A sustainable whalewatching industry

David Lusseau and Lars Bejder

Marine tourism: a global economic powerhouse

Source: Lusseau et al. (in press)
Global trends in whalewatching

An evolving industry
Current trends in growth of WW industry

- WW industry is currently expanding in developing countries that lack legal and managerial frameworks as well as capacity to control growth, i.e. opportunistic and ad-hoc local growth.


"SC strongly recommends that the Cambodian government and relevant agencies make every effort to reduce the exposure of Irrawaddy dolphins to vessel-based tourism in deep-water pools in the Mekong River." (IWC, 2010)

Whalewatching: a consumptive activity

- “There is compelling evidence that the fitness of individual odontocetes repeatedly exposed to whalewatching vessel traffic can be compromised and that this can lead to population-level effects.” (IWC SC 2006)
Will whalewatching always lead to population viability threats? **NO**

The absence of evidence is not an evidence of absence.
Our moral duty

- Ensure that we do not make the same mistakes with this industry as we did with fisheries.

- Growth and subsidies that are both unregulated can lead to fleet overcapacity with subsequent socioeconomic trauma and resource collapse.
  
  - *We cannot toy with whalewatching incentives as a pawn in the whaling political debate*

- We need to move from reactive management to a new predictive paradigm.

Management framework

- Cetaceans are common-pool resources that are exposed to many other activities (non-lethal consumption paradigm).

- Lesson from fisheries: Individual Transferable Quotas (ITQ) approach (many mechanisms under that umbrella).

[Graph showing the impact of ITQ implementation on collapse rates of cetaceans over time.]
Implications of over-exposure to WW

- Overexploitation with associated socioecological consequences

- Imperative to use the precautionary principle to manage WW activities and simultaneously develop a predictive management framework.

- IWC has the opportunity to once again lead a complete shift in paradigm for the management of natural resources.

Scientific foundations of WW management

- Currently, we cannot predict the threats to population viability caused by whalewatching at a given site

- While we can set Limits of Acceptable Changes, we cannot predict what exposure characteristics will ensure that those levels are not exceeded.

- HOWEVER, we know how we can get there
Research needs proposed by SC/LaWE

- All populations have a carrying capacity relating to WW exposure
- Define parameters for this response surface

IWC SC and CC: differences in objectives

- Aim:
  - SC: sustainable use of cetacean resources
  - CC: sustainable development of WW
  - These have two different resource targets
    - population growth rate ≥ 1
    - population size prevents extinction and maintains economic viability
- Timeframe:
  - SC: 10-15 years to develop scientific foundations for pre-emptive and adaptive management framework *given the appropriate resources*
  - CC: 5 years for a management framework in place
Management framework proposed by SC/LaWE

• Based on Revised Management Procedure
  – Why? Because its objective is sustainability and it accounts for uncertainties
  – “The most rigorously tested management procedure for a natural resource yet developed”

• Integrate in a wider socioecological model
  – Economic viability (including issues of scale, e.g. leakages)
  – Social capital integrity
  – We cannot do this at the moment (outside SC remit) but we know how to do it

Higham et al. 2008 Env Cons

Management framework proposed by SC/LaWE

• Adaptive
• Based on ABM simulations to assess likelihood of population viability threats
• Account for uncertainty
• Iterative process

• Provides exposure quotas (quotas can = infinite) that can be managed in a site-specific manner as long as we have secured property rights:
  – Time/area closures, license caps, etc.

Summary

• WW continues to grow and growth is now localised in regions that have more regulatory and managerial challenges.

• WW is a consumptive activity and should be managed accordingly.

• Whales are common pool resources, it is important that management formalises property rights

• It will take 10-15 years to develop the scientific foundations for an appropriate management procedure.

Sustainable whalewatching

• Whalewatching is an excellent way of making use of whale resources because of its associated direct and indirect benefits.

• While it does not have a direct lethal effect on whale populations, whalewatching can still consume that resource.

• Our generation is given the chance to demonstrate that we can find a way to sustainably use whales.

• Let’s show our countries that the IWC can work together to meet this challenge.