Table S1. Landsat dataset

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Date** | **Scene ID** | **Resolution, m** | | **Cloud, %** | **Daytime air, °С** |
| 16/04/2023 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20230416 | | 30 | 8.65 | 14 |
| 17/05/2023 | LANDSAT/LC09/C02/T1\_L2/LC09\_178025\_20230517 | | 30 | 8.13 | 25 |
| 02/06/2023 | LANDSAT/LC09/C02/T1\_L2/LC09\_178025\_20230602 | | 30 | 0.1 | 25 |
| 20/07/2023 | LANDSAT/LC09/C02/T1\_L2/LC09\_178025\_20230720 | | 30 | 2.54 | 27.8 |
| 06/08/2023 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20230806 | | 30 | 0 | 35.4 |
| 14/09/2023 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20230914 | | 30 | 8.23 | 23.3 |
| 07/04/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20200407 | | 30 | 0.02 | 13.6 |
| 23/04/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20200423 | | 30 | 0.08 | 16 |
| 07/05/2022 | LANDSAT/LC09/C02/T1\_L2/LC09\_177025\_20220507 | | 30 | 5.48 | 25 |
| 10/06/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20200610 | | 30 | 0.12 | 31.9 |
| 26/06/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20200626 | | 30 | 1.2 | 29.4 |
| 12/07/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20200712 | | 30 | 0 | 30.8 |
| 03/07/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20200703 | | 30 | 0.46 | 32.4 |
| 04/08/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20200804 | | 30 | 0.8 | 27.7 |
| 14/09/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20200914 | | 30 | 0.12 | 23.5 |
| 21/09/2020 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20200921 | | 30 | 0.01 | 19.9 |
| 09/04/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20180409 | | 30 | 1.65 | 11.8 |
| 04/05/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20180504 | | 30 | 0.01 | 30.5 |
| 11/05/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20180511 | | 30 | 0.03 | 18.1 |
| 27/05/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20180527 | | 30 | 0.02 | 22.2 |
| 21/06/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20180621 | | 30 | 0.01 | 29.7 |
| 30/07/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20180730 | | 30 | 2.97 | 33.5 |
| 24/08/2018 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20180824 | | 30 | 0.01 | 27.3 |
| 22/09/2017 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20170922 | | 30 | 0.01 | 27.6 |
| 10/04/2015 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20150410 | | 30 | 0.11 | 22 |
| 16/05/2014 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20140516 | | 30 | 9.53 | 29.6 |
| 04/06/2015 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20150604 | | 30 | 0.18 | 29 |
| 13/06/2015 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20150613 | | 30 | 0.06 | 28.3 |
| 12/07/2014 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20140712 | | 30 | 5.63 | 31.2 |
| 04/08/2014 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20140804 | | 30 | 6.43 | 30.9 |
| 13/08/2014 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20140813 | | 30 | 0.54 | 33 |
| 20/08/2014 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20140820 | | 30 | 1.6 | 29 |
| 17/09/2015 | LANDSAT/LC08/C02/T1\_L2/LC08\_177025\_20150917 | | 30 | 0.02 | 26 |
| 24/09/2015 | LANDSAT/LC08/C02/T1\_L2/LC08\_178025\_20150924 | | 30 | 0.03 | 30 |
| 22/04/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_20110422 | | 30 | 0 | 16.1 |
| 02/06/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_20110602 | | 30 | 0 | 27.9 |
| 18/06/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_20110618 | 30 | | 4 | 29.2 |
| 20/07/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_20110720 | 30 | | 4 | 32.8 |
| 27/07/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_20110720 | 30 | | 0 | 35.7 |
| 28/08/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_20110828 | 30 | | 0 | 29.2 |
| 08/10/2011 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_20111008 | 30 | | 0 | 24.5 |
| 23/05/1999 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19990523 | 30 | | 6 | 21.5 |
| 24/06/1999 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19990624 | 30 | | 0 | 31.2 |
| 26/07/1999 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19990726 | 30 | | 0 | 29.4 |
| 11/08/1999 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19990811 | 30 | | 11 | 33.7 |
| 05/09/1999 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19990905 | 30 | | 0 | 25.5 |
| 17/05/1997 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19970517 | 30 | | 1 | 23 |
| 14/06/1998 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19980614 | 30 | | 0 | 39.8 |
| 16/07/1998 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19980716 | 30 | | 2 | 31.8 |
| 23/07/1998 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19980723 | 30 | | 0 | 30.4 |
| 01/08/1998 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19980801 | 30 | | 1 | 35.8 |
| 09/09/1998 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19980909 | 30 | | 1 | 20.4 |
| 07/05/1996 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19960507 | 30 | | 1 | 25.2 |
| 30/05/1996 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19960530 | 30 | | 5 | 26.6 |
| 24/06/1996 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19960624 | 30 | | 0 | 30.4 |
| 10/07/1996 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19960710 | 30 | | 0 | 35 |
| 02/08/1996 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19960802 | 30 | | 1 | 28.6 |
| 11/08/1996 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19960811 | 30 | | 6 | 21.9 |
| 06/09/1997 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19970906 | 30 | | 0 | 17.4 |
| 15/07/1995 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19950715 | 30 | | 0 | 29 |
| 25/08/1995 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19950825 | 30 | | 3 | 28.4 |
| 17/04/1992 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19920417 | | 30 | 1 | 19.5 |
| 03/05/1992 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19920503 | | 30 | 2 | 21.5 |
| 16/08/1992 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19920816 | | 30 | 0 | 31.6 |
| 01/09/1992 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19920901 | | 30 | 0 | 26.1 |
| 15/04/1991 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19910415 | | 30 | 0 | 18.1 |
| 18/06/1991 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19910618 | | 30 | 0 | 31 |
| 01/10/1991 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19911001 | | 30 | 0 | 25.9 |
| 05/04/1990 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19900405 | | 30 | 0 | 21 |
| 01/07/1990 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19900701 | | 30 | 1 | 27.3 |
| 14/07/1989 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19890714 | | 30 | 0 | 30 |
| 10/04/1986 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19860410 | 30 | | 0 | 23.3 |
| 26/04/1986 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19860426 | 30 | | 0 | 13.7 |
| 28/05/1986 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19860528 | 30 | | 5 | 27.3 |
| 13/06/1986 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19860613 | 30 | | 1 | 29.3 |
| 06/07/1986 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19860706 | 30 | | 0 | 29.4 |
| 07/08/1986 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19860807 | 30 | | 4 | 29.5 |
| 09/05/1985 | LANDSAT/LT05/C02/T1\_L2/LT05\_177025\_19850509 | 30 | | 1 | 29.6 |
| 16/07/1984 | LANDSAT/LT05/C02/T1\_L2/LT05\_178025\_19840716 | 30 | | 8 | 30.7 |

B2.

Table S2. Statistical analysis of LSTs and LULC class using KDE and its metrics (July 1984-2023).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **year** | **class** | **mode** | **median** | **IQR** | **min** | **max** | **outliers** | **spread** | **skewness** | **MM** |
| 2023 | water | [30.1, 36.59] | 35.38 | 4.92 | 27.49 | 46.67 | 52 | 16.51 | 0.1 | 2 |
| 2023 | dense veg | [30.88, 32.71, 37.59, 52.85] | 34.65 | 6.69 | 26.88 | 54.59 | 354 | 20.92 | 0.61 | 4 |
| 2023 | urban | [38.8] | 39.3 | 4.39 | 27.42 | 56.28 | 4194 | 17.68 | 0.18 | 1 |
| 2023 | bare land | [37.97, 51.49, 54.24] | 37.23 | 4.85 | 27.96 | 56.87 | 123 | 16.73 | 0.4 | 3 |
| 2023 | sparse veg | [34.23, 37.73, 51.49, 52.97, 54.36] | 36.77 | 4.7 | 27.55 | 56.44 | 616 | 16.71 | 0.55 | 5 |
| 2020 | water | [30.74, 34.4, 40.9] | 39.73 | 5.06 | 29.79 | 52.34 | 37 | 17.72 | -0.28 | 3 |
| 2020 | dense veg | [34.61, 39.87, 53.71] | 37.88 | 6.16 | 29.85 | 56.84 | 220 | 17.83 | 0.63 | 3 |
| 2020 | urban | [41.85, 56.25] | 42.46 | 3.74 | 29.78 | 58.9 | 6850 | 15.62 | -0.09 | 2 |
| 2020 | bare land | [33.14, 41.11, 49.25, 53.37, 55.66] | 40.35 | 3.15 | 32.31 | 56.14 | 100 | 10.23 | 0.5 | 5 |
| 2020 | sparse veg | [30.71, 41.23] | 40.69 | 3.99 | 29.81 | 57.11 | 961 | 15.49 | 0.05 | 2 |
| 2018 | water | [30.0, 33.96, 40.29, 49.07, 53.77, 55.36] | 40.24 | 5.51 | 29.2 | 56.54 | 491 | 21.97 | 0.29 | 6 |
| 2018 | dense veg | [33.2, 35.69] | 37.39 | 6.36 | 29.11 | 56.16 | 172 | 19.49 | 0.61 | 2 |
| 2018 | urban | [42.27] | 42.32 | 3.8 | 29.03 | 58.69 | 5496 | 14.97 | -0.14 | 1 |
| 2018 | bare land | [29.63, 32.48, 43.17, 52.79] | 43.39 | 3.71 | 28.87 | 54.07 | 133 | 14.23 | -0.55 | 4 |
| 2018 | sparse veg | [29.59, 40.5] | 40.68 | 4.31 | 29.05 | 56.09 | 994 | 16.13 | 0.03 | 2 |
| 2014 | water | [29.15, 35.04, 36.58, 39.51] | 38.23 | 4.61 | 27.81 | 50.03 | 138 | 17.01 | -0.31 | 4 |
| 2014 | dense veg | [29.65, 35.31, 39.41] | 38.01 | 5.53 | 28.11 | 55.99 | 457 | 16.13 | 0.73 | 3 |
| 2014 | urban | [31.39, 41.87, 56.89] | 42.09 | 3.9 | 27.8 | 57.7 | 4561 | 15.24 | -0.07 | 3 |
| 2014 | bare land | [28.22, 30.89, 41.4, 51.69] | 40.6 | 4.07 | 27.83 | 57.55 | 359 | 14.55 | -0.1 | 4 |
| 2014 | sparse veg | [30.09, 40.29, 54.59] | 39.23 | 4.52 | 27.98 | 56.84 | 505 | 14.74 | 0.32 | 3 |
| 2011 | water | [29.34, 37.12] | 35.99 | 3.99 | 27.8 | 47.33 | 109 | 14.71 | 0.01 | 2 |
| 2011 | dense veg | [32.99] | 35.3 | 4.86 | 27.8 | 55.83 | 1039 | 15.94 | 1.08 | 1 |
| 2011 | urban | [38.5, 57.29] | 39.2 | 4.13 | 27.79 | 58.17 | 3947 | 15.97 | 0.34 | 2 |
| 2011 | bare land | [28.2, 37.87, 50.95, 54.01] | 37.55 | 4.06 | 27.79 | 56.96 | 293 | 16.73 | 0.45 | 4 |
| 2011 | sparse veg | [37.78, 50.71, 52.6, 54.75] | 37.08 | 3.8 | 27.8 | 57.75 | 1284 | 14.27 | 0.74 | 4 |
| 2006 | water | [25.39, 29.88, 35.91] | 35.01 | 5.57 | 24.37 | 51.11 | 87 | 19.54 | -0.17 | 3 |
| 2006 | dense veg | [29.46, 35.66] | 32.89 | 6.9 | 24.98 | 54.22 | 404 | 21.1 | 0.69 | 2 |
| 2006 | urban | [36.66, 56.29, 57.48] | 37.34 | 4.38 | 24.37 | 57.55 | 5212 | 18.36 | 0.19 | 3 |
| 2006 | bare land | [36.16, 51.39] | 36.44 | 4.25 | 24.93 | 54.6 | 832 | 19.95 | 0.43 | 2 |
| 2006 | sparse veg | [35.93, 52.17, 55.83, 57.07, 58.95] | 35.58 | 4.52 | 24.93 | 59.16 | 1529 | 17.88 | 0.43 | 5 |
| 1999 | water | [28.24, 33.51, 38.63, 54.14] | 38.67 | 5.38 | 27.54 | 54.3 | 159 | 19.77 | -0.26 | 4 |
| 1999 | dense veg | [33.01, 38.04] | 37.31 | 5.58 | 27.54 | 56.44 | 649 | 18.51 | 0.5 | 2 |
| 1999 | urban | [38.56, 53.06] | 39.63 | 4.3 | 27.54 | 56.44 | 3275 | 16.69 | 0.3 | 2 |
| 1999 | bare land | [28.53, 38.94, 50.82] | 39.66 | 4.51 | 27.54 | 57.66 | 630 | 17.85 | -0.12 | 3 |
| 1999 | sparse veg | [38.52, 52.1, 54.23] | 38.92 | 4.01 | 27.55 | 56.71 | 682 | 15.76 | 0.04 | 3 |
| 1996 | water | [28.5, 30.54, 35.19, 39.02] | 38.61 | 4.16 | 27.07 | 48.31 | 568 | 17.3 | -0.53 | 4 |
| 1996 | dense veg | [29.43, 35.91, 39.04] | 38.12 | 4.48 | 27.07 | 56.52 | 1320 | 16.01 | 0.81 | 3 |
| 1996 | urban | [29.63, 39.52, 53.68] | 40.99 | 4.5 | 27.07 | 59.05 | 2637 | 16.3 | 0.33 | 3 |
| 1996 | bare land | [27.98, 39.39, 52.39, 56.08, 57.51] | 39.86 | 4.11 | 27.07 | 59.45 | 446 | 17.28 | -0.25 | 5 |
| 1996 | sparse veg | [39.2, 52.54, 54.28, 57.04] | 39.35 | 3.16 | 27.07 | 58.06 | 3839 | 13.21 | 0.38 | 4 |
| 1990 | water | [25.71, 29.51, 34.01] | 33.07 | 5.15 | 24.9 | 45.54 | 16 | 17.07 | 0.13 | 3 |
| 1990 | dense veg | [29.03, 34.51] | 31.8 | 5.76 | 25.3 | 54.91 | 867 | 17.84 | 1.11 | 2 |
| 1990 | urban | [35.42, 56.83] | 36.25 | 4.93 | 24.91 | 57.92 | 2583 | 18.6 | 0.53 | 2 |
| 1990 | bare land | [34.72, 52.39, 53.86] | 34.81 | 3.75 | 25.18 | 54.6 | 674 | 16.49 | 0.37 | 3 |
| 1990 | sparse veg | [34.04, 53.24, 55.31] | 34.12 | 3.86 | 25.17 | 56.57 | 2961 | 16.18 | 0.72 | 3 |
| 1984 | water | [27.49, 37.51, 47.48, 49.86] | 36.93 | 4.91 | 26.31 | 50.85 | 194 | 17.66 | 0.05 | 4 |
| 1984 | dense veg | [36.51, 48.26] | 35.83 | 4.37 | 27.03 | 53.4 | 768 | 15.6 | 0.58 | 2 |
| 1984 | urban | [28.22, 38.88] | 39.39 | 4.49 | 26.42 | 54.66 | 1600 | 16.4 | 0.13 | 2 |
| 1984 | bare land | [40.81, 47.91] | 39.4 | 5.89 | 27.09 | 50.68 | 40 | 23.02 | -0.02 | 2 |
| 1984 | sparse veg | [27.18, 37.25, 47.78, 53.4, 54.59] | 37.59 | 3.57 | 26.31 | 55.14 | 3099 | 13.68 | 0.51 | 5 |

Figure S1-S6. KDE and Boxplot for each LULC class according to year.

S1. July 1996. S2. July 1999. S3. July 2001

A graph of a function

Description automatically generated with medium confidenceA graph of a function

Description automatically generated with medium confidenceA diagram of a graph

Description automatically generated

. S4. July 2014. S5. July 2018 S6. July 2020

A graph of a graph

Description automatically generated with medium confidenceA diagram of a graph

Description automatically generated with medium confidenceA diagram of a graph

Description automatically generated with medium confidence

Table S3. LST and LULC class data for calculating seasonal thresholds for each class (April to September 1996-2023).

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Y** | **M** | **water**  **mean** | **water**  **std** | **dense**  **veg mean** | **dense**  **veg std** | **urban**  **mean** | **urban**  **std** | **bare land**  **mean** | **bare land**  **std** | **sparse**  **veg mean** | **sparse**  **veg std** |
| 2023 | 4 | 14.31 | 2.42 | 13.98 | 3.01 | 15.14 | 2.99 | 14.57 | 2.46 | 14.93 | 2.12 |
| 2023 | 5 | 31.88 | 4.12 | 30.5 | 3.78 | 33.9 | 2.94 | 35.86 | 4.39 | 32.6 | 3.23 |
| 2023 | 6 | 34.53 | 4.5 | 32.46 | 4.07 | 37.05 | 3.29 | 38.09 | 5.11 | 35.21 | 3.6 |
| 2023 | 7 | 35.19 | 3.4 | 34.39 | 4.56 | 39.47 | 3.71 | 37.58 | 3.69 | 36.99 | 3.55 |
| 2023 | 8 | 38.93 | 3.17 | 38.98 | 3.47 | 42.78 | 3.16 | 40.4 | 3.64 | 40.59 | 3.07 |
| 2023 | 9 | 27.32 | 2.59 | 26.47 | 2.47 | 28.77 | 2 | 29.1 | 3 | 27.81 | 1.97 |
| 2020 | 4 | 24.45 | 3.59 | 23.77 | 2.69 | 25.05 | 1.94 | 25.12 | 2.59 | 24.88 | 2.34 |
| 2020 | 5 | 27.17 | 3.8 | 25.72 | 3.59 | 28.78 | 2.62 | 30.02 | 4.06 | 27.61 | 2.77 |
| 2020 | 6 | 38 | 3.71 | 37.73 | 4.05 | 42.19 | 3.22 | 40.65 | 3.3 | 39.88 | 3.46 |
| 2020 | 7 | 39.11 | 3.68 | 38.14 | 4.08 | 42.87 | 3.2 | 41.48 | 3.26 | 40.96 | 3.31 |
| 2020 | 8 | 34.51 | 3.4 | 33.76 | 3.62 | 37.28 | 3.03 | 35.93 | 3.56 | 35.63 | 3.03 |
| 2020 | 9 | 26.45 | 2.41 | 25.52 | 2.29 | 27.56 | 1.86 | 27.49 | 2.35 | 26.83 | 1.87 |
| 2018 | 4 | 22.88 | 4.13 | 23.28 | 2.48 | 24.22 | 2.14 | 24.27 | 2.4 | 23.97 | 2.52 |
| 2018 | 5 | 30.95 | 4.49 | 28.38 | 4.17 | 32.61 | 2.98 | 33.59 | 4.4 | 31.55 | 3.26 |
| 2018 | 6 | 39.49 | 4.95 | 36.93 | 4.81 | 41.88 | 3.43 | 41.88 | 4.29 | 40.29 | 3.71 |
| 2018 | 7 | 40.13 | 4.72 | 38.09 | 4.35 | 42.3 | 3.19 | 43.34 | 3.09 | 40.63 | 3.43 |
| 2018 | 8 | 34.45 | 4.13 | 32.28 | 3.58 | 35.47 | 2.54 | 37.38 | 4.7 | 34.67 | 2.77 |
| 2018 | 9 | 29.63 | 2.47 | 28.72 | 1.95 | 30.17 | 1.66 | 31.73 | 2.34 | 29.94 | 1.9 |
| 2015 | 4 | 19.6 | 2.43 | 19.69 | 1.97 | 20.5 | 1.72 | 20.17 | 1.42 | 20.34 | 1.86 |
| 2015 | 5 | 32.72 | 2.81 | 32.46 | 2.97 | 35.5 | 2.89 | 35.97 | 3.09 | 33.76 | 2.65 |
| 2015 | 6 | 38.68 | 4.86 | 36.42 | 4.82 | 41.33 | 3.52 | 42.84 | 5.92 | 39.49 | 3.68 |
| 2015 | 7 | 37.98 | 3.3 | 38.07 | 3.73 | 42.02 | 3.31 | 39.86 | 3.37 | 39.31 | 3.34 |
| 2015 | 8 | 35.36 | 2.59 | 34.76 | 3 | 37.93 | 2.61 | 36.77 | 2.38 | 36.33 | 2.53 |
| 2015 | 9 | 29.56 | 2.28 | 28.75 | 2.02 | 30.31 | 1.73 | 30.23 | 1.57 | 30.17 | 2.01 |
| 2011 | 4 | 24.21 | 3.29 | 23.57 | 2.74 | 25.1 | 2.27 | 24.52 | 2.58 | 25.19 | 2.28 |
| 2011 | 5 | 35.25 | 3.74 | 34.01 | 4.4 | 38.29 | 3.31 | 37.14 | 3.31 | 36.4 | 3.48 |
| 2011 | 6 | 36.62 | 4.06 | 35.87 | 4.44 | 40.29 | 3.85 | 38.06 | 3.62 | 37.52 | 4.11 |
| 2011 | 7 | 35.86 | 2.86 | 35.84 | 3.63 | 39.58 | 3.46 | 37.72 | 3.04 | 36.84 | 3.07 |
| 2011 | 8 | 30.89 | 2.88 | 30.55 | 2.91 | 32.82 | 2.7 | 32.08 | 2.52 | 31.62 | 2.54 |
| 2011 | 9 | 23.43 | 2.3 | 23.25 | 1.46 | 23.72 | 1.4 | 23.87 | 1.73 | 23.76 | 1.57 |
| 1999 | 4 |  |  |  |  |  |  |  |  |  |  |
| 1999 | 5 | 29.37 | 4.97 | 28.78 | 4.42 | 32.05 | 3.53 | 35.18 | 4.39 | 31.56 | 4.01 |
| 1999 | 6 | 35.34 | 4.33 | 36.33 | 4.15 | 39.96 | 3.4 | 40.58 | 3.37 | 38.78 | 3.43 |
| 1999 | 7 | 36.33 | 4.05 | 36.49 | 4.15 | 39.95 | 3.48 | 40.27 | 4.26 | 38.84 | 3.28 |
| 1999 | 8 | 35.05 | 3.91 | 35.17 | 3.25 | 37.98 | 2.9 | 39.46 | 3.33 | 36.83 | 2.99 |
| 1999 | 9 | 28.49 | 3.76 | 27.41 | 2.9 | 29.39 | 2.58 | 32.1 | 4.06 | 29.84 | 3.36 |
| 1998 | 4 |  |  |  |  |  |  |  |  |  |  |
| 1998 | 5 | 27.06 | 4.44 | 27.72 | 4.25 | 31.96 | 3.25 | 32.76 | 3.65 | 30.91 | 3.42 |
| 1998 | 6 | 39.29 | 4.49 | 39.07 | 4.09 | 42.42 | 3.39 | 44.56 | 3.83 | 41.15 | 3.34 |
| 1998 | 7 | 34.27 | 3.83 | 34.73 | 4.27 | 38.25 | 3.57 | 37.42 | 3.43 | 36.88 | 3.22 |
| 1998 | 8 | 39.32 | 3.45 | 38.7 | 3.74 | 41.84 | 3.52 | 41.61 | 3.41 | 40.13 | 2.98 |
| 1998 | 9 | 26.13 | 4.68 | 24.76 | 3.16 | 25.62 | 2.67 | 26.06 | 3.06 | 25.97 | 3.07 |
| 1996 | 4 |  |  |  |  |  |  |  |  |  |  |
| 1996 | 5 | 35.57 | 4.4 | 33.45 | 4.21 | 37.34 | 3.57 | 38.29 | 4.07 | 36.25 | 3.68 |
| 1996 | 6 | 36.37 | 3.7 | 35.48 | 4.15 | 38.88 | 3.55 | 37.7 | 3.45 | 37.39 | 3.29 |
| 1996 | 7 | 38.21 | 3.3 | 37.99 | 3.59 | 41.08 | 3.49 | 39.91 | 3.58 | 39.34 | 2.98 |
| 1996 | 8 | 30.29 | 3.15 | 28.76 | 3.35 | 31.59 | 2.93 | 31.69 | 3.15 | 30.89 | 2.64 |
| 1996 | 9 | 21.66 | 2.89 | 19.81 | 3.02 | 22.03 | 2.38 | 23.08 | 2.91 | 21.86 | 2.23 |

Figure S7. SUHI maps for July over the years.

A red and yellow explosion

Description automatically generated A map of a city

Description automatically generated

A map of a fire

Description automatically generated A map of a fire

Description automatically generated

A map of a city

Description automatically generated A red and yellow explosion

Description automatically generated

A map of a large area of fire

Description automatically generated A map of a large area of fire

Description automatically generated

A map of a fire

Description automatically generated A map of a fire

Description automatically generated