

Supplementary material for

Distribution patterns of east Australian humpback whales (*Megaptera novaeangliae*) in Hervey Bay, Queensland: a historical perspective

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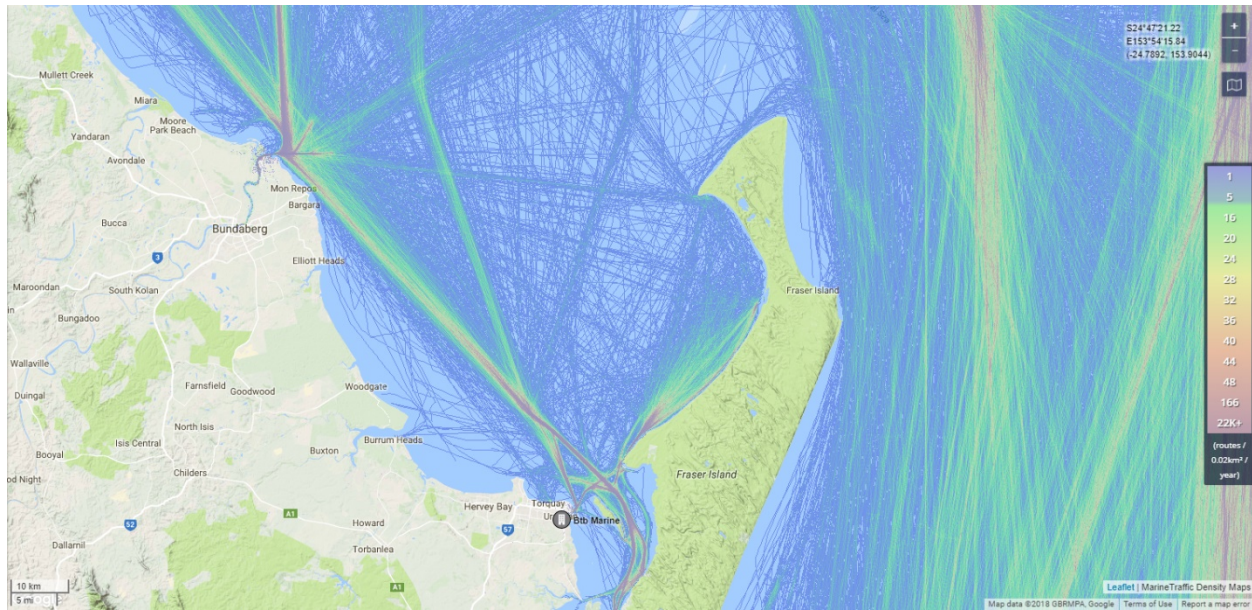


Fig. S1. Map depicting ship traffic densities in 2017 of small vessels (<500GT) equipped with AIS transceivers in the Hervey Bay region of Queensland, Australia. Source: Data for map provided by Marine Traffic (<http://www.marinetraffic.com>).

Table S1. AIC selection results for GAMM models (Poisson distribution, log link) describing the influence of environmental covariates on the count of calf pods per 1 km x 1 km grid cell in Hervey Bay, Australia from August 16, 2004 to October 17, 2016.

Calf Pod Distribution Model	AIC	ΔAIC
count ~ s(latitude, longitude)*** + month*** year	4869.4	0.0
count ~ s(latitude, longitude)*** + s(distance to shore) + month*** year	4872.8	3.4
count ~ s(latitude, longitude)*** + s(depth) + month*** year	4873.2	3.8
count ~ s(latitude, longitude)*** + s(distance to shore) + s(depth) + month*** year	4876.6	7.2

count ~ s(longitude)*** + s(latitude)* + s(distance to shore) + s(depth) + month*** year	4879.2	2.6
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Note: “*” to the right of variable term indicates the following significance levels: ***(0.0001-0.001), **(0.001-0.01), *(0.01-0.05). The term to the right of “|” indicates the random factor included in the model.

Table S2. AIC selection results for GAMM models (Poisson distribution, log link) describing the influence of environmental covariates on the count of non-calf pods per 1 km x 1 km grid cell in Hervey Bay, Australia from August 16, 2004 to October 17, 2016.

Non-Calf Pod Distribution Model	AIC	ΔAIC
count ~ s(latitude, longitude)* + month*** year	5960.6	0.0
count ~ s(latitude, longitude)* + s(depth) + month*** year	5964.2	3.6
count ~ s(latitude, longitude)* + s(distance to shore) + month*** year	5964.5	3.9
count ~ s(latitude, longitude)* + s(distance to shore) + s(depth) + month*** year	5968.2	7.6
count ~ s(latitude)* + s(longitude)** + s(distance to shore) + s(depth) + month*** year	5968.2	7.6

Note: * to the right of variable term indicates the following significance levels: ***(0.0001-0.001), **(0.001-0.01), *(0.01-0.05). The term to the right of “|” indicates the random factor included in the model.