Supporting Information 3. Visualisation of the five compared function types in *S*-space and log *S* space.

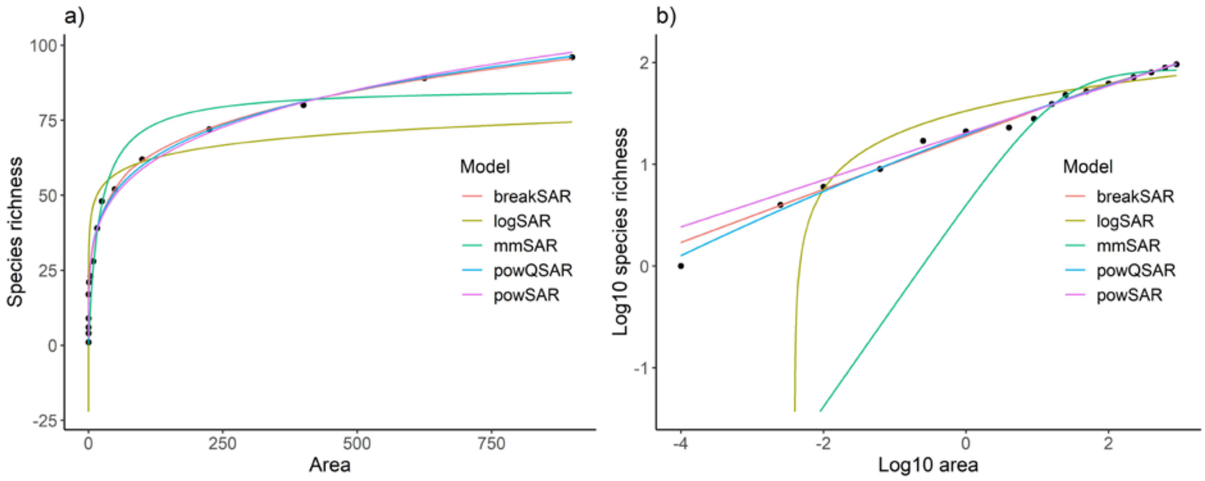

Figure S3.1. Fitted functions (in *S*-space) visualized for the exemplary dataset RU_G_N002_900 (from the Curonian Spit National Park in Russia) both with linear axes and with both axes log-transformed to highlight differences in shape and fit. According to AICc, the best model was the power function (powSAR, c = 20.29, z = 0.231), followed by quadratic power function (powQSAR, Δ_i = 1.33, c = 19.56, z_1 = 0.261, z_2 = -0.009), breakpoint power function (breakSAR, Δ_i = 3.08, c = 44.79, z_1 = 0.060, z_2 = 0.200, T = 75.88), Michaelis-Menten function (mmSAR, Δ_i = 36.25, b_0 = 86.04, b_1 = 20.76) and logarithmic function (logSAR, Δ_i = 49.51, b_0 = 33.37, b_1 = 13.88). This is a rather typical result for our datasets: the power function and its two variants have a good and similar fit to the data, while logarithmic function and Michaelis-Menten function have a similarly poor fit, largely underestimating richness at both the finest and the largest grain sizes of the fitted range. Moreover, the logarithmic function necessarily always predicts negative values for richness for small positive areas.