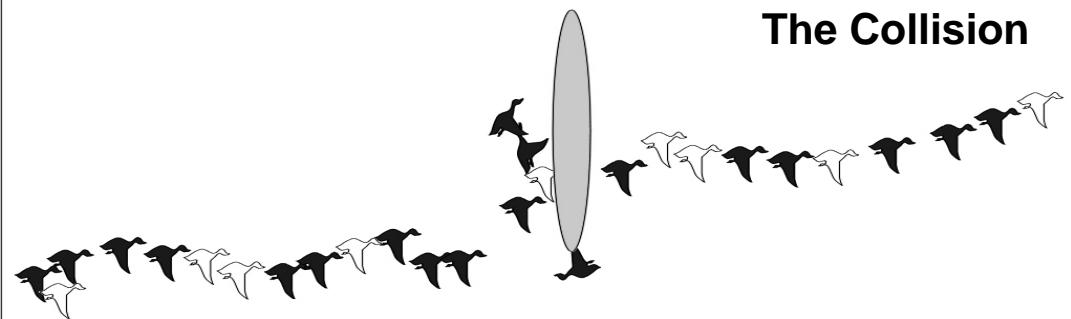


The rotor blade is coming from above

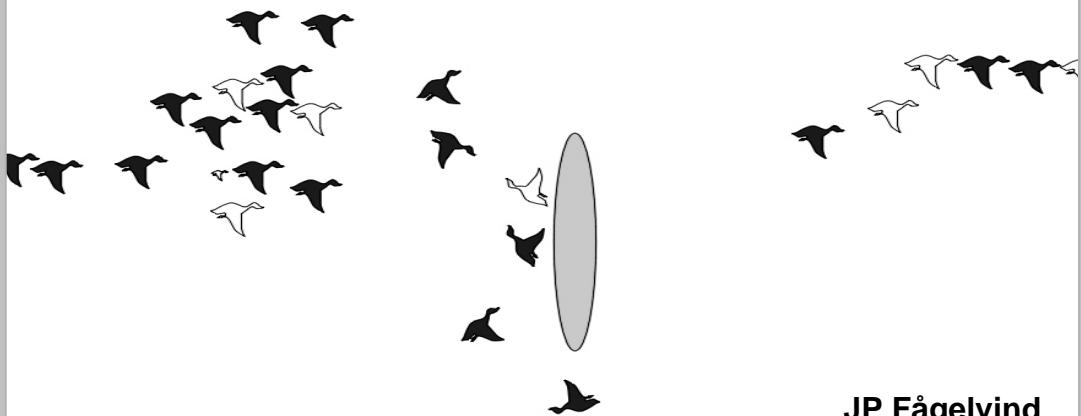
Just before



The Collision



After the collision



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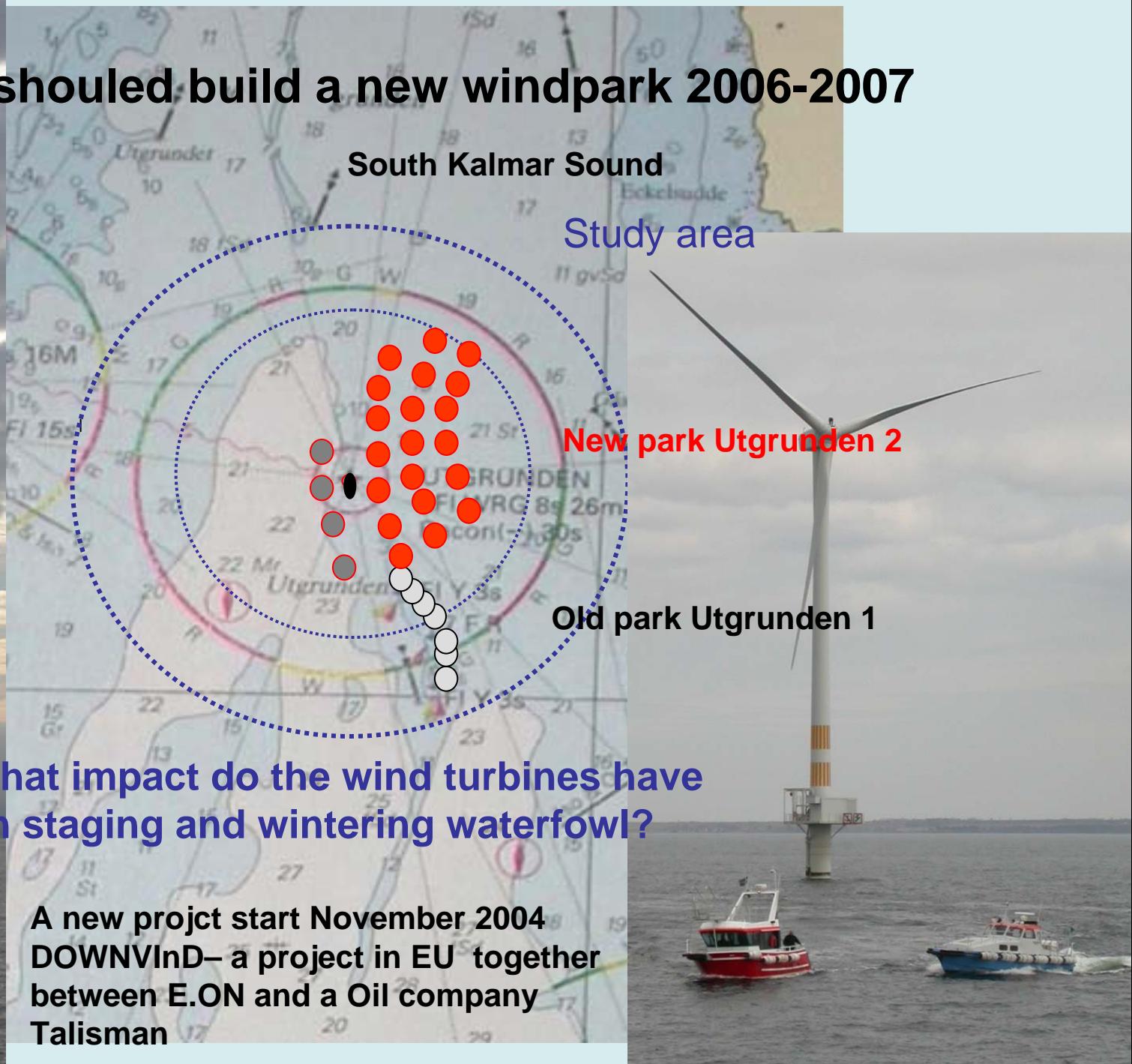
Conclusions

A calculation of collision risk based on that data shows that 1-4 birds in spring and about 10 birds in autumn run the risk of colliding with the existing wind turbines. That are when 1.3 million waterfowl passed per year.

The waterfowl that make an evasive manoeuvre extend their total migrating distance and thus time by 0,2 – 0,5 %.



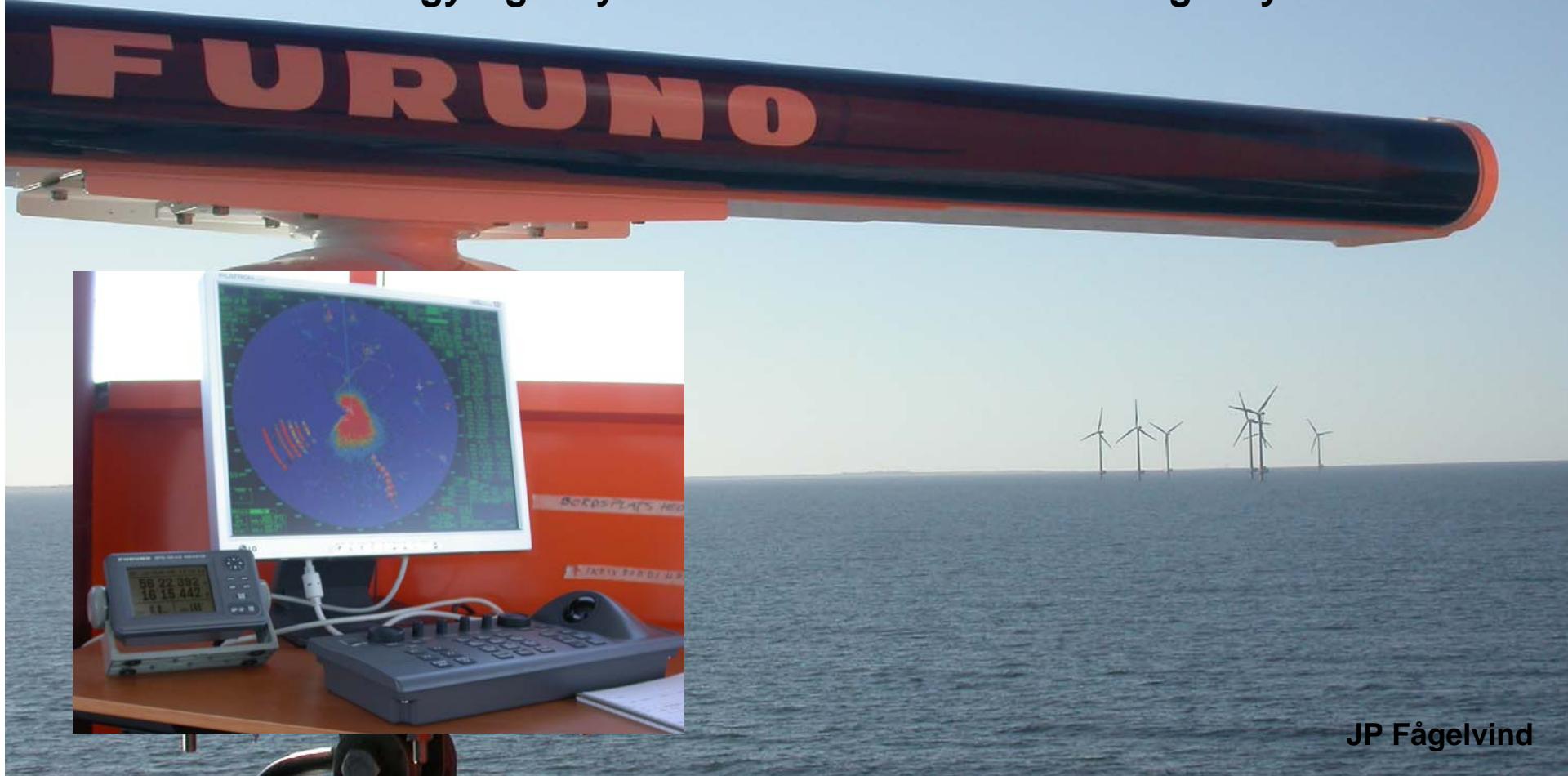
E.ON should build a new windpark 2006-2007



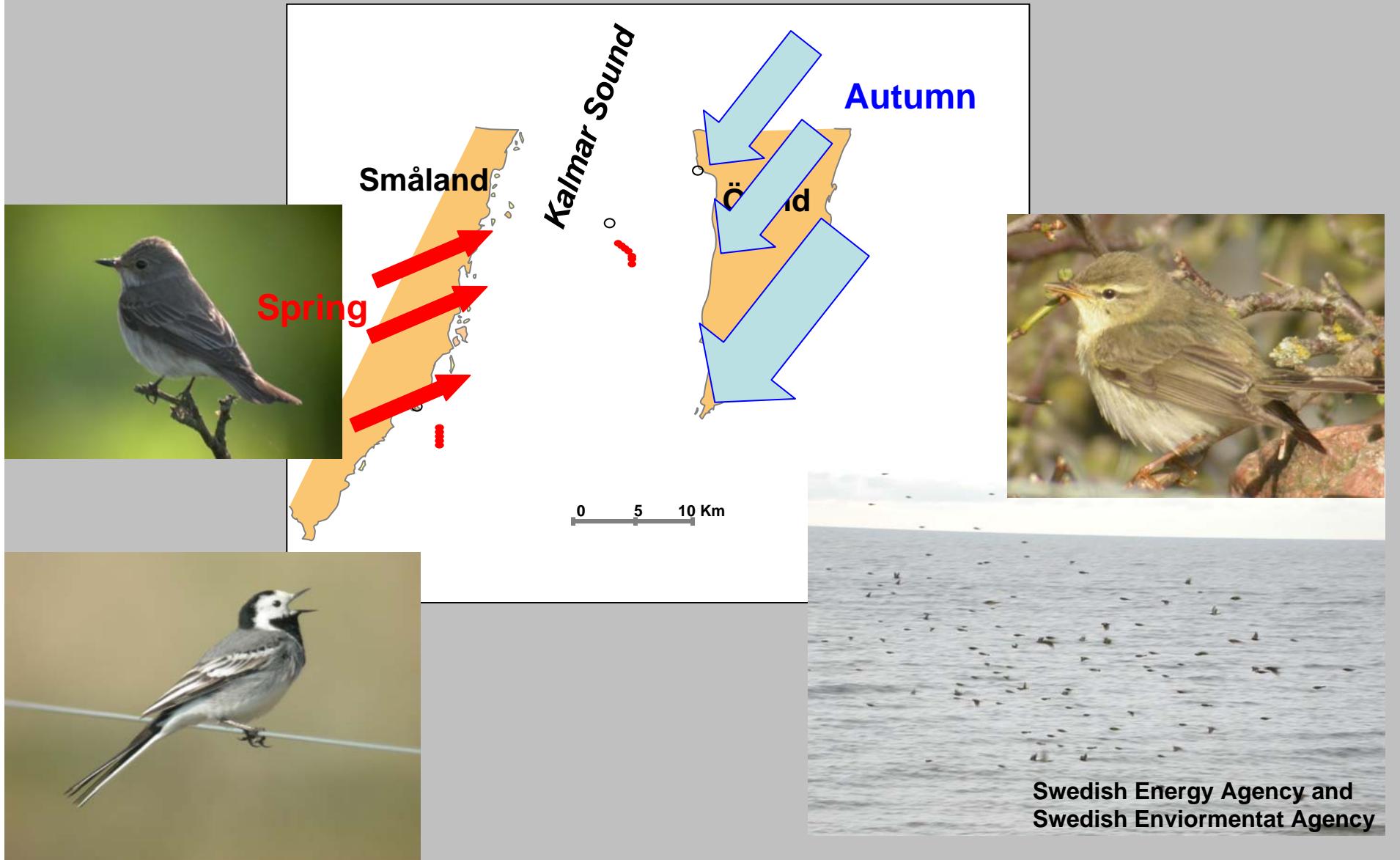
How do small bird react on offshore windpark?

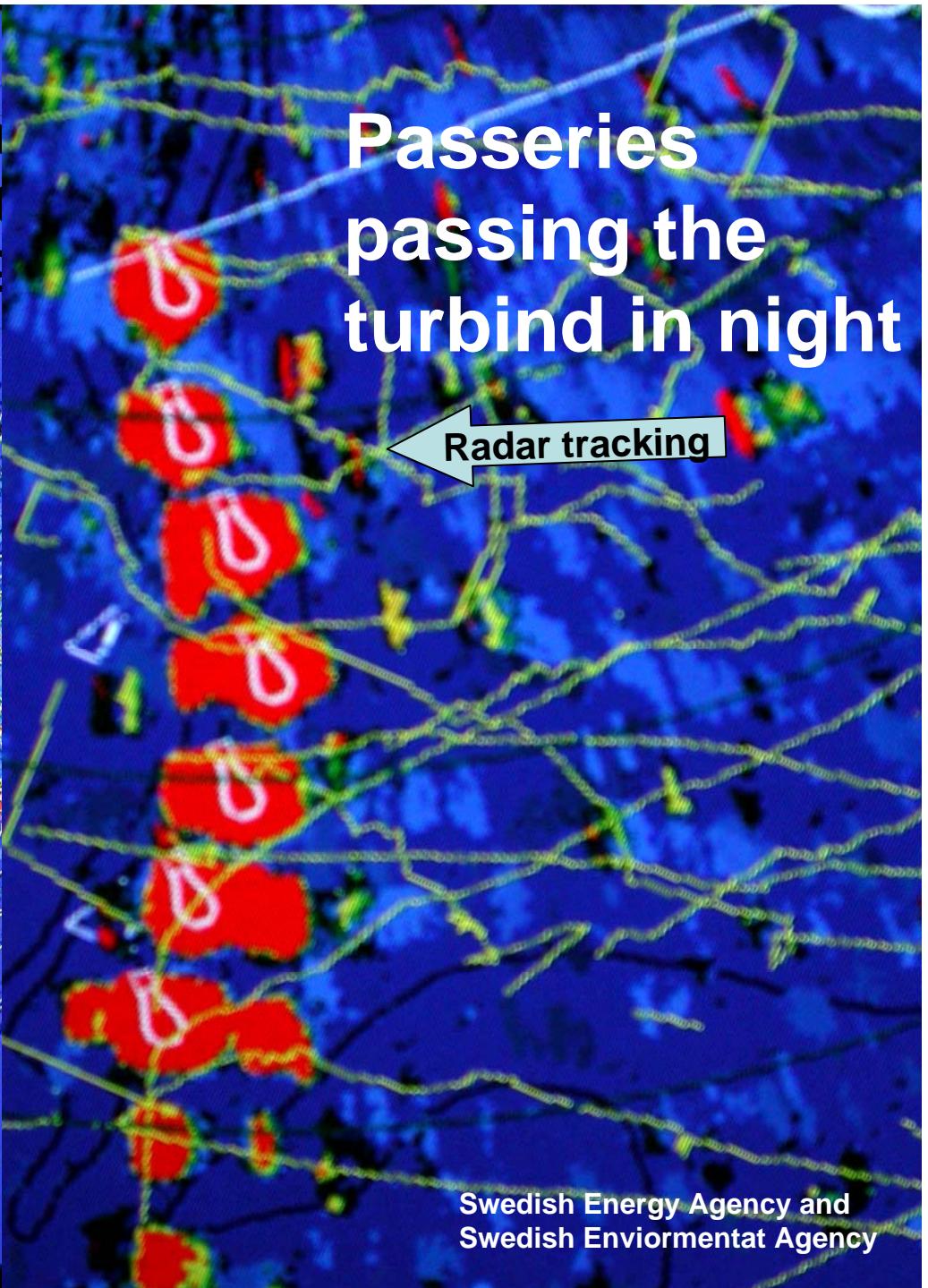
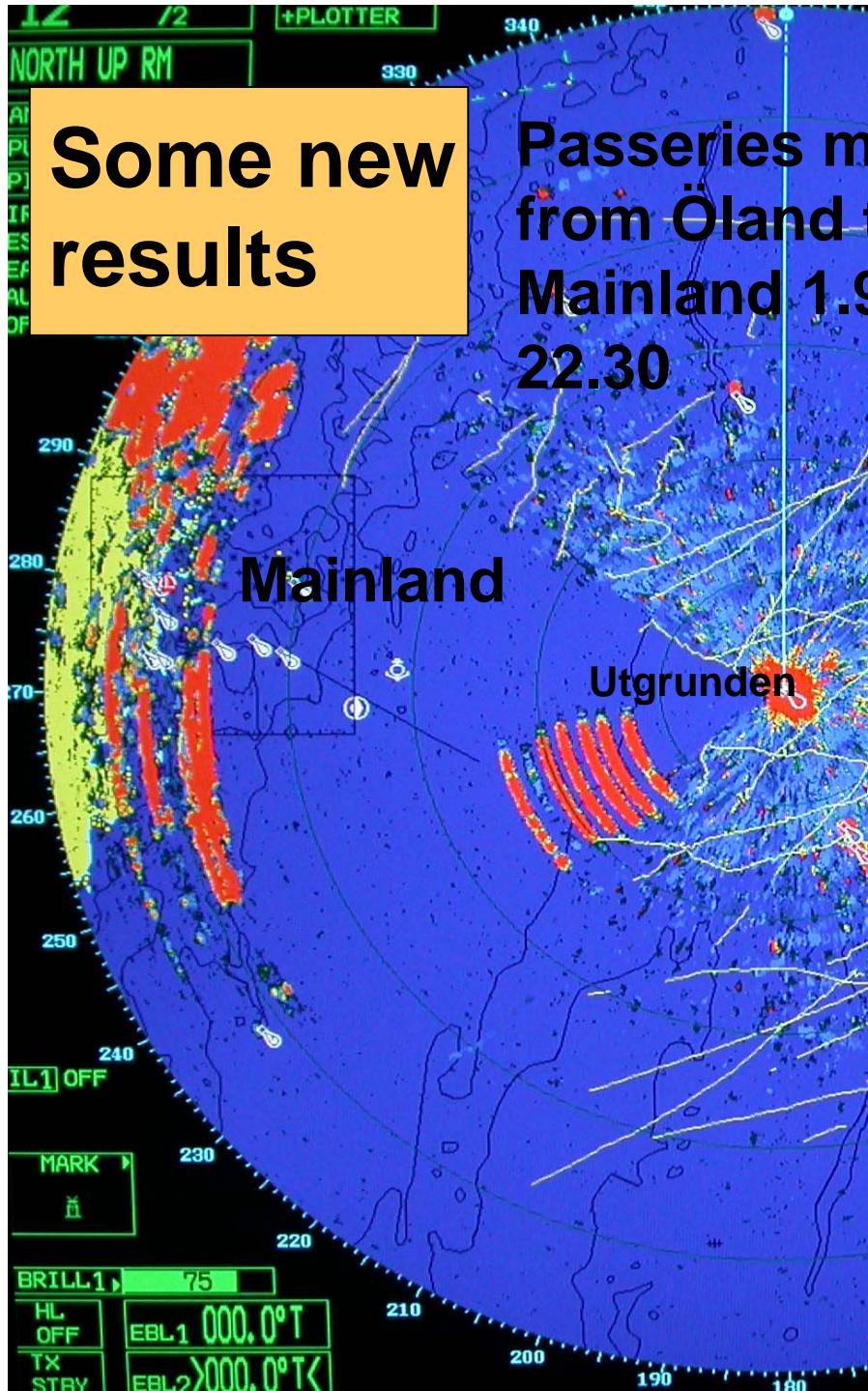
A new birdprojects have just start, August 2005 at Utgrunden in a group of enviromentat projects "Vindval".

Swedish Energy Agency and Swedish Enviormentat Agency



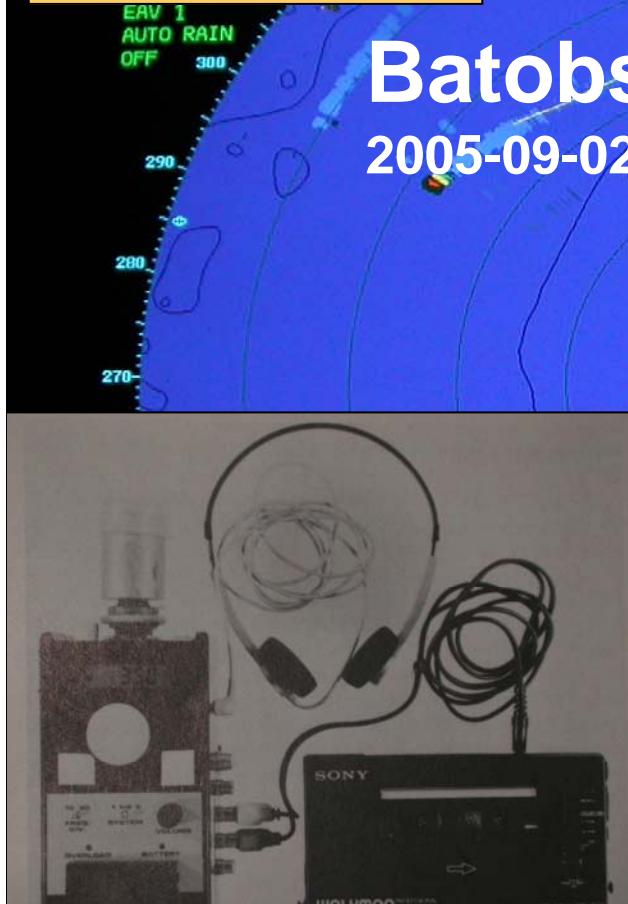
Passerines migration autumn and spring





Some new results

Bat observations 2005-09-02



Nyctalus noctula



Together with
Ingemar Ahle'n
in a bat study in the area.

Small birds and bats passed the offshore windfarm Utgrunden under migration in different altitude.



Tank you!



Swedish Energy Agency and Swedish Environmental Agency