

*Supplementary information for:*

## **Planktivores as trophic drivers of global coral reef fish diversity patterns**

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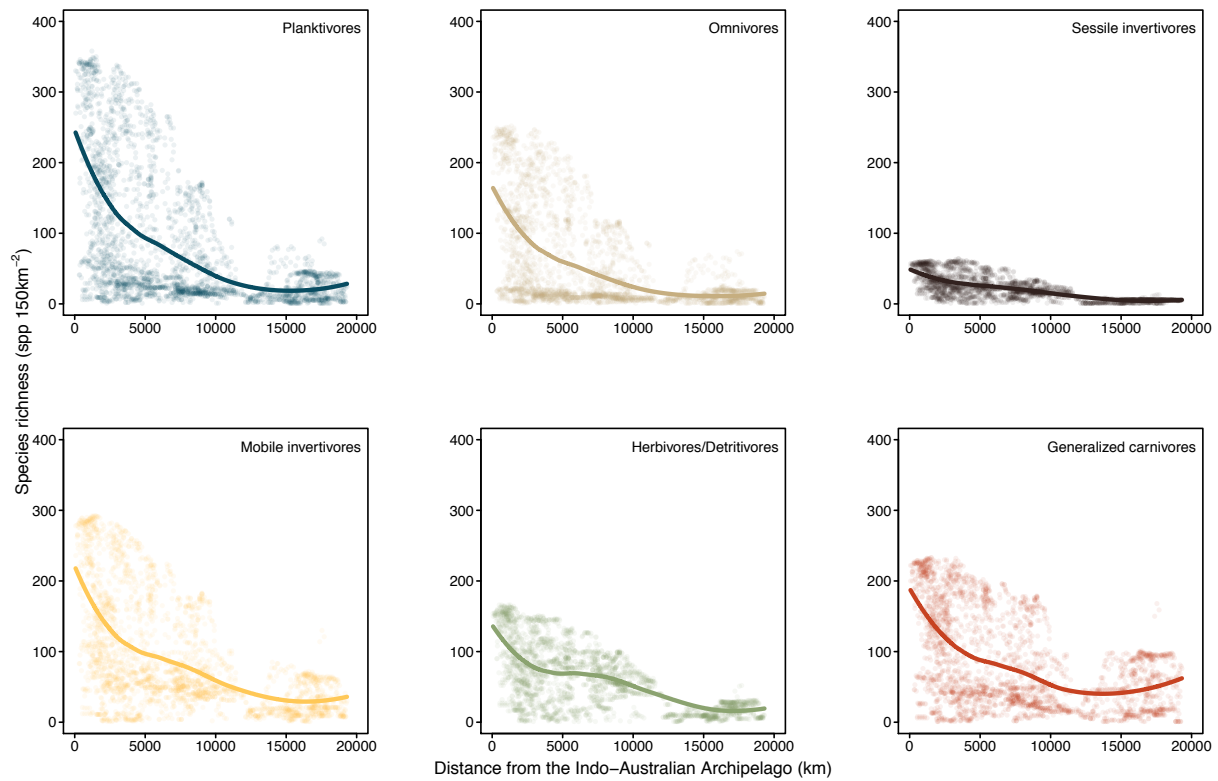
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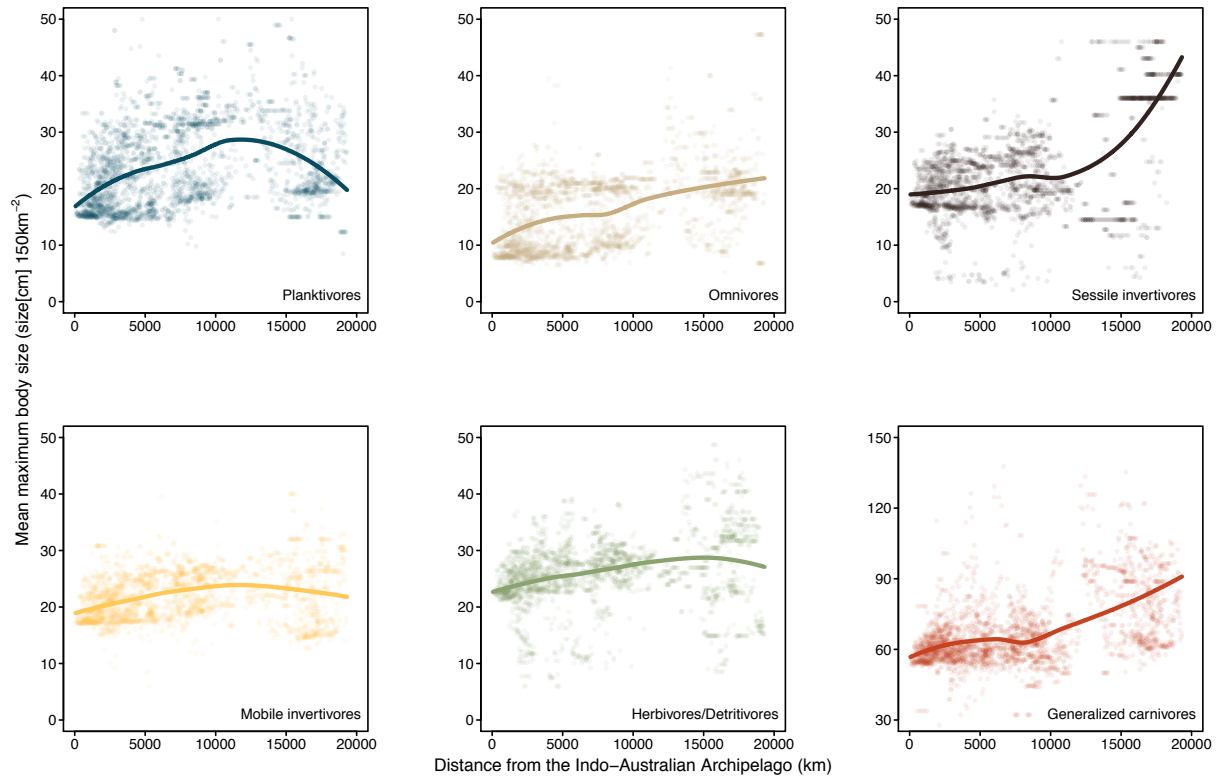
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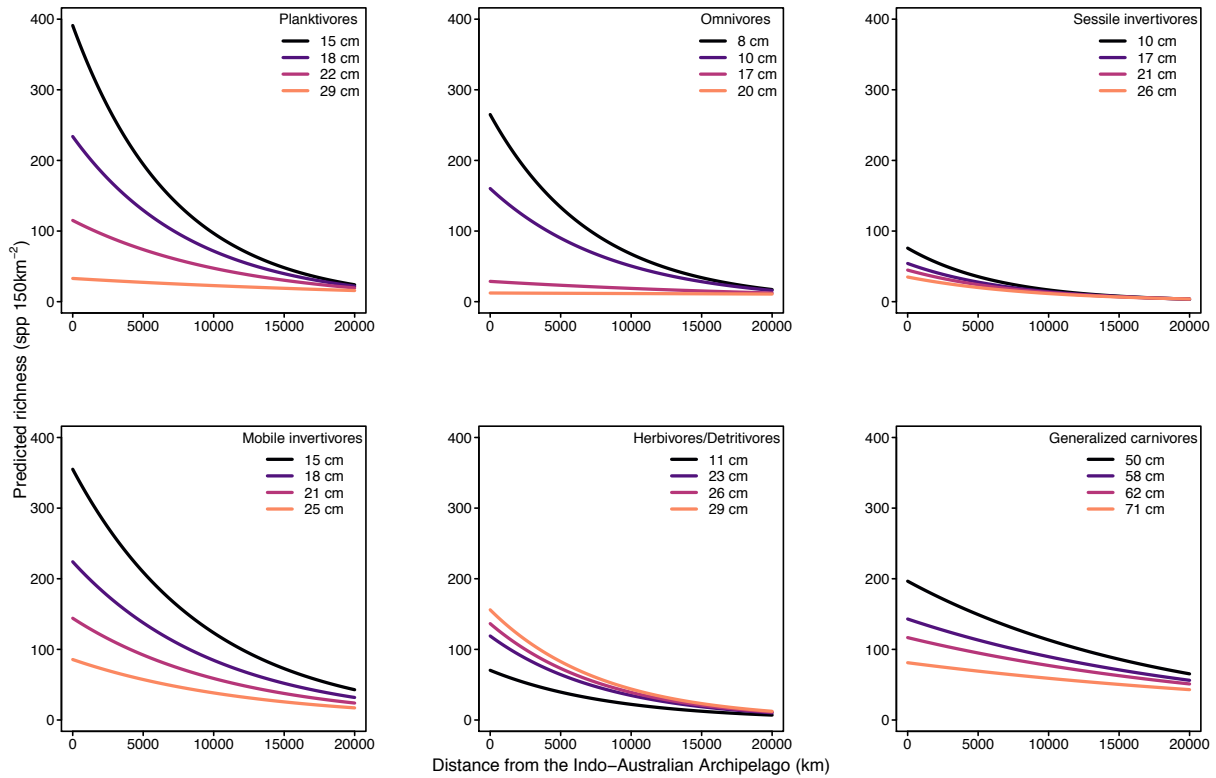
## Supplementary figures



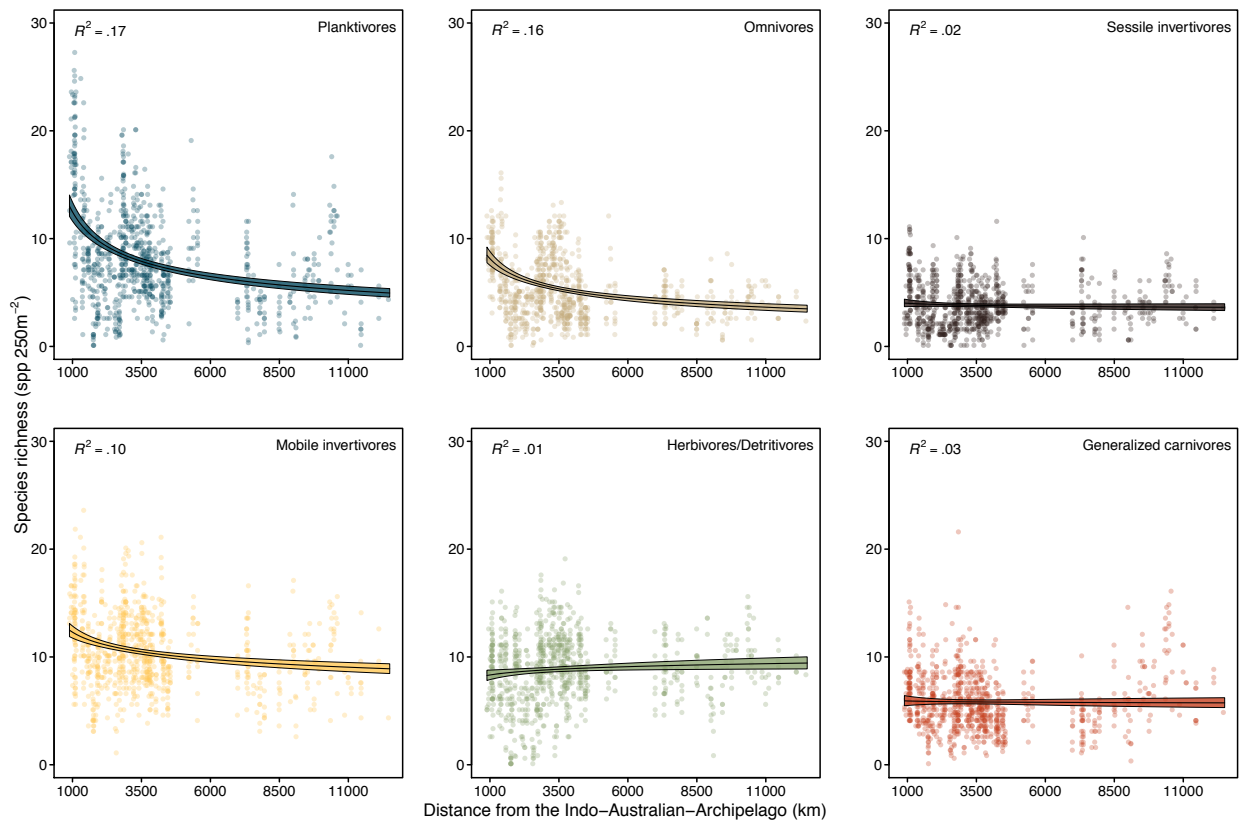
**Supplementary Figure 1 | Coral reef fish species richness per geographic cell with distance from the Indo-Australian Archipelago.** Semi-transparent points show the number of species per geographic cell in each trophic group. Lines represent the fitted values from a LOESS polynomial regression (with  $\alpha = 0.7$ ).



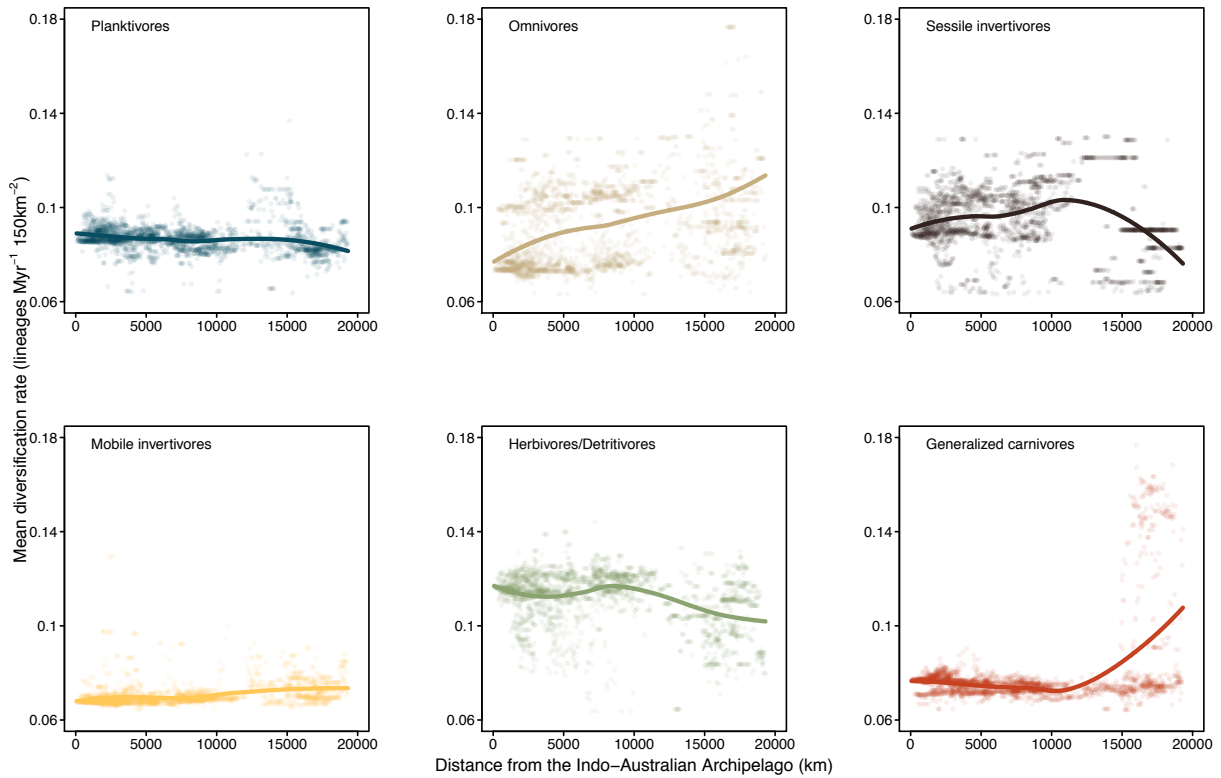
**Supplementary Figure 2 | Mean coral reef fish species body size per geographic cell with distance from the Indo-Australian Archipelago.** Semi-transparent points show the mean maximum body size of all species occurring in each geographic cell per trophic group. Lines represent the fitted values from a LOESS polynomial regression (with  $\alpha = 0.7$ ). Note that the y-axis scale for Generalized carnivores is different from the other trophic groups, given their generally larger body sizes.



**Supplementary Figure 3 | Predicted coral reef fish species richness with distance from the Indo-Australian Archipelago by varying body size.** Mean number of species per grid cell (lines) predicted from a negative binomial model per trophic group. Model predictions were made using the 2.5% quantile (black), 25% quantile (purple), median (pink), and 75% quantile (orange) of the distribution of mean species body size per geographic cell in each trophic group.



**Supplementary Figure 4 | Coral reef fish species richness at the site scale per trophic group.** Mean site species richness per trophic group from visual surveys (points) with distance from the Indo-Australian Archipelago (IAA). Curves show predictions from a generalized linear model (mean [black line]  $\pm$  95% confidence interval [polygons]) with respective  $R^2$  values (top-left corner). Model predictions were performed with body size fixed in the estimated value for the regions closer to the centre of the IAA.



**Supplementary Figure 5 | Net diversification rate per geographic cell with distance from the Indo-Australian Archipelago.** Semi-transparent points show the mean tip diversification rates of all species occurring in each geographic cell per trophic group. Lines represent the fitted values from a LOESS polynomial regression (with  $\alpha = 0.7$ ).