Table 1 Metrics of landscape structure for selected indices at the level of patches

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | AREA | PID | PERIM | SHAPE | NCORE | FRAC | CORE | ENN | CAI |
| Agriculture | 41.79 | 83 | 21766.9 | 69.616 | 41 | 68.00 | 3.685 | 169.60 | 462.89 |
| Bare land | 3.33 | 26 | 2578.45 | 13.25 | 1 | 13.16 | 0.089 | 423.62 | 11.11 |
| Forest | 2.88 | 13 | 1918.85 | 7.583 | 2 | 7.18 | 0.179 | 0 | 23.61 |
| Settlement | 31.37 | 86 | 18408.95 | 64.7 | 25 | 61.45 | 2.248 | 359.78 | 288.29 |
| Shrub land | 1.53 | 13 | 1319.21 | 7.25 | 0 | 7.09 | 0 | 134.08 | 0 |
| Grand Total | **80.90** | **221** | **45992.388** | **162.4** | **69** | **156.88** | **6.2031** | **1087.0868** | **785.912** |

Table 2 Metrics of landscape structure for selected indices at the class level

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Metrics | Agriculture | Bare land | Forest | Settlement | Shrub land | Grand Total |
| CA | 41.79 | 3.32 | 2.87 | 31.3718 | 1.5282 | 80.90 |
| NP | 67 | 13 | 7 | 60 | 7 | 154 |
| PLAND | 5166.66 | 411.11 | 355.55 | 3877.77 | 188.88 | 9999.99 |
| LPI | 5155.55 | 377.77 | 355.55 | 3822.22 | 177.77 | 9888.89 |
| PD | 8281.54 | 1606.86 | 865.23 | 7416.30 | 865.23 | 19035.18 |
| TE | 3268.03 | 1049.37 | 659.60 | 4377.37 | 659.60 | 10013.99 |
| CORE\_MN | 3.68 | 0.08 | 0.17 | 2.24 | 0 | 6.2031 |
| ED | 4039.46 | 1297.07 | 815.30 | 5410.65 | 815.30 | 12377.79 |
| AREA\_MN | 41.71 | 2.92 | 2.87 | 30.78 | 1.43 | 79.73 |
| SHAPE\_MN | 68.61 | 10.12 | 7.58 | 61.57 | 6.25 | 154.15 |
| TCA | 3.68 | 0.08 | 0.17 | 2.24 | 0 | 6.2031 |
| CPLAND | 455.55 | 11.11 | 22.22 | 277.77 | 0 | 766.66 |
| IJI | 283.65 | 191.82 | 0 | 474.01 | 91.82 | 1041.33 |
| CAI\_MN | 462.89 | 11.11 | 23.61 | 288.29 | 0 | 785.91 |
| ENN\_MN | 84.80 | 211.80 | 0 | 179.89 | 67.04 | 543.54 |

Table 3 Illustrative measures of the wider landscape metrics at the landscape level

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Metrics | Agriculture | Bare land | Forest | Settlement | Shrub land | Grand Total |
| NP | 73 | 3 | 5 | 70 | 3 | 154 |
| TA | 42.87 | 1.61 | 2.42 | 33.16 | 0.80 | 80.9 |
| AREA\_MN | 35.86 | 1.21 | 1.62 | 23.59 | 0.26 | 62.56 |
| PD | 9023.17 | 370.81 | 618.02 | 8652.35 | 370.81 | 19035.18 |
| LPI | 4855.55 | 177.77 | 266.66 | 3566.66 | 77.77 | 8944.44 |
| TE | 1888.86 | 89.94 | 209.87 | 2698.38 | 119.92 | 5006.99 |
| SHAPE\_MN | 54.30 | 2 | 3.16 | 43.29 | 1 | 103.76 |
| PR | 70 | 3 | 5 | 65 | 3 | 146 |
| TCA | 3.68 | 0.08 | 0.17 | 2.24 | 0 | 6.20 |
| CORE\_MN | 3.49 | 0.08 | 0.13 | 1.99 | 0 | 5.70 |
| CAI\_MN | 434.62 | 11.11 | 17.36 | 250.49 | 0 | 713.59 |
| ENN\_MN | 179.89 | 0 | 0 | 363.65 | 0 | 543.54 |
| IJI | 94.63 | 0 | 0 | 214.73 | 94.63 | 404.01 |
| PRD | 8652.35 | 370.81 | 618.02 | 8034.32 | 370.81 | 18046.34 |
| SHDI | 8.64 | 0.52 | 0.87 | 11.52 | 0.68 | 22.26 |
| SHEI | 12.11 | 0.76 | 1.26 | 15.14 | 0.62 | 29.91 |

Table 4 Eigenvalues and cumulative variability in various PC for landscape metrics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | F1 | F2 | F3 | F4 |
| Eigenvalue | 14.8257 | 1.0542 | 0.1193 | 0.0008 |
| Variability (%) | 92.6606 | 6.5890 | 0.7454 | 0.0050 |
| Cumulative % | 92.6606 | 99.2496 | 99.9950 | 100.0000 |

Table 5 Factor scores loading matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Land cover | PC 1 | PC 2 | PC 3 | PC 4 |
| Agriculture | 4.4318 | -1.3474 | 0.13518 | 9.74E-05 |
| Bare land | -2.9128 | -0.26812 | -0.24432 | 0.04044 |
| Forest | -2.7286 | -0.27137 | -0.28794 | -0.03918 |
| Settlement | 3.996 | 1.4312 | -0.14597 | 0.000984 |
| Shrub land | -2.7864 | 0.45561 | 0.54305 | -0.00234 |

Table 6 Results of the factor analysis for the first four factors

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Factor number | | | |
|  | 1 | 2 | 3 | 4 |
| Eigenvalue | 14.8257 | 1.05423 | 0.119272 | 0.000794234 |
| % variance | 92.661 | 6.589 | 0.74545 | 0.004964 |
|  | **Factor loadings** | | | |
| Metrics | PC 1 | PC 2 | PC 3 | PC 4 |
| NP | 0.25967 | 0.0066049 | -0.05036 | -0.04775 |
| TA | 0.2574 | -0.12913 | 0.031034 | 0.081628 |
| AREA\_MN | 0.25278 | -0.22087 | 0.10127 | 0.22675 |
| PD | 0.25967 | 0.0066049 | -0.05036 | -0.04775 |
| LPI | 0.25615 | -0.1598 | 0.053616 | 0.075298 |
| TE | 0.24968 | 0.25197 | -0.2689 | -0.52555 |
| SHAPE\_MN | 0.25801 | -0.11118 | 0.013296 | 0.028446 |
| PR | 0.25967 | -0.014077 | -0.03405 | -0.09754 |
| TCA | 0.24998 | -0.26082 | 0.12203 | -0.15947 |
| CORE\_MN | 0.24736 | -0.2917 | 0.16216 | 0.13243 |
| CAI\_MN | 0.24776 | -0.28727 | 0.15656 | 0.09394 |
| ENN\_MN | 0.23365 | 0.40604 | -0.37123 | 0.72719 |
| IJI | 0.19301 | 0.59691 | 0.77719 | -0.00377 |
| PRD | 0.25967 | -0.014077 | -0.03405 | -0.09754 |
| SHDI | 0.25255 | 0.21593 | -0.20962 | -0.14533 |
| SHEI | 0.25482 | 0.17098 | -0.23357 | -0.18415 |