

Table S1. The formula and meaning of landscape indices.

Index name	Formula	Index meaning
Patch Density (PD)	$PD = \frac{n_i}{A}$	Number of patches per unit area
Edge Density (ED)	$ED = \frac{E}{A} \times 10^6$	The total length of all edge segments per unit area for patches
Percentage of Landscape (PLAND)	$PLAND = \frac{\sum_{j=1}^n a_{ij}}{A} \times 100$	Area percentage of a certain landscape type
Landscape Shape Index (LSI)	$LSI = \frac{0.25E}{\sqrt{A}}$	A modified perimeter-area ratio of the form that measures the class shape complexity of the whole landscape
Largest Patch Index (LPI)	$LPI = \frac{MAX(a_1 a_2 \cdots a_n)}{A} \times 100$	The proportion of the largest patch area in the landscape to the total landscape area
Proportion of Like Adjacencies (PLADJ)	$PLADJ = \frac{a_i}{\sum_{j=1}^n a_{ij}} \times 100$	Degree of contiguity of the landscape
Aggregation Index (AI)	$AI = \left[\frac{g_{ii}}{\max \rightarrow g_{ii}} \right] \times 100$	Degree of aggregation of landscape patches
Contagion Index (CONTAG)	$CONTAG = \left[1 + \frac{\sum_{i=1}^m \sum_{k=1}^m \left[(p_i) \left(\frac{g_{ik}}{\sum_{k=1}^m g_{ik}} \right) \right] \left[\ln(p_i) \left(\frac{g_{ik}}{\sum_{k=1}^m g_{ik}} \right) \right] g_{ii}}{2 \ln(m)} \right] \times 100$	Degree of aggregation or extension trends of different patch types in the landscape
Shannon's Diversity Index (SHDI)	$SHDI = \sum_{i=1}^n (P_i \ln P_i)$	Reflecting landscape heterogeneity. The increase in SHDI indicates an increase in patch types or a balanced distribution of patch types in the landscape

A: total area of the landscape, *i* and *j*: different patch types, *E*: total length of all patch boundaries in the landscape, *n*: total number of patches, *a*: area of patches, *g*: number of adjacent patches, *p*: percentage of area occupied by patches, *m*: total number of patch types.