Conceptual diagram of the three main components to the spatially-explicit two-dimensional stepping stone (2DSS) model. The translation of a species distribution model (SDM) into a 2DSS is illustrated in A), where the SDM predicted suitabilities range from 0-1, then are translated into local deme sizes using a transformation function. Two transformation functions are considered in the present study- linear (left) and threshold (right). For the linear transformation, the SDM predicted suitability values are multiplied by a maximum local deme size (max local N) to achieve local deme sizes that are directly proportional to the SDM. For the threshold transformation, a threshold is applied, where demes that correspond with SDM cells with predicted suitability values above the threshold are occupied, while those less than or equal to the threshold are not occupied. To ensure that the total population size across the landscape is comparable between linear and threshold transformations for model comparison, the constant local deme size in a threshold transformation is determined by the average of all non-empty deme sizes in a corresponding linear transformation with a max local N. This ensures that the total population size across the landscape is comparable between linear and threshold transformations. Migration occurs between neighbors and is scaled by neighboring population sizes B) with the formula mN1-N2 = (NN1 / NN2) \* M, where M is a global migration rate, and N is the local deme size. C) After the final time step in the spatial portion of the simulation, all demes merge into larger non-spatial ancestral populations (Tspatial merge). Which ancestral population a deme merges into is determined by admixture assignment of empirical samples that occupy the deme. For full-landscape simulations, demes that do not correspond with empirical samples are assigned an ancestral population through nearest-neighbor interpolation of the demes assigned to an ancestral population across the landscape. All ancestral populations eventually merge into a single population at Tanc. merge.