

# Whalewatching and whaling: An urgent need for empirical research

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## **Abstract**

Recent International Whaling Commission debate on the interaction of whalewatching and whaling provides fertile ground for empirical research. Commentary to date on the relationship between whalewatching and whaling has been largely anecdotal, rendering the potential effect that whaling might have on whalewatching largely uninformed. From this situation emerges an urgent need for empirical research to address the relationship between two conflicting and probably mutually exclusive interests relating to whales. This opinion paper presents and discusses a framework in which this relationship may be more closely studied. The framework outlines different scenarios under which the evolution of a whalewatching system can interact with other human activities including whaling. The scenarios incorporated into the framework include optimum growth in the whalewatch system and variations on optimal growth subject to both constructive and destructive human activities. The framework accommodates stochastic events that may periodically impact the attractiveness of tourist destinations, perhaps to the point that whalewatch operations lack the robustness to remain viable. The authors conclude the paper with a plea for empiricism to address the various elements of the proposed framework.

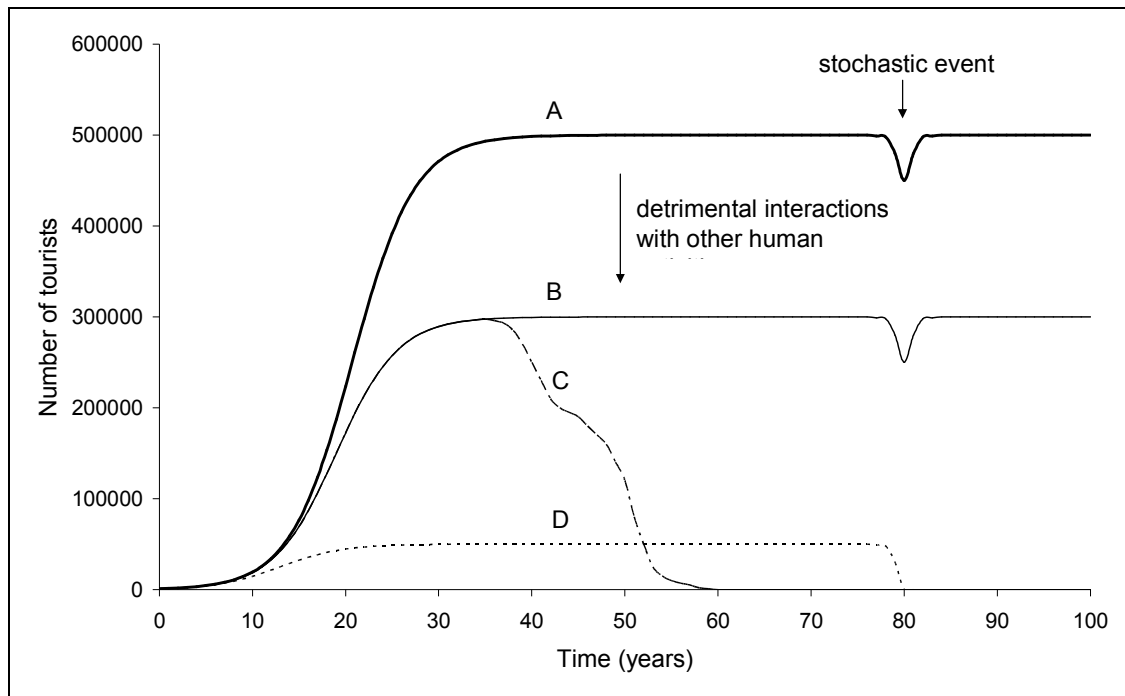
**Keywords:** Whalewatching, whaling, empirical, framework, stochastic event.

## **A conceptual framework**

Recent International Whaling Commission (IWC) debate on the interaction of whalewatching and whaling provides fertile ground for empirical research. Commentary to date on the relationship between whalewatching and whaling has been largely anecdotal, rendering the potential effect that whaling might have on whalewatching largely uninformed. From this situation emerges an urgent need for empirical research to address the relationship between two conflicting and probably mutually exclusive interests relating to whaling and whalewatching.

Tourism destinations evolve following a similar dynamics to animal populations (Duffus & Deardren 1990). After a period of slow growth, visitor numbers often undergo a phase transition of rapid growth to reach an equilibrium likened to the carrying capacity,  $K$ , of a population (Duffus & Deardren 1990). All destinations try to achieve sustainability by maintaining visitor numbers close to carrying capacity. The likelihood that sustainability will be achieved is related to many extrinsic and intrinsic factors such as the economic viability of  $K$ , competition, and the sustainability of the resources on which the system relies. Whalewatching relies on whales as the primary source attracting visitors. Activities, such as fishing, whaling, or pollution can affect the number of whales present at a tourism site. These interactions can result in tourist detraction from the sites either as a direct consequence of a decrease in the whale population or because of incompatibilities between these competing activities and the values of whalewatchers. Here we introduce a framework that conceptualises the relationship that may exist between whalewatching and these other human activities (Figure 1). The framework presents different scenarios under which the evolution of a whalewatching system can interact with other human activities including whaling. The scenarios incorporated into the framework include optimum growth in the whalewatch system and variations on optimal growth subject to both constructive and destructive human activities. While effects on  $K$  are highlighted here, it is possible for the rate of growth,  $r$ , to be affected as well.

If a human activity has a positive effect on whalewatching tourism the carrying capacity can be increased (not displayed) beyond the optimum carrying capacity (curve A). The development of new sustainable infrastructures may be one example of human activities that could increase the capacity of the system. If other human activities detract tourists from visiting the destination, or experiencing whalewatching while at the destination, they may decrease the carrying capacity of the whalewatching system but not jeopardise its sustainability (curve B). The worst case scenario is that such activities may jeopardise the sustainability of the system (curve C). While the whalewatching destination may find a local stable solution (curve D), the resulting carrying capacity may be so low that it lacks the robustness necessary to absorb the consequences of a stochastic event which would momentarily decrease the number of tourists that visit the destination. Any of these curves may depict the situation when whalewatching coexists with whaling.



**Figure 1.** Different scenarios under which the evolution of a whalewatching system can interact with other human activities such as whaling. Curve A: Optimum growth and system capacity, Curve B: Compromised capacity, Curve C: Jeopardised sustainability, Curve D: Stable sub-optimal local solution.

### Stochastic events

Within this context, any transient event that cannot be predicted but which significantly reduces travel flows to a destination, can affect whalewatching sustainability depending on how much this industry is already affected by other human activities (Figure 1). Such events may specifically and directly detract from the attractiveness of a given tourist destination. In recent years such events have included major oil spills (e.g., Exxon Valdez) and political instability. Alternatively a stochastic event may more generally reduce travel flows to given destinations due to heightened security (e.g., the aftermath of 9/11) or public health concerns (e.g., Severe Acute Respiratory Syndrome, SARS) (Eugenio-Martin et al., 2003). A third scenario is that significant events might severely impact outward travel flows from tourist generating regions. Rising travel costs (e.g., oil crises) and deteriorating economic circumstance in tourist generating regions (e.g., 1998 Asian Economic Crisis) are also examples of stochastic events that may seriously impact tourist flows into whalewatch destinations. While destinations may be robust to stochastic events when working at optimum  $K$ , interactions with other human activities may also jeopardise this robustness and lead to a collapse of the industry (Figure 1, curve D).

### Competing arguments

As demand for whalewatch experiences has increased, so commercial whalewatch businesses have proliferated (Hoyt 2000). Cetacean-based tourism now exists in 492 communities in 87 countries (Hoyt 2001). These developments take place in unique environmental, economic, socio-cultural and political contexts. Indeed in countries such as Iceland and Norway whalewatching takes place within the same

local contexts as whaling. Tourists may respond to the whaling activities of countries such as Iceland and Norway in one of at least three ways:

1. Whaling and whalewatching coexist without one adversely affecting the other,
2. Whaling, whether it be in the name of science or sustainable harvest, is considered offensive and upsetting and erodes the capacity and therefore viability of whalewatch operators,
3. Whaling, for example in terms of traditional coastal culture and indigenous rights to harvest, is seen as a valid manifestation of local culture that may enhance tourist interests in the destination.

### **Plea for empiricism**

Given the importance of whalewatching in many parts of the world, there is an urgent need to understand how tourists feel about whaling. An understanding of the factors which influence tourists' decision making is critical. This includes the reasons underpinning where tourists choose to view whales, and equally importantly where they choose *not* to view whales. Thus, it is necessary that empirical research in this field captures all whalewatchers, including latent demand, and not only those who actually participate in whalewatching in a given local or national context. Indeed in terms of the rationale behind this paper, the greatest urgency in terms of empiricism perhaps relates to those who are *not* present at whalewatch sites that are situated in local or national contexts where whaling also takes place.

### **Understanding the cultural and environmental values of tourists**

One approach to exploring the relationship between whalewatching and whaling is to understand the cultural and environmental values of tourists who engage in whalewatching. It is the values that tourists hold that underpin their travel motivations. An understanding of cultural and environmental values, therefore, is likely to shed light on the extent to which tourists will accept whalewatching experiences in countries/regions where whaling also takes place.

Research in the field of consumer behaviour confirms the importance of values as a means of understanding markets (Lawson et al., 1996). Rokeach (1968:111) defines values as "centrally held and enduring beliefs that guide actions and judgments across specific situations and beyond immediate goals to more ultimate end-states of existence". Values, therefore, may be the basis upon which travel decisions and tourism behaviours takes place. Values are distinct from attitudes because "values work at a higher level of abstraction and are deeper seated, more pervasive influences on behaviour" (Lawson et al, 1996: 81). Therefore values influence the attitudes that tourists may hold towards specific objects and situations, as well as expectations, decision-making, purchase choices and on-site behaviours.

The majority of whalewatch tourists are from western countries (Hoyt 2001) and hold western environmental values (Hinch 2001). As such, it might be expected that for most the proposition of killing whales is reprehensible. The dominant western environmental paradigm views whales as intelligent creatures with a sophisticated communication system (Kind Keppel *et. al.*, 1999). These values place whales at the fore of the international conservation movement; a position with which whaling is diametrically at odds.

However, significant divergence from the dominant western paradigm exists in cultural values associated with whales (Ris 1994, Hinch 1998). The fact that the International Whaling Committee (IWC) 1982 moratorium banning all commercial whale hunting exempts aboriginal subsistence whaling based on cultural grounds confirms this point (Smestad 1997). Indeed at some destinations where cetacean-based tourism experiences take place tourists may be exposed to quite distinct cultural values associated with whales (e.g., various northern indigenous communities). This diversity may arguably add to the uniqueness of the visitor experience (Hinch 1998). If so, this should also be subject to empirical research.

### **Understanding the dynamics of whalewatching and whaling where they co-exist.**

A second approach to understanding the scenarios presented in Figure 1 is to examine how tourists respond to whalewatching opportunities where they are forced to coexist with whaling. The Icelandic situation, for example, offers the opportunity to examine the impacts of the resumption of whaling in a context where whalewatching already existed. Whaling was initially banned in Iceland in 1985, but in March 2003 the Icelandic government endorsed the resumption of whaling in the name of research. WWF (2003:2) notes that “whalewatching companies and the tourism industry as a whole believe that a resumption of whaling is bad news for the burgeoning whalewatching industry”. It also noted, again anecdotally, that “while governments in countries from which many tourists come do not recognise Iceland’s right to hunt whales, this could cause great damage to the Icelandic tourism industry” (WWF, 2003:2). The resumption of whaling in Iceland led to a call among some conservation groups for tourists to boycott Iceland. Anecdotal evidence suggests that numbers of whalewatchers visiting Iceland subsequently declined, with cancellations and reduced bookings from within the British and German visitor markets (Reuters News Services 2003).

However fluctuations in whalewatch activities are complex. It is possible that aside from the resumption of whaling, other factors such as weather and viewing conditions, may also impact levels of visitor interest in the short term. Other factors including competition in the market, capacity issues, business management and tourist promotions may also influence the fortunes of whalewatch businesses (Hoyt & Hvenegaard 2002). Alternatively, if whalewatch numbers remain constant, it is possible that visitor numbers could well have increased had there not been a resumption of whaling (Figure 1).

In terms of empiricism, a comparison between Iceland and Norway may offer valuable insights. Whalewatching in Norway began in 1988 while it was initiated in Iceland three years later (1991) (Figure 2). This data shows that during the 1990s the numbers of whalewatchers visiting Iceland quickly equalled (in 1997) and then far surpassed the numbers of whalewatchers in Norway, despite Norway being more accessible, and better served in terms of tourist infrastructure. Norwegian whalewatching plateaued at a lower level than Iceland had achieved by 1999. Although Andenes (Norway) has received more tourists overall, numbers engaging in whalewatching in Andenes have remained relatively constant in recent years, comparable to the 1998 statistics (Hoyt, 2006, pers com). This may in part be due to Norway's standing in the international community as a country that has long supported whaling. It would seem that whaling has most likely affected the

whalewatching industry's carrying capacity in Norway although this is, again, only anecdotal. If, however, this is the case, then whaling in Norway has rendered the whalewatch industry in that country either economically unsustainable in the long term, or it has at the very least undermined the capacity for whalewatching in Norway to achieve its full potential.

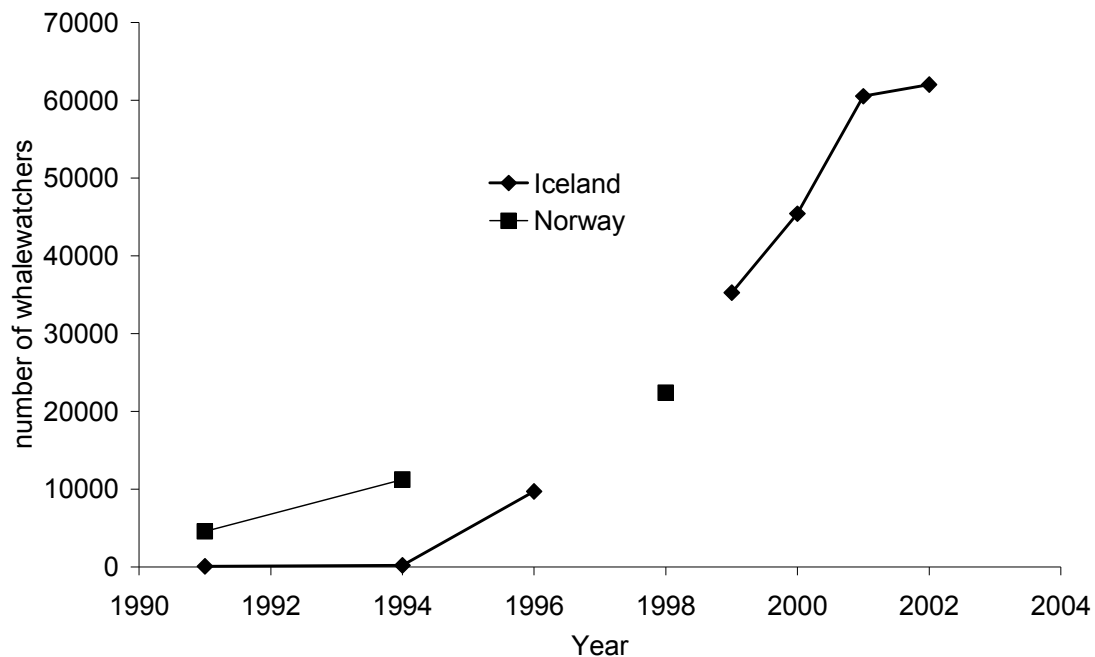


Figure 2. Visitor statistics for whalewatching activities in Norway and Iceland: Numbers compiled from Hoyt 2001 and WWF 2003.

### Conclusion

There exists an urgent clear need to better understand what attracts and repels whalewatchers. Taking the tourism industry into an ecosystem perspective it can be shown that rates of growth and carrying capacity can be affected by extrinsic influences. Knowing who whalewatchers are is critical if the growth and carrying capacity of whalewatching is to be understood, as well as how extrinsic influences including whaling affect the viability and survival of commercial whalewatch operations. Tourism is rapidly becoming a key industry in the economy of many nations (Hoyt, 2001; Parsons et al., 2003). Empirical research is urgently needed to address the various elements of the conceptual framework presented in Figure 1. Until such research is undertaken the affects of whaling on whalewatching, where the two coexist, will remain a subject of pure speculation.

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### References

Duffus, D.A. and Dearden, P. (1990). Non-consumptive wildlife oriented recreation. A conceptual framework. *Biological Conservation* 53:213-231.

Eugenio-Martin, J.L., Thea-Sinclair, M. and Yeoman, I. (2003). *Quantifying the effects of tourism crises: An application to Scotland*. Unpublished paper.

Hinch, T.D. (1998). Ecotourists and indigenous hosts: Diverging views on their relationship with nature. *Current Issues in Tourism* 1(1): 120-124.

Hinch, T.D. (2001) Ecotourism in Indigenous Territories. In D. Weaver (Ed). *The Encyclopedia of Ecotourism*. Oxon, UK: CABI Publishing.

Hoyt, E. 2000. *Whale Watching 2000: Worldwide Tourism Numbers, Expenditures, and Expanding Socioeconomic Benefits*. International Fund for Animal Welfare, Crowborough, UK.

Hoyt, E. (2001). *Whale Watching 2001*. Unpublished report to IFAW and UNEP, London.

Hoyt, E., Hvenegaard, G.T. (2002). A review of whale-watching and whaling with applications for the Caribbean. *Coastal Management* 30: 381-399.

Kind-Keppel, J., Nikolay, A., Muloin, S., Otis, R. (1999). *Whale watchers attitudes towards boats accompanying Killer Whales (Orcinus orca)*. Unpublished Paper Presented at the 1999 Northeast Regional Animal Behaviour Society Annual Meeting, C.W. Post Campus, Long Island University, New York.

Lawson, R., Tidwell, P. et al. (1996) *Consumer Behaviour in Australia and New Zealand*, McGraw-Hill Book Company, Sydney.

Parsons, E.C.M., Warburton, C.A., Woods-Ballard, A., Hughes, A. and Johnston, P. (2003). The value of conserving whales: The impacts of cetacean-based tourism on the economy of rural West Scotland. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 13: 397-415.

Ris, M. 1993. Conflicting cultural values: Whale tourism in Northern Norway. *Arctic* 46(2): 156-163.

Ris, M. 1994. Conflicting cultural values: Whale tourism in Northern Norway. In Freeman, M.M.R. and Kreuter, U.P. (Eds). *Elephants and Whales- Resources for whom?* Gordon and Breach Science Publications, USA.

Rokeach, M. (1968). *Beliefs, attitudes, and values; a theory of organization and change*. Jossey-Bass. San Francisco.

Smestad, T.H. 1997. *Images of whales, whaling and whalers: A rhetorical study of the controversies over Norwegian minke whaling*. Unpublished Master of Arts thesis. University of Oslo, University of Maastricht.

WWF (2003). *Whale watching: A future for whales?* WWF report, June 2003. URL: <http://www.panda.org> (Accessed: 25 April 2006).