



Societal decisions required for the determination of safe bycatch limits for harbour porpoise, common dolphin and bottlenose dolphin

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Societal decisions required for the determination of ~~safe bycatch limits~~ **thresholds of "unacceptable interactions"** for harbour porpoise, common dolphin and bottlenose dolphin

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Why?



MoP 3 (2000), Res 3: defines "**unacceptable interactions**" as being, in the short term, a total anthropogenic removal above **1.7 % of the best available estimate of abundance** with the precautionary objective to reduce bycatch to less than 1% of the best available abundance estimate

MoP 6 (2009), Res 1: Conservation Plan for harbour porpoises in North Sea: *Action 6: finalise a **management procedure approach** for determining maximum allowable anthropogenic removals in the region*



Influence European policy



Development of MSFD indicators by ICG – COBAM: M6 is a bycatch indicator, monitoring needs to be implemented in 2014

EU Regulation 812/2004 - European Commission is revising approaches to bycatch (currently uses 1.7% best population estimate). Results expected 2015

Opportunity to rectify misinterpretation



Three management procedures for defining the threshold of "unacceptable interaction":

1. Rule of thumb (e.g. 1.7% or 1% of best population estimate)
2. Potential Biological Removal (United States)
3. Catch Limit Algorithm (International Whaling Commission)



Limits of unacceptable interaction



ASCOBANS 1.7%:	3679 porpoises
ASCOBANS 1%:	2164 porpoises
PBR:	1246 porpoises
CLA:	840 porpoises

Management procedures for North Sea are more precautionary for setting limits of unacceptable interaction

Data from Scheidat et al, 2013 (Open Journal of Marine Science) using 95% probability that 80% carrying capacity objective is met



CLA is more precautionary because it is species specific and takes account of:

- population status**
- life history**
- population/stock structure**
- historical bycatch**
- environmental variability**
- uncertainty of all the above**



History



Joint IWC/ASCOBANS meeting (2000) recommended development of a management procedure approach using simulation studies for setting limits to achieve management objectives

SCANS II (2005) compared PBR and CLA to determine acceptable levels of bycatch for harbour porpoise. CODA (2007) applied the methods to common dolphins

ICES have consistently advised the European Commission to adopt such an approach for bycatch

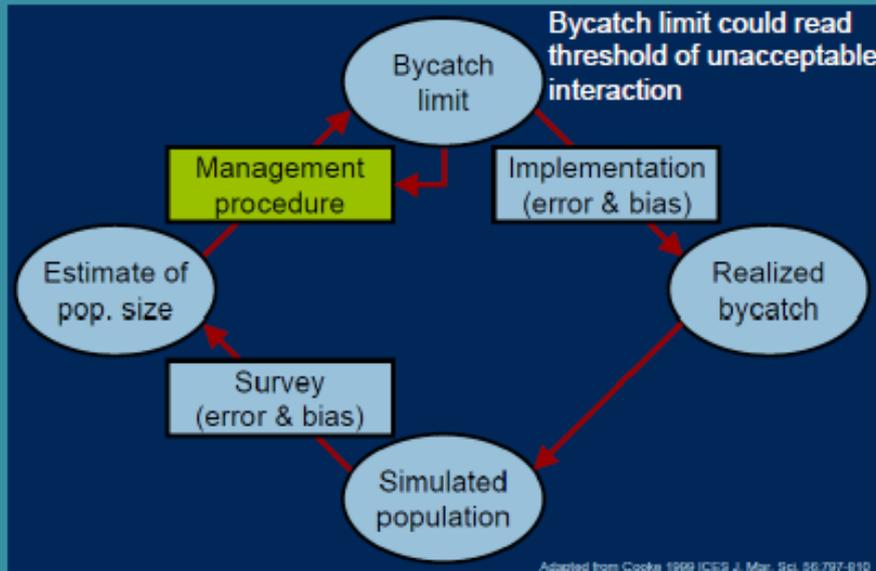


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Simulation Model



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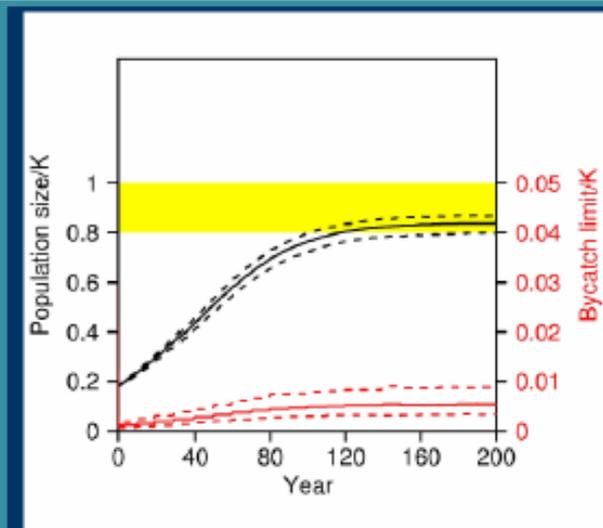


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Species specific simulation output



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Solid lines = median, dashed lines = 90% interval



Conservation Objectives



Scientific methods can estimate:

- the probability of meeting objectives
- the consequences of decisions

but society/policy makers need to decide:

- appropriate conservation objectives
- what risks are acceptable

Is ASCOBANS willing to have a role in this?



ASCOBANS Conservation Objective

'to allow populations to recover to and/or maintain 80% of carrying capacity in the long term'

already initiated the process but...



What does 'in the long term' mean?

Examples

SCANS II and CODA used 200 years

IWC uses 100 years

IUCN uses 100 years or 3 generations

USA's MMPA uses 100 years

Does ASCOBANS have an opinion?



In the 'long term', how often is '80% of carrying capacity' required to be met?

- on average (e.g. 50% of the time)
- mostly (e.g. 95% of the time)
- something in between

Scheidat et al (2013) used 95% as the desired level of certainty of achieving the goal.



Examples



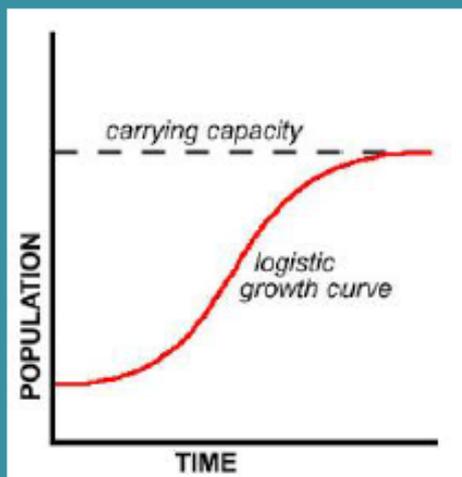
IWC aim for 72% carrying capacity on average (50% of the time);

Canada's OBFM for seals has target of 70% of maximum recorded abundance for 80% of the time;

MMPA aims for 50% of carrying capacity at least 95% of the time



Confidence in achieving goals



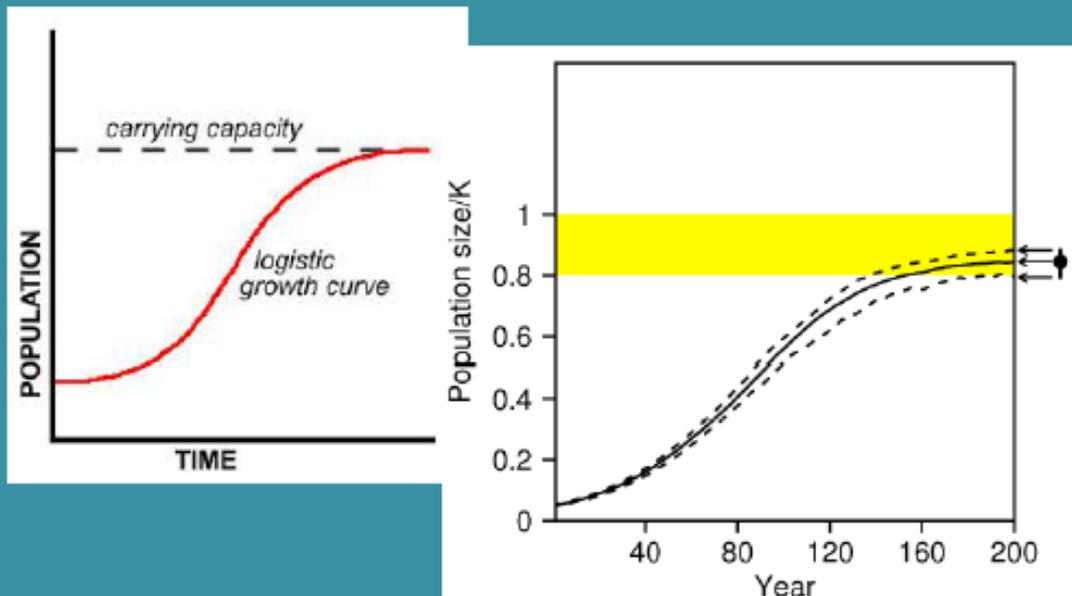


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Confidence in achieving goals



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What next?



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UK have requested that ASCOBANS advise on how they would explicitly define their conservation objective. Does the AC feel able to provide this?

Opportunity for ASCOBANS to influence and enable the further development of thresholds of unacceptable interaction:

ICG-COBAM work on GES indicators (bycatch)

European Commission have requested ICES advice on development of frameworks for assessing bycatch