**Supplementary Information S4: *Global and local connectivity metric estimates for the focal species***

**Table S3:** Global connectivity metrics in the present scenario (PS) and in the hypothetical scenario (HS)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Chinkara** | | **Nilgai** | | **Blackbuck** | | **FHA** | |
| **PS** | **HS** | **PS** | **HS** | **PS** | **HS** | **PS** | **HS** |
| **F** | 5.02×109 | 3×109 | 2.18×1010 | 3.92×109 | 3.06×109 | 3.56×108 | 6.36×108 | 1.61×108 |
| **EC** | 1.67×109 | 9.15×108 | 2.87×109 | 1.09×109 | 1.46×109 | 6.09×108 | 6.08×108 | 3.91×108 |
| **PC** | 1.25×104 | 3.76×105 | 3.7×104 | 5.34×105 | 9.46×105 | 1.66×105 | 1.66×105 | 6.85×106 |
| **IIC** | 2.14×104 | 3.74×105 | 5.33×104 | 5.54×105 | 2.23×104 | 1.74×105 | 3.13×105 | 7.51×106 |
| **MSC** | 6.28×108 | 3.5×108 | 1.67×109 | 6.25×108 | 9.38×108 | 1.52×108 | 3.34×108 | 2.16×108 |
| **SLC** | 3.88×109 | 7.8×108 | 6.09×109 | 9.08×108 | 3.25×109 | 7.08×108 | 8.72×108 | 3.96×108 |
| **CCP** | 0.67 | 0.3 | 0.83 | 0.43 | 0.51 | 0.62 | 0.36 | 0.45 |
| **ECS** | 3.21×109 | 5.3×108 | 5.59×109 | 8.1×108 | 2.4×109 | 5.65×108 | 7.22×108 | 2.92×108 |
| **NC** | 7 | 5 | 4 | 3 | 5 | 6 | 6 | 3 |
| **GD** | 4.37×108 | 5×107 | 3.57×108 | 1.15×108 | 6.53×107 | 8.05×106 | 8.26×106 | 1.94×106 |
| **H** | 104.59 | 31.42 | 153.54 | 35.42 | 192.24 | 7.5 | 36.98 | 5 |

Terms and their meanings:  
F: Sum Flux, EC: Equivalent Probability, PC: Probability of connectivity, IIC: Integral Index of Connectivity,  
MSC: Mean Size of the Components, SLC: Size of the Largest Component, CCP: Class Coincidence Probability, ECS: Expected Cluster Size, NC: Number of components, GD: Graph Diameter, and H: Harary Index

|  |
| --- |
|  |

**Figure S6:** ID numbers of the blackbuck nodal habitats

|  |
| --- |
|  |

**Figure S7:** ID numbers of the chinkara nodal habitats

|  |
| --- |
|  |

**Figure S8:** ID numbers of the four-horned antelope nodal habitats

|  |
| --- |
|  |

**Figure S9:** ID numbers of the nilgai nodal habitats

**Table S4: Local connectivity metrics for blackbuck nodal habitats**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Node Id** | **N** | **E** | **Area (km2)** | **Perimeter (km)** | **BC** | **F** | **CF** | **IF** | **CC** | **CCe** | **CCor** | **Dg** | **Ec** |
| 1 | 25.14 | 81.37 | 64 | 48 | 0 | 5807419 | 0 | 4.47E+15 | 0 | 34707031 | 0.5 | 1 | 55667246 |
| 2 | 24.99 | 80.71 | 172 | 128 | 6.3E+10 | 10154866 | 1.94E+09 | 3.13E+16 | 0 | 16194124 | 0.8 | 2 | 31060531 |
| 3 | 24.93 | 81.13 | 160 | 100 | 1.16E+11 | 10927449 | 9.16E+08 | 2.73E+16 | 0 | 24029660 | 1.333333 | 2 | 43464536 |
| 4 | 24.79 | 80.17 | 64 | 48 | 3.28E+11 | 7084519 | 2.68E+09 | 4.55E+15 | 0.333333 | 13553390 | 1 | 3 | 29499637 |
| 5 | 24.60 | 82.01 | 96 | 64 | 0 | 9021753 | 0 | 1.01E+16 | 0 | 13856346 | 0.5 | 1 | 20964646 |
| 6 | 24.61 | 79.89 | 32 | 32 | 0 | 3760536 | 1.15E+09 | 1.14E+15 | 0.666667 | 15873478 | 0.9 | 3 | 39141376 |
| 7 | 24.62 | 79.58 | 24 | 28 | 3.75E+12 | 13672470 | 1.74E+09 | 9.04E+14 | 0.5 | 14286338 | 1.333333 | 4 | 40082377 |
| 8 | 24.51 | 82.34 | 176 | 132 | 4.79E+10 | 5620799 | 2.64E+08 | 3.20E+16 | 0 | 6892735 | 1.333333 | 2 | 10519230 |
| 9 | 24.38 | 79.23 | 112 | 84 | 2.13E+11 | 6220153 | 7.57E+08 | 1.32E+16 | 0.333333 | 17458888 | 1.125 | 3 | 46915656 |
| 10 | 24.46 | 79.44 | 40 | 32 | 0 | 12119189 | 8.74E+08 | 2.08E+15 | 0.666667 | 16800385 | 0.9 | 3 | 45049477 |
| 11 | 24.35 | 78.30 | 36 | 36 | 3.69E+11 | 36104635 | 2.74E+09 | 2.60E+15 | 1 | 32880774 | 0.727273 | 4 | 59979845 |
| 12 | 24.35 | 78.51 | 32 | 28 | 0 | 35481803 | 2.98E+09 | 2.16E+15 | 1 | 32344133 | 0.727273 | 4 | 59227212 |
| 13 | 24.26 | 78.57 | 52 | 36 | 0 | 34256051 | 3.63E+09 | 4.49E+15 | 1 | 30385816 | 0.727273 | 4 | 56744502 |
| 14 | 24.27 | 79.00 | 24 | 24 | 0 | 11119628 | 0 | 8.43E+14 | 0 | 25116530 | 0.333333 | 1 | 55667246 |
| 15 | 24.23 | 80.58 | 52 | 40 | 0 | 7891915 | 18404600 | 3.11E+15 | 1 | 5086731 | 1 | 2 | 5641347 |
| 16 | 24.20 | 78.29 | 120 | 76 | 2.93E+12 | 21498787 | 7.39E+09 | 1.70E+16 | 0.466667 | 29654493 | 1.44 | 6 | 56242982 |
| 17 | 24.13 | 81.18 | 188 | 108 | 0 | 18058593 | 0 | 3.87E+16 | 1 | 4067489 | 1 | 2 | 5641347 |
| 18 | 24.15 | 82.64 | 40 | 44 | 3.82E+12 | 7479292 | 3.36E+08 | 1.90E+15 | 0 | 8342811 | 1.333333 | 2 | 16321977 |
| 19 | 24.07 | 78.62 | 100 | 56 | 3.19E+12 | 24019789 | 1.69E+10 | 1.24E+16 | 0.428571 | 24475725 | 1.828571 | 8 | 49209935 |
| 20 | 24.06 | 78.14 | 40 | 28 | 0 | 7275093 | 0 | 1.89E+15 | 0 | 38310251 | 0.166667 | 1 | 65252892 |
| 21 | 24.03 | 80.90 | 96 | 68 | 0 | 35572824 | 53639093 | 1.26E+16 | 1 | 3512874 | 1 | 2 | 4532116 |
| 22 | 24.03 | 82.71 | 32 | 28 | 0 | 5735429 | 0 | 1.21E+15 | 0 | 11437923 | 0.5 | 1 | 20964646 |
| 23 | 23.91 | 78.72 | 44 | 32 | 0 | 25480556 | 8.38E+09 | 3.06E+15 | 0.833333 | 23599950 | 0.761905 | 4 | 45845839 |
| 24 | 23.87 | 79.62 | 40 | 32 | 0 | 78636825 | 4.62E+09 | 4.75E+15 | 1 | 22561979 | 0.551724 | 4 | 50328678 |
| 25 | 23.54 | 79.72 | 656 | 276 | 1.26E+14 | 1.32E+08 | 2.69E+10 | 5.17E+17 | 0.290909 | 18178125 | 2.283019 | 11 | 49587996 |
| 26 | 23.81 | 79.74 | 64 | 48 | 1.7E+12 | 3.28E+08 | 7.7E+09 | 2.51E+16 | 1 | 21445061 | 0.551724 | 4 | 49805537 |
| 27 | 23.78 | 78.46 | 60 | 36 | 2.59E+12 | 17278380 | 7.67E+09 | 4.64E+15 | 0.666667 | 23799795 | 0.695652 | 4 | 46742295 |
| 28 | 23.78 | 80.06 | 72 | 64 | 2.15E+12 | 98590565 | 4.49E+09 | 1.23E+16 | 0.666667 | 27762546 | 0.666667 | 4 | 62000539 |
| 29 | 23.75 | 78.71 | 48 | 36 | 5.85E+12 | 22936000 | 1.68E+10 | 3.40E+15 | 0.666667 | 21193209 | 0.695652 | 4 | 41515814 |
| 30 | 23.71 | 78.59 | 44 | 36 | 6.25E+13 | 27956714 | 1.78E+10 | 3.17E+15 | 0.6 | 21276727 | 0.961538 | 5 | 42165246 |
| 31 | 23.75 | 79.20 | 28 | 24 | 0 | 1E+08 | 7.06E+09 | 3.59E+15 | 1 | 20458438 | 0.473684 | 3 | 36931676 |
| 32 | 23.58 | 79.29 | 508 | 144 | 1.28E+13 | 3.99E+08 | 2.45E+10 | 4.61E+17 | 0.416667 | 15710217 | 1.76087 | 9 | 36663096 |
| 33 | 23.64 | 79.91 | 36 | 28 | 1.41E+11 | 3.01E+08 | 7.15E+09 | 1.21E+16 | 0.833333 | 25567492 | 0.615385 | 4 | 59090379 |
| 34 | 23.57 | 80.46 | 120 | 68 | 3.79E+11 | 12738610 | 3E+09 | 1.59E+16 | 0.5 | 30454370 | 0.941176 | 4 | 65245608 |
| 35 | 23.55 | 78.91 | 28 | 32 | 1.14E+14 | 66510665 | 3.69E+10 | 2.65E+15 | 0.4 | 19044907 | 1.2 | 6 | 36353868 |
| 36 | 23.58 | 80.08 | 32 | 32 | 2.65E+13 | 54321597 | 6.01E+09 | 2.76E+15 | 0.7 | 27161763 | 0.862069 | 5 | 62307569 |
| 37 | 23.47 | 79.00 | 44 | 40 | 2.51E+13 | 1.21E+08 | 1.27E+10 | 7.25E+15 | 0.833333 | 18580220 | 0.695652 | 4 | 31749508 |
| 38 | 23.47 | 81.22 | 72 | 52 | 0 | 0 | 0 | 5.18E+15 | 0 | 0 | 0 | 0 | 0 |
| 39 | 23.45 | 79.47 | 76 | 52 | 2.97E+12 | 2.62E+08 | 1.04E+10 | 2.57E+16 | 0.8 | 19319351 | 0.78125 | 5 | 46389704 |
| 40 | 23.41 | 79.39 | 36 | 36 | 1.68E+15 | 3.32E+08 | 1.12E+10 | 1.32E+16 | 0.833333 | 19619089 | 0.533333 | 4 | 45289324 |
| 41 | 23.42 | 80.48 | 32 | 24 | 0 | 31475138 | 1.25E+09 | 2.03E+15 | 1 | 31340264 | 0.4 | 2 | 65252892 |
| 42 | 23.23 | 79.09 | 748 | 268 | 1.5E+09 | 2.59E+08 | 6.69E+09 | 7.53E+17 | 0.6 | 14403686 | 0.735294 | 5 | 33037692 |
| 43 | 23.30 | 80.17 | 92 | 56 | 3.24E+12 | 28855813 | 8.03E+09 | 1.11E+16 | 0.4 | 24002901 | 1.241379 | 6 | 56824034 |
| 44 | 22.96 | 79.81 | 32 | 32 | 1.09E+13 | 21176020 | 5.08E+09 | 1.70E+15 | 0.333333 | 25912497 | 0.5 | 3 | 57375076 |
| 45 | 22.84 | 79.83 | 28 | 24 | 0 | 8194738 | 0 | 1.01E+15 | 0 | 30920214 | 0.333333 | 1 | 62575398 |

Terms and their meanings:  
N: Latitude, E: Longitude, BC: Betweenness centrality index, CF: Current Flow, F: Flux, IF: Interaction Flux, CC: Clustering Coefficient, CCe: Closeness Centrality,  
CCor: Connectivity Correlation, Dg: Node degree, and Ec: Eccentricity

**Table S5 : Local connectivity metrics for edges linking blackbuck nodal habitats**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Dist** | **DistM** | **BC** | **CF** |
| 3-1 | 4780364.856 | 29313.7085 | 3.72E+14 | 1.14E+09 |
| 3-2 | 4317403.13 | 22485.28137 | 1.38E+15 | 2.5E+09 |
| 4-2 | 4892922.082 | 53941.1255 | 3.70E+14 | 3.26E+09 |
| 6-4 | 5117676.128 | 28627.417 | 5.9E+13 | 1.6E+09 |
| 7-4 | 6058677.152 | 70426.40687 | 2.52E+13 | 1.63E+09 |
| 8-5 | 4282415.932 | 26142.13562 | 8.66E+14 | 5.36E+08 |
| 7-6 | 4300765.083 | 30627.417 | 4.05E+13 | 7.87E+08 |
| 10-6 | 5935001.785 | 50627.417 | 2.08E+13 | 8.21E+08 |
| 9-7 | 4536046.394 | 38142.13562 | 1.18E+14 | 1.08E+09 |
| 10-7 | 2669867.915 | 19656.85425 | 1.52E+14 | 8.51E+08 |
| 18-8 | 5876560.876 | 41798.98987 | 1.23E+14 | 6.88E+08 |
| 10-9 | 3840916.434 | 17656.85425 | 3.12E+14 | 1.05E+09 |
| 14-9 | 3330600.379 | 20828.42713 | 2.67E+14 | 8.6E+08 |
| 12-11 | 2801654.353 | 22485.28137 | 1.65E+14 | 1.75E+09 |
| 13-11 | 3499940.098 | 30970.56275 | 1.65E+14 | 1.56E+09 |
| 16-11 | 2251818.5 | 10000 | 9.08E+14 | 3.17E+09 |
| 19-11 | 5855931.976 | 43455.84412 | 6.21E+13 | 3.19E+09 |
| 13-12 | 1757544.492 | 4828.427125 | 4.92E+14 | 2.38E+09 |
| 16-12 | 3314095.791 | 23313.7085 | 3.86E+14 | 2.38E+09 |
| 19-12 | 5103298.157 | 28970.56275 | 9.3E+13 | 3.53E+09 |
| 16-13 | 4012381.535 | 31798.98987 | 3.86E+14 | 1.98E+09 |
| 17-15 | 5641346.633 | 60769.55262 | 1.95E+14 | 2.05E+08 |
| 19-13 | 2818383.105 | 10828.42713 | 7.39E+14 | 5.93E+09 |
| 19-16 | 4538088.251 | 24828.42713 | 5.16E+14 | 4.18E+09 |
| 20-16 | 4051501.176 | 18485.28137 | 2.91E+14 | 4.29E+09 |
| 21-15 | 4532115.52 | 39455.84412 | 2.15E+14 | 2.2E+08 |
| 21-17 | 2493631.929 | 5656.854249 | 3.20E+15 | 3.19E+08 |
| 22-18 | 2829894.642 | 14485.28137 | 1.84E+14 | 4.08E+08 |
| 23-19 | 3061110.411 | 12485.28137 | 5.28E+14 | 7.06E+09 |
| 25-24 | 3662904.733 | 28828.42713 | 2.07E+15 | 4.13E+09 |
| 26-24 | 2462185.997 | 8828.427125 | 4.64E+14 | 2.88E+09 |
| 26-25 | 1136224.461 | 2828.427125 | 1.91E+16 | 9.47E+09 |
| 27-16 | 6218499.315 | 40627.417 | 9.97E+13 | 5.15E+09 |
| 27-19 | 4573073.226 | 26970.56275 | 2.52E+14 | 3.43E+09 |
| 27-23 | 5517896.692 | 31798.98987 | 5.84E+13 | 2.36E+09 |
| 28-25 | 2898669.233 | 14485.28137 | 6.33E+15 | 5.87E+09 |
| 29-19 | 5611179.114 | 32142.13562 | 9.94E+13 | 6.47E+09 |
| 29-23 | 2247083.589 | 13656.85425 | 4.49E+14 | 8.54E+09 |
| 30-19 | 5200625.649 | 34970.56275 | 1.20E+14 | 5.88E+09 |
| 30-23 | 4492329.955 | 17313.7085 | 8.58E+13 | 3.2E+09 |
| 30-27 | 2215641.658 | 10828.42713 | 6.32E+14 | 9.22E+09 |
| 30-29 | 2420742.716 | 8828.427125 | 4.53E+14 | 3.83E+09 |
| 32-24 | 5173803.894 | 35798.98987 | 5.63E+14 | 4.76E+09 |
| 32-25 | 4433122.151 | 32142.13562 | 1.54E+16 | 7.12E+09 |
| 32-26 | 4650663.131 | 36970.56275 | 1.30E+15 | 5.67E+09 |
| 32-31 | 2388779.417 | 9656.854249 | 2.72E+15 | 9.18E+09 |
| 33-25 | 1184149.332 | 2828.427125 | 1.04E+16 | 9.91E+09 |
| 33-28 | 3211733.774 | 18485.28137 | 2.81E+14 | 2.55E+09 |
| 34-28 | 5788468.99 | 38142.13562 | 1.58E+14 | 3.43E+09 |
| 35-29 | 5161945.334 | 34970.56275 | 1.11E+14 | 1.92E+10 |
| 35-30 | 5811377.25 | 38627.417 | 6.51E+13 | 1.79E+10 |
| 35-31 | 5417846.003 | 34627.417 | 1.85E+13 | 6.68E+09 |
| 35-32 | 5395841.486 | 28142.13562 | 3.42E+14 | 9.31E+09 |
| 36-25 | 4289391.45 | 26970.56275 | 1.08E+15 | 4.5E+09 |
| 36-28 | 2848932.711 | 16828.42713 | 3.34E+14 | 2.26E+09 |
| 36-33 | 3317830.529 | 15656.85425 | 1.15E+14 | 3.13E+09 |
| 36-34 | 5565291.128 | 29656.85425 | 9.24E+13 | 3.08E+09 |
| 37-31 | 4693296.367 | 41455.84412 | 7.26E+13 | 2.22E+09 |
| 37-32 | 2903302.5 | 12000 | 2.98E+15 | 8.69E+09 |
| 37-35 | 2251550.342 | 9656.854249 | 2.72E+14 | 1.34E+10 |
| 39-24 | 6038608.74 | 49112.69837 | 4.7E+13 | 1.76E+09 |
| 39-25 | 2183720.843 | 7656.854249 | 1.10E+16 | 8.38E+09 |
| 39-26 | 5515467.977 | 50284.27125 | 1.08E+14 | 2.28E+09 |
| 39-32 | 2712762.155 | 8828.427125 | 5.88E+15 | 6.77E+09 |
| 40-25 | 3711505.017 | 11656.85425 | 1.80E+15 | 6.34E+09 |
| 40-32 | 1684644.474 | 5656.854249 | 5.68E+15 | 7.6E+09 |
| 40-39 | 1121813.624 | 2828.427125 | 2.94E+15 | 6.9E+09 |
| 41-34 | 2259311 | 8000 | 8.01E+14 | 3.1E+09 |
| 42-25 | 4826558.881 | 43455.84412 | 1.73E+16 | 7.4E+09 |
| 42-32 | 1177388.683 | 2828.427125 | 1.68E+17 | 6.31E+09 |
| 42-35 | 4138668.524 | 24142.13562 | 1.28E+15 | 1.12E+10 |
| 42-37 | 4029589.623 | 20142.13562 | 2.04E+15 | 5.35E+09 |
| 42-40 | 3068898.191 | 12485.28137 | 4.88E+15 | 5.81E+09 |
| 43-25 | 5192081.803 | 79254.834 | 1.72E+15 | 5.1E+09 |
| 43-33 | 6380791.673 | 45455.84412 | 3.99E+13 | 2.9E+09 |
| 43-34 | 4529085.303 | 33798.98987 | 4.77E+14 | 2.76E+09 |
| 43-36 | 4300628.427 | 31656.85425 | 1.65E+14 | 3.13E+09 |
| 43-41 | 3850992.137 | 31313.7085 | 2.06E+14 | 3.48E+09 |
| 44-25 | 5743122.863 | 62769.55262 | 4.18E+14 | 5.93E+09 |
| 44-43 | 5854492.753 | 58627.417 | 5.24E+13 | 4.33E+09 |
| 45-44 | 2033710.429 | 6828.427125 | 2.29E+14 | 3.98E+09 |

Here BC and CF stand for Betweenness Centrality and Current Flow, respectively. Dist and DistM are measures of dispersal cost through the path.

**Table S6: Local connectivity metrics for chinkara nodal habitats**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Node Id** | **N** | **E** | **Area (km2)** | **Permimeter (km)** | **BC** | **CF** | **F** | **IF** | **CC** | **CCe** | **Ccor** | **Dg** | **Ec** |
| 1 | 25.07 | 80.85 | 64 | 44 | 0 | 3.76E+09 | 19638865 | 5.35E+15 | 1 | 2.09E+08 | 0.666667 | 2 | 4.03E+08 |
| 2 | 24.96 | 81.26 | 92 | 68 | 0 | 0 | 53005756 | 1.33E+16 | 0 | 2.39E+08 | 0.333333 | 1 | 4.37E+08 |
| 3 | 24.95 | 81.10 | 64 | 56 | 1.00E+14 | 6.5E+09 | 78409615 | 9.11E+15 | 0.333333 | 2.28E+08 | 1.5 | 3 | 4.26E+08 |
| 4 | 24.88 | 80.63 | 84 | 68 | 3.89E+14 | 1.53E+10 | 67627504 | 1.27E+16 | 0.333333 | 1.89E+08 | 1.285714 | 3 | 3.81E+08 |
| 5 | 24.91 | 80.46 | 52 | 36 | 2.13E+15 | 2.02E+10 | 1.31E+08 | 9.51E+15 | 0 | 1.82E+08 | 0.8 | 2 | 3.7E+08 |
| 6 | 24.64 | 79.99 | 428 | 256 | 3.48E+13 | 2.22E+10 | 1.04E+08 | 2.28E+17 | 0 | 1.46E+08 | 1 | 2 | 3.2E+08 |
| 7 | 24.42 | 79.55 | 212 | 88 | 2.08E+15 | 3.14E+10 | 2.44E+08 | 9.67E+16 | 0 | 1.36E+08 | 0.8 | 2 | 2.95E+08 |
| 8 | 24.32 | 79.33 | 96 | 72 | 2.73E+15 | 3.73E+10 | 1.84E+08 | 2.69E+16 | 0.333333 | 1.3E+08 | 1.125 | 3 | 2.78E+08 |
| 9 | 24.27 | 80.65 | 144 | 92 | 0 | 0 | 1.71E+08 | 4.54E+16 | 0 | 2.13E+08 | 0.5 | 1 | 4.37E+08 |
| 10 | 24.23 | 80.50 | 220 | 108 | 1.07E+15 | 6.83E+09 | 1.28E+08 | 7.65E+16 | 0 | 2.04E+08 | 1.333333 | 2 | 4.28E+08 |
| 11 | 24.29 | 78.63 | 36 | 32 | 0 | 0 | 21362650 | 2.07E+15 | 0 | 1.4E+08 | 0.25 | 1 | 2.65E+08 |
| 12 | 24.24 | 82.11 | 24 | 24 | 0 | 1.08E+08 | 13602015 | 9.02E+14 | 1 | 52866805 | 0.571429 | 2 | 85446675 |
| 13 | 24.22 | 81.98 | 28 | 24 | 0 | 1.06E+08 | 12078152 | 1.12E+15 | 1 | 51221406 | 0.571429 | 2 | 83472196 |
| 14 | 24.16 | 78.80 | 80 | 48 | 7.83E+13 | 4.45E+10 | 22729449 | 8.22E+15 | 0.166667 | 1.21E+08 | 2 | 4 | 2.45E+08 |
| 15 | 24.15 | 80.11 | 152 | 88 | 5.86E+14 | 1.47E+10 | 1.32E+08 | 4.31E+16 | 0 | 1.72E+08 | 1 | 2 | 3.92E+08 |
| 16 | 24.12 | 79.21 | 112 | 92 | 0 | 1.5E+10 | 52636407 | 1.84E+16 | 1 | 1.35E+08 | 0.571429 | 2 | 2.78E+08 |
| 17 | 24.00 | 79.85 | 116 | 68 | 6.73E+15 | 2.06E+10 | 3.11E+08 | 4.95E+16 | 0 | 1.6E+08 | 0.8 | 2 | 3.76E+08 |
| 18 | 24.02 | 81.76 | 68 | 44 | 1.88E+13 | 6.12E+08 | 56421874 | 8.46E+15 | 0.3 | 26716192 | 2.083333 | 5 | 41741467 |
| 19 | 24.01 | 81.56 | 48 | 32 | 0 | 14113848 | 58871349 | 5.13E+15 | 1 | 33979802 | 0.5 | 2 | 56289136 |
| 20 | 23.96 | 81.68 | 44 | 36 | 5.57E+13 | 3.67E+08 | 84822634 | 5.67E+15 | 0.666667 | 27976912 | 0.9 | 3 | 51265281 |
| 21 | 23.82 | 78.43 | 36 | 36 | 2.3E+12 | 4.49E+10 | 4143854 | 1.45E+15 | 0 | 1.16E+08 | 0.5 | 2 | 2.27E+08 |
| 22 | 23.59 | 79.76 | 420 | 216 | 1.39E+15 | 2.72E+10 | 3.13E+08 | 3.08E+17 | 0 | 1.36E+08 | 1.8 | 3 | 3.44E+08 |
| 23 | 23.78 | 80.12 | 24 | 24 | 0 | 0 | 1.03E+08 | 3.05E+15 | 0 | 1.72E+08 | 0.333333 | 1 | 3.86E+08 |
| 24 | 23.38 | 79.27 | 1200 | 396 | 2.18E+14 | 2.99E+10 | 1.18E+08 | 1.58E+18 | 0.333333 | 1.2E+08 | 0.9 | 3 | 3.08E+08 |
| 25 | 23.69 | 80.91 | 64 | 44 | 0 | 0 | 1.39E+08 | 1.30E+16 | 0 | 7289690 | 0.5 | 1 | 11102927 |
| 26 | 23.63 | 81.01 | 92 | 56 | 4.85E+15 | 3.12E+08 | 2.5E+08 | 3.15E+16 | 0 | 2612559 | 2 | 2 | 3476454 |
| 27 | 23.65 | 81.75 | 40 | 28 | 7.65E+13 | 3.72E+08 | 26003441 | 2.64E+15 | 0.333333 | 40314862 | 1 | 3 | 74894303 |
| 28 | 23.60 | 80.49 | 32 | 32 | 0 | 0 | 0 | 1.02E+15 | 0 | 0 | 0 | 0 | 0 |
| 29 | 23.51 | 81.15 | 248 | 132 | 0 | 0 | 95909305 | 8.53E+16 | 0 | 6425795 | 0.5 | 1 | 11102927 |
| 30 | 23.58 | 81.63 | 32 | 28 | 0 | 0 | 25683767 | 1.85E+15 | 0 | 49108506 | 0.333333 | 1 | 85446675 |
| 31 | 23.48 | 78.73 | 52 | 48 | 3.15E+13 | 4.64E+10 | 1.06E+08 | 8.21E+15 | 0.5 | 1.14E+08 | 1.142857 | 4 | 2.71E+08 |
| 32 | 23.47 | 79.47 | 36 | 36 | 8.91E+16 | 3.6E+10 | 1.02E+09 | 3.79E+16 | 0 | 1.34E+08 | 0.666667 | 2 | 3.31E+08 |
| 33 | 23.44 | 78.94 | 40 | 32 | 2.22E+15 | 2.82E+10 | 2.39E+08 | 1.12E+16 | 0.5 | 1.18E+08 | 1.470588 | 5 | 2.88E+08 |
| 34 | 23.35 | 78.68 | 60 | 56 | 0 | 1.84E+10 | 1.05E+08 | 9.90E+15 | 1 | 1.21E+08 | 0.692308 | 3 | 2.82E+08 |
| 35 | 23.36 | 82.38 | 80 | 48 | 0 | 0 | 0 | 6.40E+15 | 0 | 0 | 0 | 0 | 0 |
| 36 | 23.29 | 80.15 | 72 | 44 | 0 | 0 | 0 | 5.18E+15 | 0 | 0 | 0 | 0 | 0 |
| 37 | 23.25 | 78.78 | 32 | 28 | 2.65E+15 | 2.31E+10 | 1.79E+08 | 6.76E+15 | 0.666667 | 1.21E+08 | 1.066667 | 4 | 2.89E+08 |
| 38 | 23.22 | 78.95 | 28 | 28 | 5.78E+15 | 2.46E+10 | 3.56E+08 | 1.08E+16 | 0.666667 | 1.26E+08 | 0.75 | 3 | 3.02E+08 |
| 39 | 22.92 | 79.58 | 24 | 24 | 0 | 0 | 0 | 5.76E+14 | 0 | 0 | 0 | 0 | 0 |

Terms and their meanings:  
N: Latitude, E: Longitude, BC: Betweenness centrality index, CF: Current Flow, F: Flux, IF: Interaction Flux, CC: Clustering Coefficient, CCe: Closeness Centrality,  
CCor: Connectivity Correlation, Dg: Node degree, and Ec: Eccentricity

**Table S7: Local connectivity metrics for edges linking chinkara nodal habitats**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Dist** | **DistM** | **BC** | **CF** |
| 3-1 | 37806990.52 | 36970.56275 | 1.03E+14 | 4.71E+09 |
| 4-1 | 17763342.04 | 23313.7085 | 1.15E+15 | 8.17E+09 |
| 3-2 | 1960873.624 | 2828.427125 | 4.88E+15 | 6E+09 |
| 4-3 | 34215098.66 | 35798.98987 | 2.40E+14 | 7.65E+09 |
| 5-4 | 4471395.166 | 6828.427125 | 5.06E+15 | 2.07E+10 |
| 6-5 | 16458405.99 | 27798.98987 | 5.99E+15 | 2.47E+10 |
| 7-6 | 8490274.076 | 13656.85425 | 3.88E+16 | 3.35E+10 |
| 8-7 | 4451567.137 | 7656.854249 | 1.71E+16 | 3.81E+10 |
| 14-8 | 27672253.62 | 44627.417 | 6.15E+14 | 2.48E+10 |
| 16-8 | 12428835.67 | 17313.7085 | 5.40E+15 | 1.79E+10 |
| 10-9 | 2769731.346 | 4828.427125 | 2.46E+16 | 7.19E+09 |
| 15-10 | 19834743.46 | 25313.7085 | 5.57E+15 | 1.54E+10 |
| 14-11 | 13289385.98 | 16142.13562 | 7.69E+14 | 4.71E+09 |
| 13-12 | 7563968.904 | 10828.42713 | 3.00E+14 | 2.66E+08 |
| 18-12 | 41741467.39 | 51798.98987 | 2.67E+13 | 3.53E+08 |
| 16-14 | 27690007.12 | 33798.98987 | 5.00E+14 | 1.85E+10 |
| 17-15 | 6783288.969 | 10485.28137 | 1.56E+16 | 2.14E+10 |
| 18-13 | 39766988.37 | 50627.417 | 3.84E+13 | 3.71E+08 |
| 19-18 | 7833161 | 12000 | 1.42E+15 | 2.41E+08 |
| 20-18 | 2809305.143 | 4828.427125 | 2.23E+15 | 5.13E+08 |
| 20-19 | 4204927.608 | 6828.427125 | 1.40E+15 | 3.11E+08 |
| 21-14 | 33840075.03 | 54284.27125 | 9.05E+13 | 4.66E+10 |
| 22-17 | 5833615 | 10000 | 3.39E+16 | 2.63E+10 |
| 23-22 | 14639285.02 | 22485.28137 | 2.48E+15 | 4.43E+09 |
| 26-25 | 3476453.691 | 4828.427125 | 8.92E+15 | 4.68E+08 |
| 27-18 | 28796928.51 | 38485.28137 | 1.60E+14 | 3.71E+08 |
| 27-20 | 24869393.46 | 33313.7085 | 2.12E+14 | 4.13E+08 |
| 29-26 | 1748663.803 | 2828.427125 | 2.38E+16 | 6.52E+08 |
| 30-27 | 5066448.72 | 7656.854249 | 8.22E+14 | 4.44E+08 |
| 31-21 | 38545105.55 | 51112.69837 | 6.33E+13 | 4.79E+10 |
| 32-22 | 5416874.5 | 10000 | 9.77E+16 | 3.73E+10 |
| 32-24 | 4074932.038 | 5656.854249 | 1.17E+17 | 3.94E+10 |
| 33-24 | 16975011.96 | 16828.42713 | 1.01E+16 | 2.52E+10 |
| 33-31 | 10544259.11 | 16485.28137 | 2.88E+15 | 1.71E+10 |
| 34-31 | 4242952.385 | 7656.854249 | 1.99E+15 | 2.04E+10 |
| 34-33 | 12493077.76 | 19313.7085 | 6.52E+14 | 9.1E+09 |
| 37-31 | 10970257.66 | 18828.42713 | 6.34E+14 | 1.24E+10 |
| 37-33 | 15605483.51 | 22970.56275 | 2.42E+14 | 4.36E+09 |
| 37-34 | 5116382.204 | 8828.427125 | 3.65E+15 | 1.25E+10 |
| 38-24 | 12260605 | 14000 | 1.49E+16 | 2.66E+10 |
| 38-33 | 23551386.72 | 21313.7085 | 9.07E+13 | 5.54E+09 |
| 38-37 | 8219154.148 | 12828.42713 | 6.52E+15 | 2.15E+10 |

Here BC and CF stand for Betweenness Centrality and Current Flow, respectively. Dist and DistM are measures of dispersal cost through the path.

**Table S8 : Local connectivity metrics for four-horned antelope nodal habitats**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Node Id** | **N** | **E** | **Area (km2)** | **Perimeter (km)** | **BC** | **CF** | **F** | **IF** | **CC** | **Cce** | **CCor** | **Dg** | **Ec** |
| 1 | 24.84 | 80.37 | 32.00 | 28 | 8.89E+13 | 1.04E+09 | 3.64E+07 | 2.19E+15 | 0 | 3.66E+06 | 1.33 | 2 | 6.74E+06 |
| 2 | 24.85 | 80.65 | 44.00 | 36 | 0 | 0 | 3.94E+06 | 2.11E+15 | 0 | 4.99E+06 | 0.5 | 1 | 8.26E+06 |
| 3 | 24.61 | 79.99 | 340.00 | 180 | 5.72E+13 | 1.24E+09 | 2.08E+07 | 1.23E+17 | 0 | 2.86E+06 | 0.8 | 2 | 5.47E+06 |
| 4 | 24.43 | 79.61 | 104.00 | 68 | 5.39E+14 | 2.94E+09 | 6.28E+07 | 1.73E+16 | 0.33 | 2.48E+06 | 0.9 | 3 | 4.45E+06 |
| 5 | 24.24 | 80.49 | 216.00 | 108 | 6.54E+14 | 2.88E+08 | 5.66E+07 | 5.89E+16 | 1 | 3.77E+06 | 0.8 | 2 | 7.07E+06 |
| 6 | 24.29 | 78.63 | 36.00 | 32 | 0 | 0 | 1.13E+07 | 1.70E+15 | 0 | 4.32E+06 | 0.25 | 1 | 8.26E+06 |
| 7 | 24.32 | 79.29 | 44.00 | 44 | 1.62E+14 | 1.68E+09 | 6.21E+07 | 4.67E+15 | 0.67 | 2.36E+06 | 1.14 | 4 | 5.13E+06 |
| 8 | 24.27 | 79.14 | 28.00 | 24 | 4.83E+13 | 7.40E+08 | 4.27E+07 | 1.98E+15 | 1 | 2.53E+06 | 0.75 | 3 | 5.59E+06 |
| 9 | 24.21 | 80.61 | 80.00 | 52 | 0 | 4.18E+08 | 1.17E+08 | 1.58E+16 | 1 | 4.08E+06 | 0.8 | 2 | 7.44E+06 |
| 10 | 24.16 | 78.80 | 60.00 | 44 | 3.87E+13 | 9.93E+08 | 1.24E+07 | 4.35E+15 | 0.5 | 3.48E+06 | 1.33 | 4 | 7.31E+06 |
| 11 | 24.13 | 79.25 | 120.00 | 92 | 1.61E+13 | 1.00E+09 | 2.59E+07 | 1.75E+16 | 0.67 | 2.53E+06 | 1.14 | 4 | 5.50E+06 |
| 12 | 24.14 | 80.08 | 200.00 | 104 | 1.67E+14 | 2.23E+09 | 2.83E+07 | 4.57E+16 | 0.33 | 2.98E+06 | 1.5 | 3 | 5.69E+06 |
| 13 | 24.13 | 81.20 | 76.00 | 48 | 0 | 0 | 2.84E+06 | 5.99E+15 | 0 | 1.15E+06 | 1 | 1 | 1.15E+06 |
| 14 | 24.07 | 80.96 | 24.00 | 28 | 0 | 0 | 8.99E+06 | 7.92E+14 | 0 | 1.15E+06 | 1 | 1 | 1.15E+06 |
| 15 | 23.96 | 79.84 | 32.00 | 28 | 2.86E+14 | 3.02E+09 | 5.45E+07 | 2.77E+15 | 0 | 2.75E+06 | 0.8 | 2 | 4.88E+06 |
| 16 | 23.67 | 79.83 | 104.00 | 88 | 1.70E+13 | 2.54E+09 | 8.25E+06 | 1.17E+16 | 0 | 2.75E+06 | 0.8 | 2 | 4.14E+06 |
| 17 | 23.55 | 81.07 | 140.00 | 88 | 0 | 0 | 0 | 1.96E+16 | 0 | 0 | 0 | 0 | 0 |
| 18 | 23.49 | 79.60 | 32.00 | 32 | 8.23E+13 | 2.30E+09 | 1.83E+07 | 1.61E+15 | 0.33 | 3.11E+06 | 1.5 | 3 | 5.40E+06 |
| 19 | 23.45 | 79.20 | 124.00 | 56 | 0 | 2.19E+08 | 2.50E+07 | 1.85E+16 | 1 | 4.44E+06 | 0.8 | 2 | 7.44E+06 |
| 20 | 23.32 | 79.43 | 84.00 | 64 | 0 | 4.83E+08 | 3.80E+07 | 1.02E+16 | 1 | 4.00E+06 | 0.8 | 2 | 6.93E+06 |
| 21 | 23.28 | 80.17 | 24.00 | 28 | 0 | 0 | 0 | 5.76E+14 | 0 | 0 | 0 | 0 | 0 |
| 22 | 22.87 | 79.92 | 60.00 | 44 | 0 | 0 | 0 | 3.60E+15 | 0 | 0 | 0 | 0 | 0 |

Terms and their meanings:  
N: Latitude, E: Longitude, BC: Betweenness centrality index, CF: Current Flow, F: Flux, IF: Interaction Flux, CC: Clustering Coefficient, CCe: Closeness Centrality,  
CCor: Connectivity Correlation, Dg: Node degree, and Ec: Eccentricity

**Table S9: Local connectivity metrics for edges linking four-horned antelope nodal habitats**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Dist** | **DistM** | **BC** | **CF** |
| 2-1 | 1521752.455 | 27313.7085 | 1.73E+14 | 1.12E+09 |
| 3-1 | 1275712.25 | 24142.13562 | 1.17E+15 | 2E+09 |
| 4-3 | 1014595.742 | 17313.7085 | 6.00E+15 | 3.67E+09 |
| 7-4 | 1319677.433 | 21656.85425 | 7.62E+14 | 2.1E+09 |
| 11-4 | 1688125.438 | 28970.56275 | 8.43E+14 | 1.65E+09 |
| 9-5 | 368992.211 | 6828.427125 | 9.39E+15 | 1E+09 |
| 12-5 | 1381263.532 | 23313.7085 | 4.15E+15 | 1.74E+09 |
| 10-6 | 955553.9329 | 16142.13562 | 4.07E+14 | 1.06E+09 |
| 8-7 | 461341.266 | 7656.854249 | 7.36E+14 | 1.14E+09 |
| 10-7 | 2443545.461 | 44627.417 | 0 | 5.88E+08 |
| 11-7 | 658805.9705 | 11656.85425 | 1.56E+15 | 6.49E+08 |
| 10-8 | 1753577.068 | 31313.7085 | 1.21E+14 | 7.78E+08 |
| 11-8 | 1105124.703 | 18142.13562 | 4.35E+14 | 5.63E+08 |
| 12-9 | 2033142.994 | 34485.28137 | 0 | 1.19E+09 |
| 11-10 | 1808752.621 | 31313.7085 | 2.96E+14 | 7.88E+08 |
| 15-12 | 815849.9263 | 14142.13562 | 1.84E+15 | 3.61E+09 |
| 14-13 | 1153653.823 | 20485.28137 | 2.16E+14 | 1E+08 |
| 16-15 | 1572323.737 | 28142.13562 | 4.74E+14 | 3.49E+09 |
| 18-16 | 1262287.853 | 18142.13562 | 4.18E+14 | 3.1E+09 |
| 19-18 | 2040849.836 | 34970.56275 | 1.21E+14 | 1.14E+09 |
| 20-18 | 1524323.399 | 26142.13562 | 2.13E+14 | 1.43E+09 |
| 20-19 | 676561.6411 | 11656.85425 | 2.98E+15 | 9.1E+08 |

Here BC and CF stand for Betweenness Centrality and Current Flow, respectively. Dist and DistM are measures of dispersal cost through the path.

**Table S10: Local connectivity metrics for nilgai nodal habitats**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Node Id** | **N** | **E** | **Area (km2)** | **Perimeter (km)** | **BC** | **CF** | **F** | **IF** | **CC** | **Cce** | **CCor** | **Dg** | **Ec** |
| 1 | 25.13 | 81.26 | 36 | 28 | 0 | 0 | 4.16E+08 | 1.63E+16 | 0 | 1.75E+08 | 0.2 | 1 | 3.57E+08 |
| 2 | 25.12 | 80.88 | 40 | 32 | 0 | 0 | 4.28E+08 | 1.87E+16 | 0 | 1.51E+08 | 0.5 | 1 | 3.32E+08 |
| 3 | 25.06 | 80.79 | 56 | 40 | 1.51E+16 | 7.11E+09 | 5.59E+08 | 3.44E+16 | 0 | 1.45E+08 | 0.666667 | 2 | 3.26E+08 |
| 4 | 24.93 | 80.96 | 592 | 308 | 1.07E+16 | 2.24E+10 | 4.79E+08 | 6.34E+17 | 0.2 | 1.22E+08 | 2.083333 | 5 | 3.01E+08 |
| 5 | 24.91 | 80.46 | 60 | 44 | 1.81E+15 | 1.27E+10 | 9.17E+08 | 5.86E+16 | 1 | 1.22E+08 | 0.444444 | 2 | 2.97E+08 |
| 6 | 24.85 | 80.37 | 36 | 32 | 3.00E+16 | 2.81E+10 | 9.38E+08 | 3.51E+16 | 0.333333 | 1.18E+08 | 1.333333 | 4 | 2.91E+08 |
| 7 | 24.80 | 80.25 | 24 | 24 | 3.74E+16 | 2.97E+10 | 1E+09 | 2.46E+16 | 0 | 1.14E+08 | 0.5 | 2 | 2.84E+08 |
| 8 | 24.63 | 80.01 | 652 | 224 | 3.34E+16 | 5.55E+10 | 8.19E+08 | 9.59E+17 | 0.166667 | 92160128 | 1.333333 | 4 | 2.52E+08 |
| 9 | 24.76 | 80.44 | 44 | 40 | 1.71E+17 | 2.42E+10 | 1.1E+09 | 5.02E+16 | 0.333333 | 1.17E+08 | 0.692308 | 3 | 2.9E+08 |
| 10 | 24.58 | 79.74 | 108 | 60 | 2.61E+16 | 5.28E+10 | 1.3E+09 | 1.52E+17 | 1 | 94067901 | 0.444444 | 2 | 2.43E+08 |
| 11 | 24.41 | 79.46 | 628 | 248 | 3.84E+16 | 7.43E+10 | 7.64E+08 | 8.74E+17 | 0.2 | 77861858 | 1.785714 | 5 | 2.14E+08 |
| 12 | 24.47 | 82.66 | 52 | 44 | 0 | 0 | 0 | 2.70E+15 | 0 | 0 | 0 | 0 | 0 |
| 13 | 24.42 | 79.22 | 24 | 24 | 0 | 0 | 8.36E+08 | 2.06E+16 | 0 | 91823860 | 0.2 | 1 | 2.21E+08 |
| 14 | 24.26 | 80.56 | 528 | 232 | 0 | 0 | 3.21E+08 | 4.48E+17 | 0 | 1.95E+08 | 0.333333 | 1 | 3.57E+08 |
| 15 | 24.32 | 78.57 | 100 | 72 | 0 | 1.32E+10 | 1.98E+08 | 2.98E+16 | 1 | 1.08E+08 | 0.5 | 2 | 2.24E+08 |
| 16 | 24.26 | 79.13 | 40 | 32 | 4.56E+16 | 4.71E+10 | 8.45E+08 | 3.54E+16 | 0.666667 | 85251210 | 0.692308 | 3 | 2.05E+08 |
| 17 | 24.23 | 78.95 | 48 | 32 | 3.62E+16 | 6.14E+10 | 5.74E+08 | 2.99E+16 | 0.333333 | 89405838 | 1.066667 | 4 | 2.06E+08 |
| 18 | 24.16 | 78.80 | 80 | 48 | 1.62E+16 | 4.15E+10 | 3.89E+08 | 3.75E+16 | 0.333333 | 94391783 | 0.818182 | 3 | 2.1E+08 |
| 19 | 24.13 | 79.23 | 192 | 124 | 5.54E+15 | 4.52E+10 | 7.03E+08 | 1.72E+17 | 0.5 | 79106617 | 0.941176 | 4 | 1.94E+08 |
| 20 | 24.09 | 79.99 | 544 | 168 | 3.28E+16 | 2.16E+10 | 8.24E+08 | 7.44E+17 | 0.333333 | 1.54E+08 | 1.285714 | 3 | 3.15E+08 |
| 21 | 23.88 | 79.66 | 52 | 44 | 0 | 6.73E+09 | 7.61E+08 | 4.23E+16 | 1 | 1.55E+08 | 0.571429 | 2 | 3.14E+08 |
| 22 | 23.82 | 78.43 | 44 | 36 | 9.44E+14 | 3.9E+10 | 1.18E+08 | 7.13E+15 | 0.4 | 1.01E+08 | 1.136364 | 5 | 2.09E+08 |
| 23 | 23.59 | 79.76 | 420 | 240 | 1.66E+17 | 4.98E+10 | 1.61E+09 | 8.54E+17 | 0.166667 | 1.27E+08 | 1.777778 | 4 | 2.82E+08 |
| 24 | 23.79 | 80.11 | 100 | 44 | 0 | 0 | 6.34E+08 | 7.34E+16 | 0 | 1.61E+08 | 0.25 | 1 | 3.2E+08 |
| 25 | 23.74 | 78.98 | 36 | 28 | 7.94E+15 | 5.08E+10 | 2.53E+08 | 1.04E+16 | 0.4 | 93151515 | 1 | 5 | 2.06E+08 |
| 26 | 23.38 | 79.27 | 1352 | 456 | 1.19E+16 | 5.51E+10 | 5.61E+08 | 2.59E+18 | 0.333333 | 1.07E+08 | 0.642857 | 3 | 2.54E+08 |
| 27 | 23.61 | 80.49 | 56 | 40 | 1.81E+13 | 3.92E+08 | 10851749 | 3.74E+15 | 0 | 75314216 | 1.333333 | 2 | 1.03E+08 |
| 28 | 23.57 | 81.07 | 144 | 60 | 3.28E+13 | 3.6E+08 | 81633324 | 3.25E+16 | 0 | 71906748 | 1.333333 | 2 | 1.23E+08 |
| 29 | 23.48 | 78.73 | 52 | 48 | 2.23E+15 | 4.69E+10 | 4.6E+08 | 2.66E+16 | 0.6 | 1.01E+08 | 1.041667 | 5 | 2.34E+08 |
| 30 | 23.44 | 81.19 | 120 | 68 | 0 | 0 | 97397383 | 2.61E+16 | 0 | 83670593 | 0.5 | 1 | 1.4E+08 |
| 31 | 23.44 | 78.94 | 40 | 32 | 3.16E+16 | 5.15E+10 | 8.55E+08 | 3.58E+16 | 0.380952 | 1.02E+08 | 1.75 | 7 | 2.38E+08 |
| 32 | 23.35 | 78.68 | 60 | 56 | 0 | 2.23E+10 | 5.4E+08 | 3.60E+16 | 1 | 1.05E+08 | 0.5625 | 3 | 2.4E+08 |
| 33 | 23.29 | 80.15 | 64 | 40 | 0 | 0 | 7980870 | 4.61E+15 | 0 | 1E+08 | 0.5 | 1 | 1.4E+08 |
| 34 | 23.25 | 78.78 | 32 | 28 | 2.64E+16 | 4.38E+10 | 8.47E+08 | 2.81E+16 | 0.666667 | 1.09E+08 | 0.888889 | 4 | 2.48E+08 |
| 35 | 23.23 | 78.93 | 68 | 48 | 4.47E+16 | 5.42E+10 | 1.25E+09 | 8.99E+16 | 0.666667 | 1.13E+08 | 0.642857 | 3 | 2.56E+08 |
| 36 | 22.93 | 79.74 | 108 | 76 | 3.66E+14 | 56000000 | 47717862 | 1.68E+16 | 0 | 3312396 | 2 | 2 | 4917381 |
| 37 | 22.92 | 79.58 | 24 | 24 | 0 | 0 | 98440502 | 2.94E+15 | 0 | 9450242 | 0.5 | 1 | 13983103 |
| 38 | 22.84 | 79.85 | 32 | 32 | 0 | 0 | 1.1E+08 | 4.55E+15 | 0 | 7845257 | 0.5 | 1 | 13983103 |

Terms and their meanings:  
N: Latitude, E: Longitude, BC: Betweenness centrality index, CF: Current Flow, F: Flux, IF: Interaction Flux, CC: Clustering Coefficient, CCe: Closeness Centrality,  
CCor: Connectivity Correlation, Dg: Node degree, and Ec: Eccentrici

**Table S11: Local connectivity metrics for edges linking nilgai nodal habitats**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Dist** | **DistM** | **BC** | **CF** |
| 4-1 | 7945045.5 | 10000 | 1.50E+16 | 7.10E+09 |
| 3-2 | 1646945.782 | 2828.427125 | 1.71E+16 | 7.21E+09 |
| 4-3 | 7152929.51 | 9656.854249 | 4.43E+16 | 1.47E+10 |
| 5-4 | 3875316.907 | 6828.427125 | 3.24E+16 | 1.49E+10 |
| 6-4 | 9630159.328 | 16485.28137 | 1.86E+16 | 7.57E+09 |
| 9-4 | 2674606.891 | 4828.427125 | 1.95E+17 | 2.33E+10 |
| 6-5 | 1526484.482 | 2828.427125 | 2.63E+16 | 1.83E+10 |
| 7-6 | 4279525.21 | 7656.854249 | 4.56E+16 | 3.12E+10 |
| 9-6 | 4650780.437 | 7656.854249 | 3.35E+15 | 6.24E+09 |
| 8-7 | 2610340.258 | 4828.427125 | 5.32E+16 | 3.49E+10 |
| 9-8 | 8254220.27 | 15313.7085 | 1.93E+17 | 2.62E+10 |
| 10-8 | 1558119.733 | 2828.427125 | 9.82E+16 | 5.58E+10 |
| 11-8 | 10752622.5 | 17313.7085 | 2.57E+17 | 1.84E+10 |
| 11-10 | 1990091.985 | 2828.427125 | 9.40E+16 | 5.89E+10 |
| 13-11 | 1544071.643 | 2828.427125 | 2.01E+16 | 6.76E+09 |
| 16-11 | 2727926.253 | 4828.427125 | 7.12E+16 | 4.95E+10 |
| 19-11 | 5784476.259 | 9656.854249 | 1.14E+17 | 3.86E+10 |
| 17-16 | 8139179.975 | 13656.85425 | 4.45E+16 | 4.13E+10 |
| 18-15 | 9676085.933 | 14485.28137 | 1.91E+16 | 1.93E+10 |
| 18-17 | 4198091.797 | 7656.854249 | 4.12E+16 | 4.59E+10 |
| 19-16 | 10201112.73 | 13656.85425 | 9.22E+15 | 1.07E+10 |
| 19-17 | 11158135.17 | 14485.28137 | 1.35E+16 | 2.28E+10 |
| 20-14 | 13898996.31 | 21313.7085 | 1.69E+17 | 2.09E+10 |
| 21-20 | 11154647.6 | 15656.85425 | 1.82E+16 | 9.70E+09 |
| 22-15 | 44701783.98 | 63941.1255 | 7.69E+14 | 1.61E+10 |
| 22-18 | 31280109.78 | 52627.417 | 3.15E+15 | 2.61E+10 |
| 23-20 | 5748366.3 | 10828.42713 | 3.26E+17 | 3.39E+10 |
| 23-21 | 13353059.92 | 21313.7085 | 2.14E+16 | 1.13E+10 |
| 24-23 | 10555928.5 | 18000 | 6.34E+16 | 8.89E+09 |
| 25-17 | 55310533.91 | 61941.1255 | 6.32E+14 | 2.03E+10 |
| 25-19 | 42888612.82 | 46284.27125 | 9.30E+15 | 3.00E+10 |
| 25-22 | 66196021.17 | 89396.96962 | 4.73E+13 | 4.35E+09 |
| 26-23 | 4450615 | 8000 | 5.98E+17 | 6.33E+10 |
| 28-27 | 85446711.8 | 90083.26112 | 1.33E+14 | 7.68E+08 |
| 29-22 | 38615186.09 | 48284.27125 | 8.64E+14 | 2.20E+10 |
| 29-25 | 23452006.17 | 36284.27125 | 2.94E+15 | 2.72E+10 |
| 30-28 | 7423364.871 | 8485.281374 | 1.17E+16 | 6.24E+08 |
| 31-22 | 54655246.37 | 69597.97975 | 2.24E+15 | 1.69E+10 |
| 31-25 | 26523990.48 | 37455.84412 | 1.21E+16 | 2.69E+10 |
| 31-26 | 13056867.18 | 18485.28137 | 6.12E+16 | 3.33E+10 |
| 31-29 | 11911231.36 | 16485.28137 | 1.78E+16 | 1.02E+10 |
| 32-29 | 4489503.181 | 7656.854249 | 3.68E+15 | 2.49E+10 |
| 32-31 | 12680472.88 | 19313.7085 | 2.68E+15 | 3.58E+09 |
| 33-27 | 37403455.37 | 59455.84412 | 5.11E+14 | 5.12E+08 |
| 34-29 | 12578016.19 | 18828.42713 | 3.05E+15 | 1.70E+10 |
| 34-31 | 18751117.26 | 25313.7085 | 4.73E+14 | 7.00E+09 |
| 34-32 | 5321162.518 | 8485.281374 | 2.60E+16 | 2.39E+10 |
| 35-26 | 3960111.079 | 6828.427125 | 1.23E+17 | 5.74E+10 |
| 35-31 | 19690261.16 | 19656.85425 | 9.57E+14 | 1.23E+10 |
| 35-34 | 3033631.114 | 4828.427125 | 5.03E+16 | 4.66E+10 |
| 37-36 | 4917381 | 8000 | 2.36E+15 | 1.88E+08 |
| 38-36 | 1707410.485 | 2828.427125 | 3.52E+15 | 1.96E+08 |

Here BC and CF stand for Betweenness Centrality and Current Flow, respectively. Dist and DistM are measures of dispersal cost through the path.