

### 6.10.1 CASE STUDY: A SHARED GOAL FOR BRYDE'S WHALES

Given the extremely small size of the Bryde's whale population in New Zealand, an average of one fatality per year from ship strike is a very serious concern for the sustainability of the population. In response, a Bryde's whale working group was formed in 2011 to discuss ways of reducing the number of ship-whale collisions in the Hauraki Gulf. The working group consisted of a mix of interested parties including Auckland University researchers, DOC, the Environmental Defence Society, Ports of Auckland, the shipping industry, local iwi and the Hauraki Gulf Forum. The group has worked toward understanding why Bryde's whales are so susceptible to ship strikes and developing methods to minimise collisions between ships and whales.

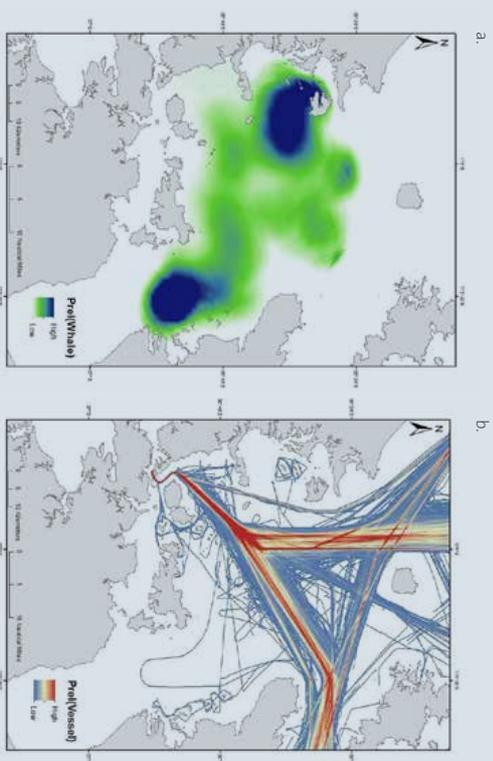
Research showed that shipping lanes cut across areas frequently utilised by whales and there is no evidence that they avoid approaching ships. Unlike many other whales, Bryde's whales spend more than 90% of their time in shallow surface waters (<12 m deep), which increases their risk of being hit. The whales appear to spend most of their day feeding on krill, other plankton, and small fishes, whereas they spend the majority of the night resting nearer the surface. The behaviour of Bryde's whales therefore makes them highly vulnerable to ship strikes, particularly at night when they are on the surface and may be slower to react.

A number of options have been, or are being explored to try and minimise the risk of ship strikes including:

1. **Trying to identify "safe" shipping lanes that avoided areas that were most frequently used by Bryde's whales.** Data on individual commercial shipping routes<sup>15</sup> were overlaid on the distribution of Bryde's whale sightings<sup>16</sup> in the inner Hauraki Gulf to try and determine whether shipping lanes could be established that avoided the areas predominantly used by Bryde's whales. However, it was found that there was a broad overlap between whale distribution and vessel traffic (Figure 6-43), and therefore, no "safe" shipping lanes could be recommended (Riekkola 2013).
2. **Using acoustic detectors to warn ships when Bryde's whales are nearby.** Acoustic detectors that pick up whale vocalisations have been successfully used overseas to provide warnings to ships when whales are nearby (Lippsett 2009). However, Bryde's whales were found to rarely vocalise, and therefore, acoustic detectors would be of limited use for detecting Bryde's whales (Constantine et al. 2012).
3. **Lowering the average speed of commercial ships in the inner Gulf. Currently, commercial shipping vessels travel through the Hauraki Gulf at an average speed of 13 knots.** Based on international research, lowering the speed to a maximum of 10 knots is estimated to reduce the probability of a lethal ship strike from 5% to 16% (Riekkola, 2013). The commercial shipping industry has roughly estimated that lowering the speed limit to 10 knots would cost the industry around \$5–8 million per annum (R. Constantine, Auckland University, pers. comm.). However, given the large reduction in the likelihood of a ship strike if shipping speeds are lowered, the shipping industry and Ports of Auckland have recently agreed upon a voluntary protocol to minimise ship-whale collisions (Ports of Auckland 2013a). The main points of the protocol are:
  - a. reduce speed in the Hauraki Gulf to 10 knots whenever possible,
  - b. stick to the recommended shipping routes to minimise the area covered by ships,
  - c. keep a watch out for whales when in the Hauraki Gulf during the day,
  - d. report all whale sightings to harbour control,
  - e. slow down if a whale is spotted and do not pass less than 1 km from a whale.

Shipping companies are also provided with report cards designed to encourage awareness and compliance with the voluntary protocol. The report cards are provided by the International Fund for Animal Welfare and contain details on ship speed through the Hauraki Gulf, the percentage of time a ship is above the voluntary speed limit, and additional travel time required if a ship stayed within the speed limit.

It is hoped that the voluntary protocol will reduce the number of whale-ship collisions in the Hauraki Gulf in future years.



**Figure 6-43** Relative probability of observing a) a Bryde's whale and, b) a vessel (>70m) in the Hauraki Gulf during July 2012–June 2013 (from Riekkola, 2013). Note that while a) shows two hotspots in whale distribution in the Hauraki Gulf for 2012–2013, the location of hotspots varies from year to year.

<sup>15</sup> Automatic Identification System Vessel data provided by Kordia Ltd.

<sup>16</sup> Mainly provided by commercial whale-watch companies.