



**REPORT
OF THE ECS-ASCOBANS WORKSHOP ON
RECREATIONAL ACTIVITIES AND THEIR IMPACT ON
CETACEANS**



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This report is available on the workshop page: <https://www.ascobans.org/en/meeting/ecs-ascobans-workshop-recreational-activities-and-their-impact-cetaceans>

Opening of the Workshop

Jenny Renell (ASCOBANS Secretariat) welcomed everyone to the half-day workshop, along with the Co-Chairs Peter Evans (Sea Watch Foundation & Bangor University) and Mark Simmonds (OceanCare & Bristol University). A tour-de-table introductions took place, and the Co-Chairs introduced the aims of the workshop, which were to provide a platform to review and gather information about the status and impacts of marine recreational activities across Europe.

Recreational Activities and Their Potential Impacts on Cetaceans (by Peter Evans)

Recreational activities that can impact cetaceans (and seals) involve two main groups: those that run commercial trips targeting marine wildlife, and the general public who go out on vessels of different types for water sports and other forms of outdoor recreation. Both of these activities have been rapidly increasing in Europe. Whale and dolphin watching started in Europe in the mid to late 1980s and since then, the numbers involved have increased greatly with the last published estimates (in 2011) indicating over half a million persons/year taking part in mainland Europe and more than a million in the Atlantic Islands, particularly the Canaries. Other recreational activities, particularly involving personal watercraft (powerboats, RIBs, jet skis, kayaks etc.) have also multiplied within the coastal zone of many regions of Europe posing potential risk of disturbance and physical injury to many species of marine wildlife.

Two cetacean species that tend to frequent coastal waters and, therefore, come into regular contact with recreational activities are the bottlenose dolphin and harbour porpoise. The former has been studied best with a wide range of both short-term and long-term responses observed. These include changes in behaviour (movement away, longer dives, increased swim speeds, changes in whistle frequencies and group clustering), in the case of short-term responses, to longer-term effects such as emigration from the affected area, population declines, and disruption of association patterns. All of these impacts have been observed within the semi-resident coastal population of bottlenose dolphins inhabiting Cardigan Bay in West Wales. There is a significant inverse relationship between motorboat densities in Cardigan Bay and mean bottlenose dolphin densities, cases of injuries to a number of dolphin individuals, and even calf mortality with evidence of physical trauma.

In the Special Area of Conservation in southern Cardigan Bay, a voluntary code of conduct has been in place for many years. This is where the main commercial wildlife trip operators are based. Compliance with the code is high amongst the trip operators whereas it is much lower in recreational speed craft. Dolphin negative responses are greatest with speed boats and kayaks whilst they are least with sail boats and fishing boats. In northern Cardigan Bay, a voluntary code of conduct was introduced only recently. This is an area with high activity of personal watercrafts, and many cases of disturbance through non-compliance with the code of conduct. Raising public awareness and education are keys to successful reduction in disturbance from recreational activities. However, this is particularly challenging when many of the marine users come from outside the region, stay for only short periods, and, in some cases, launch their crafts independently. Speed is the major issue, and acoustic studies have determined that a bottlenose dolphin would only hear a jet ski, for example, when it was less than 500 metres from it. Given the speed and typically erratic nature of jet ski travel, this may pose a serious threat to marine wildlife.

There are far fewer studies of the impacts of vessel disturbance upon harbour porpoises. In Shetland, negative reactions (mainly movements away and changes in surfacing rates) were observed at distances exceeding 1 km in the case of a large ferry under power, whereas speed boats (mainly RIBs) elicited a response only when vessels were about 300 metres away. However, there was also a seasonal change in behaviour by porpoises with significantly greater tolerance and even movements towards vessels in August and September compared with May and June. There was also a much higher frequency of negative reactions from solitary porpoises and mother-calf pairs compared with groups of animals. These behavioural changes were believed to reflect increased social behaviour as well as habituation to local boats that were seasonally resident in the area.

Video studies and theodolite tracking of porpoises around a foraging hotspot (a tidally energetic area of water around a headland in north Anglesey, Wales) experiencing high levels of recreational activity found lower numbers of porpoises in the presence of motorised vessels compared with non-motorised ones, and a negative relationship between porpoise numbers and the number of vessels within 5 km. Behavioural changes include shorter surfacing rates, particularly in the presence of speed craft compared with non-speed craft and no vessels at all. Feeding declined from 82% to 58% in the presence of vessel activity whilst avoidance increased from 1.8% to 12.9%. Theodolite tracking demonstrated the marked change in swimming behaviour in the presence of a speed craft.

Studies in Denmark have shown that porpoises held in an outdoor pen open to the natural flow of seawater are sensitive to high frequency vessel noise, whilst D-tags attached to free-swimming porpoises in the Belt Seas showed marked changes in diving and foraging behaviour in the presence of a fast ferry.

Observing a number of simple rules of conduct can markedly reduce the possibility of disturbance to cetaceans: avoid fast approaches to animals; do not steer directly at them, instead approach cautiously from behind and to one side, gradually getting closer to no more than 200 metres, allowing animals to come to the vessel if they desired. If animals are not receptive to such an approach, perhaps because they are foraging (detected by a change in their behaviour and movement away), leave them alone as disturbance is more likely. Avoid close approach to cetaceans with young as they are more vulnerable to physical injury. Ensure cetaceans have an escape route, and limit the number of vessels within close proximity.

There is a need for countries to tighten up on regulations limiting disturbance, starting with strong education and awareness outreach programmes, but backed up by legal enforcement of codes of conduct, with emphasis upon identifying cases of persistent harassment through reckless behaviour.

During the discussion it was highlighted that one of the key problems with personal watercraft / jet skis is that they surprise the animals by appearing suddenly and without warning.

Case Study: Recreational Disturbance to Dolphins in Southwest England (by Simon Ingram)

Coastal bottlenose dolphins form small, vulnerable communities distinct from pelagic populations. They inhabit shallow coastal waters (<50m depth) with limited ranges. The English Channel hosts four separate, genetically and socially distinct coastal communities, showing no evidence of intermixing. The Gulf of St Malo supports the largest population in the northeast Atlantic, with three other communities: two near the northwest tip of Brittany and one along England's south coast. Human activities, including recreational boating, fishing, and pollution, increasingly threaten these populations.

Research shows significant declines in sightings since the 1990s, prompting the formation of the South Coast Bottlenose Dolphin Consortium in 2016. This collaborative effort between various stakeholders within the region integrates citizen science with over 7,400 sightings recorded from 2007-2020, emphasizing public engagement in monitoring efforts. However, Bayesian modeling estimates a small population of 48 individuals, with an imbalanced age structure dominated by adults (96.85%) and few juveniles and calves, raising concerns about reproduction and population sustainability.

Recreational activities pose significant risk, including disturbance from boats and eco-tourism. A combination of direct and indirect human-induced pressures, such as noise pollution, prey depletion, and chemical contamination, can lead to a decline in coastal marine mammal populations. Evidence of the Allee effect, where low population genetic diversity exacerbates declines, underscores the fragility of these small discrete dolphin populations. Comparisons with other global populations reveal similar issues but highlight the South Coast's serious reproductive challenges, with a low crude birth rate (0.034).

In summary, multiple lines of evidence identify a distinct coastal ecotype of bottlenose dolphins, which is ecologically and socially separate from pelagic populations. The animals in these coastal groups are direct descendants of their founders, often leading to genetically distinct local populations. Coastal bottlenose dolphin populations are significantly impacted by human activities and as a result are particularly vulnerable to local extinction. Any loss of calves, breeding females, or disturbances has an amplified effect on these small populations, further threatening their survival. Evidence indicates that the South Coast of England population of bottlenose dolphins is in decline, highlighting the urgent need for targeted conservation measures to address these challenges.

There was a brief discussion regarding solitary sociable dolphins. Their solitariness is unlikely to be caused by disturbance, but they may interact with leisure craft. It was noted that their reliance on interactions with humans is usually instigated and enabled by people¹.

Marine Mammal Disturbance: Challenges, Recommendations & Solutions (by Katie Dyke)

Ms Dyke gave a brief introduction to cetacean disturbance in Scotland. She explained that there are several different issues affecting the management of the issue. She drew on personal experiences of witnessed disturbances on the ground as part of her role as WDC Shorewatch coordinator and lessons learned from supporting a large group of citizen scientists when witnessing ongoing issues.

Ms Dyke looked at case studies within Scotland, highlighting the issues and challenges faced and offering recommendations and solutions.

Challenges discussed included:

- UK wildlife watching codes work when recommendations are followed but issues arise when operators do not follow recommendations as the codes have no legal weight.
- UK legal definition of disturbance is difficult to evidence.
- There are long wait times on '101' calls and call handlers can be dismissive of the incident, leading to reporter fatigue.
- Failure within the internal police reporting system, leading to a misrepresentation of the scale of the issue.
- A lack of awareness from the public of their impact when interacting with cetaceans on the water.
- The required behavioural change takes a long time delivering the same message.

Solutions / Recommendations:

- Working closely with Police Scotland on reporting crimes, increasing data collection, providing evidence and showing hot spots, as well as creating resources to help educate members of the public.
- Creation of a nationwide data collection programme recording disturbance cases utilising citizen scientists and creating strong partnerships with Police Scotland with a direct link to share this data, allowing for better surveillance and understanding of the issue.
- Development of joint approaches to education and awareness raising – police, other NGOs and other organisations.
- Pushing governments and communities to support licencing of tour boat operators.
- Marine wildlife crimes to become notifiable offences across the UK (already achieved in Scotland) and for the NWCUC (National Wildlife Crime Unit) to have marine mammal crime regarded as priority species.

¹ More information about them can be found in Nunny & Simmonds, 2019 Front. Vet. Sci. 5:331.

The Welfare Implications of Recreational Boating (by Laetitia Nunny and Mark Simmonds)

Ms Nunny gave a brief introduction to animal welfare. She explained that there are a number of different approaches including considering how an animal copes with its environment, if its needs and wants are being met, and whether or not it is living a “natural” life. She highlighted that animal welfare focuses on the individual animal and not on the population or species. She shared some statements from a paper by Mellor (2016: *Animals* 6(3): 21):

- “Animal welfare is a state that is subjectively experienced by an animal; it is a state within the animal.”
- “An animal’s welfare status at any one time may vary on a continuum from very bad to very good.”

It is our responsibility to consider how our activities have an impact on wild animal welfare. The impacts of the physical presence of recreational vessels, their speed and the noise they produce were considered in terms of how they could potentially impact cetacean welfare:

- Scaring the animals, causing them to be driven, strandings
- Impacting behaviour e.g. disturbing foraging, resting etc.
- Excluding animals from habitat
- Interfering with communication (disrupting society, separating mothers and calves)
- Separating mother/calf which could lead to starvation (calf) and grief (mother)
- Boat strikes, injuries, wounds (potential for infection)
- Stress (acute and/or chronic)

Ms Nunny went on to describe the Five Domains Model as a way to assess animal welfare (see Mellor et al., 2020: *Animals* 10(10): 1870) and Mr Simmonds explained how this has been adapted for cetaceans (see Nicol et al., 2020: *Frontiers in Veterinary Science* 7: 57). To apply the welfare assessment tool for wild cetaceans (WATWC) a panel of experts is invited to consider an issue potentially impacting cetaceans. It has been used to consider the impacts of human activity on Southern Resident killer whales (Nicol et al., 2020) and ship strikes (Rae et al., 2023: *Animal Welfare* 32: e18).

Impact of recreational boats on cetaceans in the Mediterranean Sea – a case study from the northern Adriatic (by Tilen Genov)

Mr Genov presented information on the impact of recreational boats on cetaceans in the Mediterranean Sea, with a particular focus on a case study from the northern Adriatic Sea. The Gulf of Trieste in the northern Adriatic hosts a resident population of about 150 bottlenose dolphins, which has been studied since 2002 and is now relatively well known. However, this area is also one of the most human impacted areas in the Mediterranean Sea.

A number of human activities represent a threat to local biodiversity, including dolphins. These include commercial fishing, aquaculture, shipping, recreational boating, urbanization, etc. The area is one of the main European shipping routes, but is also a highly popular tourist destination during summer months, leading to increased recreational boat traffic. This presents a number of potential and actual challenges to resident dolphins, including acoustic masking, disturbance and potential injuries and death from collisions.

Disturbance occurs through a number of mechanisms, including boats that attempt to approach animals in a responsible manner, those that attempt to approach them in a less responsible manner, and even those that do not see the animals and merely speed through the area where the animals are located. Even though there is no directed dolphin-watching in the area, the number of recreational boats alone means that animals are exposed to boat traffic on a regular basis. This is also a problem within marine protected areas. Injuries potentially related to collisions have been documented in the area. Underwater noise monitoring has shown that noise levels increase substantially during summer months, due to increased traffic.

The speaker emphasized the following key considerations: i) better compliance with existing regulation is needed, ii) reducing speed can be important in mitigating negative effects, iii) marine protected areas have the potential to help, but need to be sufficiently large and appropriately enforced, iv) public awareness can and does help in reducing the negative effects of boat traffic on dolphins, v) cumulative effects need to be considered, and vi) researchers need to also consider their own impacts on the study animals.

There was some discussion about how to deal with people who are disturbing wildlife. Signalling them to slow down can help. Cetacean researchers may appear to have authority because of their cameras and if they have "research" written on the boat. Cetacean researchers can train local rangers and work with the local community.

Potential reasons for increased disturbance were considered including social media and that recreational vessels are more affordable these days. A lack of resources prevents authorities from monitoring the situation at sea.

Discussion

Ideas that came from the leisure craft discussion at the end of the workshop:

- National nautical licensing requirements should include clear information about how to behave around cetaceans and other wildlife and where there is an exam involved in the licensing process, people's understanding of this aspect should be tested;
- Fast moving leisure craft should be excluded from areas where cetaceans are known to carry out key behaviours such as resting and foraging;
- Mooring permissions might be linked with agreement to follow appropriate local guidelines/code;
- Pointing a telephoto lens can warn people that their bad behaviour is being watched;
- Messaging needs to be understandable to all;
- Given the language differences between countries, the development of clear visuals as warnings was advocated;
- Partnerships with jet ski clubs may be helpful (examples were given of this);
- Drones might be used for scrutiny (so long as they themselves do not cause disturbance);
- Remote monitoring;
- Communicate, communicate, communicate;
- Clear messaging is essential and hence it is important not to have competing and potentially clashing codes of conduct;
- Echosounders should be considered as a source of disturbance and so boaters should be encouraged to shut them off when not essential. Many modern boats have echosounders on all the time. There is a campaign in Sweden to turn them off if not needed;
- Arguments can, and should, be developed about the cruelty involved in bad boat behaviour around the animals;
- Developing the ability to loudly whistle and dramatically eye roll was also noted as helpful in some circumstances;
- Work with other stakeholders including local police and coastguards;
- Awareness raising is essential. Trying new methods, e.g. high school children giving talks to tourists.

Some additional Hot Spots of potential conflict that were identified:

- Pelagos Sanctuary
- Egypt
- The Belt Sea
- Southern Portugal/The Algarve
- The Lisbon Coast / Tagus River estuary
- Red Sea on the Saudi Side

Other points that were discussed:

- Do individuals/populations learn to avoid boats? Do mothers teach this to their calves?
- Bottlenose dolphins sometimes behave differently around boats that they know compared to boats they do not know.
- How to interpret cetacean behaviours. We need to know if they are being disturbed.
- It is important to consider cumulative effects for the animals experiencing lots of encounters day in day out. People only think about their own encounter and, therefore, do not think there is a problem for the animals.
- Intentional and unintentional encounters are different. If intentional, there should be a time limit. If the encounters are throughout the day, impacts might be worse.
- Wildlife police/officers exist in some countries but by no means everywhere.
- Sometimes people on recreational vessels do not see the animals. More people needed to be more aware of what they are doing and what wildlife could be in the vicinity.

Conclusion

In concluding the workshop, the Co-Chairs suggested that participants all share ideas, and that they would attempt to work out a forum to do this. The URL of the Marine Animal Rescue Coalition² would be circulated for inspiration.

Close of the Workshop

The workshop closed on Tuesday 9 April 2024 at 18:03 CEST.

² <https://marineanimalrescuecoalition.org/documents/resources/>

Annex: List of Participants

Last name	First name
Affatati	Alice
Airoldi	Sabina
Allen	Austin
Bakkers	Sanne
Cervin	Linnea
Collet	Lina
Destremau	Chloe
Di-Méglio	Nathalie
Eloi	Delphine
Erber	Claudia
Evans	Peter
González-Campos Más	Sandra
Harker	Jaz
Jarvis	Dan
Knight	Alan
Martin	Emily
McIvor	Ashlie
Nunny	Laetitia
Oehen	Sylvan
Pelletegeas	Guillaume
Quirin	Alicia
Ravignani	Andrea
Renell	Jenny
Rolim	Margarida
Shearer	Jeanne
Simmonds	Mark
Simmons	Gem
Soares	Logan
Sokcic	Nikolina
Stedt	Johanna
Steel	Emma
Tregenza	Nick
Vallejo	Ann Carole
Vitoria	Yaiza
Westra	Bas
Zimme	Walter