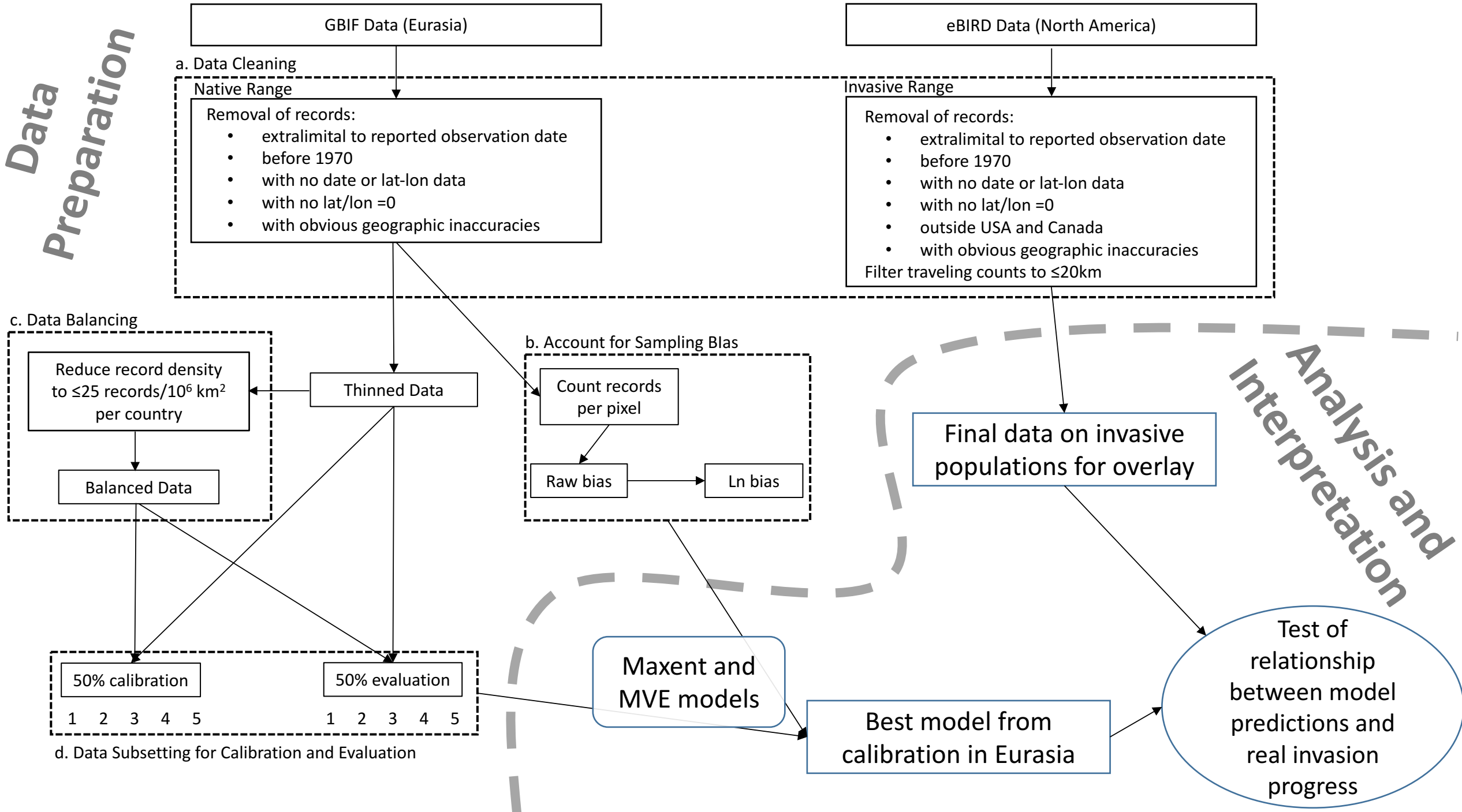
Data Preparation
GBIF Data (Eurasia)
eBIRD Data (North America)
a. Data Cleaning
Native Range
Removal of records:
• extralimital to reported observation date
• before 1970
• with no date or lat-lon data
• with no lat/lon =0
• with obvious geographic inaccuracies
Invasive Range
Removal of records:
• extralimital to reported observation date
• before 1970
• with no date or lat-lon data
• with no lat/lon =0
• outside USA and Canada
• with obvious geographic inaccuracies
Filter traveling counts to ≤20km
c. Data Balancing
Reduce record density to ≤25 records/10⁶ km² per country
Thinned Data
Balanced Data
b. Account for Sampling BIas
Count records per pixel
Raw bias
Ln bias
Final data on invasive populations for overlay
Analysis and Interpretation
50% calibration
50% evaluation
1 2 3 4 5
1 2 3 4 5
d. Data Subsetting for Calibration and Evaluation
Maxent and MVE models
Best model from calibration in Eurasia
Test of relationship between model predictions and real invasion progress

Supplementary Materials

Summary of Principal Component Analysis Results

We created this analysis on a global scope, and based on variables 1-7 and 10-17 from the bioclimatic variables provided in the WorldClim climate data archive (www.worldclim.org). These

Variance explained:

	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.8443	1.9873	1.09497	0.93816	0.66159
Proportion of variance	0.5393	0.2633	0.07993	0.05868	0.02918
Cumulative proportion	0.5393	0.8026	0.88257	0.94125	0.97043

Factor loadings:

Bioclimatic variable	Definition	PC1	PC2	PC3	PC4	PC5
bio1	Annual mean temperature	0.329	-0.154	-0.120	-0.028	0.141
bio2	Mean diurnal range	0.116	-0.374	-0.101	-0.375	-0.473
bio3	Isothermality	0.324	-0.020	-0.016	0.119	-0.333
bio4	Temperature seasonality	-0.323	-0.023	0.058	-0.385	0.138
bio5	Maximum temperature of warmest month	0.255	-0.278	-0.153	-0.344	0.266
bio6	Minimum temperature of coldest month	0.340	-0.068	-0.117	0.157	0.102
bio7	Temperature annual range	-0.302	-0.110	0.055	-0.485	0.051
bio10	Mean temperature of warmest quarter	0.277	-0.240	-0.144	-0.280	0.313
bio11	Mean temperature of coldest quarter	0.339	-0.098	-0.104	0.123	0.056
bio12	Annual precipitation	0.232	0.347	0.180	-0.196	0.033
bio13	Precipitation of wettest month	0.246	0.224	0.472	-0.172	0.135
bio14	Precipitation of driest month	0.101	0.413	-0.327	-0.252	-0.288
bio15	Precipitation seasonality	0.095	-0.320	0.493	-0.034	-0.503
bio16	Precipitation of wettest quarter	0.245	0.242	0.446	-0.173	0.135
bio17	Precipitation of driest quarter	0.113	0.415	-0.309	-0.247	-0.260

Supplementary Figures

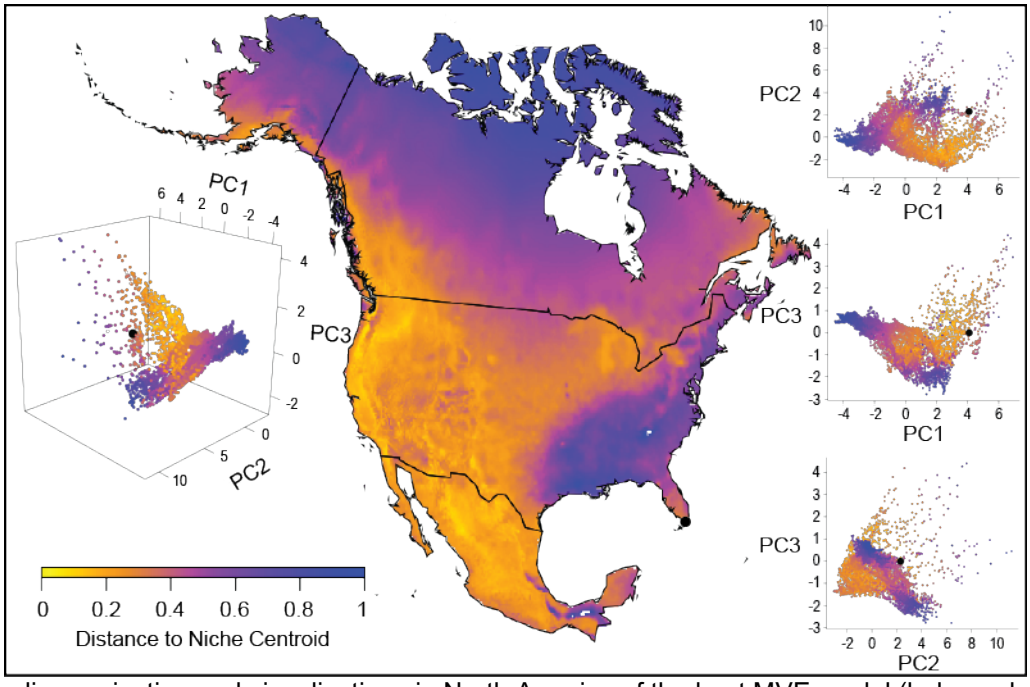

Fig S1 Median projection and visualizations in North America of the best MVE model (balanced occurrence data, no bias layer) based on an adjusted least training presence threshold (*E* = 5%). (a) Projected environmental suitability. Environmental distance from calculated niche centroid is displayed on a continuous gradient scale, after standardizing and subtracting from unity. Visualizations in environmental space: 3-dimensional and 2-dimensional plots. Projection: North America Lambert Conformal Conic.

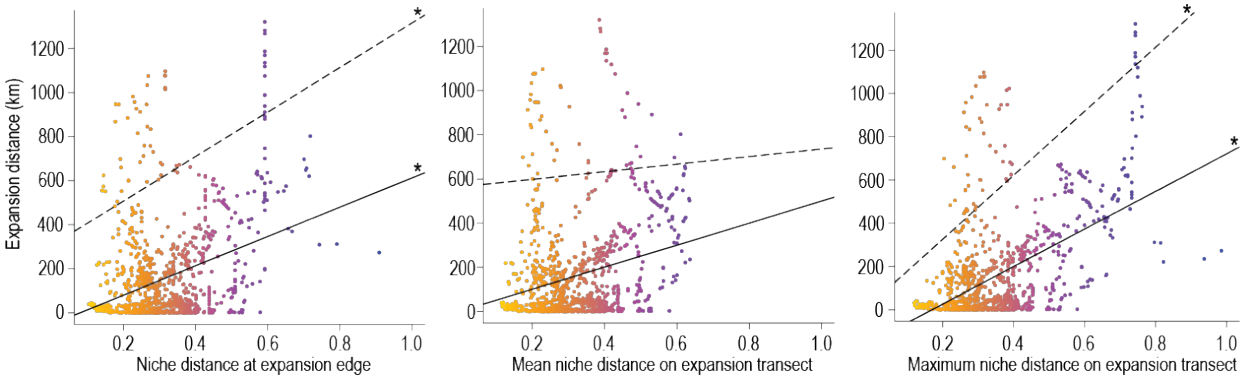

Fig S2 Plots of simple linear (black lines) and 5% quantile (dashed lines) regressions of the best MVE model (balanced occurrence data, no bias layer) for distance from niche centroid to expansion edge for (a) raw and (b) thinned data, and mean distance traveled from last expansion with (c) raw and (d) thinned data. Color ramp is identical to Figure S1. Asterisk (*) denotes significance.