WHICH WAY NOW? COMPARISON OF MARINE CODES OF CONDUCT FOR SUSTAINABLE MARINE WILDLIFE TOURISM IN WEST WALES

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Abstract: As a specific area of niche tourism, sustainable marine wildlife tourism has experienced dramatic growth in recent years. This has resulted in a plethora of academic and non-academic literature, exploring and reinforcing good practice. However, little consideration has been given to whether current advice given to those involved in the industry is consistent. The seas around West Wales support an incredibly rich and diverse range of marine species, most notably dolphins, seals and whales. Although a number of voluntary marine codes exist for local boat operators, it is unclear whether these correlate with advice given to operators further afield. Recognising that consistent standards are vital when dealing with migratory species, this paper explores, via a thematic analysis, differences in current marine wildlife tourism codes of conduct between Wales and other countries located along the migratory routes of Minke, Orca and Fin Whales. Results show a proliferation of codes, which has resulted in significant levels of contradiction. This paper will make recommendations about what might improve existing local, national and international codes of conduct for marine wildlife tour operators and critique issues associated with those recommendations.

Keywords: Marine wildlife tourism, niche tourism, codes of conduct, West Wales

1.Introduction

Marine wildlife tourism, primarily involving whale watching has experienced rapid growth in recent years. It can be considered niche tourism due to its reliance on limited and threatened resources. In 2008, the global marine wildlife industry generated approximately $2 billion in revenue and supported 13,000 jobs worldwide (MMC, 2019). In the same year, 13 million tourists participated in marine wildlife activities across 119 countries and 3,300 operators offered marine wildlife trips. In 2008, global ticket sales for marine wildlife trips generated $870 million (direct expenditure), with subsequent indirect expenditure generating $1.2 billion, resulting in total marine wildlife viewing expenditure of $2.1 billion (IFAW, 2009).

The aim of this paper is to explore the differences in marine wildlife tourism between Wales and other countries on the migratory routes of Minke, Orca and Fin Whales, which are the larger species, found off the coast of West Wales and so are of particular interest to local commercial boat operators. The authors will review 22 marine codes of conduct, which relate to operators working specifically along these migratory routes. The guidance also relates to other marine species such as dolphins and seals which are found in the area but which do not migrate. It is therefore important to consider the range of guidance across the entire migratory routes of species, because it is assumed that a consistent approach is more effective in terms of influencing species behaviour and consequential species survival.

2.Literature Review

The International Whaling Commission, the recognized intergovernmental authority on the management of whales as a resource, defines whale watching as “any commercial enterprise which provides for the public to see cetaceans in their natural habitat” (IWC, 1994). However, for the purposes of this study, the authors need to point out that whale watching does not include tourism activities where animals are captive in pools or sea pens.

The most recent study into the global economic value of the marine wildlife tourism sector (Cisneros-Montemayor et al, 2010) suggests that an additional $413 million and 5,700 global jobs could be generated by expansion of the sector into new geographical regions. Expansion could generate revenues in excess of $2.5 billion a year, supporting 19,000 global jobs. These global trends are reflected at local level. Tourism, and in particular coastal tourism, which includes whale watching, is extremely important in Wales. According to the latest report published by Visit Britain (Visit Britain, 2019), 9.02 million people visited Wales, 3.7 million (41%) of whom visited the coast. £719 million was spent at coastal destinations, 44% of total tourism expenditure in Wales. Average spend was £180 per trip, an increase of 0.6% on the previous year. Although these figures are generally positive, the total number of tourists decreased slightly on the previous year, a decline of 3%.

At local level, for example, in St David's, West Wales, where the population is around just 1,500 residents (Stdavids.gov.uk, 2019) there are 5 marine wildlife boat operators (Tripadvisor.co.uk, 2019), offering trips from 1 hour to all day. A typical 2.5-hour trip around Ramsey Island would cost around £60 ($78) for an adult and £30 ($39) for a child (Ramseyisland.co.uk, 2019). Whale watching is the lifeblood of this local community. However, as noted by Inman (2016), whale watching is not licenced in the UK and information about the industry is difficult to obtain. The closest comparison for West Wales comes from a 2015 study based on the West of Scotland (Ryan, 2018). In the study, 22 marine wildlife companies supported 51,200 tourists. £2.3 million of direct revenue was generated directly and £3.7 million indirectly. The activities supported 72 full-time equivalent jobs.

According to Trave et al (2017), sustainability within marine wildlife tourism does not result in chronic or irreversible detrimental changes. Indeed, Trave et al (2017) argue that this form of tourism can produce economic and social benefits. However, other authors have identified negative environmental impacts, particularly for the marine species being viewed. A number of studies have shown that cetaceans exhibit feeding and resting behavioural changes in response to marine traffic (Marino, 2012). These are survival activities which can, if affected, reduce reproduction rates, population sizes and wider ecosystem functioning. In addition, there is substantial evidence to demonstrate physical injury and mortality caused by vessel collisions (New, 2015).

Currently it is still unclear whether wildlife tourism is truly succeeding in achieving its conservation objectives (Trave et al, 2017). Although national and international legislation exists across most of the globe to protect marine species, it is often very generic and does not respond rapidly enough to changing local pressures. Issues have also been highlighted, regarding costs associated with compliance (Greiner et al, 2000) and the important role of self-regulation (Gjerdalen and Williams, 2000; Inman et al, 2016). Consequently, codes of conduct have emerged to provide flexible, low-cost, self-regulated, effective responses to marine wildlife tourism risks (Parsons, 2012). These operate at global, regional, national and local level (WCA, 2019; Inman, 2016). Although research has previously been undertaken into UK Codes of Conduct (Garrod, 2014), it has been 15 years since the last review. Things have changed in that time, particularly around West Wales, which is the focus of this study.

3.Methodology

The authors relied on secondary data sources to provide a comparison of marine codes of conduct for sustainable marine wildlife tourism in West Wales. Firstly, data from three large scale surveys for cetaceans using both aerial and boat-based techniques (Breen, 2016) was used to identify migratory routes of the three cetacean species being considered. These were the Small Cetacean Abundance in the North Sea and Adjacent Waters (SCANS) I and II surveys, carried out in 1994 and 2005 respectively (Hammond et al., 2002 and Hammond et al., 2013)

and the Cetaceans Offshore Distribution and Abundance in the European Atlantic, carried out in 2007 (CODA, 2007 and Hammond et al., 2007). This approach was also used to identify countries located along the migration routes of species concerned. Results from these and subsequent surveys is reported to the EEC via the UK Marine Mammal Research Unit, the Sea Watch Foundation and the JNCC (Joint Nature Conservancy Council). The JNCC provides the most up to date and comprehensive reports via its European Economic Community reporting which is updated every six years. The most recent report was published in 2013 (JNCC, 2013). This will be the main reference source for population numbers and migratory routes, although the authors have supplemented this, where required, by additional data sources.

Secondly, desk research was undertaken using search terms "marine code", "marine code of conduct", "whale-watch code of conduct", "whale watch code", "whale watch guidelines", "marine wildlife guidelines" and "marine wildlife code" in order to identify existing marine codes of conduct. Thematic analysis was then used to identify, categorise and cross-tabulate the 37 most frequently occurring recommendations, as drawn from the literature. With specific regards to tourism research, Hannam and Knox (2005) recognise the value of thematic analysis. In addition, and as noted by Walters (2016), its' most frequent application in tourism research concerns the interpretation of written documents.

Thirdly, and mainly due to the early stage nature of the research, the authors employed a basic quantitative thematic mode analysis via a Microsoft Excel spreadsheet. Results are presented in the next section.

4. Results

4.1 Migratory Routes of Minke, Orca and Fin Whales

4.1.1 Minke Whales (Balaenoptera acutorostrata)

Minke whales are seasonally abundant in the North Atlantic Ocean. They are the most commonly found baleen whales to transit British waters. In winter, they migrate southwards to breed and in summer, migrate northward to the coast of Norway (WWF, 2019). As far as is known, the species transiting off the coast of West Wales migrates between the Barents Sea and the African continental shelf (Risch, 2014). The population is estimated to be around 18,958 (Hammond, 2013 in JNCC, 2013).

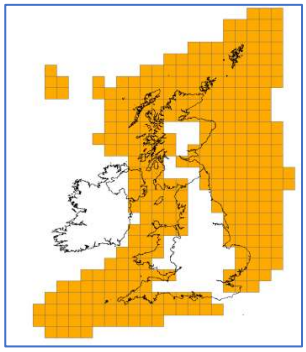

Figure 1: Distribution of Minke Whales around UK Waters. (Source: JNCC (1), 2013).

4.1.2 Orca (Orcinus Orca)

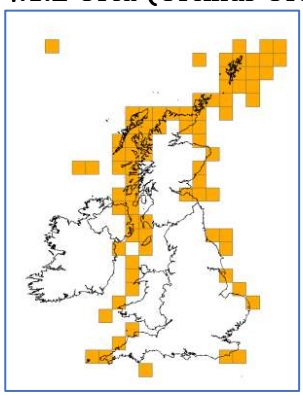

Figure 2: Distribution of Orcas Around the UK (Source: JNCC (2) 2013).

Orcinus Orca/ Killer Whales are found in UK waters throughout the year and come closer to shore between April and October. Group sizes in the UK are typically 6-8, although larger groups have been observed. Populations in the wider Northeast Atlantic are unknown, although there are regional estimates (Forney, 2007). The most recent estimate for the North Atlantic Sightings Surveys area in 2001 was 15,014 individuals (Hammond et al. 2013 in JNCC (2), 2013). Orca whales in UK waters are part of the wider North Atlantic population with known movements of individuals between the UK, Iceland and Norway (Foote, 2011).

4.1.3 Fin Whale (Balaenoptera Physalus)

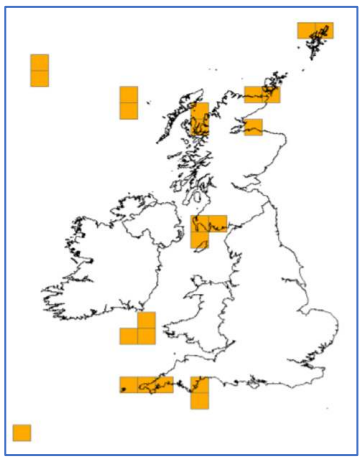

Figure 2. Distribution of Fin Whales in UK Waters (Source JNCC (3), 2013).

Fin whales are the second largest of the baleen whales (Reid, 2003). They can grow to around 20m long and can blow water up to 6m high in the air. They tend to swim alone or in pairs in deep water. For management purposes, UK Fin whales are grouped into the British Isles-Spain-Portugal stock by the International Whaling Commission. This is one of seven stocks. The Cetacean Offshore Distribution and Abundance survey (Hammond, 2007) identified 13,966 Fin whales between the Shetland Channel and the Bay of Biscay in July 2007.

From the analysis of migratory routes of Minke, Orca and Fin Whales, it can be concluded that codes of conduct from Norway, Denmark, Netherlands, Belgium, France, Spain and Portugal (plus England, Scotland, Ireland and Wales) should be considered in this study.

4.2 Codes of Conduct

4.2.1 Numbers of Codes of Conduct

The following section summarises the results of the review of codes of conduct for marine wildlife boat operators working around Norway, Denmark, Netherlands, Belgium, France, Spain, Portugal, England, Scotland, Ireland and Wales. It is organised according to global, regional, national, and local level guidance.
It is noted that ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas) is active but focuses on small cetaceans in the North Atlantic. The UK 2018 Annual report was reviewed, although did not include specific information about codes of conduct (ASCOBANS, 2017).

Table 1 summarises the relevant global, regional, national and local codes of conduct which were considered as part of the study. Many of the national level codes were originally identified via a 2013 study (IWC, 2013). Others were identified through desk-based research which was undertaken between January and May 2019.

Table 1. Relevant Global and Regional Codes of Conduct (n=22)

Global Codes of Conduct
1. World Cetacean Alliance Global Best Practice Guidelines (WCA, 2019)
2. International Whaling Commission (IWC, 1996)
Regional Codes of Conduct
3. Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS, 2016)
4. Association of Arctic Expedition Cruise Operators (AECO, 2017)
National Codes of Conduct
5. Norway National Guidelines for Whale Watching (Nor whale, 2017)
6. French Charter for Responsible Marine Mammal Observation (in French) (Government of France, 2017)
7. Spanish Decree for the Protection of Cetaceans (in Spanish) (Government of Spain, 2008)
8. Spain Canary Islands Whale Watching Regulations (Canaries Government, 2002)
9. Portugal National Guidelines (Government of Portugal, 2006)
10. Iceland National Guidelines (Ice whale, 2015)
National (UK) Codes of Conduct
11. Natural Resources Wales Sea Wise Code (Natural Resources Wales, no date)
12. Natural England and Marine Management Organisation Guidance (Natural England, 2017)
13. Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017)
14. Scottish Wildlife & Adventure Tourism Association Guidance (Scottish Wildlife and Adventure Tourism Association, 2010)
15. Ireland National Guidelines- Marine Notice No 15 of 2005 (Government of Ireland, 2005)
16. Sea Watch Foundation Marine Code of Conduct (Sea Watch Foundation, no date)
17. Whale and Dolphin Conservation (ACCOBAMS, 2008)
18. WISE (WISE, no date)
Local Codes of Conduct within West Wales
19. Pembrokeshire Marine Code (Pembrokeshire Coastal Forum, no date)
20. Ceredigion Marine Code (Ceredigion County Council, 2010)
21. Ceredigion Water Users Marine Code of Conduct (Ceredigion County Council, 2019)
22. Ceredigion County Council- Commercial Passenger Boat Code Prepared for Harbours Operating Within the Cardigan Bay Candidate SAC (Ceredigion County Council, no date)

**Note: Denmark, the Netherlands, Belgium do not have national level marine wildlife codes of conduct.*

Table 1 lists 22 different marine codes of conduct which are relevant to Minke, Orca and Fin whale species migrating along the coast of West Wales. A marine wildlife boat operator in West Wales should ideally adhere to all of these codes, which include 37 different recommendations.

This is obviously impossible, but the point is that the extensive list of codes makes it difficult to know which ones to implement.

The decision about which codes to implement depends on which species are likely to be seen. This in turn, is dependent on which countries are passed during migration. **Table 2** lists the countries along the migratory routes of Minke, Orca and Fin Whales.

Table 2. Migratory Routes of Cetacean Species.

	Minke	**Orca**	**Fin**
1. Iceland		√	
2. Norway	√	√	
3. Denmark	√	√	
4. Netherlands	√		
5. Scotland	√	√	√
6. England	√	√	√
7. Ireland	√	√	√
8. Wales	√	√	√
9. Belgium	√		
10. France	√		√
11. Spain	√		√
12. Portugal	√		
No. Countries	11	7	6

From this we can see that the Minke Whale species migrates past the greatest number of countries (n=11). This is followed by Orcas (n=7) and Fin whales (n=6). Interestingly, population sizes of the three species reflect a similar pattern. Minke whales have the highest populations, followed by Orcas and then Fin whales. This suggests that Minke whales, which have the largest populations, also are subject to the broadest (and most confusing) range of management measures. In addition to the national level codes listed above, there are a broad range of global, regional and local level measures, which only adds to the complexity.

A detailed analysis of specific recommendations within each code of conduct was undertaken. From this, the researcher was able to identify which recommendations were consistent and which ones were contradictory. The following section summarises the findings.

4.2.2 Frequently Cited Recommendations

A total of 37 different recommendations were identified from the 22 codes of conduct. In order of frequency, the most commonly cited recommendations related to: direction of approach, group division, chasing, feeding, juvenile avoidance, and swimming with cetaceans. **Table 3** shows the most frequently cited recommendations. This includes all recommendations cited by 10 or more codes of conduct.

Table 3. Most Frequently Cited Recommendations

Number of codes recommending the measure (n=22)	Recommendation
17	No person or boat shall cause any cetacean to become separated from a group.
16	No person shall use motorised swimming aids for cetacean watching.
15	If a cetacean shows avoidance behaviour, it must not be pursued.
13	Do not swim with cetaceans.
13	Extra caution needs to be taken by the operator when calves are present.
13	Cetaceans should always be approached from the side and slightly behind, with the boat moving in parallel.
12	No deliberate chasing of cetaceans.
12	No person shall make excessive loud, disturbing or continuous noise.
12	Do not touch cetaceans.
11	Operators should not enter restricted zones or areas protected from boats or swimmers as designated by local, national, or international law, conventions or agreements.
11	Cetaceans always have right of way.
10	If cetaceans bow-ride alongside the boat, the boat should remain at a constant speed with no sudden changes in direction.

In summary, it can be concluded that the most frequently cited consistent recommendations were that cetaceans should not be divided (n=17), that motorized vehicles should not be used (n=16) and that there should be no pursuit (n=15).

4.2.3 Contradictory Recommendations

In contrast, a broad range of guidance was given regarding vessel speeds, minimum approach distances, stay time and maximum number of vessels. **Tables** 4, 5, 6 and 7 demonstrate the range of advice given.

Table 4. Vessel Distance and Speed

Code of Conduct	Recommendation
Sea Watch UK	1000m, 10 knots
WISE UK	1000m, 6 knots
Portugal	300m, 3 knots
France	300m, 4 knots
Arctic	300m, 5 knots
NRW	300m, 6 knots
SMWWC	300m, 6 knots
Iceland	300m, 8mph (7 knots)
Ceredigion Marine Code	300m, min speed
World Cetacean Alliance	300m, no wake speed
Pembrokeshire Marine Code	within eyesight, 5 knots

**Note: other codes either agreed with the World Cetacean Alliance recommendation or did not mention it.*

Recommended vessel distance/ speed ranged greatly. **Table 4** shows how there were ten variations of the advice, which ranged from 10 knots at 1000m to no wake speed at 300m.

Table 5. Minimum Approach Distance

Portugal	30m
Arctic	50m
Spain	60m
Canary Islands	60m
WCA	Boats should not approach a whale closer than 100 metres and should not approach a dolphin or porpoise closer than 50 metres.
SWATA	"too close"
Ceredigion	100m dolphins
Cardigan Bay SAC	100m of all marine mammals

**Note: other codes either agreed with the World Cetacean Alliance recommendation or did not mention it.*

Table 5 shows that there were seven different pieces of advice given to boat operators about minimum approach distance. These ranged from 30m to 100m.

Table 6. Maximum Stay Time

WISE	15 minutes
NRW	15 minutes
Natural England MMO	15 minutes
SWATA	15 minutes
Ceredigion	15 minutes
Sea Watch	20 minutes
Iceland	20 minutes
WCA	If the number of boats within 300 metres of a cetacean remains three or less, viewing time should be kept to a maximum of 30 minutes per boat.
SMWWC	30 mins 1 boat, 15 minutes +1 boat
Ireland	30 minutes
France	45 minutes

**Note: other codes either agreed with the World Cetacean Alliance recommendation or did not mention it.*

Table 6 shows that there were six different pieces of advice given to boat operators about maximum stay time. These ranged from 15 to 45 minutes.

Table 7. Maximum Number of Boats

NW Europe and WDC	1 boat
Norway	2 boats max within 100m
SMWWC	2 boats
Sea Watch	2 boats within 1km
WISE	2 boats within 1km, 1 boat close proximity
WCA	No more than three boats should be between 300 metres and the minimum approach distance of a cetacean at any one time.
Portugal	3 vessels, 100m
Canary Islands	3 vessels, 200m
France	5 boats
Ceredigion	"avoid bunching"

**Note: other codes either agreed with the World Cetacean Alliance recommendation or did not mention it.*

Of all the recommendations, those relating to numbers of boats was most confusing. **Table 7** shows that there were ten different pieces of advice given to boat operators about the maximum number of boats. These ranged from 1 to 5. Of all the recommendations being considered, this one is likely to cause the most obvious impacts.

5. Discussion and Conclusions

This research has shown that there are a large number of codes of conduct and an extensive range of recommendations relevant to Minke, Orca and Fin whales migrating along the West Wales coast. Some of the recommendations are consistent, but a large number are not. At best this is confusing, at worst it could be fatal, directly threatening the sustainability of the niche tourism sector. This research has demonstrated that there is a need to standardise global, regional, national and local advice about vessel speeds, minimum approach distances, stay time and maximum numbers of vessels, as well as to reduce the number of recommendations.

It is recognised that things are rarely that simple and that a number of issues are associated with these recommendations. Firstly, it is highly likely that there will be economic, social or environmental interests which take priority in some countries but not others. This could make global agreement very difficult. Secondly, although commercial boat operators might be generally aware of guidelines, detailed knowledge or appreciation of the importance of implementation may be lacking. Accredited training schemes, operating at global scale have an important role to play here, although funding sources are as yet, unidentified. Thirdly, policing of the marine environment is notoriously difficult. There will always be those individuals that flout the codes for personal or commercial reasons and codes need to be flexible enough to provide local solutions (IWC, 2018). Boat operators could be involved in policing, although this would require a formal reporting and response system.

Finally, it is recognized that standardization and streamlining of codes, training and policing of commercial boat operations are not enough. The issue is wider than that, in that recreational boaters are also involved. Awareness raising through education is key to reaching this group, although even with this in place, persuasion can be challenging. A number of reports (E.g. Cressey, 2014; Walker, 2017; Walker, 2018) have suggested that voluntary codes should be reinforced via clear links to statutory measures with properly funded monitoring and enforcement capabilities. This could provide the stiff backbone required. Despite with these shortcomings, the codes have a vital role to play in reducing the cumulative impact of whale-watching. Conclusions are clear. We do not need more codes, but we do need simplicity and consistency. We need to raise awareness of their existence and we need to persuade commercial and recreational boat operators to use them.

The work undertaken here provides an initial insight into the status of marine wildlife codes of conduct that are particularly relevant for boat operators targeting Minke, Orca and Fin whale species along the coast of West Wales. As with all research, it is not without its' weaknesses. The research was fairly simplistic and relied on subjective interpretation of a small sample size. Some codes of conduct were quite dated, therefore might no longer be applied and some were in languages other than English, therefore could have been mis-interpreted. It is possible that codes were not available online, and therefore could have been missed.

Even taking all these shortcomings into account, it is clear that there are too many codes of conduct, that they contradict one another and that recreational boat operators are excluded. This niche tourism sector is under threat. Policy work around standardization and streamlining would be the obvious next step, but in the meantime, further research is required to further analyse these findings and explore factors that might influence adoption of codes.

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