

Description of landscape metrics.

Table S4. Indices that quantified landscape structure at each of three focal scales for each of the 15 sampling sites based on a 2011 land cover map.

Landscape index	Formula	Variables	Description
Composition			
Percent forest/pasture	$\frac{\sum_{j=1}^n a_{ij}}{A} (100)$	a_{ij} , area (m ²) of patch ij ; A , total landscape area (m ²).	Percent of the total area of the focal scale occupied by a particular land cover type (i.e. forest or pasture).
Mean forest patch size	$\frac{\sum_{j=1}^n a_{ij} (\frac{1}{10,000})}{n_i}$	a_{ij} , area (m ²) of patch ij ; n_i , number of patches of land cover type i .	Average area of all forest patches (divided by 10,000 to convert to hectares) within a focal scale.
Forest patch density	$\frac{n_i}{A} (10,000) (100)$	n_i , number of patches of land cover type i ; A , total landscape area (m ²).	Number of forest patches divided by total area of the focal scale (multiplied 10,000 and 100 to convert to 100 hectares).
Simpson's diversity	$1 - \sum_{i=1}^m P_i^2$	P_i , proportion of landscape occupied by land cover type i .	Measures landscape heterogeneity by considering proportions of all land cover types within a focal scale.
Configuration			
Mean forest proximity	$\frac{\sum_j \sum_{s=1}^n \frac{a_{ijs}}{h_{ijs}^2}}{n_i}$	a_{ijs} , area (m ²) of patches ijs within focal scale; h_{ijs} , distance (m) between patch ijs and nearest neighbor patch ijs , based on patch edge-to-edge distance; n_i , number of patches type i .	Average of the sum of forest patch area divided by the edge-to-edge distance squared between the focal patch and the nearest patch for all forest patches within a focal scale.
Mean forest nearest neighbor	$\frac{\sum_{j=1}^n h_{ij}}{n_i}$	h_{ij} , distance (m) between patch ij and nearest neighbor patch of type i , based on patch edge-to-edge distance; n_i , number of patches type i .	Average minimum edge-to-edge distance between all possible pairwise patches of forest in a focal scale.
Mean forest patch shape	$\frac{\sum_{j=1}^n \frac{0.25 p_{ij}}{\sqrt{a_{ij}}}}{n_i}$	p_{ij} , perimeter (m) of patch ij ; a_{ij} , area (m ²) of patch ij ; n_i , number of patches of land cover type i .	Average of forest patch perimeter divided by square root of patch area, adjusted by a constant to adjust for a square standard, within a focal scale.
Forest edge density	$\frac{\sum_{k=1}^m e_{ik}}{A} (10,000)$	e_{ik} , total length (m) of edge of all patches type i ; A , total landscape area (m ²).	Total length of edge of forest patches divided by total area of the focal scale (multiplied by 10,000 to convert to hectares).