Cetaceans: can we manage to conserve them?

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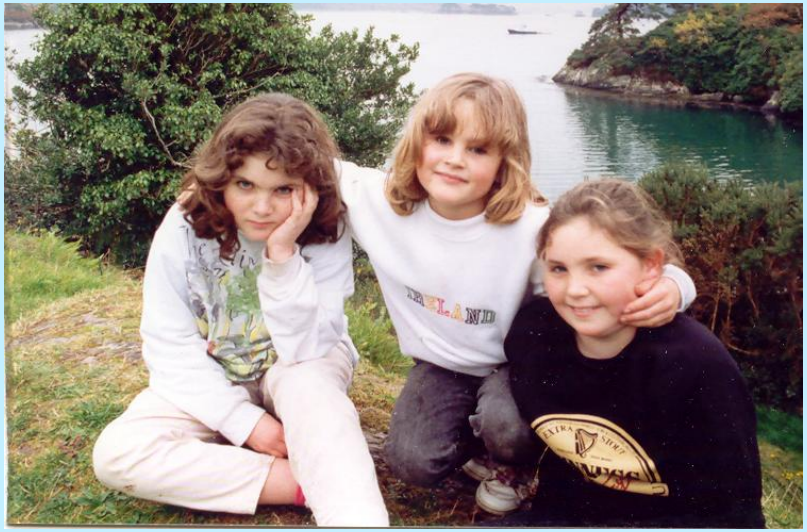
Studying Cetaceans

- **Wide range of life styles and habitats**

- **Beautiful but difficult!**



What is conservation management?

- Everything – even doing nothing, can be said to be management –
- We can only (try to) manage humans, not cetaceans
- We have an obligation to try and do it properly

HUMAN FACTORS 1

- **Instantaneous death**
  - **direct hunting (e.g. whaling)**
  - **indirect hunting**
  - **(e.g. bycatches, ship strikes)**
- ***Individual level, always a problem - population level, not necessarily so***

HUMAN FACTORS 2

- **Habitat degradation**
  - **Acoustic and chemical pollution**
  - **Overfishing**
  - **Climate change**
  - **Coastal development**
  - ***Environmental factors - affect ALL species - most vulnerable may be those for whom direct exploitation would not be allowed.***

how?

- Define OBJECTIVES with respect to the status of cetacean populations;
- Assess their STATUS in the light of those objectives
- Determine MEASURES to ensure that objectives are met and will continue to be met –
  - identify and address 'threats'

And then….

- **MONITOR to make sure you're right!**
- **It is not an option in an uncertain world – and inevitable scientific uncertainty MUST be taken into account**
- **The best laid plans……**
- **Build monitoring into any 'conservation strategy'**

EXAMPLES OF OBJECTIVES

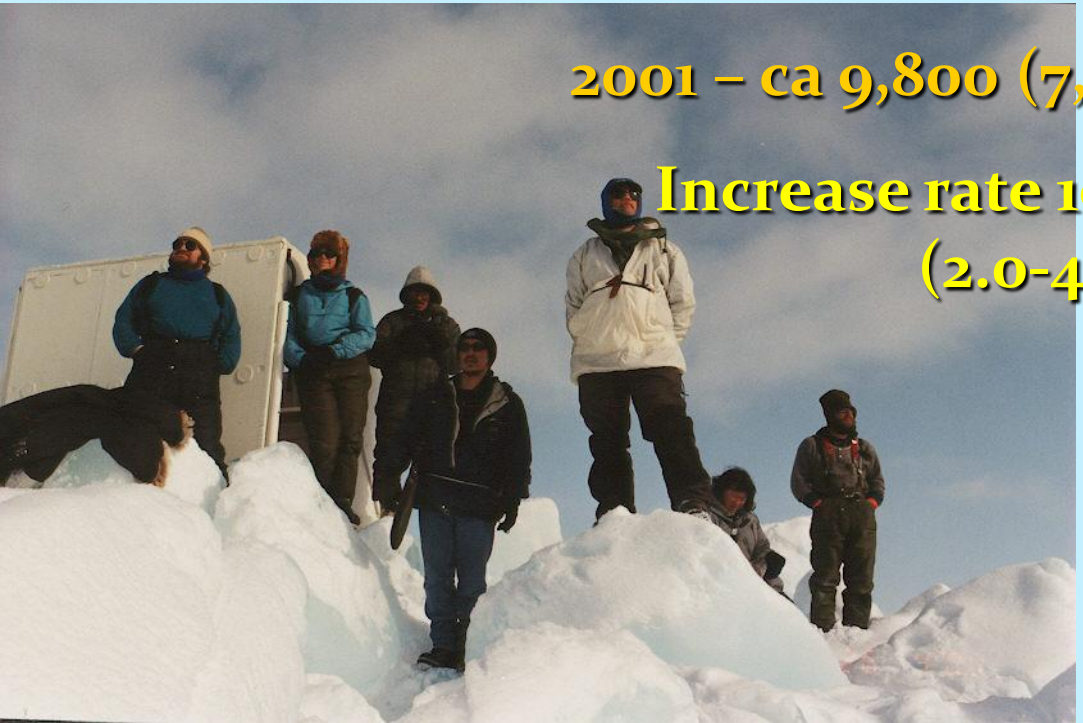
- **WHO ? Can be single population, group of species, habitat….**
- **WHAT?**
  - **Not to seriously increase risk of extinction**
  - **Allow anthropogenic mortality if shown to be sustainable**
  - **Maintain or restore to original ‘levels’**
  - **Maintain current levels**
  - **Maintain current distribution**

Characterising status

- **Abundance:**
  - **Absolute**
  - **Trends (monitoring)**
- **Relate to objectives**
  - **Simple**
  - **Modelling (what if we get it wrong)**
- **Puts potential threats into context**

ABUNDANCE: CENSUS

Bering-Chukchi-Beaufort Seas bowhead



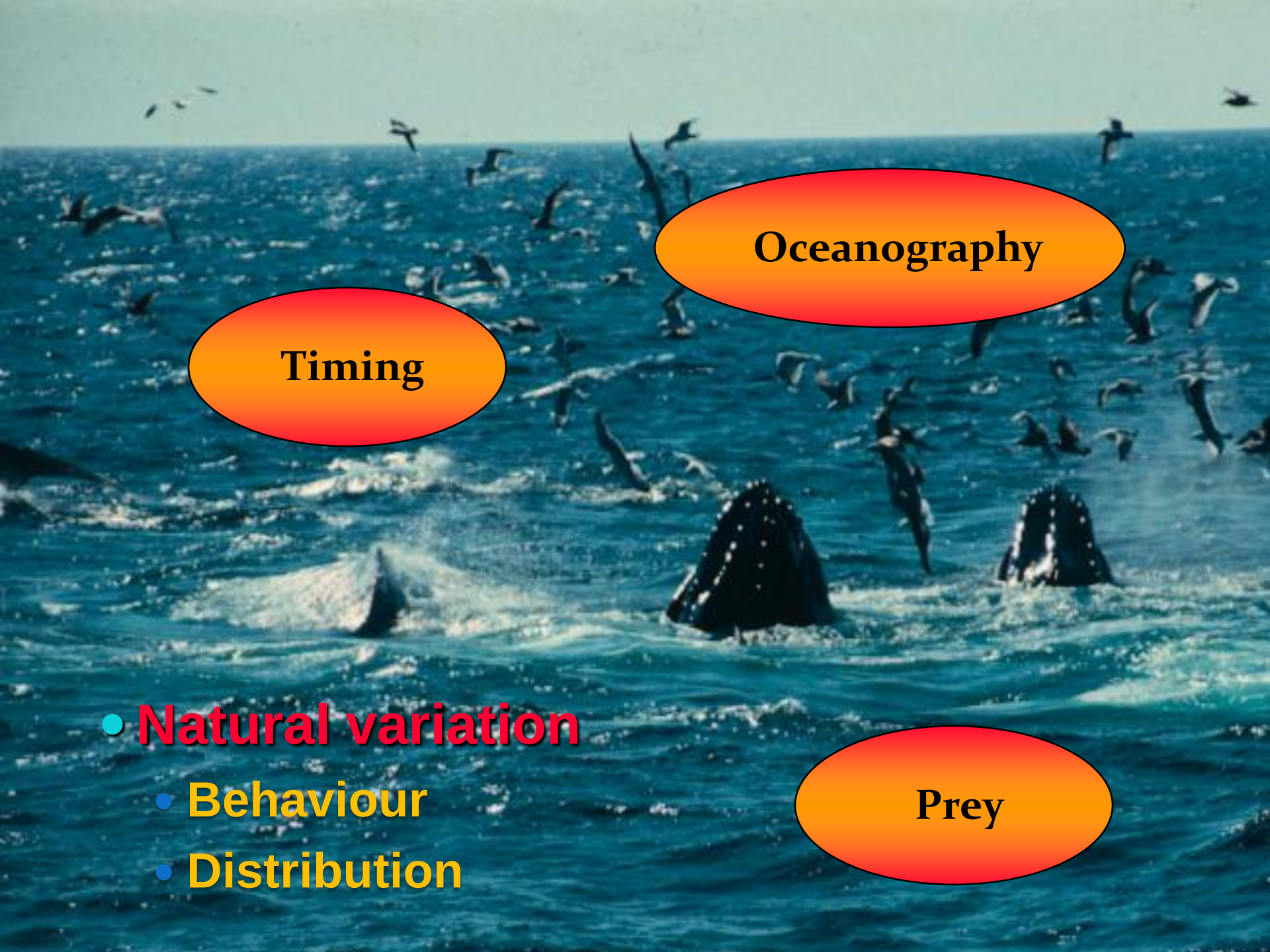
2001 – ca 9,800 (7,700 – 12,600)

Increase rate 1978-2001 3.3% (2.0-4.7%)

ABUNDANCE: SAMPLING AN AREA

Limitations

- An estimate of how many whales in a particular area at a particular time
- Need to know the relationship of that area and time to the population's life history
- Must take into account possible bias, precision, additional variance
- CONTINUITY

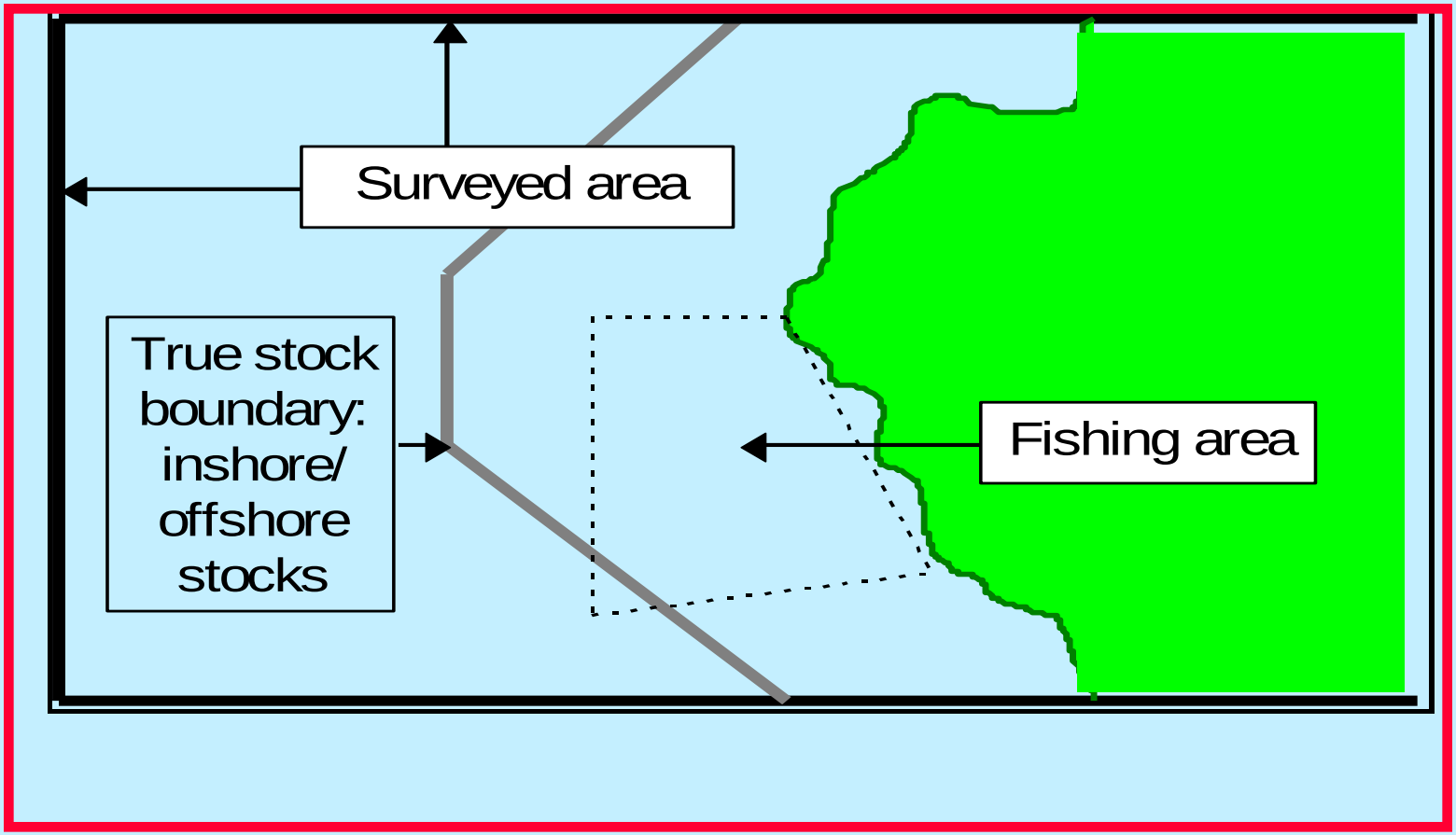


- **Natural variation**
  - **Behaviour**
  - **Distribution**

Distribution/structure

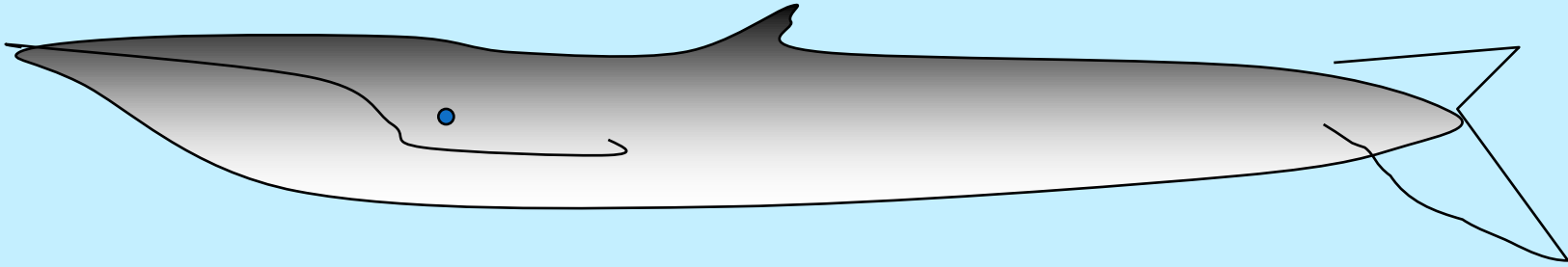
- Important that surveys cover sufficient area – whales don't follow our boundaries
- May over- or underestimate problems
- May obtain false impression of trends
- Synoptic surveys – ACCOBAMS survey

AN EXAMPLE


Surveyed area
True stock boundary: inshore/ offshore stocks
Fishing area

Extinction is for ever.....

Unless you use.....



Balaenoptera electronicus

conclusions

- Beware the snapshot, even if it's all you've got
- Whenever you take a management decision – monitor to make sure it's the right one – and that you don't introduce an unexpected new problem
- Put in the effort to design your monitoring scheme properly – don't reinvent wheels
- Integrate, co-operate and see statistics and models as tools not 'little gods'
- Remember the people – decisions affect lives and livelihoods – involve them from the start

Respect all the environment

- Not just the ‘cuddly’ bits!

Take up Irish history tonight