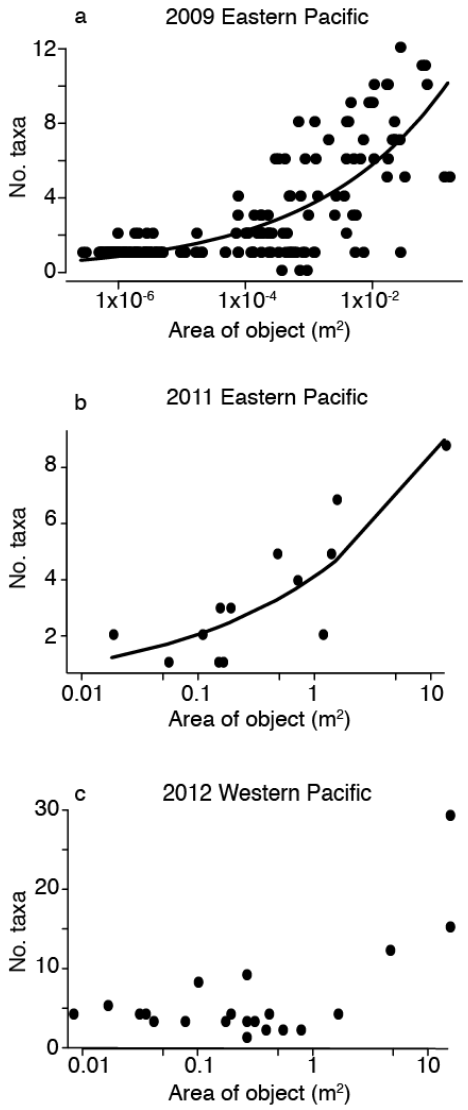

Figure S1. Semilog plots of taxa vs. surface area (m^2) of debris object, by cruise

Solid line is an exponential non-linear least squares regression. a) 2009 Eastern Pacific (Kendall's tau, τ=0.561, *N*=208, *P*<0.001); b) 2011 Eastern Pacific (Kendall's tau, τ=0.650, *N*=13, *P*=0.003); c) 2012 Western Pacific (Kendall's tau, τ=0.062, *N*=21, *P*=0.710). No fit line is included in (c) due to the lack of a significant correlation, which was caused by limited sample size of large objects. Differences in x-axis scale between 2009 and 2011/2012 are due to different sampling methodologies.

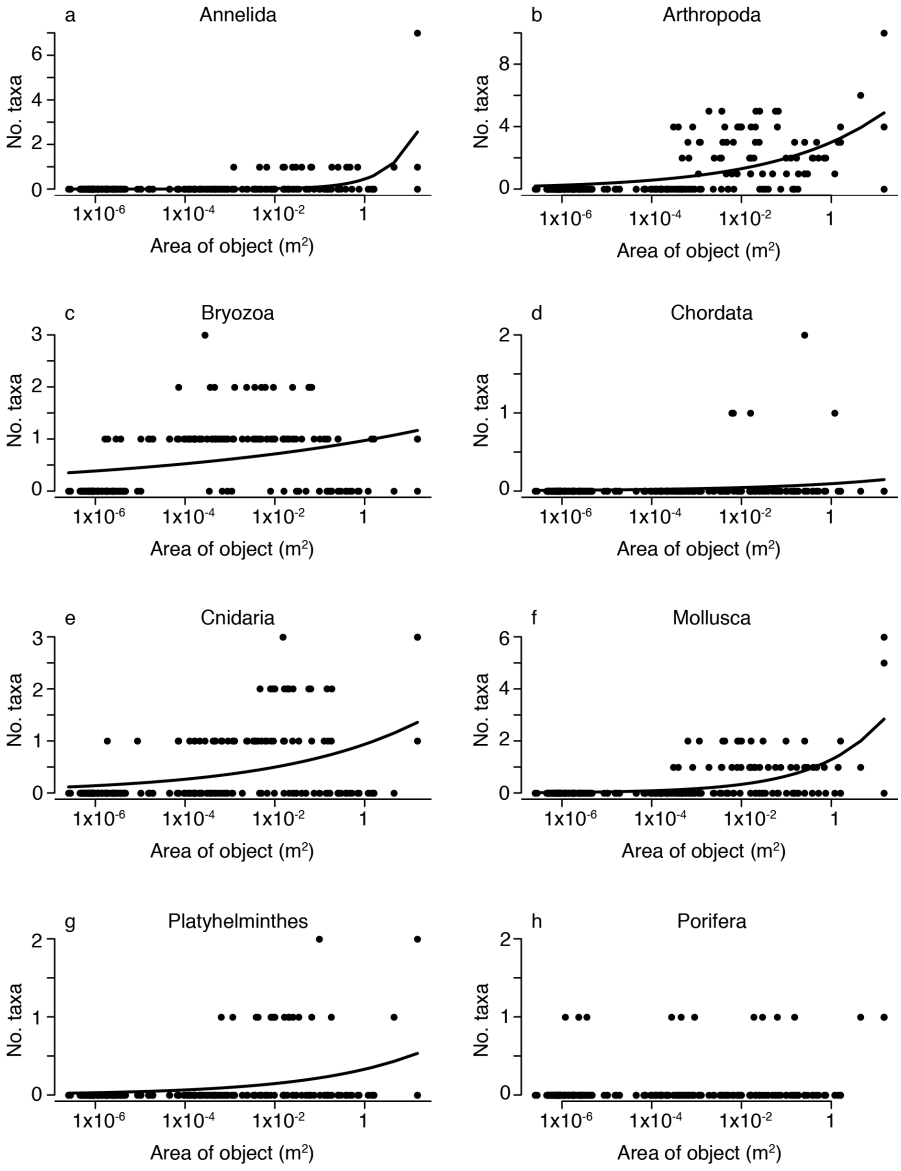

Figure S2. Semilog plots of taxa vs. surface area (m^2) of debris object, by phylum

Solid line is an exponential non-linear least squares regression. All following statistics are for Kendall's tau, with sample size N=242. a) Annelida, τ=0.304, P<0.001; b) Arthropoda, τ=0.526, P<0.001; c) Bryozoa, τ=0.447, P<0.001; d) Chordata, τ=0.142, P=0.007; e) Cnidaria, τ=0.394; P<0.001; f) Mollusca, τ=0.417, P<0.001; g) Platyhelminthes, τ=0.267, P<0.001; h) Porifera, τ=0.163, P=0.002. If the 4 largest objects are excluded, all relationships remain significant with the exception of Porifera (τ=0.082, P=0.121).