Supplementary material:

Ballistic to Brownian: Patterns of resource distribution determine movement of a freshwater snail

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This file contains one table and two figures.

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Table S1. Linear regression results on the effects of resource distribution on snail movement for the entire experiment. Estimates (value) of the intercept and slope, the standard error of those estimates, t statistic, and *p*-value for the power-law exponent (μ).

	Intercept				Slope			
	Estimate	SE	*t* value	*p* value	Estimate	SE	*t* value	*p* value
μ	**1.701**	**0.139**	**12.202**	**< 0.001**	**0.014**	**0.002**	**6.075**	**< 0.001**

Table S2. Range of ΔAIC values between the power-law and exponential distributions and Akaike weights of the power-law distribution. Of the two values in each row for the ΔAIC range column, the lower value indicates the trial with the smallest difference in AIC values, and the higher value indicates the trial with the greatest difference values. AIC values of the power-law distributions were subtracted from the exponential distributions, so positive values indicate that the power-law distribution better fit the data, which was the case for every trial. The Akaike weights of the power-law distributions were all one, also indicating the power-law distribution better fit the data than the exponential distribution.

Treatment	ΔAIC range	Akaike Weights Power-law distribution
0%	53.99 – 3711.62	All 1
25%	967.78 – 3110.22	All 1
50%	383.79 – 3439.61	All 1
75%	488.97 – 4230.96	All 1
100%	474.12 – 2709.09	All 1

Figure S1: Three examples of snails tracks where the snails were consumed the biofilm. The green material is biofilm, and the black squares are bare patches. The snail tracks can be seen as the squiggly lines where the snails have removed the biofilm.

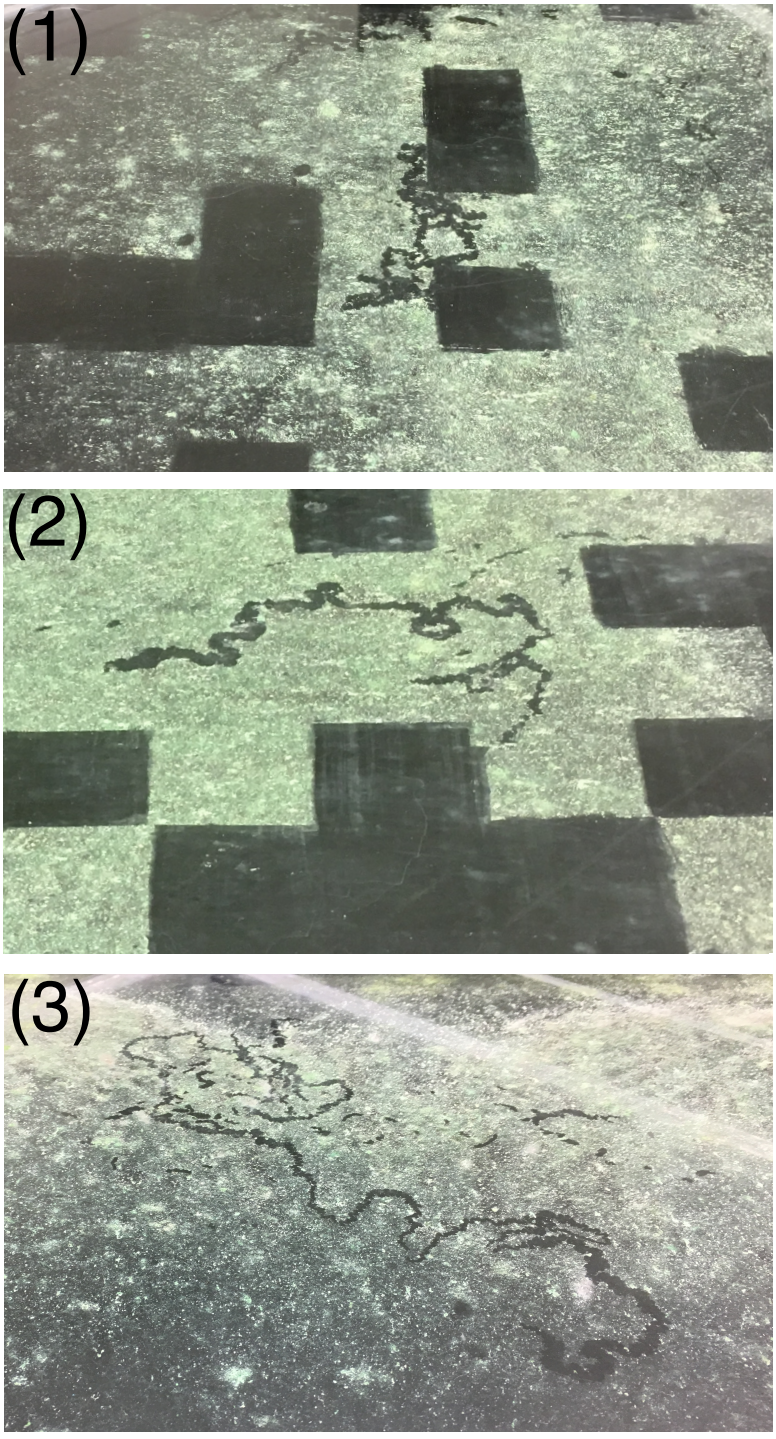

Figure S2: Relationship between number of snail scats counted at end of the experiment and percent biofilm coverage. The curve in the graph is described by the logistic growth curve in the upper-left corner and was fit using the *nls* function in R. The asymptote is around 83 scats and is reached shortly after the 25% coverage treatment.

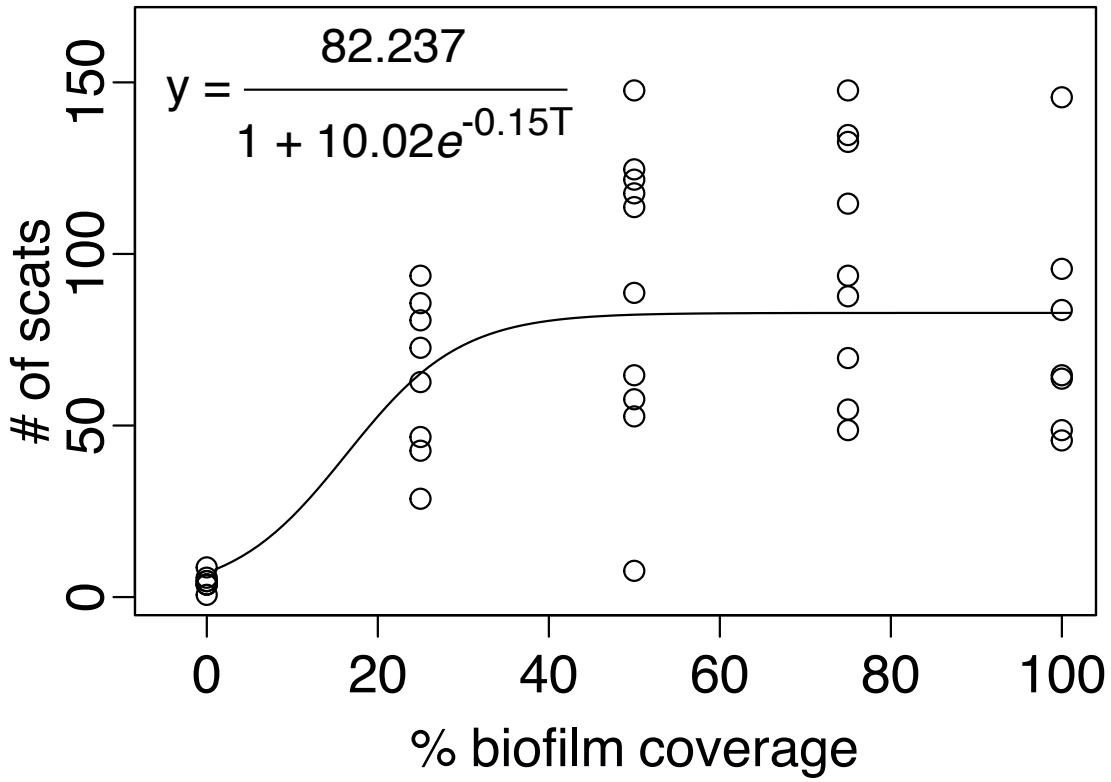

Figure S3: Rank-frequency plots for the 0% resource coverage treatment. The most frequent displacement lengths are the highest ranked. Short distribution lengths are the most frequent and thus are ranked highly, whereas long step lengths become increasingly infrequent.

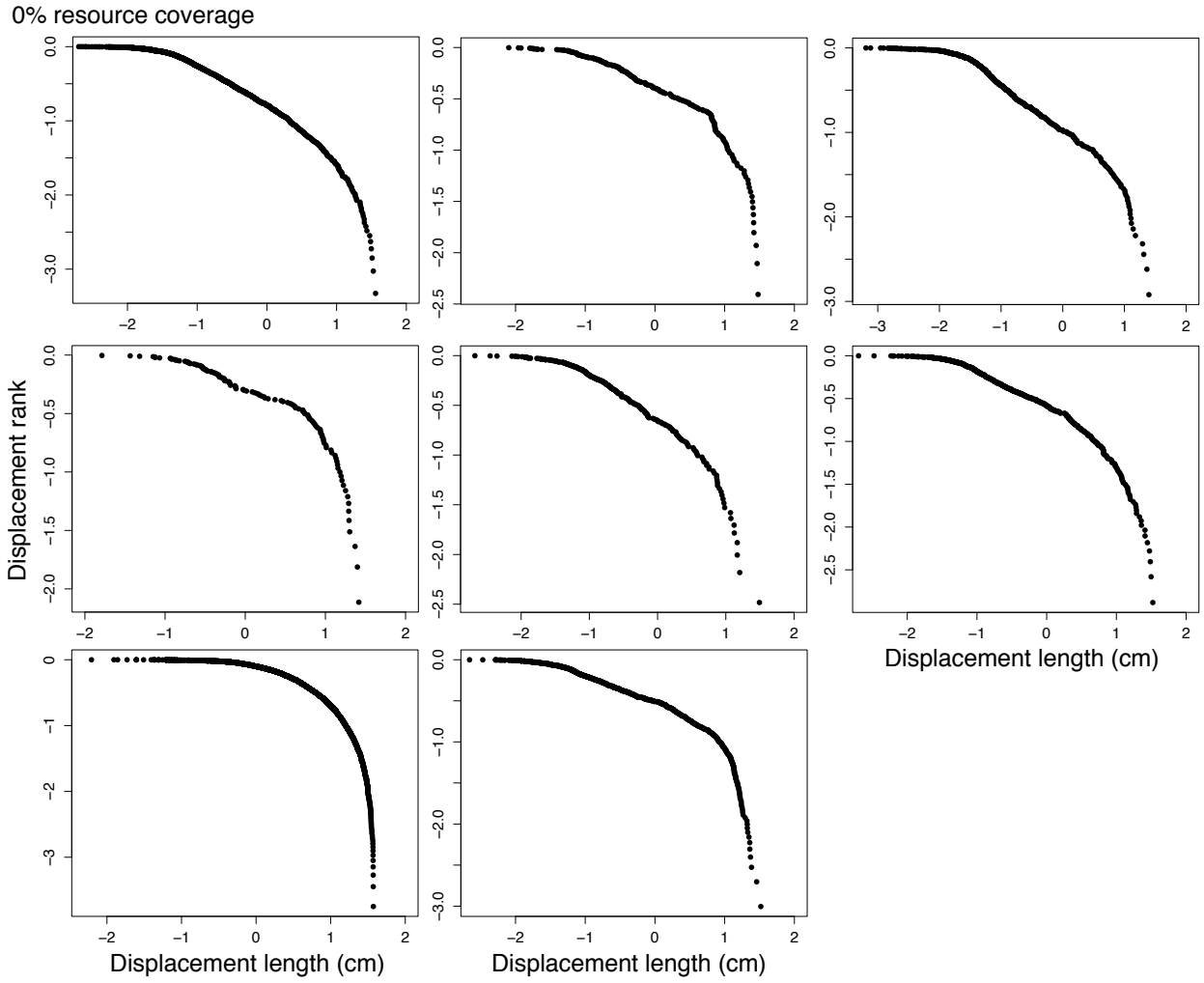

Figure S4: Rank-frequency plots for the 25% resource coverage treatment. The most frequent displacement lengths are the highest ranked. Short distribution lengths are the most frequent and thus are ranked highly, whereas long step lengths become increasingly infrequent.

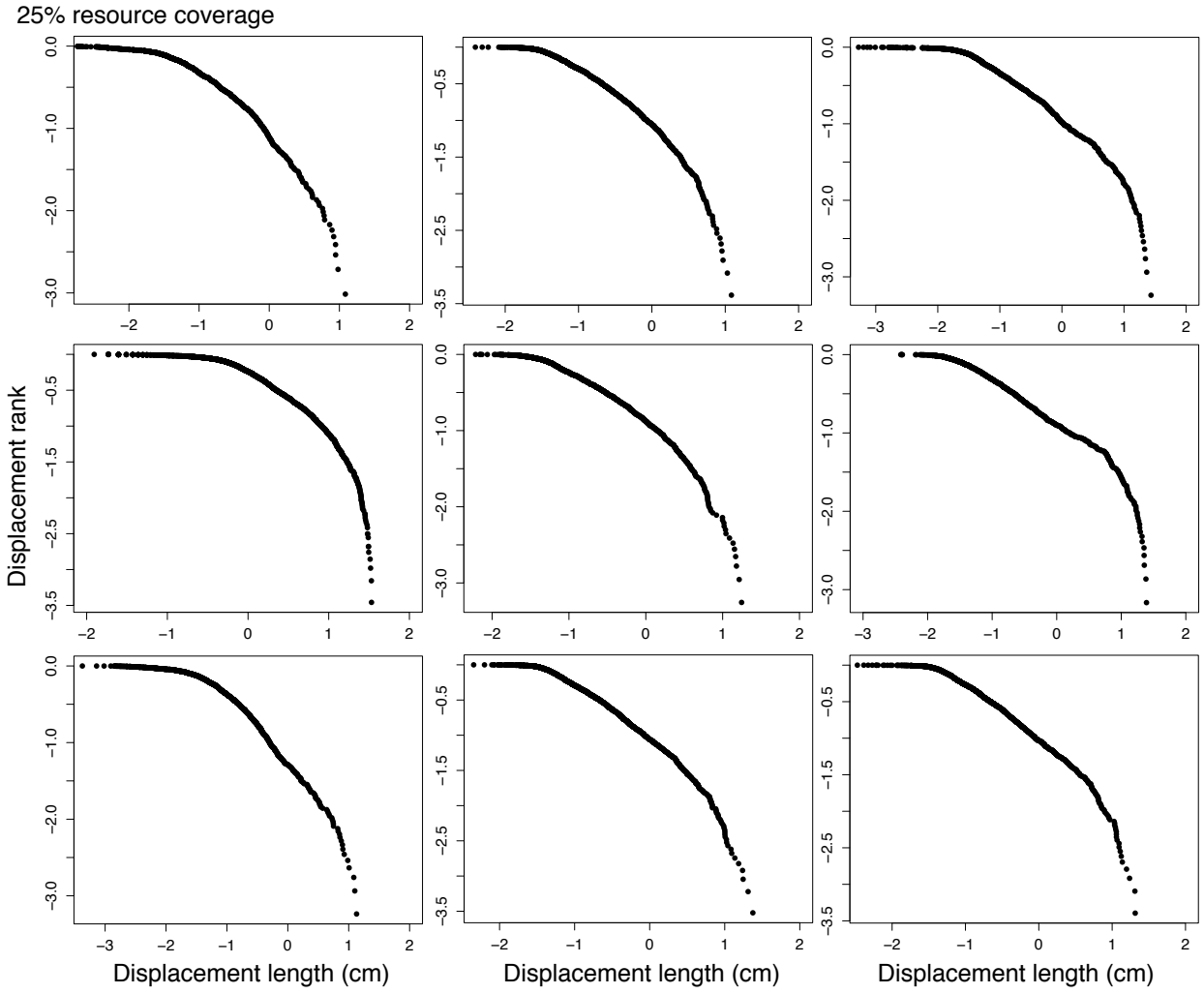

Figure S5: Rank-frequency plots for the 50% resource coverage treatment. The most frequent displacement lengths are the highest ranked. Short distribution lengths are the most frequent and thus are ranked highly, whereas long step lengths become increasingly infrequent.

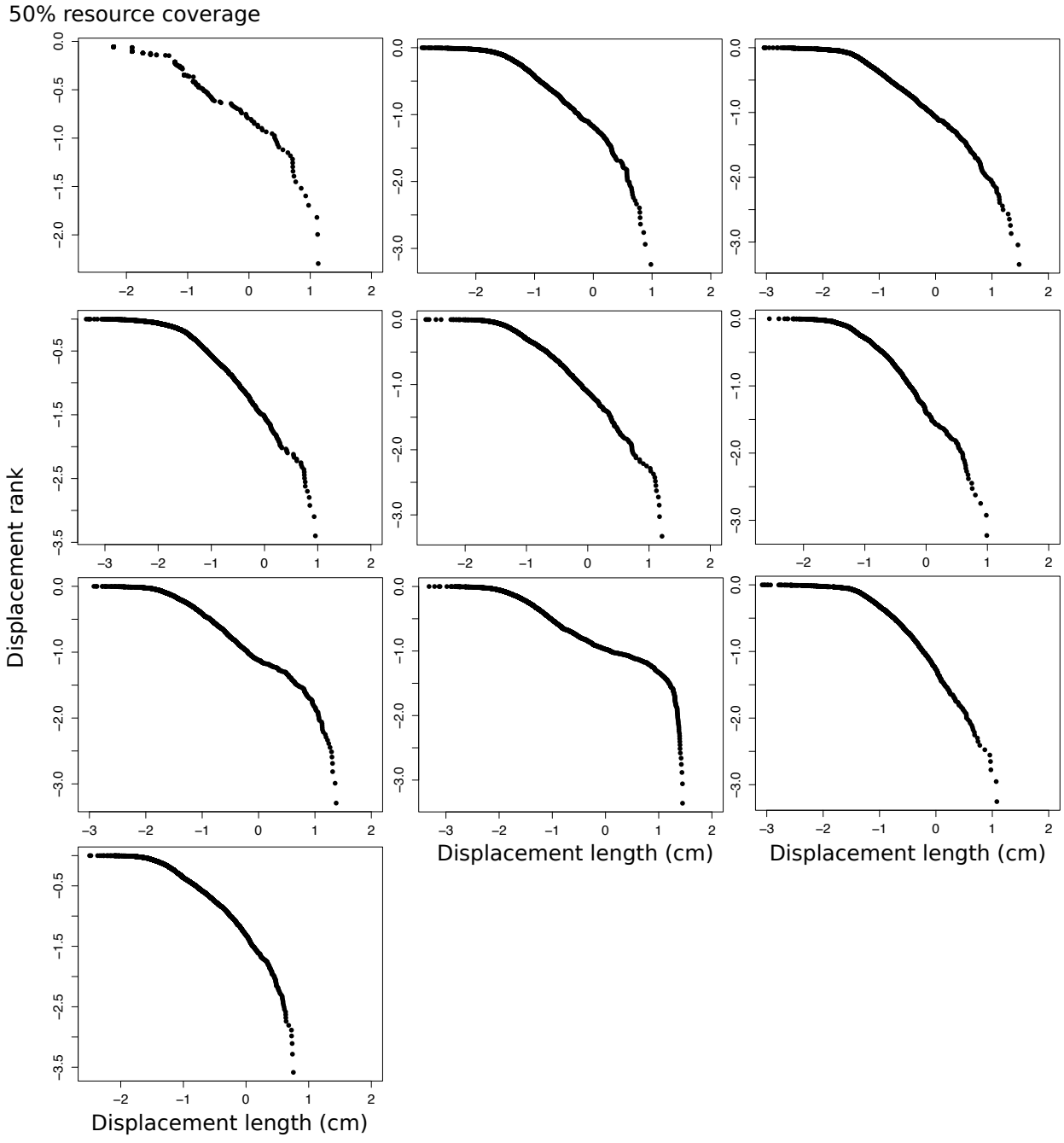

Figure S6: Rank-frequency plots for the 75% resource coverage treatment. The most frequent displacement lengths are the highest ranked. Short distribution lengths are the most frequent and thus are ranked highly, whereas long step lengths become increasingly infrequent.

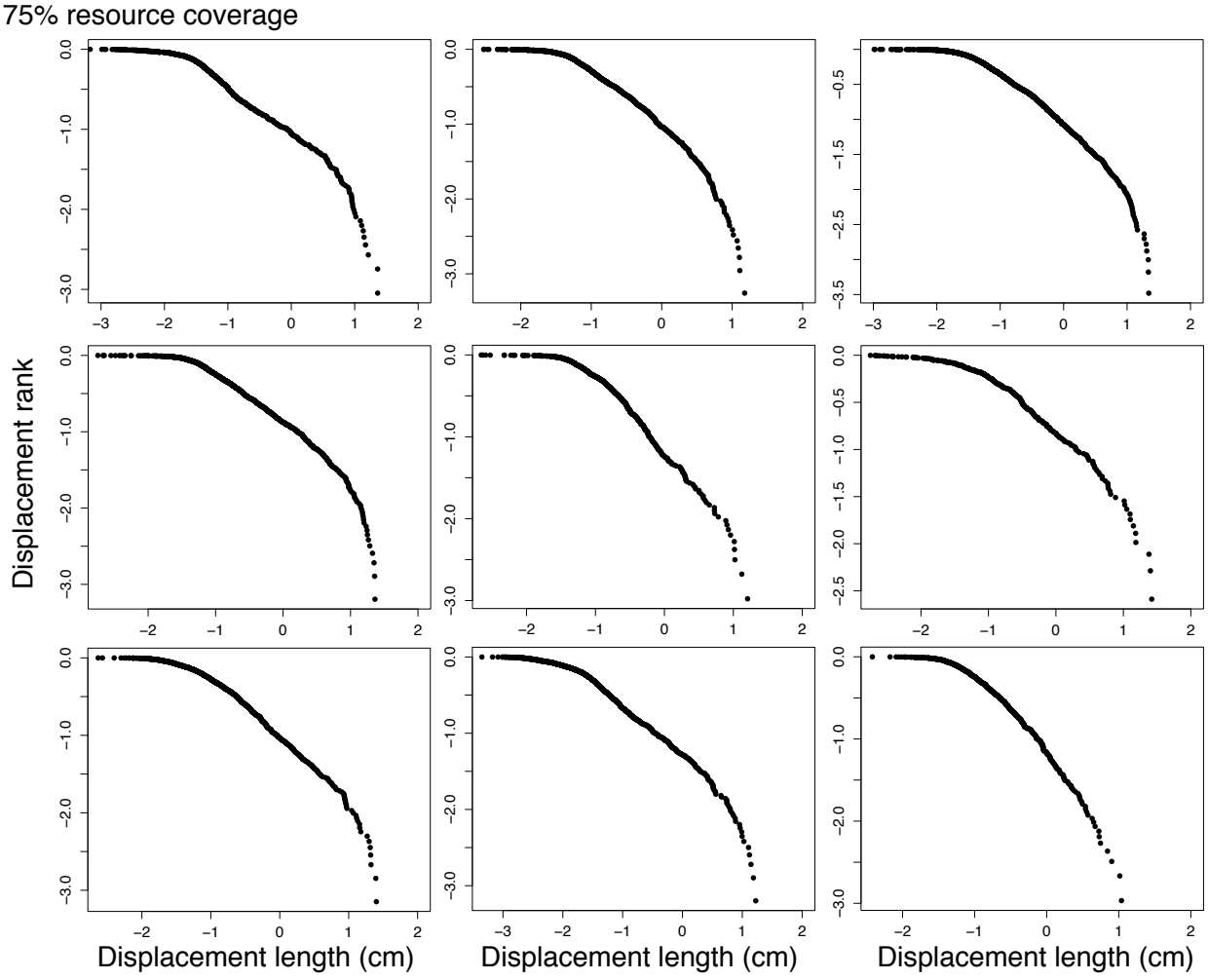

Figure S7: Rank-frequency plots for the 100% resource coverage treatment. The most frequent displacement lengths are the highest ranked. Short distribution lengths are the most frequent and thus are ranked highly, whereas long step lengths become increasingly infrequent.