

Table S1. Description of environmental predictor variables used to build final species distribution model (SDM) of Jefferson salamander breeding ponds. *Variable excluded from SDM due to high correlation ($r > |0.7|$) with other variables.

Variable name	Description	Data Source	
Temperature	BIO1*	Annual mean temperature	WorldClim v2 available at worldclim.org
	BIO2*	Mean diurnal temperature range	
	BIO3	Isothermality ((BIO2/BIO7)*100)	
	BIO4	Temperature seasonality (SD*100)	
	BIO5*	Max temperature of warmest month	
	BIO6*	Min temperature of coldest month	
	BIO7*	Temperature annual range (BIO5-BIO6)	
	BIO8	Mean temperature of wettest quarter	
	BIO9	Mean temperature of driest quarter	
	BIO10	Mean temperatures of warmest quarter	
	BIO11*	Mean temperature of coldest quarter	
Precipitation	BIO12	Annual precipitation	PDEM available at geogratings.ca
	BIO13*	Precipitation of wettest month	
	BIO14*	Precipitation of driest month	
	BIO15	Precipitation seasonality (CV)	
	BIO16*	Precipitation of wettest quarter	
	BIO17*	Precipitation of driest quarter	
	BIO18	Precipitation of warmest quarter	
	BIO19*	Precipitation of coldest quarter	
	Topography	Elevation*	
Pdep		Probability of terrain depression, probability from 0 to 1 of a location being in a terrain depression	
Land type	Land type as defined by SOLRIS: Mixed forest, Deciduous forest, Treed swamp, Thicket swamp, Marsh, Open water, Plantation, Tilled, Transportation (roads), Built-up area (pervious), Built-up area (impervious), Undifferentiated	SOLRIS v3 available at geohub.lio.gov.on.ca	
Soil type	Texture	Soil texture of the surface horizon as combinations of sand, clay, and silt composition: Clay, Clay Loam, Coarse Sandy Loam, Fine Sand, Fine Sandy Loam, Gravelly Loam, Gravel, Gravelly Sand, Gravelly Sandy Loam, Loam, Loamy Fine Sand, Loamy Sand, Loamy Very Fine Sand, Organic, Sand, Silty Clay, Silty Clay Loam, Silt Loam, Sandy Loam, Very Fine Sandy Loam, Variable	Soil Survey Complex available at geohub.lio.gov.on.ca
	Drainage	Class describing how well water drains from the soil: Very Rapidly, Rapidly, Well, Moderately Well, Imperfectly, Poorly, Very Poorly, Variable	

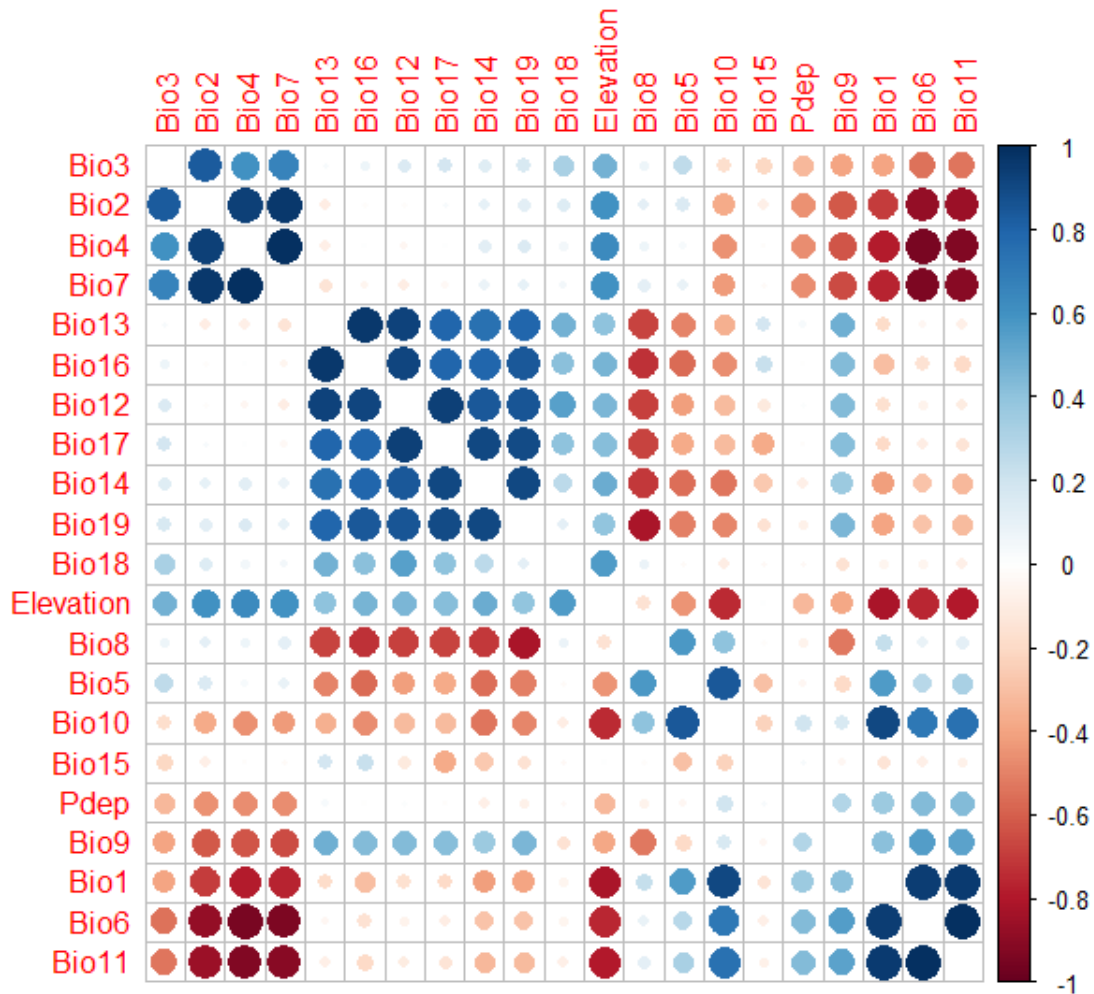


Figure S1. Correlation matrix of continuous environmental predictor variables used to build a species distribution model (SDM) of Jefferson salamander breeding ponds. Circle size represents the magnitude of Pearson’s correlation coefficient, calculated using ENMTools (Warren et al. 2010). Red circles denote negative correlations while blue denotes positive. See Table S1 for full description of variables.

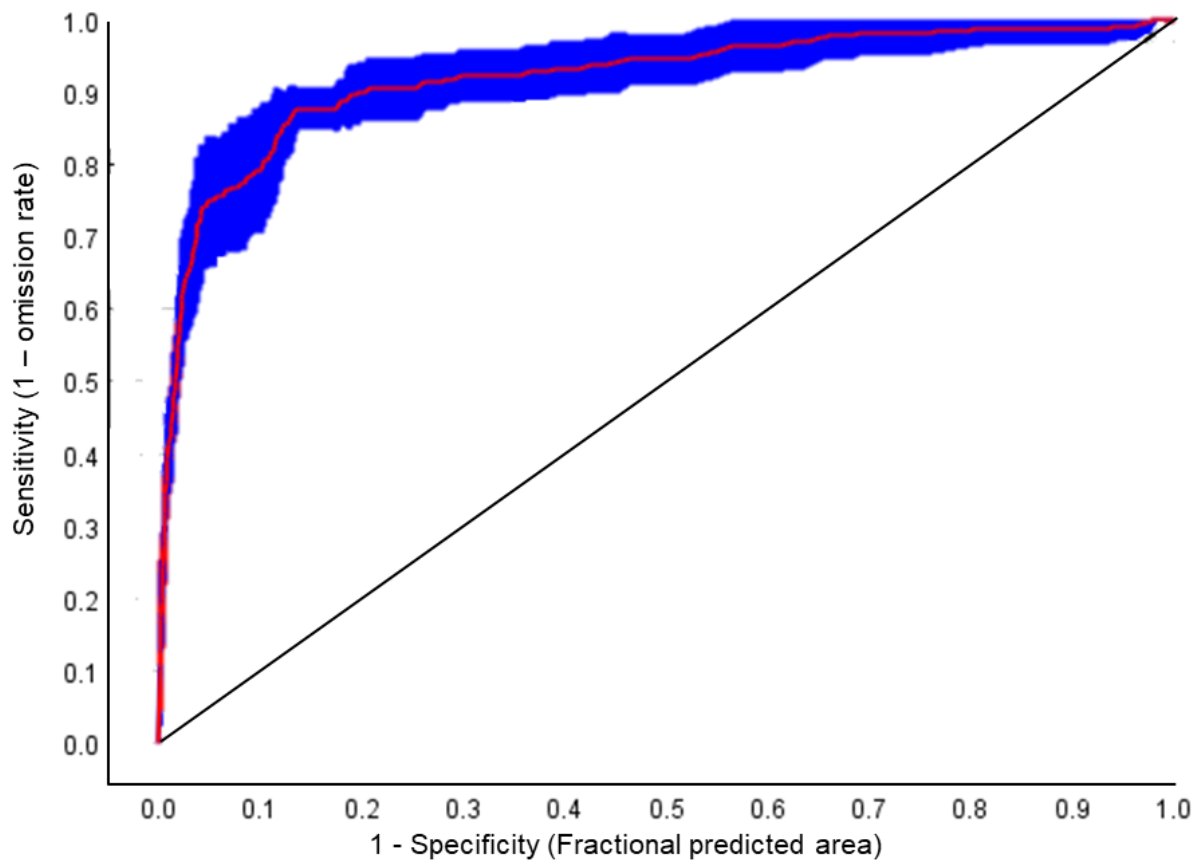


Figure S2. Receiver operating characteristic (ROC) curve for the final calibrated species distribution model (SDM), plotting Model sensitivity is plotted against 1 – model specificity, averaged across all 10 model replicates. The red line depicts mean model performance and the blue area represents +/- 1 standard deviation across model replicates. Area under the curve (AUC) is 0.919, indicating excellent model performance compared to random prediction represented by the black line. Note that specificity is measured as fractional predicted area in presence-only modelling.

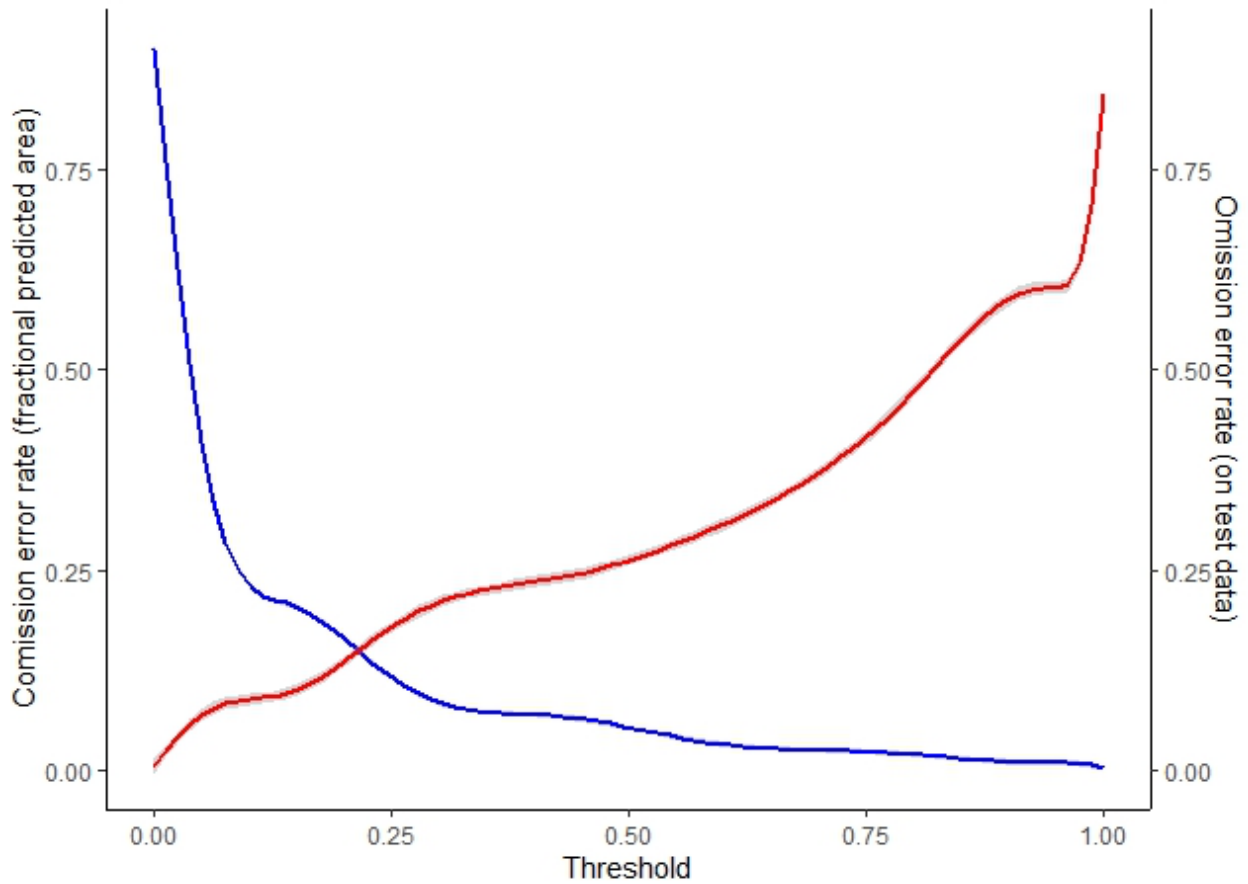


Figure S3. Commission error rate (blue line) and omission error rate (red line) against threshold values from species distribution model (SDM) of Jefferson salamander breeding ponds in southern Ontario. Note that commission error rate is measured as the fraction of the total study area predicted as presence (fractional predicted area) due to the lack of absence data in presence-only modeling. Omission error rate is measured as the rate of known occurrence locations incorrectly classified as absences. Rates averaged across 10 model replicates.