



# Potential effects of whale watching on common dolphins in the South coast of mainland Portugal

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## Introduction:

Since the 1950s, the whale watching industry has been growing all around the world. This business not only brings several economic benefits but it can also be a good tool for scientific research on cetaceans (Hoyt, 2011), despite the threats it might pose to target species. The south coast of Portugal is one of the main whale-watching spots in the country. Presently, there are 20 licensed whale-watching companies, and 35 vessels operating in this area (ICNF, 2013). With the activity's development the question is "Can this industry affect the target species?". Common dolphins, *Delphinus delphis*, were used to verify if whale-watching vessels affected the immediate response of the animals.



Figure 1. An adult and a calf of common dolphin in Portuguese waters.

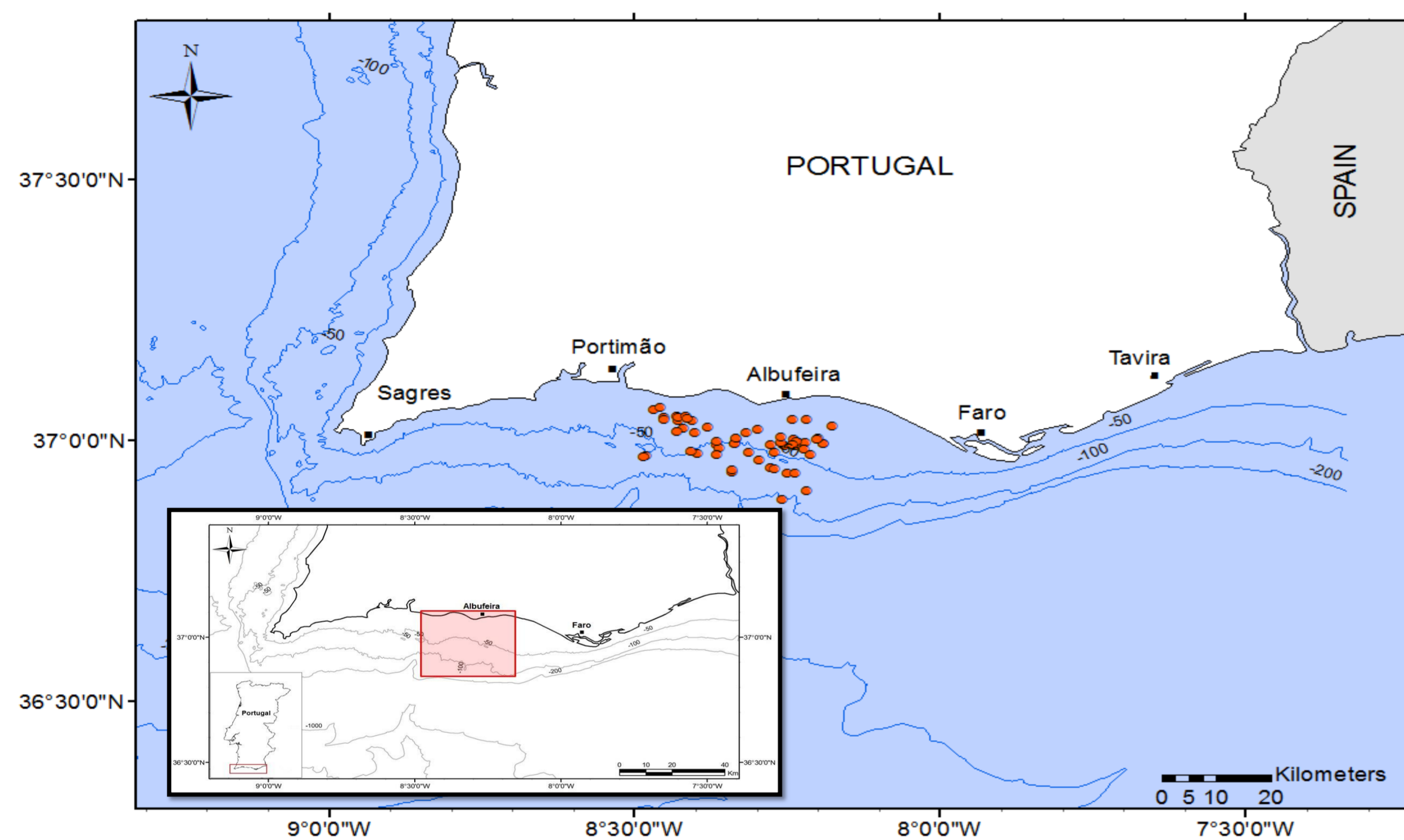


Figure 2. Common dolphin sightings within the study area in the south coast of Portugal

## Results:

When less than 3 vessels were present in the encounter, most groups of dolphins approached them. When 1 or 2 vessels were present 46,3% and 44,2% of the groups approached them, respectively. When three or more vessels were present, the immediate response more often exhibited by the dolphins was evasion (45,5% of the groups for 3 vessels, and 54,7% for more than 3 vessels) (Figure 3). It was also possible to verify that most commonly (30,6%) more than 3 vessels were inside the approach zone.

## Discussion:

Portugal is one of the few countries that legally protects cetaceans from a wrong and boundless whale-watching activity (Decreto-Lei nº 9/2006 de 6 de Janeiro de 2006). The Portuguese law interdicts more than three platforms in the approach zone. As shown above, the percentage of encounters with more than three boats is high and the dolphins avoided more often the whale watching vessels in this occasions, which means there is a lack of enforcement in the south coast of Portugal. With whale-watching development it is important to alert the operators for this issue, and to have a better management and enforcement by the appropriate authorities in this area.

## References:

- Hoyt, E. (2001). *Whale-watching 2001 worldwide tourism and expanding socioeconomic benefits*.  
 ICNF (2013). *Empresas autorizadas a realizar operações turísticas de observações de cetáceos em águas de Portugal Continental (Decreto-Lei n.º 9/06, de 6 de Janeiro)* [online] Available from: <http://www.icnf.pt/portal/turnatur/ativ/resource/doc/empr-cetaceos> [Accessed: February 27<sup>th</sup> 2014]

## Methods:

Whale watching boats were used as opportunistic platforms to carry out surveys in July 2013, corresponding to a total of 100 hours of effort and 33 encounters with common dolphins. The number of vessels present in the approach zone and the immediate response of the dolphins to whale-watching vessels were recorded. Each time one of these variables changed, a new moment was described. The approach zone was considered to be the circle within 100 meters radius around the group of animals.

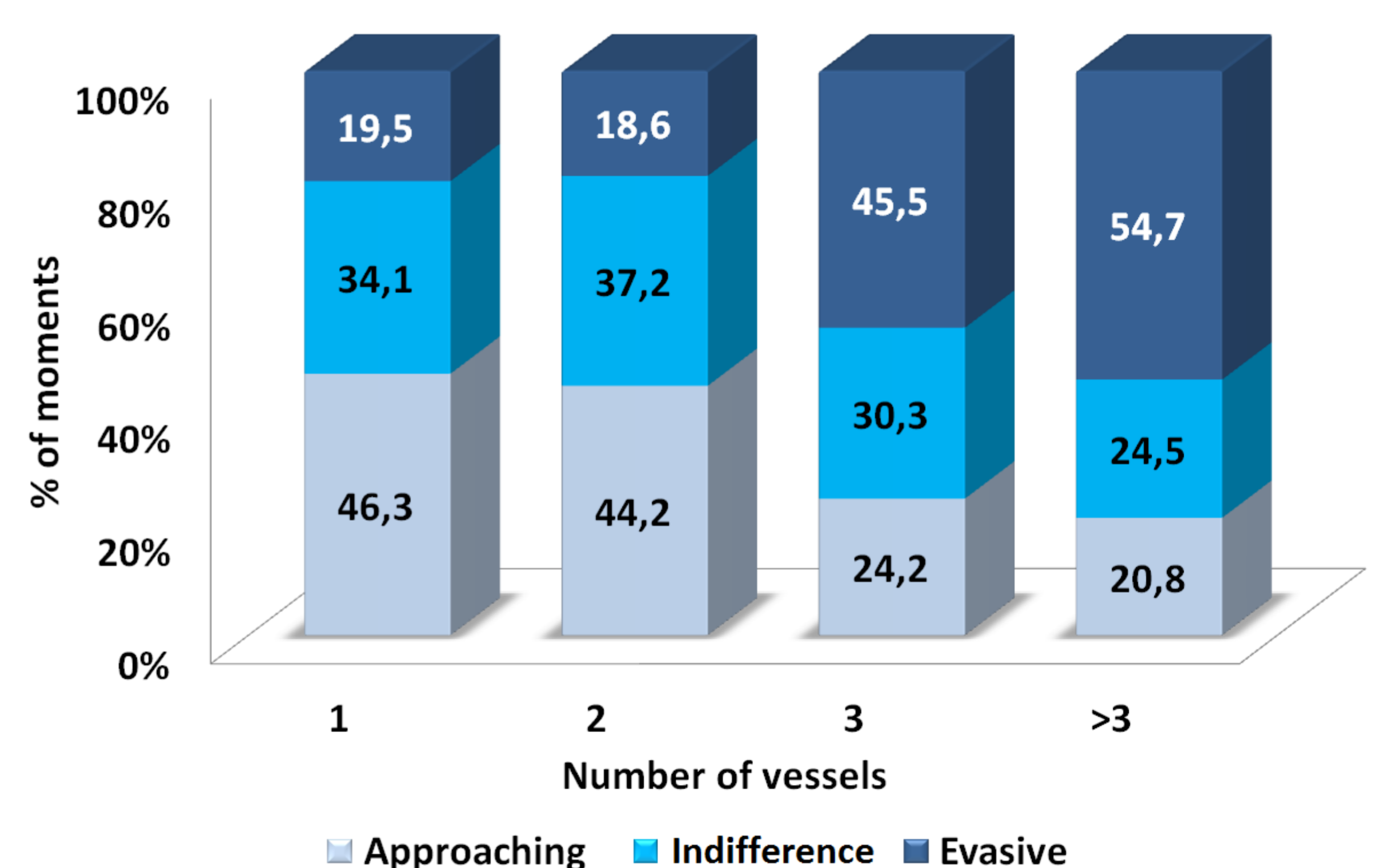


Figure 3. Percentage of immediate responses according to the number of vessels in the approach zone.

## Acknowledgments:

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