Electronic Supplement

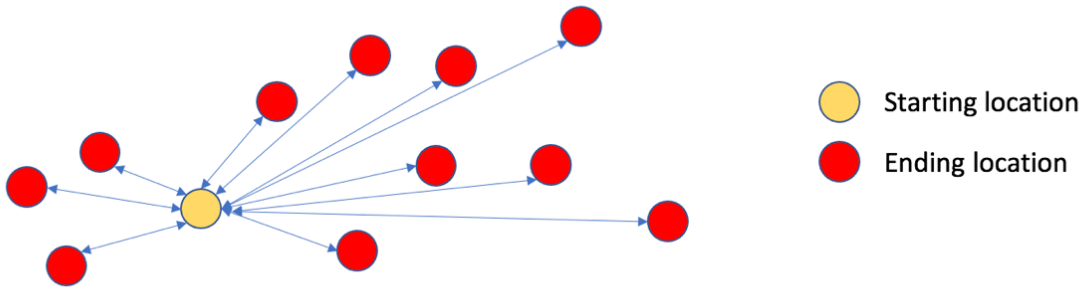


Figure S1: Schematic showing how we calculated Mean Absolute Distance. The yellow dot represents the starting location, the red dots are ending locations, and the arrows are the distance between each start and end point. The average of all these distances is the Mean Absolute Distance.

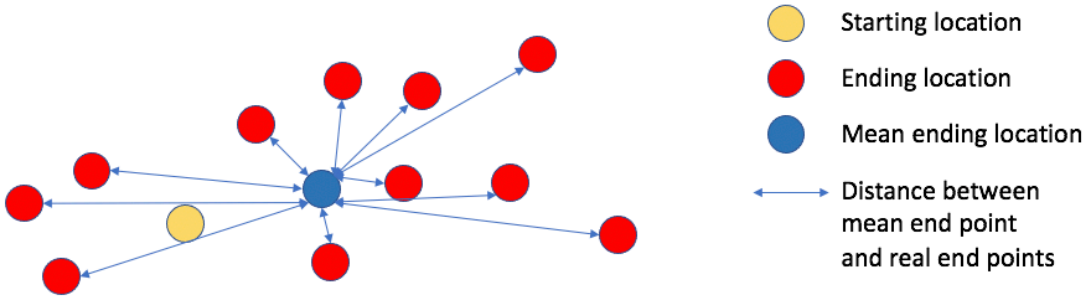
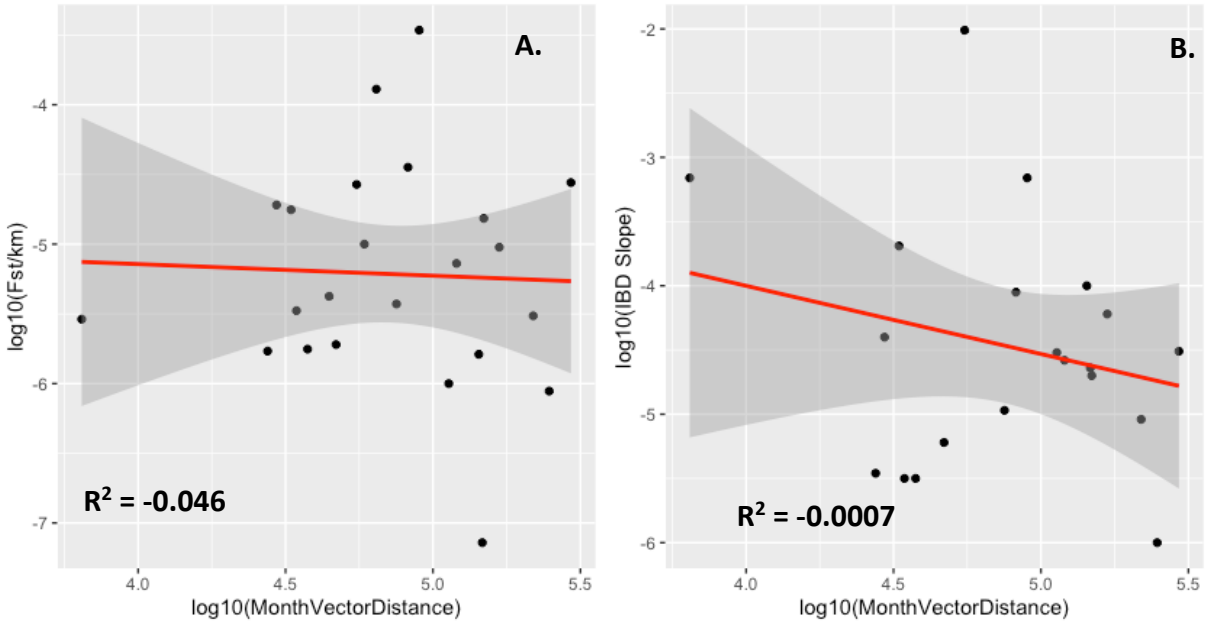
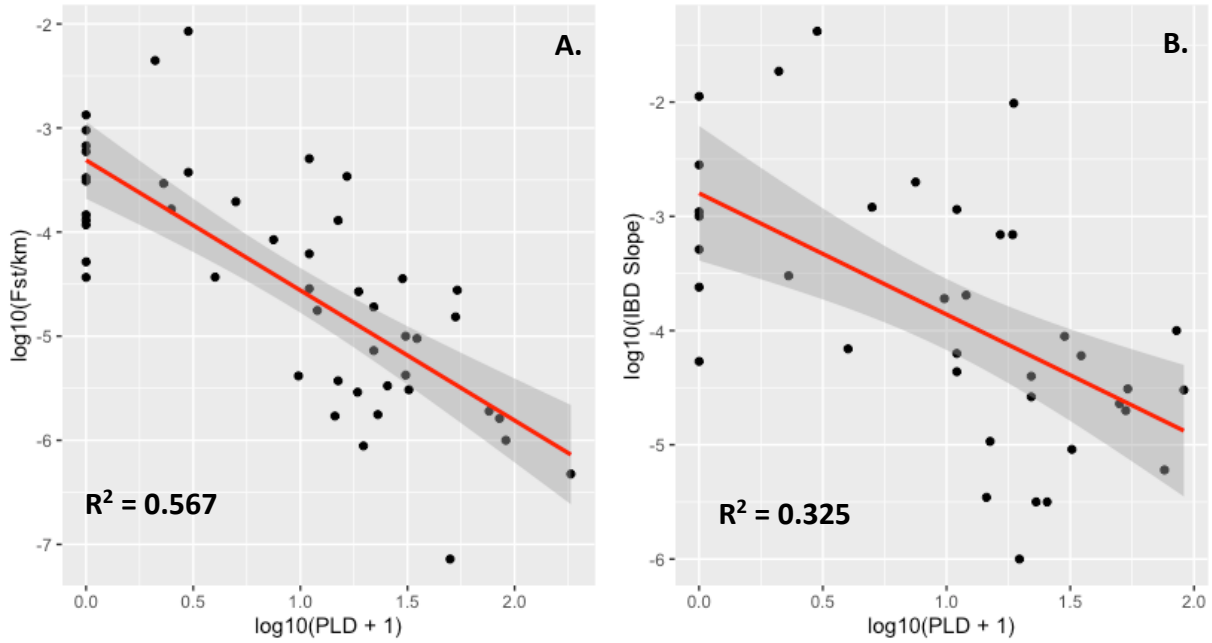


Figure S2: Schematic showing how we calculated Vector Standard Deviation. The yellow dot is the starting location, the red dots are ending locations, and the blue dot is the mean ending location, which is the point that is the shortest distance from all the ending locations. The arrows represent the distance between the ending locations and the mean ending location. The average of all these distances is the Vector Standard Deviation.



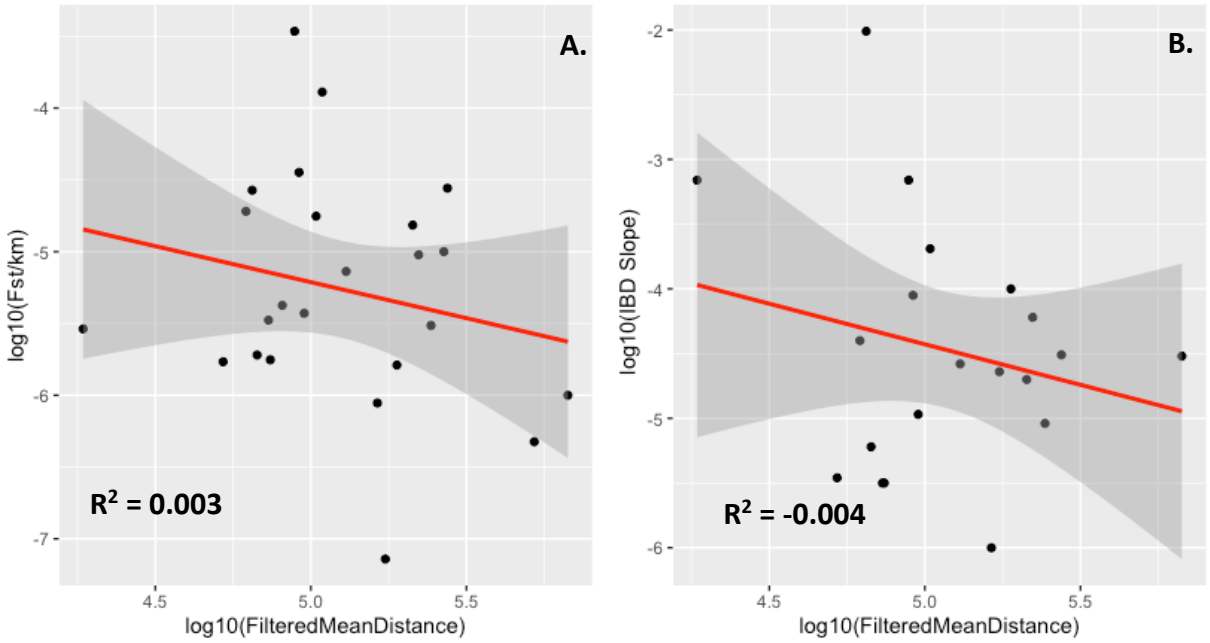
Month Filter

Figure S3: Log (month-filtered Vector-Mean Distance) versus (A) log F_{ST}/km (p = 0.854), and (B) log IBD slope (p = 0.740) for species with PLD > 10. Using Dunn and Clarke's *z*-test, the R^2 for the correlation of F_{ST}/km with PLD is not significantly different compared to month-filtered Vector-Mean distance (p = 0.123). For IBD slope, its correlations with PLD and with month-filtered Vector-Mean distance are not significantly different (p = 0.634). For both of the genetic metrics, the correlation with month-filtered Vector-Mean Distance was not significantly different from the correlation with Filtered Vector-Mean Distance (Dunn and Clark's *z*-test: F_{ST}/km, p = 0.546; IBD slope, p = 0.939). The month-filtered Vector-Mean Distance includes dispersal only during spring months (April, May, and June in the Northern hemisphere and September, October, and November in the Southern Hemisphere).



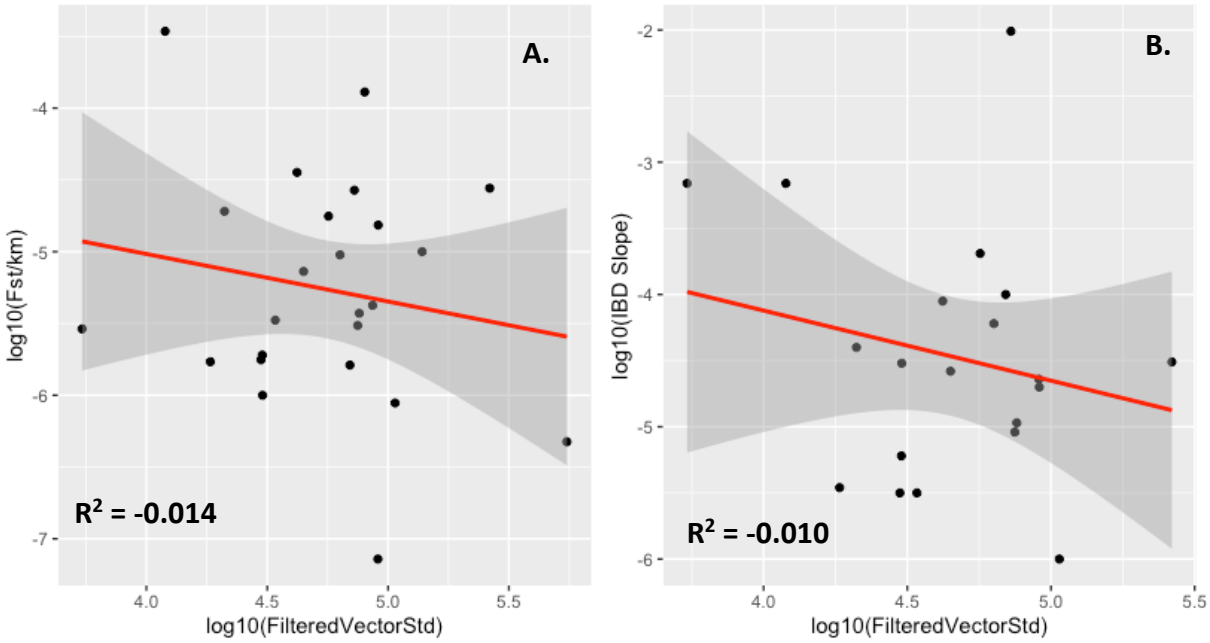
Recreations of Selkoe and Toonen (S&T) Analyses

Figure S4: Log (PLD + 1) versus (A) log F_{ST}/km ($p < 0.0001$), and (B) log IBD slope ($p = 0.0001$) for the full range of PLDs.



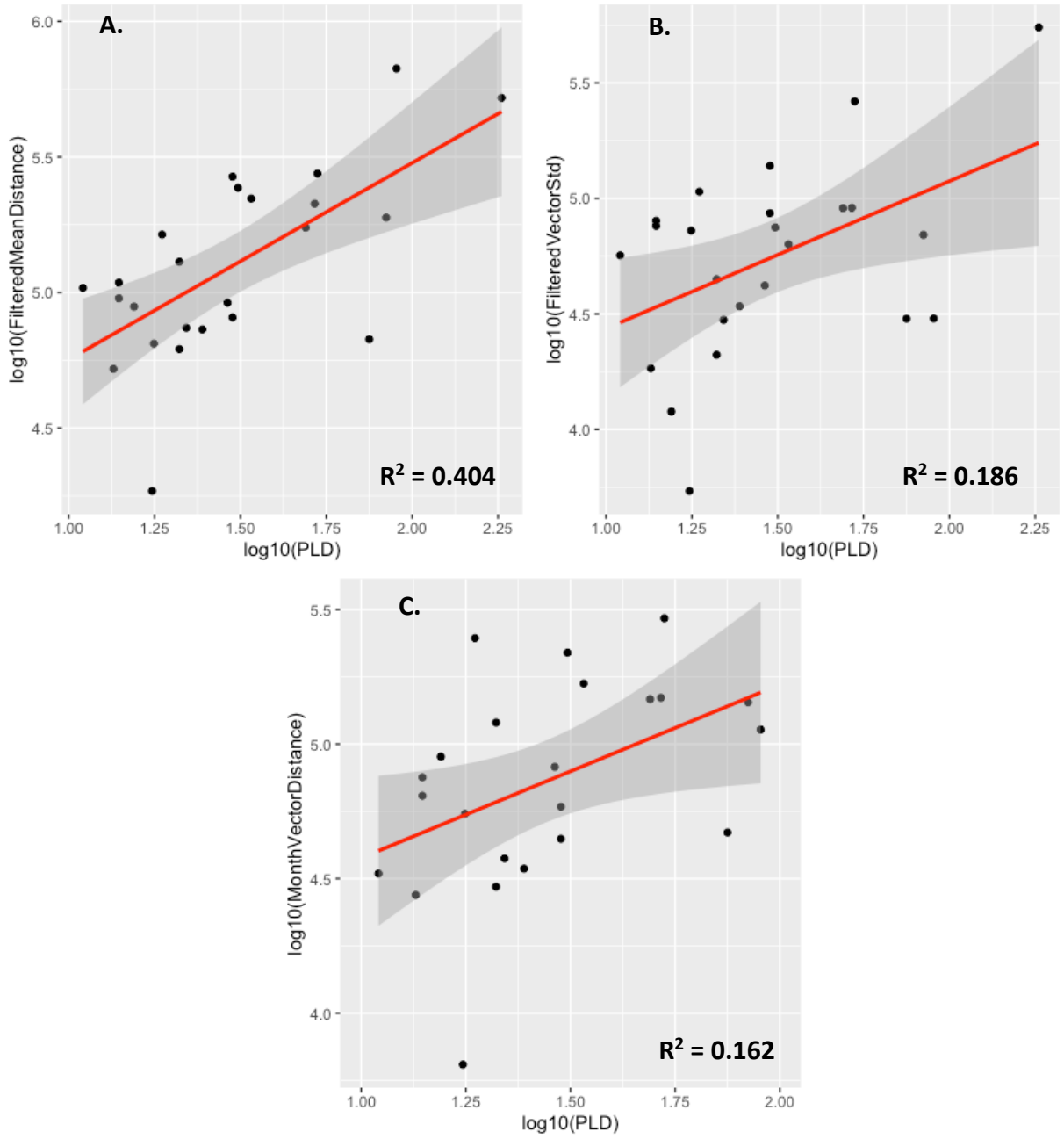
Mean Absolute Distance

Figure S5: Log (mean filtered absolute distance) versus (A) log F_{ST}/km (p = 0.313), and (B) log IBD slope (p = 0.350) for species with PLD > 10. Using Dunn and Clark's *z*-test, the R^2 for the correlation between PLD and F_{ST}/km is not significantly different than the correlation between mean absolute distance and F_{ST}/km (p = 0.132). For IBD slope, its correlations with PLD and with mean absolute distance are not significantly different (p = 0.724).



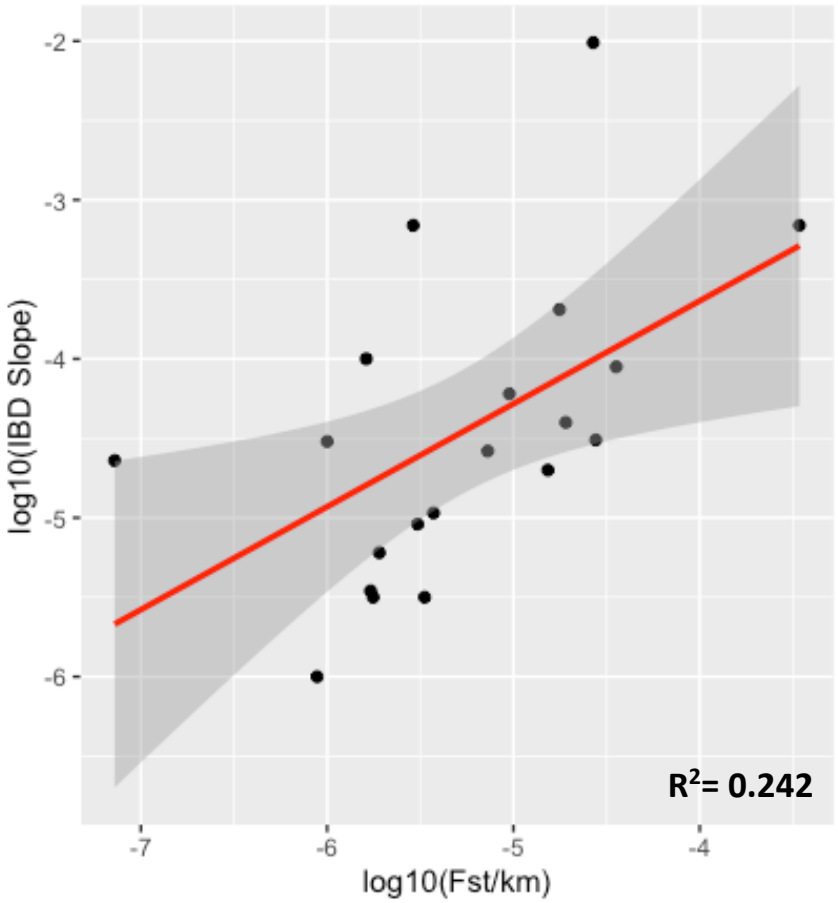
Vector Standard Deviation

Figure S6: Log (filtered vector standard deviation) versus (A) log F_{ST}/km (p = 0.417) and (B) log IBD slope (p = 0.377) for species with PLD > 10. Using Dunn and Clark's *z*-test, the R^2 for the correlation between PLD and the genetic metric F_{ST}/km is not significantly different than the correlation of F_{ST}/km with vector standard deviation (p = 0.158). For IBD slope, its correlations with PLD and with vector standard deviation are not significantly different (p = 0.821).



PLD vs distance metrics

Figure S7: PLD versus (A) filtered absolute dispersal distance ($p = 0.001$), (B) filtered vector standard deviation ($p = 0.020$), and (C) month-filtered Vector-Mean Distance ($p = 0.033$) for species with PLD > 10.



F_{ST}/km vs IBD slope

Figure S8: Log F_{ST}/km versus log IBD slope ($p = 0.016$) for species with PLD > 10. This correlation indicated that F_{ST}/km and IBD slope are strongly, but not perfectly, correlated.

AIC Tables

Supp. Tables S1-S2. Evaluation of all four possible combinations of the 2-variable models examining the effects of pelagic larval duration (PLD), Filtered Vector-Mean Distance, and their interaction on each genetic metric (F_{ST}/km and IBD slope). Each table contains a separate model with AIC values that can be directly compared only within that table.

Table S1 **F_{ST}/km**	**AIC**
PLD	56.520
Filtered vector-mean distance	60.875
PLD + Filtered vector-mean distance	58.164
PLD * Filtered vector-mean distance (Full model with interaction term)	59.792

Table S2 **IBD Slope**	**AIC**
PLD	59.342
Filtered vector-mean distance	58.807
PLD + Filtered vector-mean distance	60.800
PLD * Filtered vector-mean distance (Full model with interaction term)	61.139