# One-Page Place Assessment: Castellana Grotte, Bari, Italia

## Climate

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C High</td>
<td>10.8</td>
<td>11.2</td>
<td>14.2</td>
<td>17.7</td>
<td>22.9</td>
<td>27.4</td>
<td>30.2</td>
<td>30.0</td>
<td>25.4</td>
<td>20.7</td>
<td>15.2</td>
<td>11.5</td>
<td>19.77</td>
</tr>
<tr>
<td>°C Low</td>
<td>4.2</td>
<td>3.8</td>
<td>5.9</td>
<td>8.5</td>
<td>13.0</td>
<td>16.9</td>
<td>19.3</td>
<td>19.4</td>
<td>15.8</td>
<td>12.6</td>
<td>8.3</td>
<td>5.2</td>
<td>11.08</td>
</tr>
<tr>
<td>°F High</td>
<td>51.4</td>
<td>52.2</td>
<td>57.6</td>
<td>63.9</td>
<td>73.2</td>
<td>81.3</td>
<td>86.4</td>
<td>86.0</td>
<td>77.7</td>
<td>69.3</td>
<td>59.4</td>
<td>52.7</td>
<td>67.6</td>
</tr>
<tr>
<td>°F Low</td>
<td>39.6</td>
<td>38.8</td>
<td>42.6</td>
<td>47.3</td>
<td>55.4</td>
<td>62.4</td>
<td>66.7</td>
<td>66.9</td>
<td>60.4</td>
<td>54.7</td>
<td>46.9</td>
<td>41.4</td>
<td>51.9</td>
</tr>
</tbody>
</table>

**Record High:** 43.0°C | **July** | **Record Low:** -7.0°C | **January**

## Sun

<table>
<thead>
<tr>
<th></th>
<th>Mar 21</th>
<th>Jun 21</th>
<th>Sep 21</th>
<th>Dec 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latitude</td>
<td>40.9°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevation</td>
<td>300 m</td>
<td>984 ft</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOLAR-NOON ALTITUDE ANGLE (ABOVE HORIZON):**
- **Degrees N or S of Due East:** Sun Rises
- **Degrees N or S of Due West:** Sun Sets

**SOLAR-NOON WINTER-SOLSTICE SHADOW RATIO:**
- 1 : 2.08...

**9AM & 3PM WINTER-SOLSTICE SHADOW RATIO:**
- 1 : 4.20...

## Wind

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>km/h</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>MPH</strong></td>
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</tbody>
</table>

## Water

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
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<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>mm</strong></td>
<td>67</td>
<td>68</td>
<td>65</td>
<td>48</td>
<td>35</td>
<td>27</td>
<td>31</td>
<td>28</td>
<td>55</td>
<td>66</td>
<td>76</td>
<td>82</td>
<td>648</td>
</tr>
<tr>
<td><strong>INCHES</strong></td>
<td>2.6</td>
<td>2.7</td>
<td>2.6</td>
<td>1.9</td>
<td>1.4</td>
<td>1.1</td>
<td>1.2</td>
<td>1.1</td>
<td>2.2</td>
<td>2.6</td>
<td>3.0</td>
<td>3.2</td>
<td>25.5</td>
</tr>
</tbody>
</table>

**Average Pan Evaporation (Potential Loss):**

**Wettest Year’s Rain:**

**Driest Year’s Rain:**

**Longest Period with No Measurable Precipitation:**

**Rainfall Income:**
- 6,208 lpcd
- 1,640 GPCD

**Area:**
- 68 km²
- 26.2 sq miles

**Population:**
- 19,435

**Utility-Water Use:**
- 250 lpcd
- 66 GPCD

**Depth to Groundwater:**

**Current Groundwater Extraction:**

**Natural Groundwater Recharge:**

## Waterergy

### Totem Species

- **Fish:**
- **Mammal:**
- **Plant:**
- **Bird:**
- **Reptile:**
- **Amphibian:**
FOR MORE INFORMATION & HOW TO APPLY IT

P1. For more CLIMATE information, see the introduction and chapters 1, 2, & 4 of Rainwater Harvesting for Drylands and Beyond (RWHDB), Volume 1, 2nd Edition
P2. For more SUN information, see chapters 2 & 4 and appendices 5 & 7
P3. For more WIND information, see chapters 2 & 4 and appendices 5 & 9
P4. For more WATER information, see the introduction, chapters 1–4, and appendices 1–5
P5. For more WATERGY information, see chapters 2 & 4 and appendix 9
P6. For more TOTEM SPECIES information: the ethics, principles, and strategies throughout RWHDB help us shift from a negative to a positive impact on these species and their habitats and ecosystems, on which our quality of life also depends.

CASTELLANA GROTTE’S PLACE-ASSESSMENT NOTES
a. Altitude angle (a.k.a., elevation angle) refers to the number of degrees the sun is located above the horizon at a given time and date.
b. The solar-noon winter-solstice shadow ratio is the object’s height : length of object’s shadow cast on December 21 at noon (the longest noontime shadow of the year). The ratio is 1 : x, where x = 1 ÷ tangent (90 - (latitude + 23.44)).
c. Azimuth is the angle formed between a reference direction (here, due south) to the point on the horizon directly below a given object. Solar noon is the time on any day when the sun’s azimuth is 0°. The 9 am & 3 pm winter-solstice azimuth indicates the sun’s deviation, in degrees, east/west of due south at those times (±3 hours from solar noon) on December 21.
d. The direction of a prevailing wind is the direction from which the wind blows
e. 
f. 
g. Rainfall income calculated in situ w/ average rainfall, area, & population
h. Town proper
i. 
j. 

CREDITS: Brad Lancaster, Resource concept | Megan Hartman, Resource creation, research

CASTELLANA GROTTE’S PLACE-ASSESSMENT REFERENCES
1. Castellana Grotte weather station data, obtained from Francesco Costante of www.meteocastellana.it, via email 3 Sept 2013
2. Approximate extremes for Gioia del Colle weather station, Wunderground.com, accessed 2 Sept 2013
3. Rainwater Harvesting for Drylands & Beyond, Vol 1, or esrl.noaa.gov/gmd/grad/solcalc, accessed 2 Sept 2013
4. RWHDB Vol 1, or Mar 21 = 90–latitude, Jun 21 = 90–(latitude–23.44), Sep 21 = 90–latitude, Dec 21 = 90–(latitude+23.44)
5. 
8. 
9. 
10. 
11. 
12. 