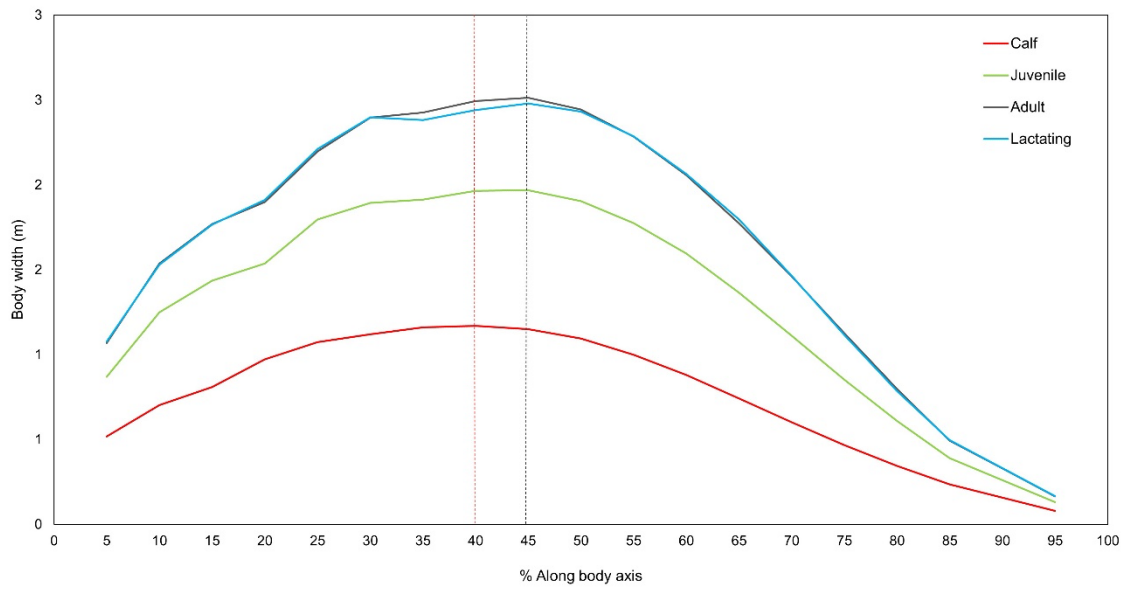**Figure S1.** Total number of individuals sampled per day during northbound and southbound migrations (May to October) 2020 in northern New South Wales, n = 513. Individuals divided by reproductive class (Calves n = 48, Juveniles n = 166, Adults n = 251, and Lactating females n = 48).

Figure S2. Average width along the body axis at 5% increments for each reproductive class of humpback whales sampled in northern New South Wales. Black dashed line represents the widest point for juveniles, adults, and lactating females (45% along body axis), red dashed line represents widest point for calves (40% along body axis) (n = 513).
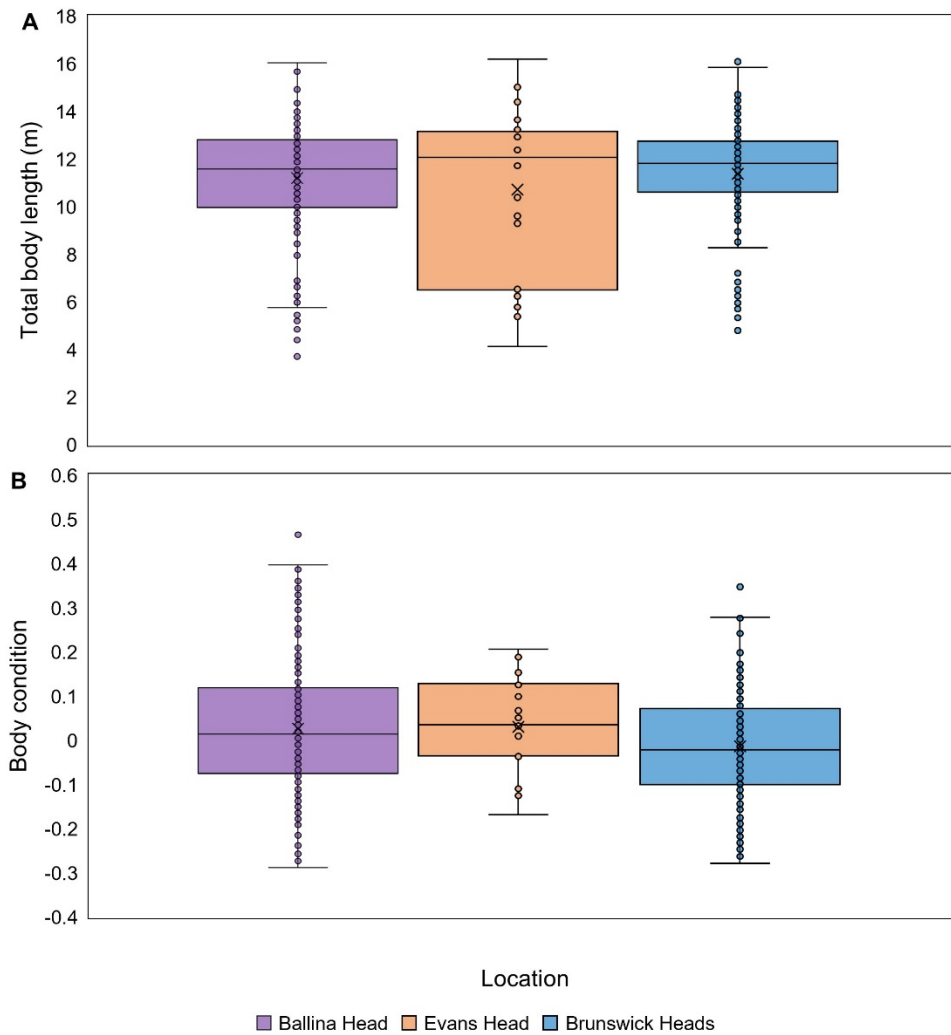
Figure S3. A. Total body length and B. Body condition of humpback whales included in the analysis grouped into sampling locations Ballina Head (headland), Evans Head (headland) and Brunswick Heads (vessel), New South Wales (n = 513). The box indicates the upper and lower quartile, the black solid line represents the median for each location, the x is the mean for each location, the whiskers show the maximum and minimum ranges of body condition, the dots mark individual humpback whales, whilst dots outside the whiskers mark outliers.
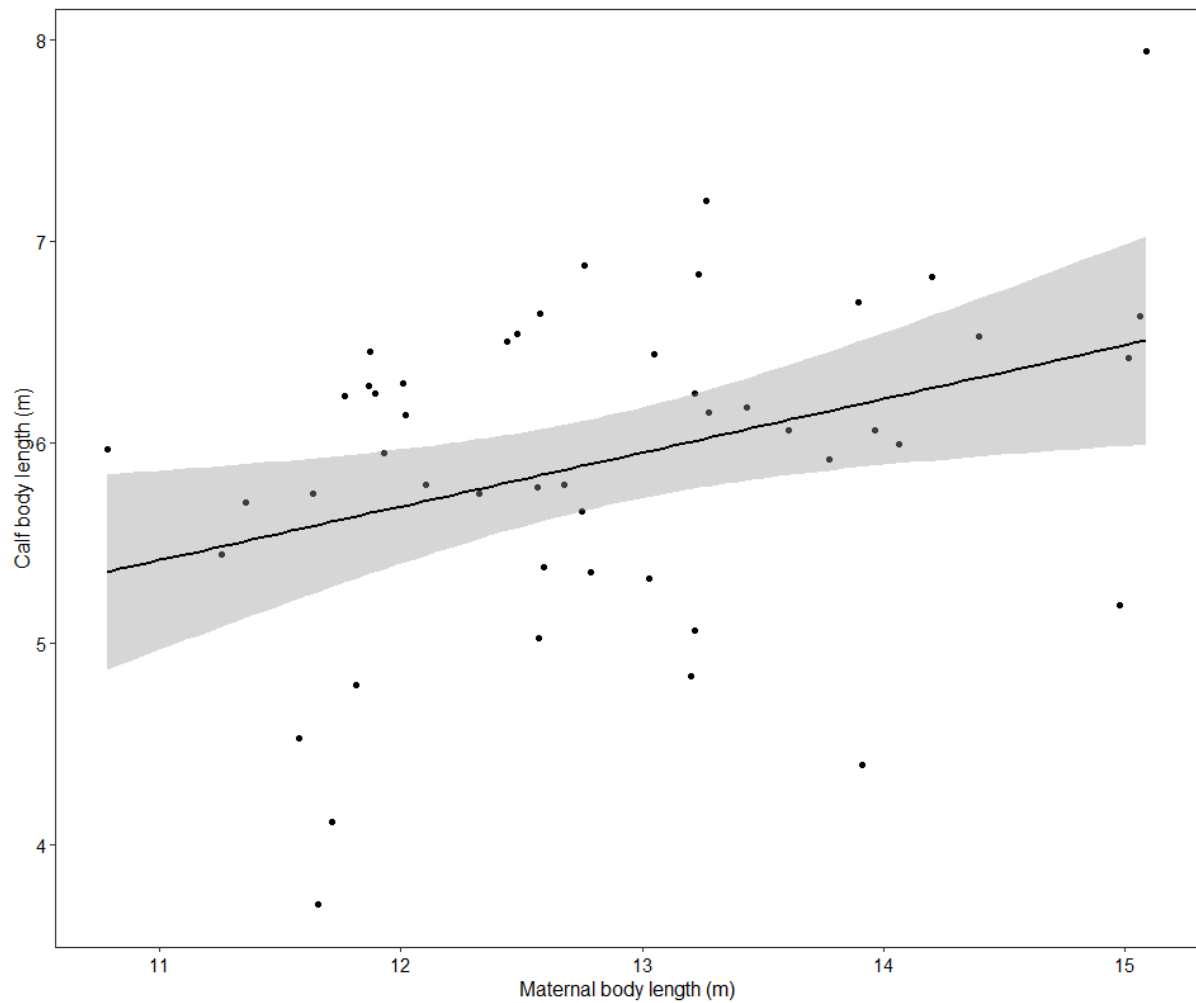
Figure S4. The significant ($F_{1,46}$ = 6.63, p = 0.01, R^2 = 0.10) relationship between calf body length and maternal body length for cow/calf humpback whale pairs sampled in northern NSW (n = 48). The solid black line represents the predicted values of the fitted generalised linear model with 95% confidence interval represented by the grey shaded area.

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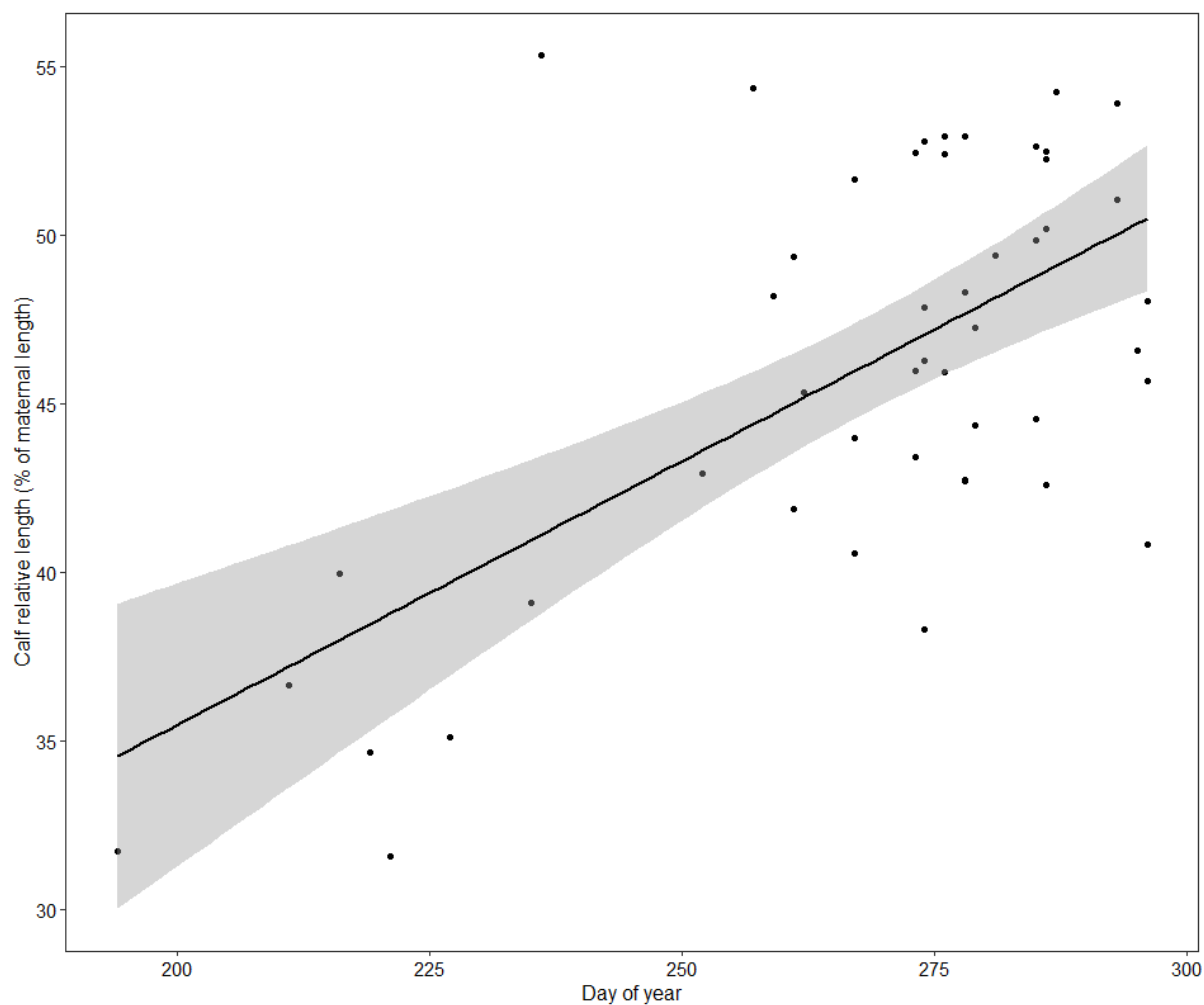
Figure S5. The significant ($F_{1,46}$ = 29.34, p < 0.01, R^2 = 0.37) relationship between body length and day of year for humpback whale calves sampled in northern NSW (n = 48). The solid black line represents the predicted values of the fitted generalised linear model with 95% confidence interval represented by the grey shaded area.