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A review of the frameworks developed to manage whalewatching

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Whalewatching¹ was estimated to be worth €1.12 billion worldwide in 1998 and is becoming economically important in many EU countries (Hoyt, 2000). However tourism activities can have a detrimental effect on the behaviour of whales and the long-term sustainability of whalewatching has not been assessed. The scientific management of whalewatching and tourism is extremely limited with few published studies of whalewatching operations (e.g. Corkeron, 1995; Findlay, 1997; Leaper et al. 1997; Berrow & Holmes, 1999) and, despite the economic importance of whalewatching, there have been few socio-economic studies on this industry.

Potential frameworks for sustainable management

Regulations and legislation

A variety of voluntary and legislative measures have been used to manage whalewatching throughout the world. Within Europe, the Habitats Directive is becoming increasingly relevant for managing Whalewatching, however outside of Marine Protected Areas (MPA), additional legislation may have to be considered in order to provide a legal framework for tourism management. The most successful management potential exists where the number of operators and vessels are licensed.

Marine Protected Areas

Marine Protected Areas can play a strategic role in the management of marine environments and may be designated for a variety of reasons (see Kelleher & Kenchington, 1992). Stellwagen Bank National Marine Sanctuary (<http://www.sbnms.nos.org>) was established in 1993 in recognition of its importance for whales, largely determined from work carried out on whalewatching vessels, and the threat of excessive disturbance from the whalewatching industry. Critical habitats such as calving areas, rubbing beaches (for orcas) are often those areas designated no go zones.

In Europe the Habitats Directive requires member states to designate sites (Special Areas of Conservation) for the conservation of specific species (including bottlenose dolphin *Tursiops truncatus* and harbour porpoise *Phocoena phocoena*). Whalewatching in Europe on bottlenose dolphins occurs in the Azores, Canary Islands, Croatia, France, Greece, Ireland, Italy, Portugal and the UK. MPA have also been established in Europe outside the framework of the

¹ defined by the International Whaling Commission as any commercial enterprise which provides for the public to see cetaceans in their natural habitat (IWC, 1994).

Habitats Directive. The Ligurian Sea Sanctuary was established by France, Italy and Monaco in 1999. Although mainly concerned with industrial and fisheries impacts, the MPA will also attempt to regulate whalewatching operations.

Codes of Conduct/Guidelines

Models of best practice including codes of conduct and accreditation schemes are increasingly being promoted for the management of whalewatching. Most countries and communities involved in whalewatching have some regulations including codes of conduct with which whalewatching operators are asked to comply. Often these are voluntary but have legal enforcement in some areas, which may be through local by-laws or within the wider legislation of marine protected areas. Carlson (2000) recently reviewed international whalewatching guidelines, including six countries in Europe (Azores,

Research

Due to the lack of basic information on the ecology of cetaceans and the impact of tourism, research should be an essential element in the sustainable management of whalewatching. Research should not be seen as having a negative impact on whalewatching as Tilt (1985) found that in California whalewatchers were willing to pay more if the tour proceeds went towards whale research or education.

Carrying capacity

The carrying capacity of whales to whalewatching is the ultimate constraint to sustainable whalewatching and all activities should be carried out within it. Unfortunately there is little or no information on the carrying capacity of whales to whalewatching. IFAW (1995) list some biological and population parameters that may be impacted by whalewatching. To assess carrying capacity the most sensitive parameter must be determined and its limits assessed and whalewatching managed to within these constraints.

Education

Similar to ongoing research, education should be an integral part of developing sustainable whalewatching. Information on the species and habitat being exploited should be available to whalewatchers and operators alike. Information on the legislation and codes of conduct etc should be promoted at all opportunities together with the sensitivity and conservation value of the site.

Stakeholder involvement

Increasingly the involvement of stakeholders in resource management is critical to the success of sustainable development. Stakeholders, both state bodies, local authorities and local community groups and private companies should be identified and invited to contribute to the process. Responsibilities and aspirations should be agreed upon and a development plan together with timescales and the resources required to implement plan.

Funding

Sustainable development of whalewatching requires long-term funding commitment. State agencies are unlikely to, and should not necessarily, be expected to fund monitoring of whalewatching activities in the long-term. The "polluter pays

principal” has been applied to industrial development throughout Europe and may be appropriate for the whalewatching industry. A number of studies have shown that willingness to pay (WTP) when based on levies is much higher if the funds are demonstrably used for research and monitoring (Tilt 1985, Orams 2000). It should be considered an operating overhead, similar to boat fuel and insurance. Unless funding is built into the operating costs of the whalewatching industry then it is unlikely that whalewatching can become genuinely sustainable.

Monitoring indices to assess the sustainability of whalewatching

Despite the economic importance and longevity of whalewatching in many parts of the world there is surprisingly no long term monitoring of the whalewatching industry and its effects on cetaceans at any whalewatching location. There have been a number of short-term studies to assess the effect of tour boats and other activities on cetacean behaviour but no ongoing monitoring. There are data being collected as part of other studies, which could be used to address tourism related issues, but they are not designed to assess impact.

Biological monitoring

In order to develop genuinely sustainable whalewatching the effect of tourism activity on the species and habitat being exploited must be quantified and the impact assessed. This information is essential to determine carrying capacity, which is the amount of activity a species or habitat can be subjected to without affecting its long-term viability, and is the biological framework within which whalewatching is constrained. In practice it is extremely difficult to quantify carrying capacity and this has not been achieved at any whalewatching location in the world though some locations are attempting to address this issue (e.g. Shark Bay, Australia). Impacts of whalewatching are likely to be cumulative rather than catastrophic which emphasises a need for long term studies and for cautious interpretation when evaluating disturbance from short term studies (Bejder et al. 1999). In addition present information on baseline parameters is considered insufficient to measure subtle changes in behaviour that may be caused by whalewatching.

Monitoring Visitor Satisfaction

Managing whalewatching is as much about managing people as managing whales (Orams 2000). In order to develop sustainable ecotourism, monitoring people and product satisfaction is also essential, but despite the economic importance of whalewatching there have been few surveys to determine whether or not whalewatching operations are sustainable and even fewer to assess whether the needs of those who will pay to see whales are being met.

Requirements of monitoring programme

A clear indication of the objectives of a monitoring programme is essential as different indices will monitor different aspects of the life-history or habitat of a species. A long-term ongoing monitoring scheme should measure parameters that are sensitive enough to detect change at the appropriate scale. Analysis of these data may act as an early warning that something is changing, which may be an indication that the target species are receiving too much attention, and this should

trigger a dedicated study. IFAW (1995) provide a list of potential biological and operational parameters that could be used to monitor impact. Some parameters will be more useful than others and are species or location specific.

Long term monitoring must also be financially sustainable and thus attempting to monitor population changes through recruitment, mortality or immigration/emmigration is likely to be financially unsustainable (Wilson et al. 1999). Monitoring will be more effective if a regular commitment is maintained over a long period providing extensive reporting, rather than short-term, intensive studies.

References

- Bejder, L. Dawson, S.M. & Harraway, J.A. (1999) Responses by Hector's dolphins to boats and swimmers in Porpoise Bay, New Zealand. *Marine Mammal Science* 15, 738-750.
- Berrow, S.D. & Holmes, B. (1999) Tour boats and dolphins: quantifying the activities of whalewatching boats in the Shannon estuary, Ireland. *Journal of Cetacean Research and Management* 1(2), 199-204.
- Carlson, C. (2000) A review of whale watching guidelines and regulations around the world. International Fund for Animal Welfare. Report to the International Whaling Commission SC52/WW5.
- Findlay, K.P. (1997). Attitudes and expenditures of whale watchers in Hermanus, South Africa. *South African Journal of Wildlife Research* 27(2):57-62.
- Hoyt, E. (2000) *Whale Watching 2000, Worldwide tourism numbers, expenditures and expanding social.* Whale and Dolphin Conservation Society, Bath, UK. 36 pp.
- IFAW, Tethys Research Institute and Europe Conservation (1995). *Report of the Workshop on the Scientific Aspects of Managing Whale Watching, Montecastello di Vibio, Italy.* 40 pp.
- Kelleher, G. & Kenchington, R. (1992) *Guidelines for Establishing Marine Protected Areas. A Marine Conservation and Development Report.* IUCN, Gland, Switzerland, 79pp.
- Leaper, R., Fairburns, R., Gordon, J., Hiby, A., Lovell, P. and Papastavrou, V. (1997). Analysis of data collected from a whalewatching operation to assess the relative abundance and distribution of the minke whale (*Balaenoptera acutorostrata*) around the Isle of Mull, Scotland. *Report of the International Whaling Commission* 47:505-511.
- Orams, M. (2000) Tourists getting close to whale, is it what whale-watching is all about ? *Tourism Management* 21, 561-569.
- Tilt, W. (1985) *Whalewatching in California:survey of knowledge and attitudes.* Yale School of Forestry and Environmental Studies, New Haven, CT, unpublished, 40pp.

For a full version of this paper see:

- Berrow, S . (2003) An assessment of the framework, legislation and monitoring required to develop genuinely sustainable whalewatching. In *Marine Ecotourism: Issues and Experiences.* Eds. Garrod, B and Wilson. J. Channel View Publications. ISBN 1-853150-42-3. pages 66-78.

