Number of days with uncomfortable humidex, an index to describe how hot the weather feels to the average person, by combining heat and humidity for period

- **Caution** (26.67-32.5°C)
  - Fatigue possible
- **Extreme caution** (32.5-40°C)
  - Heat stroke, cramps, or exhaustion likely, and heat stroke possible
- **Danger** (40-52°C)
  - Heat cramps or exhaustion possible

**Jaipur**

- **2014-2023**: 79.23%
- **2017**: 99.52%

<table>
<thead>
<tr>
<th>Year</th>
<th>Vegetation</th>
<th>Waterbodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>0.47%</td>
<td>25.17%</td>
</tr>
<tr>
<td>2021</td>
<td>0.39%</td>
<td>25.17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat centres in the city and</td>
<td>66</td>
<td>58</td>
</tr>
<tr>
<td>Share of total area covered by heat centres</td>
<td>60</td>
<td>57</td>
</tr>
</tbody>
</table>
Addition of built up area in heat centres

Addition in built-up area
- 2020: 27.25 ha
- 2021: 11.54 ha
Fabric Density Ratio (FDR)

$$FDR = \frac{\text{Perimeter of the buildings} \times \text{Average height}}{\text{Total analysis area}}$$
Connaught Place – Analysis of Grey-Greens

- Buildings: 27.86%
- Roads: 24.26%
- Greens: 23.76%
- Parking and footpaths: 24.12%

Outer boundary of CP
Quality and variety of vegetation matters

Unshaded region
LST > 40.0°C

Shading due to palm tree
LST = 35.9°C

Shading due to large canopy tree
LST = 29.7°C

Effective vegetation cover can be responsible for decrease by as much as ~5°C - 10°C
Materials have a major effect on heat retention

- Sites with **similar morphology** and **similar greens**: exhibit $\Delta LST = 7.33^\circ C$.
- Major reason: **extensive use** of **heat-retaining** roofing **materials** (metal, tarpaulin, GI sheets, etc.)

### Green Thite nagar
- LST = 47.99°C

### Exposed
- 94.1% (5.8%)
- 97.7% (2.2%)

### Green Chikhali
- LST = 55.31°C

**Difference in Land Surface Temperature = 7.33°C**
Quality and variety of vegetation matters

Source: Blue Green Systems for urban heat mitigation: mechanisms, effectiveness and research directions, IWA
Quality and variety of vegetation matters

Source: Blue Green Systems for urban heat mitigation: mechanisms, effectiveness and research directions, IWA