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# ENVIRONMENTAL PRACTISES AND MILITARY ACTIVITIES – Sonar and marine nature protection in Denmark



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## OBJECTIVE

Preventing this:



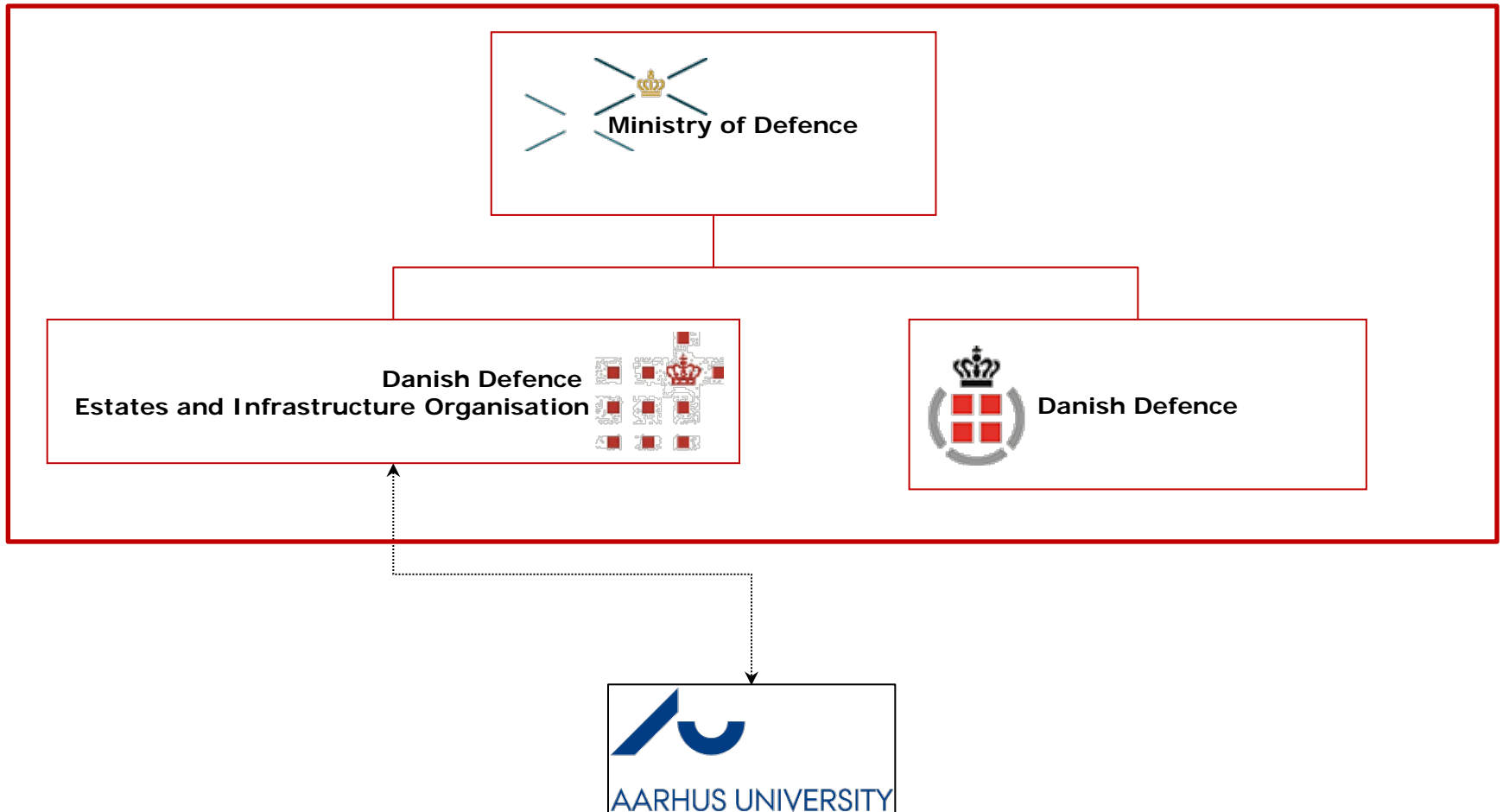
While doing this:



ASW illustration from ECA, Sindel; [www.sindel.it/Defence\\_Contents\\_ASWTT.html](http://www.sindel.it/Defence_Contents_ASWTT.html) (04-05-2015)



# WHO?



## LEGAL BACKGROUND - EU

### The European Habitats Directive (1992) (The European Birds Directive (1979))

- **Species**
- Area designations:
  - *Natural habitat types*
  - *Species*

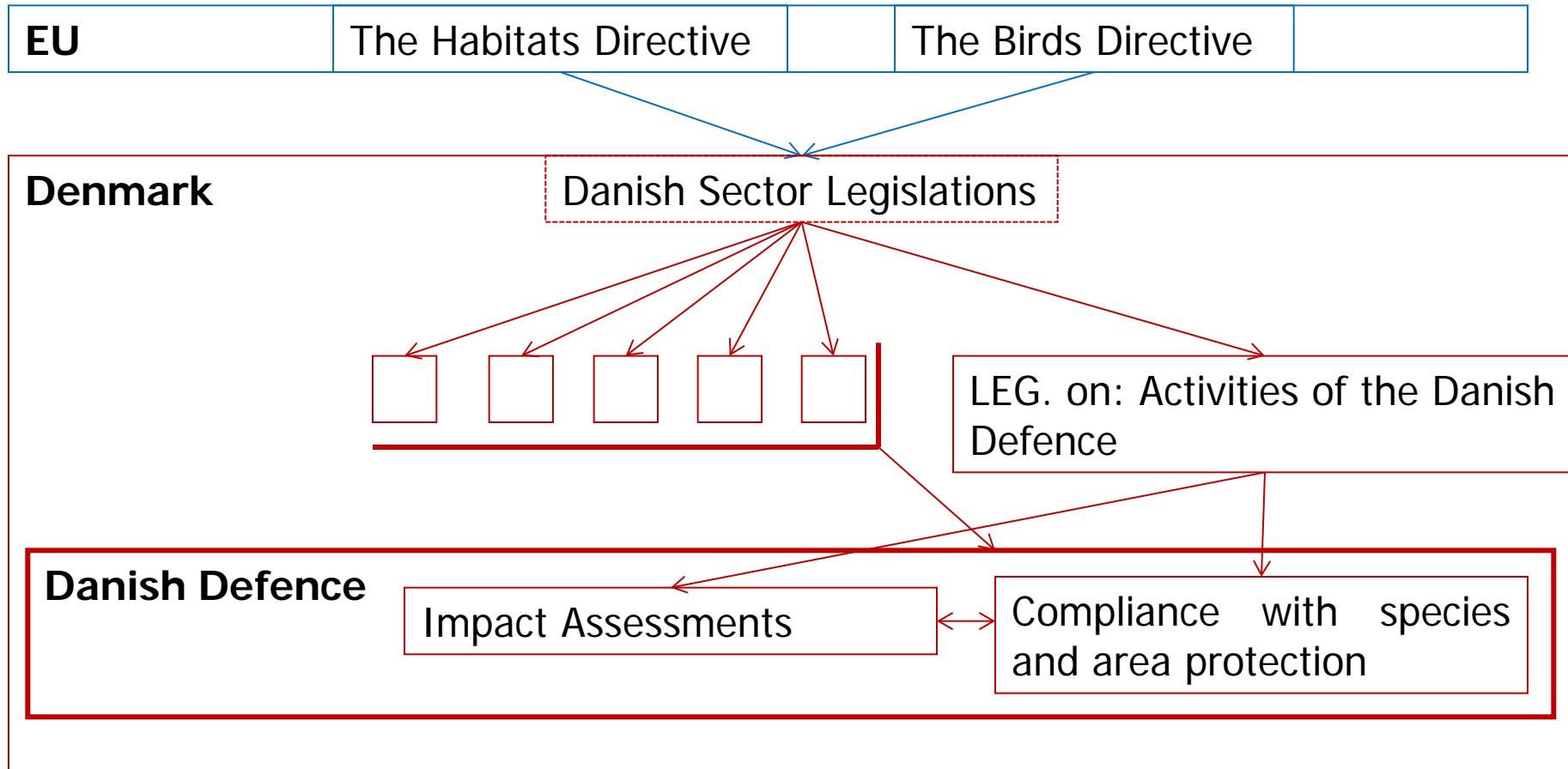


(Marine Strategy Framework Directive:

art.2, no. 2: "This Directive shall not apply to activities the sole purpose of which is defence or national security." Though "endeavour to"...)



# LEGAL BACKGROUND - NATIONAL



# CORE REQUIREMENTS

## Areas:

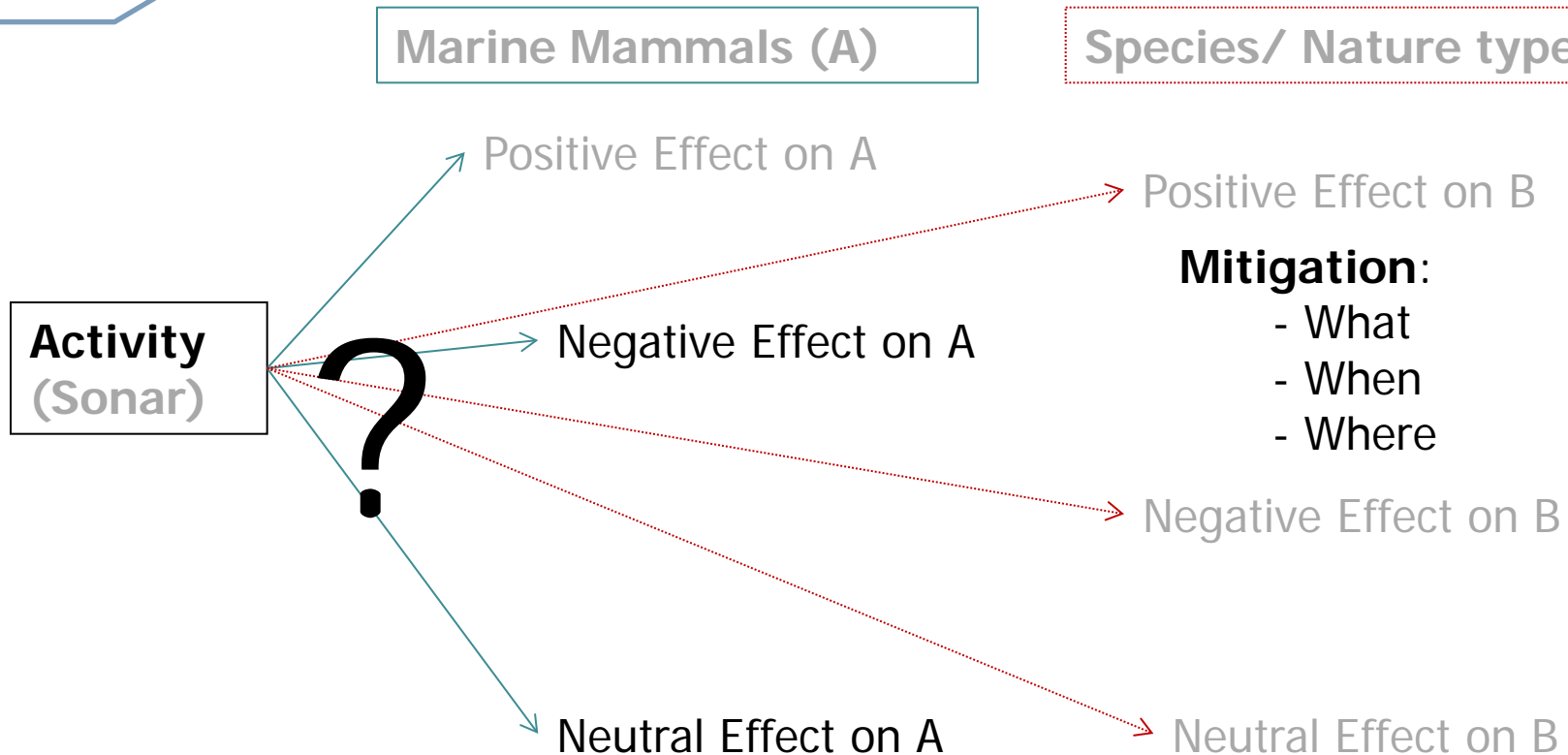
- Impact Assessment (project/plan: significance, accumulative effects)
- Integrity of site (long term neg. impact on population)

## Species:

- Local population
- Breeding sites, resting places



# WAY OF THINKING



**Task:** Identify A, B, (...)  
Identify Impact (incl. Significance)  
Identify Mitigation Options  
Identify Priority



## MITIGATION MEASURES – “WHEN”

### Harbor porpoise

Breeding season: **June-August**

Dependent calves: **September**



### Harbor seal

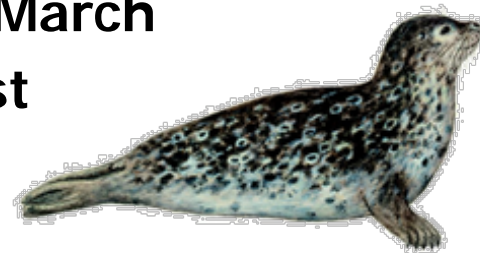
Breeding season: **June-July**

Molting season: **August-September**

### Grey seal

Breeding season: **February-March**

Molting season: **June-August**



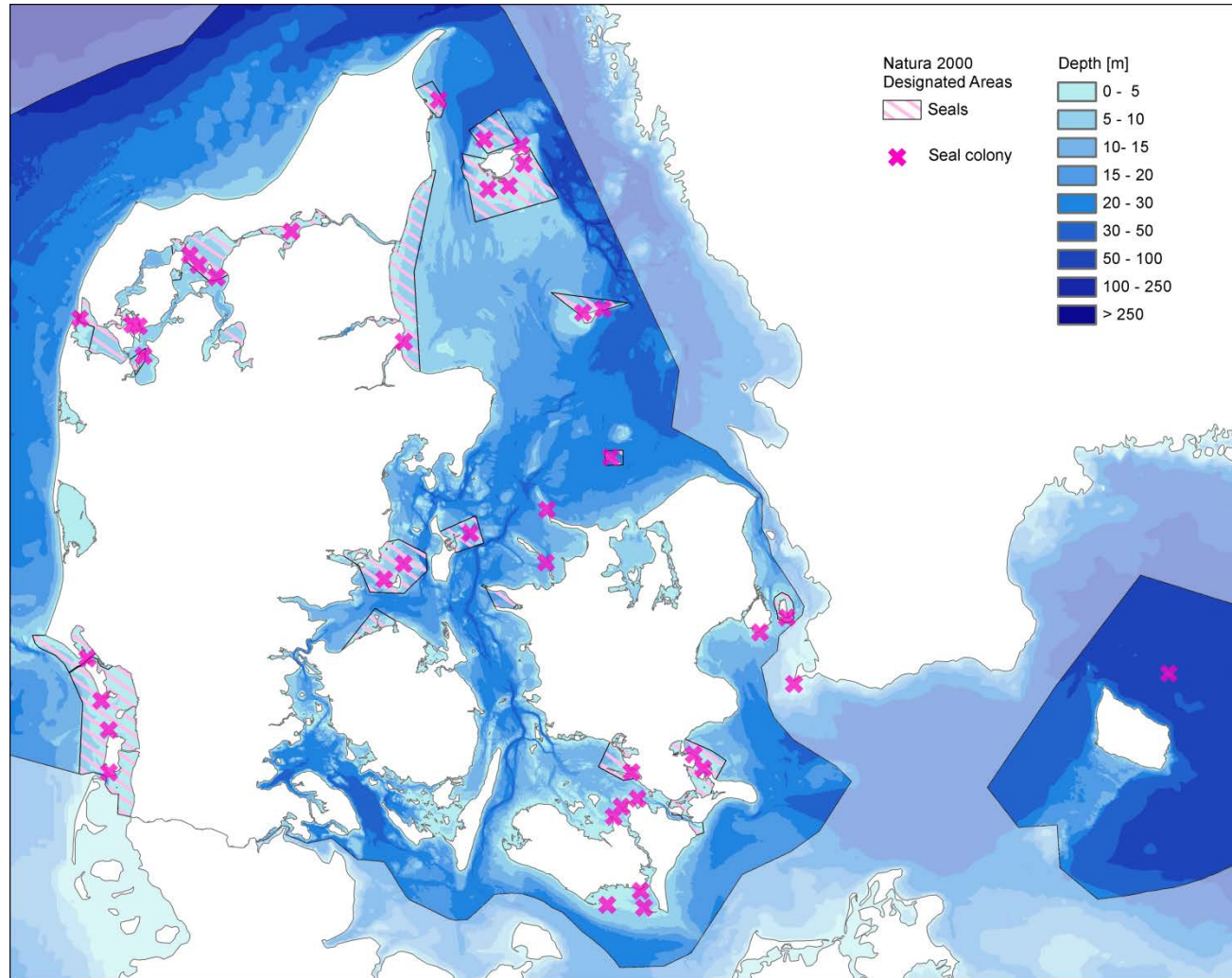




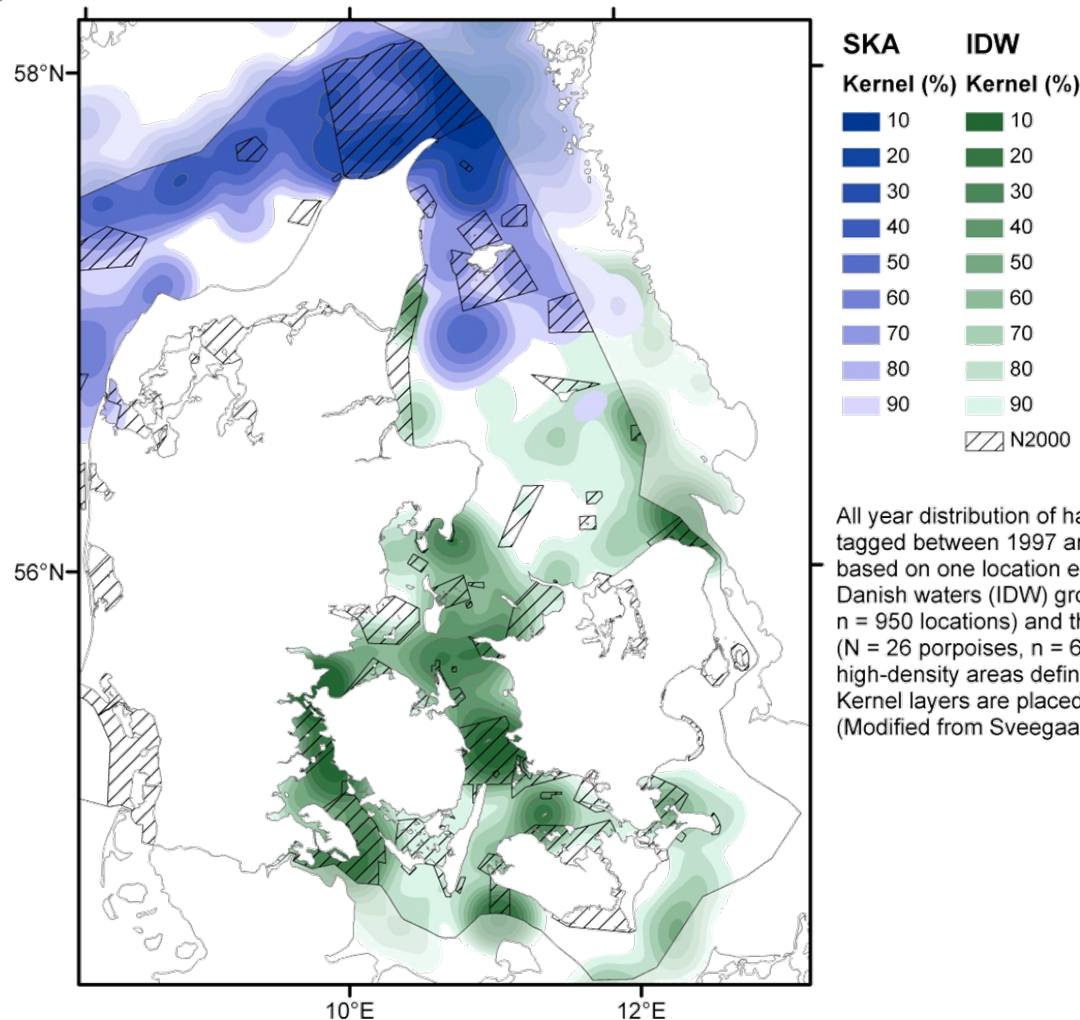
# SEALS – THE WEAK SPOTS

Hearing  
impairment

Temporary  
Displacement



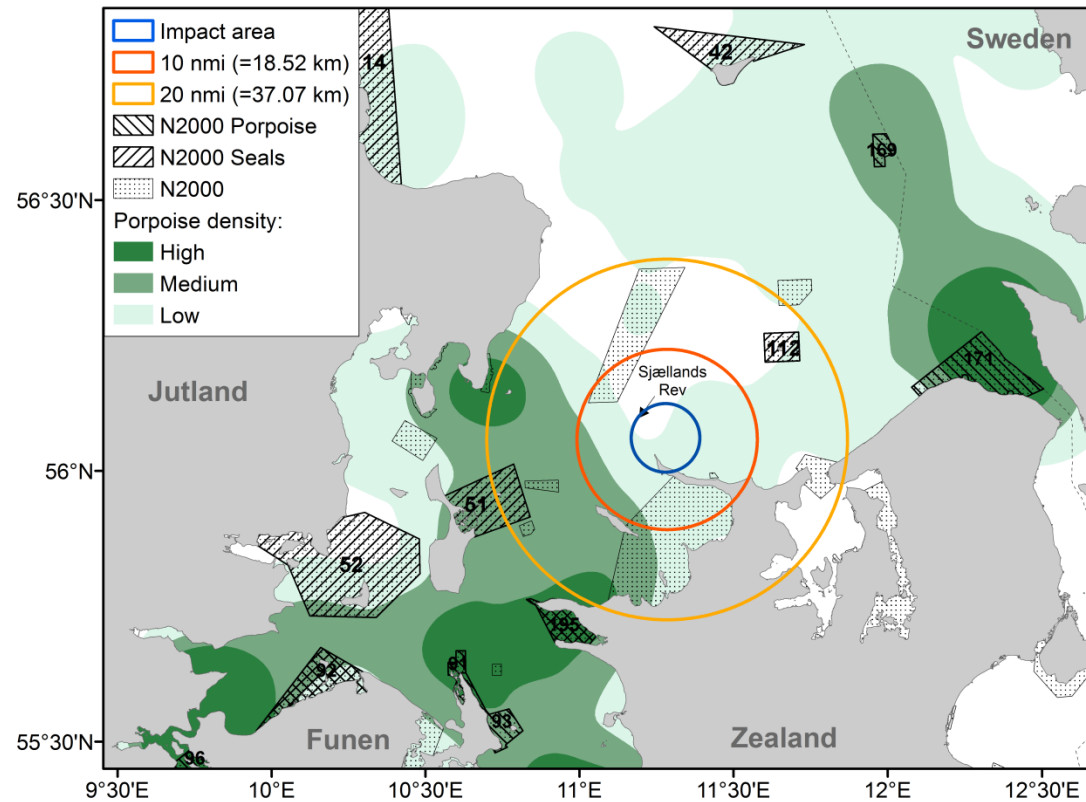
# MEET THE PORPOISES



All year distribution of harbor porpoises *Phocoena phocoena* tagged between 1997 and 2007 displayed by fixed kernel density based on one location every four days from each other. The Inner Danish waters (IDW) group are shown in green (N = 38 porpoises, n = 950 locations) and the Skagerrak group (SKA) are shown in blue (N = 26 porpoises, n = 665 locations). Black line indicates high-density areas defined as the 30% kernel contour. Kernel layers are placed below the land layer. (Modified from Sveegaard et al. 2011)



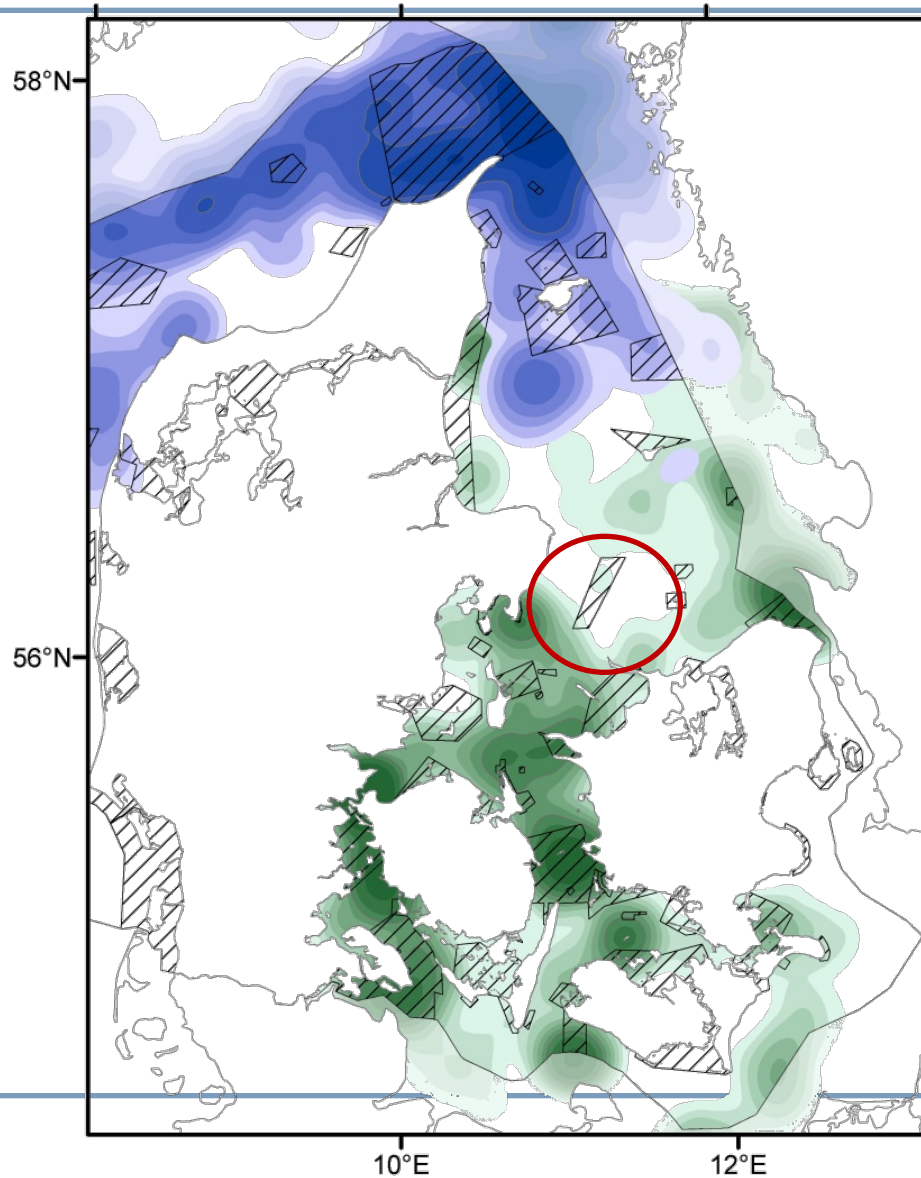
# THE UNKNOWN – HOW FAR IS FAR ENOUGH?



**Figur 1.** Kort over øvelsesområdet, Natura 2000-områder (Habitatnumre er indikeret for områder med havpattedyr på udpegningsgrundlaget), bufferzoner på hhv. 10 og 20 sømil (målt fra øvelsesområdets NØ-lige hjørne, samt forekomsten af marsvin, baseret på data fra dyr udstyret med satellitsendere. Desto mørkere grøn farve, desto højere tæthed (Modificeret fra Sveegaard et al. 2011).



## MITIGATION – “WHERE”







## MITIGATION – “WHAT”



- Ramp-up
- Visual inspection
- Directionality
- Limiting no. pings (suspected freq.)
- Limiting no. sonars
- Limiting speed of ships



## WHAT WE NEED TO KNOW



- Impact on population (cumulative):
  - Deadly?
  - Effect of displacement – how many times are too many?
- Effect of mitigation measures?
- Alternatives (time, place, procedure, BAT)?





# QUESTIONS?

