	Null model	Site climate	Site climate + Sp. status	Site climate + Sp. pref. temp.	Site climate + Sp. pref. precip
ΔAIC	0.00	3.80	0.30	0.82	10.62
General predictors					
Seedling no. (transformed)	**18.17	**18.02	**17.77	**17.78	**17.53
Local temp.	-	0.30	1.14	0.85	0.42
Local precip.	-	-0.37	0.07	-0.09	-0.50
Transient/Persistent predictors					
Transient	-	-	0.71	-	-
Transient * Local temp.	-	-	*-3.02	-	-
Transient * Local precip.	-	-	-1.40	-	-
Origin-based predictors					
Transients from similar temp.	-	-	-	-0.20	-
Transients from cooler into warmer	-	-	-	*-2.67	-
Transients from warmer into cooler	-	-	-	1.43	-
Transients from similar precip.	-	-	-	-	-0.92
Transients from drier into wetter	-	-	-	-	0.29
Transients from wetter into drier	-	-	-	-	0.01
Transients from unknown climates	-	-	-	-0.53	-0.51

Table S3.
Standardized coefficients (z-scores) from different GLM models (columns) predicting numbers of established seedlings by species and site. In column headers, "Sp. status" refers to whether the species is locally-transient or locally-persistent, and "Sp. pref. temp./precip." refers to the nearest temperatures/precipitations at which we found the species to have a persistent adult population, which we used to infer the climate from which they likely dispersed. The predictor Seedling no. (transformed) refers to the numbers of emerged seedlings of each species at each site, normalized with Yeo-Johnson transformations (refer to Methods). Data consisted of all recorded emerged/established seedlings that could be identified to species. N is equal to 692, the number of unique emerged seedling species-by-site combinations. Asterisks denote significance (*: $p < 0.05$, **: $p < 0.001$). Dashes denote predictors that were not included in a given model.