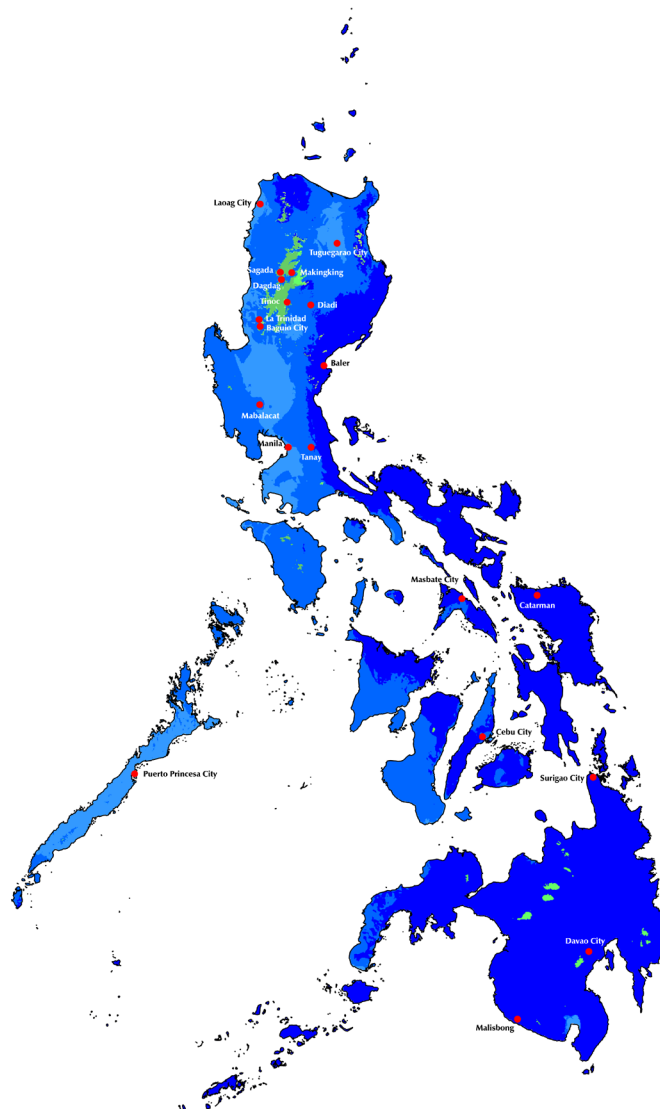

NZB.RGChan.

3.2 Koppen-Geiger

Key Locations



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ABOUT THE SERIES

**This pdf file-binding is part of the
NZB.RGChan.Series on foundational researches undertaken by
R.G.CHAN & Associates for in-house office use, towards
systematic steps for Net Zero Building Design of projects.**

CONTEXTUALIZATION

This study has been prepared in anticipation of the related data that can be obtained by way of the Köppen–Geiger climate classifications in the Philippines, specifically as reference information for building science in the context of Net Zero Building (NZB) design.

This report is the second part which follows the binding NZB.RGChan.3.1 Koppen-Geiger Philippines, where five (5) Köppen-Geiger climate types in the Philippines are classified. Provinces and key cities are listed according to the Regions they belong to, followed by their corresponding climate classifications. In this subsequent report, four (4) key locations are identified for each climate classification. This report further names geographic locations and climate parameters to serve as key locations under each climate, which can be used as basis in the climate design for all other locations.

KEY LOCATIONS

For the Philippines to be well represented through the Köppen-Geiger climate classifications, key locations are taken from various Regions in the Philippines. Four (4) key locations are chosen for each type of Köppen-Geiger climate classification: Tropical rainforest climate (Af), Tropical monsoon climate (Am), Tropical savanna climate (Aw), Subtropical highland oceanic climate (Cwb), and Oceanic climate (Cfb). Extreme climate conditions, climate recognitions and tiles (e.g. Tuguegarao as the “hottest city in the Philippines”), altitude, and availability of climatic data are factors that contributed to the selection of key locations. Climatic data for the following key locations are taken from weatherspark.com and climate-data.org.

Tropical rainforest climate (Af)

Davao City



The city of Davao has a tropical climate that does not have a true dry season. While there is significant rainfall during the winter season, the largest amount of rainfall occurs during the summer months. On average, the temperatures in this city are usually high.



Figure 01. Location within the Philippines

Region:	Davao Region (Region XI)
Province:	Davao del Sur (geographically only)
Altitude:	6 m above sea level
Coordinates:	7°04'N 125°36'E
Climate:	Tropical
Rainfall:	Significant rainfall throughout the year have very little.
Avg. annual temp.:	27.0°C
Annual rainfall:	1878 mm

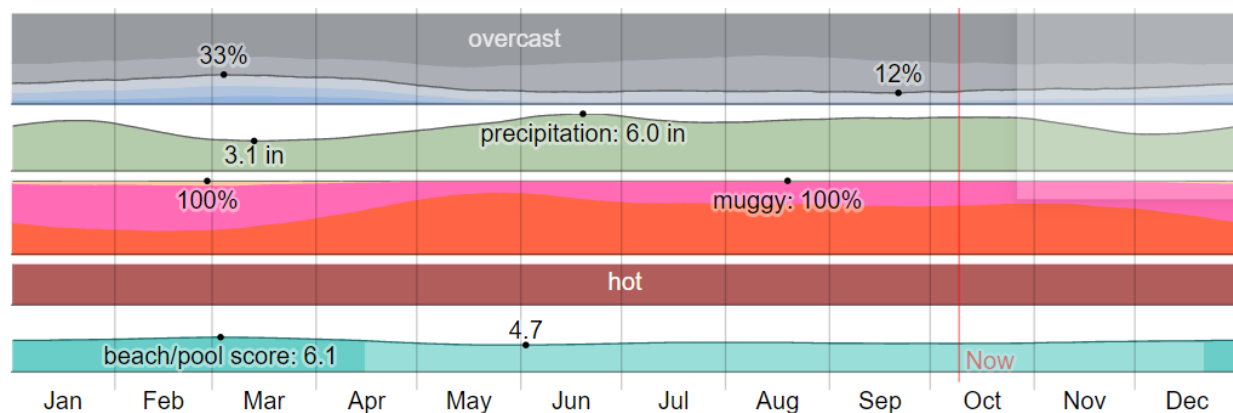


Figure 02. Davao City climate Summary [via Weatherspark.com]

Between the driest and wettest months, the difference in precipitation is 135 mm. The average temperatures vary during the year by 1.5°C.

Table 01. Davao City weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	26.2	26.4	27.1	27.7	27.6	27.1	26.9	27	27.1	27.2	27.2	26.8
Min. Temperature (°C)	21.6	21.7	22	22.3	22.9	22.7	22.5	22.5	22.5	22.5	22.4	22.2
Max. Temperature (°C)	30.9	31.2	32.3	32.9	32.4	31.6	31.4	31.6	31.8	32	32	31.4
Precipitation/ Rainfall (mm)	116	109	89	157	224	190	181	177	192	170	153	120

Temperature

At an average temperature of 27.7°C, April is the hottest month of the year. In January, the average temperature is 26.2°C. It is the lowest average temperature of the whole year.

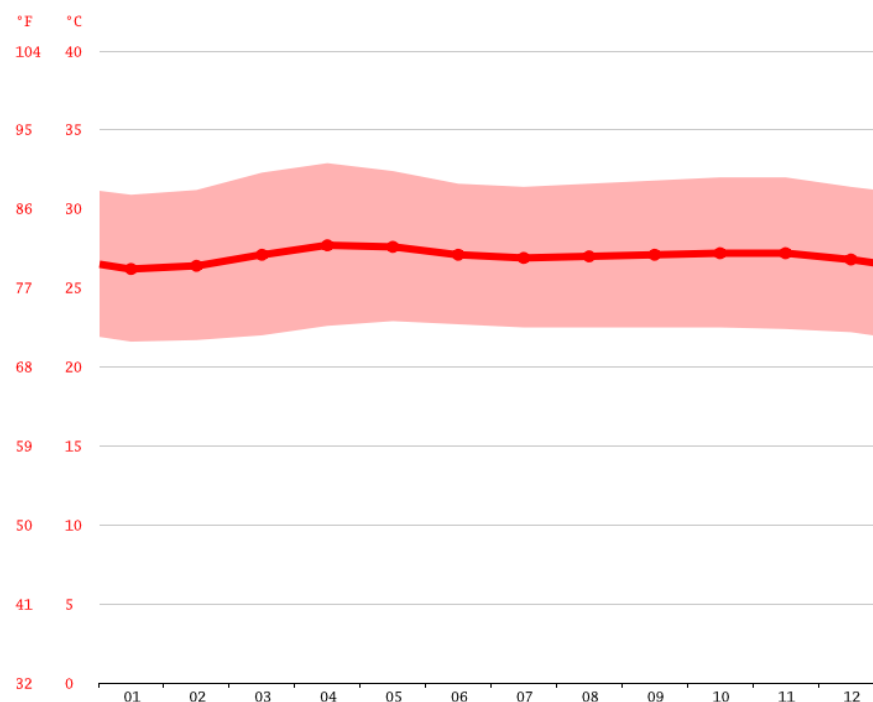


Figure 03. Davao City average temperature [via Climate-data.org]

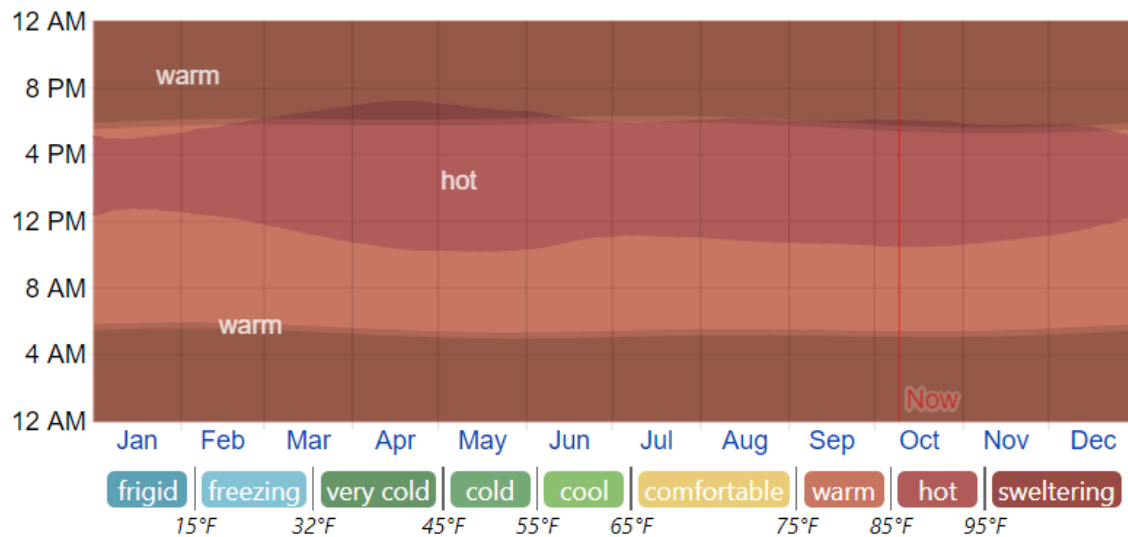


Figure 04. Davao City average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Davao City, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 43 minutes of daylight. The longest day is June 21, with 12 hours, 32 minutes of daylight.

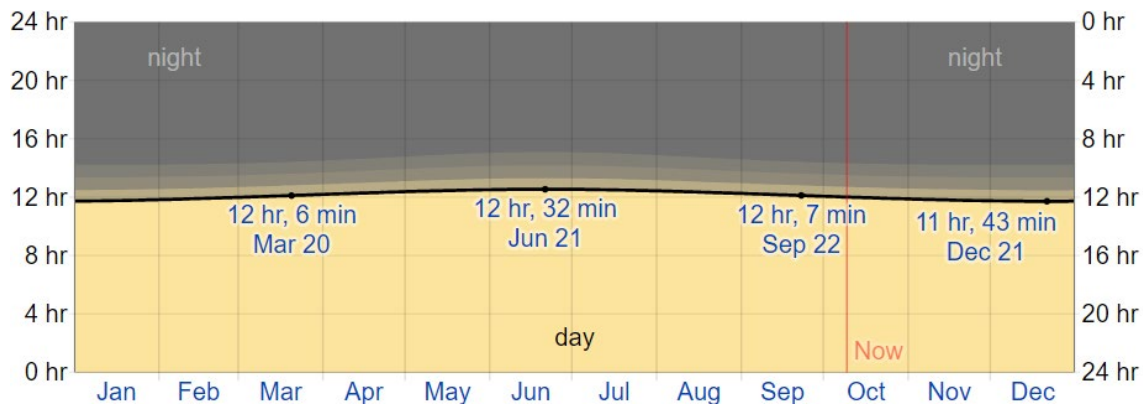


Figure 05. Davao City hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:24 AM on June 3, and the latest sunrise is at 6:29 AM on January 21. The earliest sunset is at 5:22 PM on November 22, and the latest sunset is at 6:34 PM on July 7.

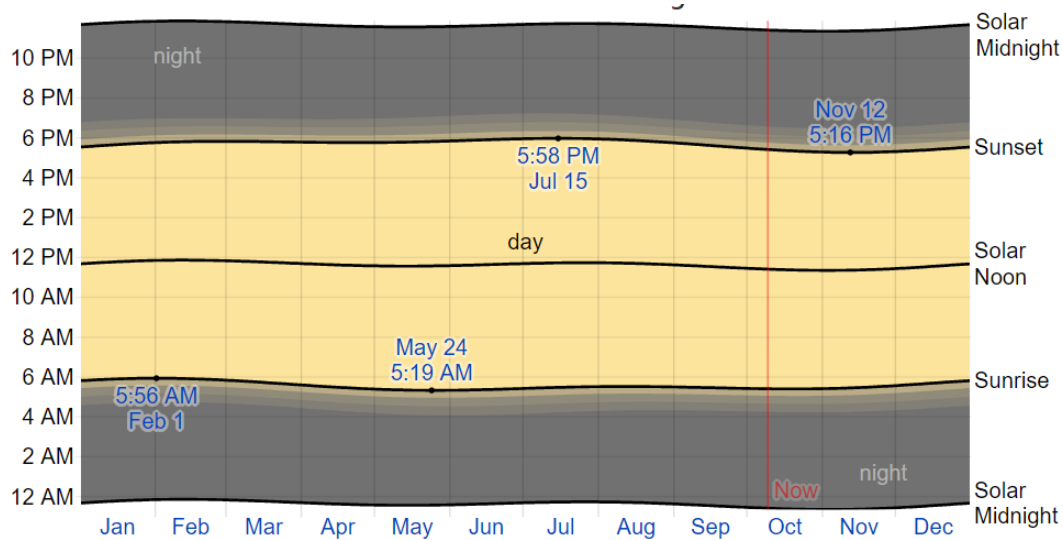


Figure 06. Davao City sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

Davao City experiences significant seasonal variation over the course of the year. The clearer sky coverage part of the year begins late December and lasts until late April. The cloudier part of the year begins late April and ends late November.

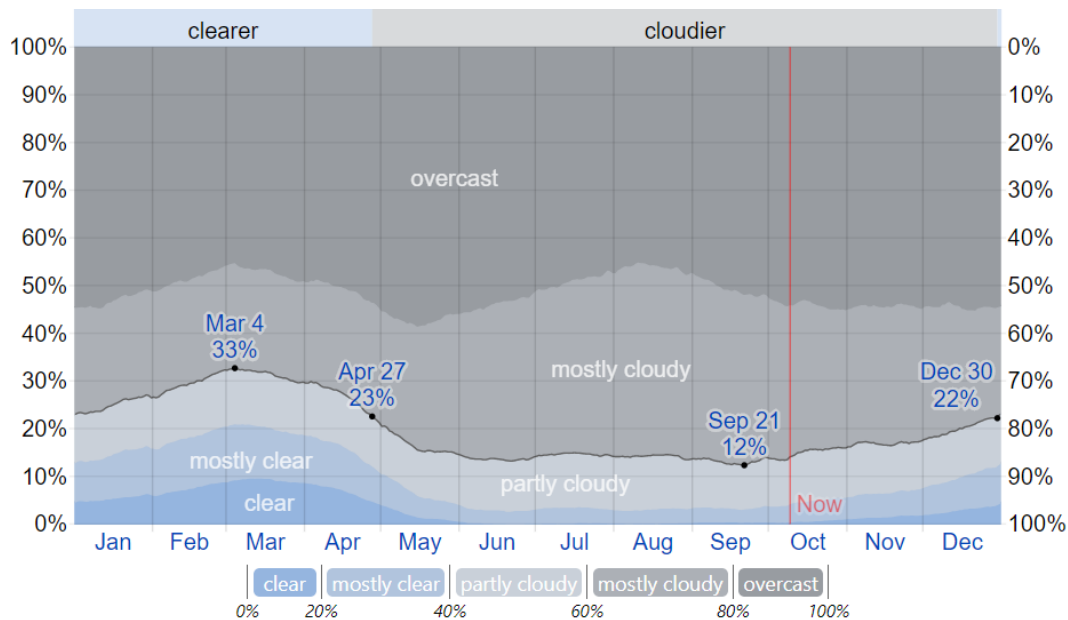


Figure 07. Davao City cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Davao City experiences mild seasonal variation over the course of the year. The windier part of the year lasts from late June to early October, while the calmer time of the year lasts from early October to late June.

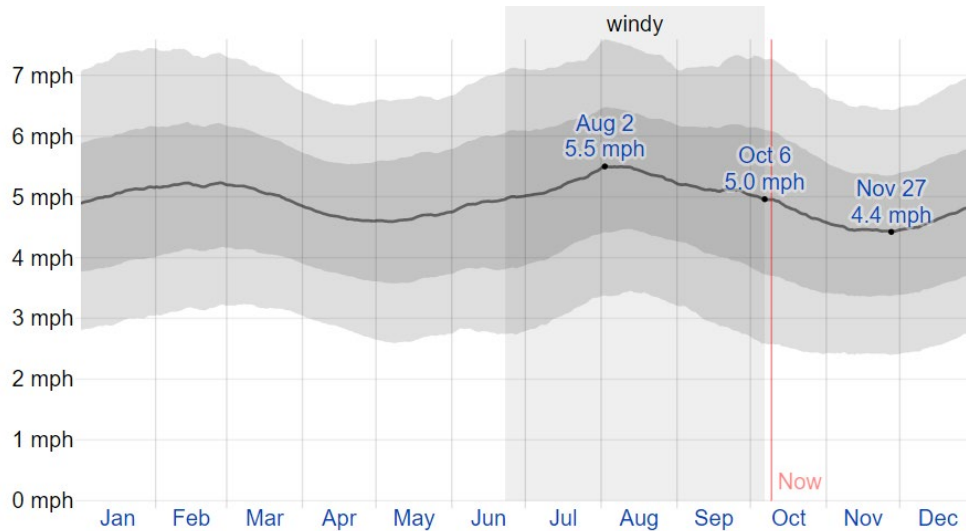


Figure 08. Davao City average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the east during mid-February to early June and from late October to late November; from the south from early June to late September; and from the north from late November to mid-February.

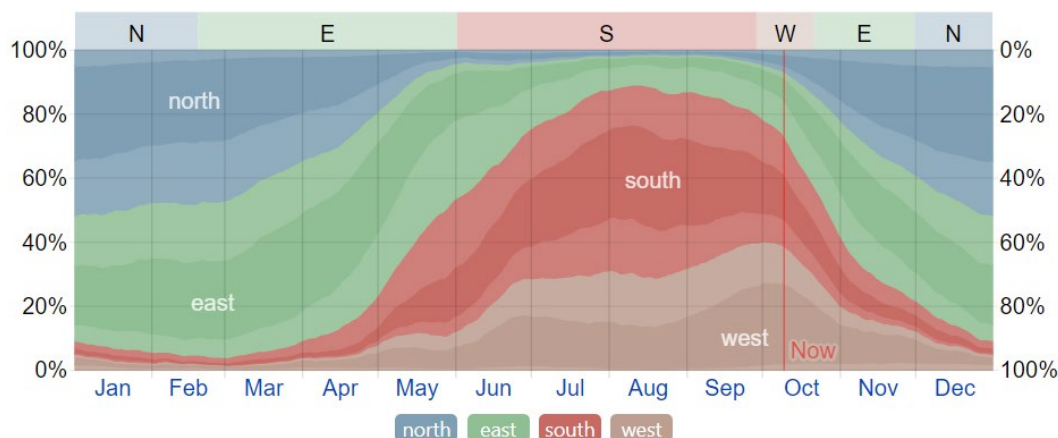


Figure 09. Davao City wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

Precipitation is the lowest in March, with an average of 89 mm. Most precipitation falls in May, with an average of 224 mm.

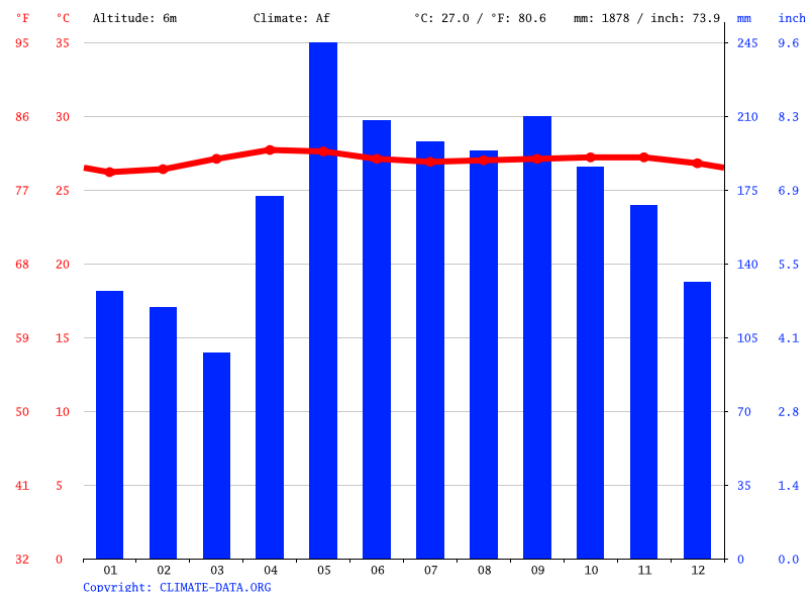


Figure 10. Davao City climate graph (Weather by month) [via Climate-data.org]

Davao City experiences significant seasonal variation in monthly rainfall.



Figure 11. Davao City daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

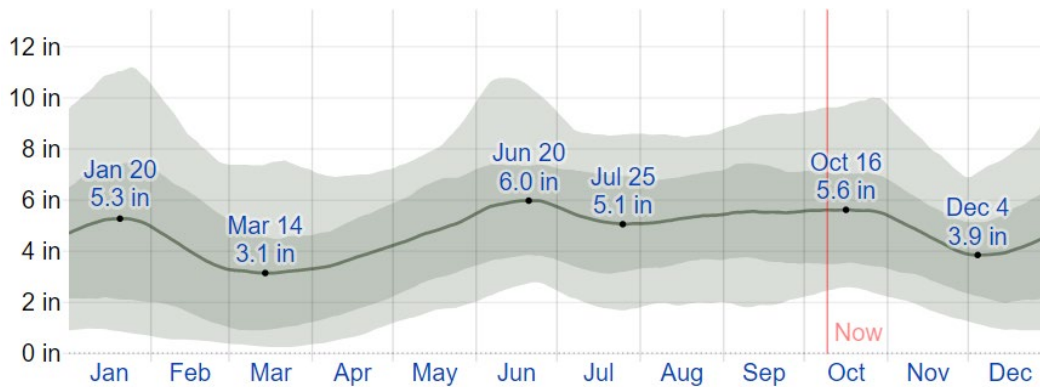


Figure 12. Davao City average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The chance that a given day will be muggy in Davao City is essentially constant during May, remaining around 100% throughout.

For reference, on May 18, the muggiest day of the year, there are muggy conditions 100% of the time, while on January 22, the least muggy day of the year, there are muggy conditions 94% of the time.

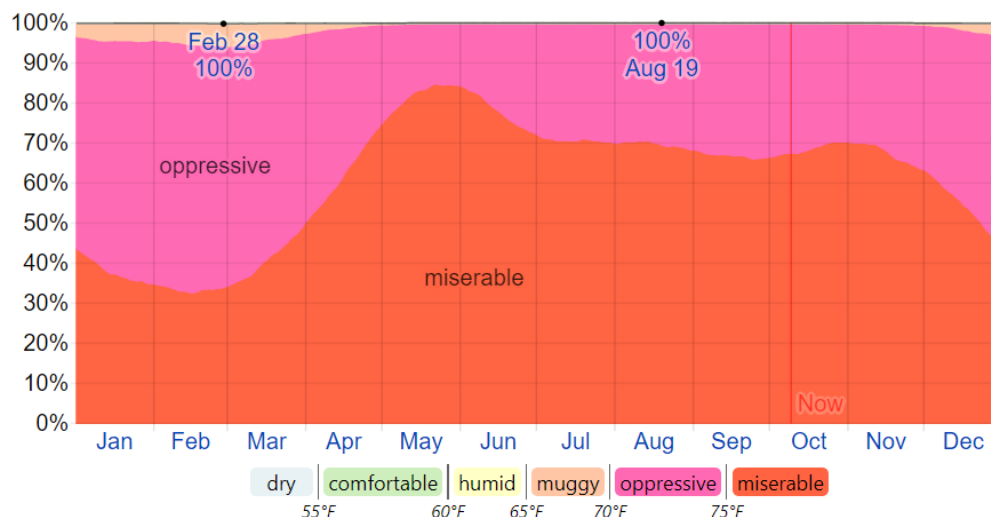


Figure 13. Davao City humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

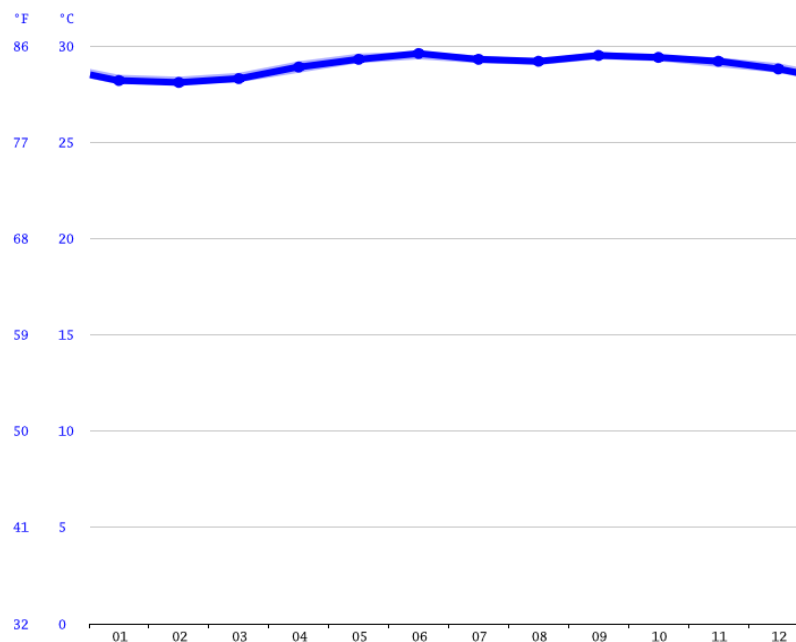


Figure 14. Davao City water temperature [via Climate-data.org]

Table 02. Davao City water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	28.0	28.0	28.1	28.6	29.1	29.3	29.1	29.0	29.3	29.2	28.9	28.6
Avg. Water Temperature (°C)	28.2	28.1	28.3	28.9	29.3	29.6	29.3	29.2	29.5	29.4	29.2	28.8
Max. Water Temperature (°C)	28.5	28.4	28.6	29.2	29.6	29.7	29.5	29.3	29.7	29.5	29.4	29.1

The average water temperature during the year located in Davao City (Davao Gulf) at 29°C.

At about 29.7°C is the maximum of the water temperatures over the months. This will be reached in June. The low is 28.0°C and is measured in January.

The date of the lowest water temperature is around January 16. At this time, it is about 28.00°C. The maximum of 29.7°C is measured around June 04.

Baler



The city of Baler on average, has temperatures that are always high. A lot of rain falls in the month of: January, March, May, June, July, August, September, October, November and December. November is the most wet month and should be avoided if you are not a big fan of rain.



Region:	Central Luzon (Region III)
Province:	Aurora
Altitude:	10 m above sea level
Coordinates:	15°45'30"N 121°33'45"E
Climate:	Tropical
Rainfall:	Significant rainfall throughout the year
Avg. annual temp.:	26.8°C
Annual rainfall:	3099 mm

Figure 15. Location within the Philippines

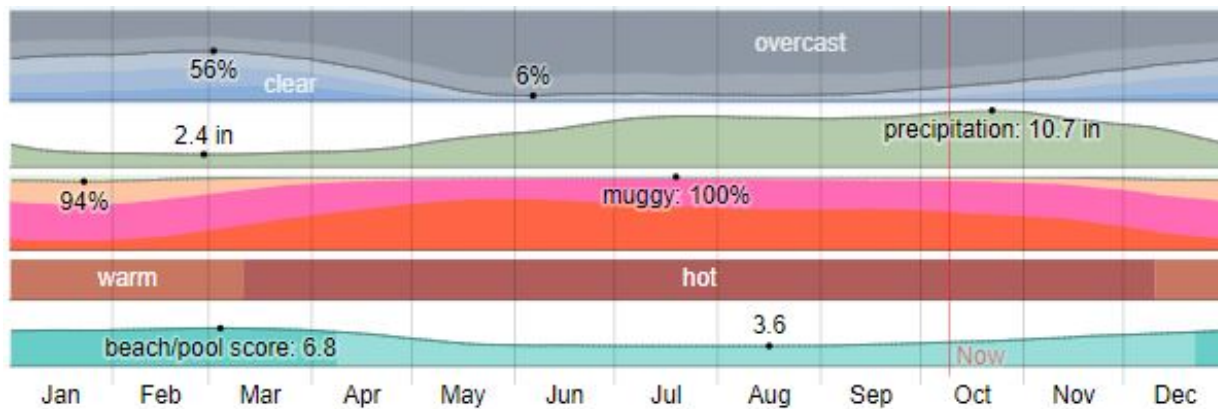


Figure 16. Baler climate summary [via Weatherspark.com]

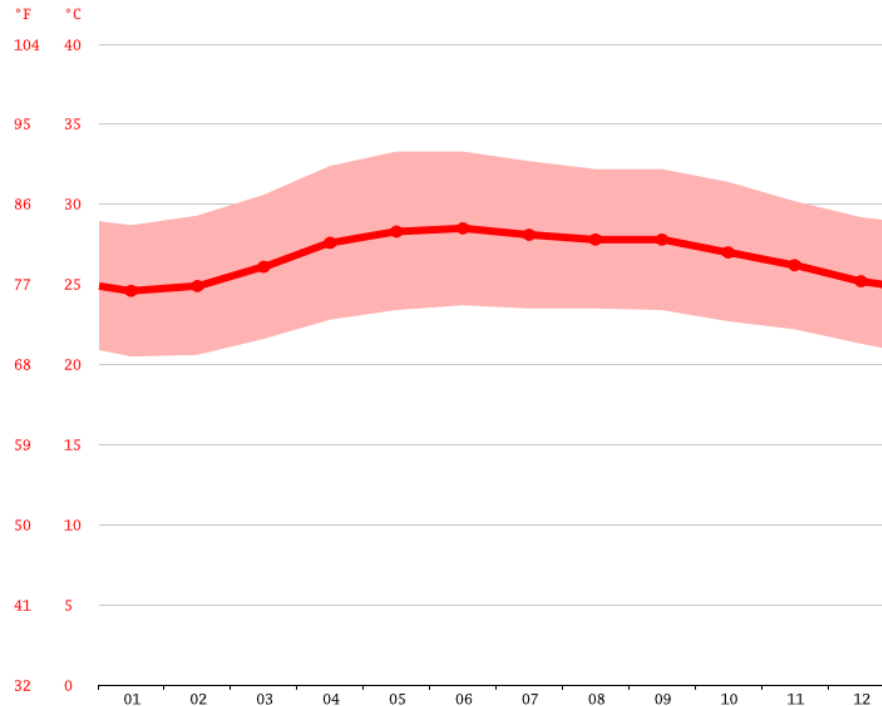
Between the driest and wettest months, the difference in precipitation is 135 mm. The average temperatures vary during the year by 1.5°C.

Table 03. Baler weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	24.6	24.9	26.1	27.6	28.3	28.5	28.1	27.8	27.8	27.0	26.2	25.2
Min. Temperature (°C)	20.5	20.6	21.6	22.8	23.4	23.7	23.5	23.5	23.4	22.7	22.2	21.3
Max. Temperature (°C)	28.7	29.3	30.6	32.4	33.3	33.3	32.7	32.2	32.2	31.4	30.2	29.2
Precipitation / Rainfall (mm)	189	153	199	236	297	254	243	223	276	372	457	200

Temperature

The temperatures are highest on average in June, at around 28.5°C. January is the coldest month, with temperatures averaging 24.6°C.

*Figure 17. Baler average temperature [via Climate-data.org]*

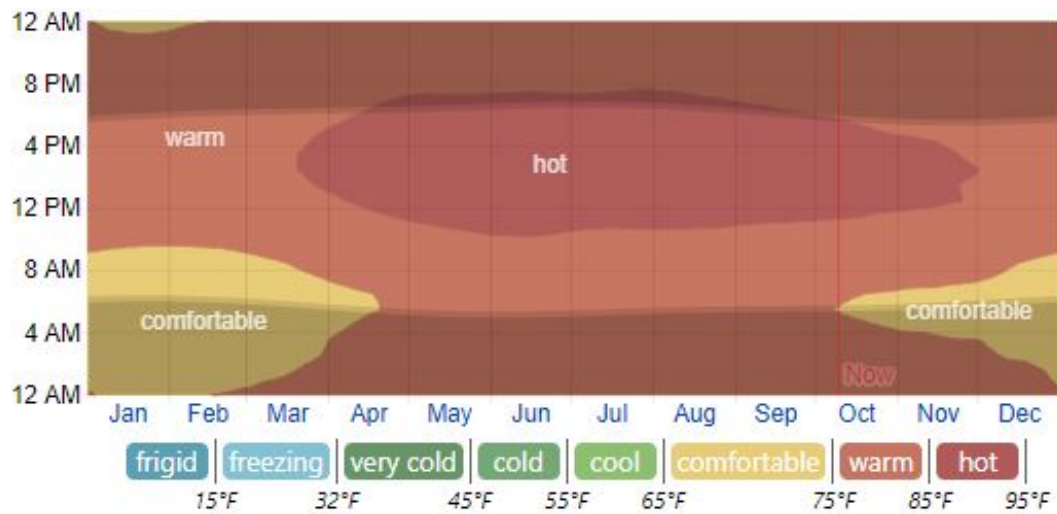


Figure 18. Baler average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Baler, the length of the day varies over the course of the year. The shortest day is December 21, with 11 hours, 12 minutes of daylight and the longest day is June 21, with 13 hours, 4 minutes of daylight.



Figure 19. Baler hours of daylight and twilight in May [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:21 AM on June 3, and the latest sunrise is at 6:24 AM on January 22. The earliest sunset is at 5:19 PM on November 22, and the latest sunset is at 6:29 PM on July 8.

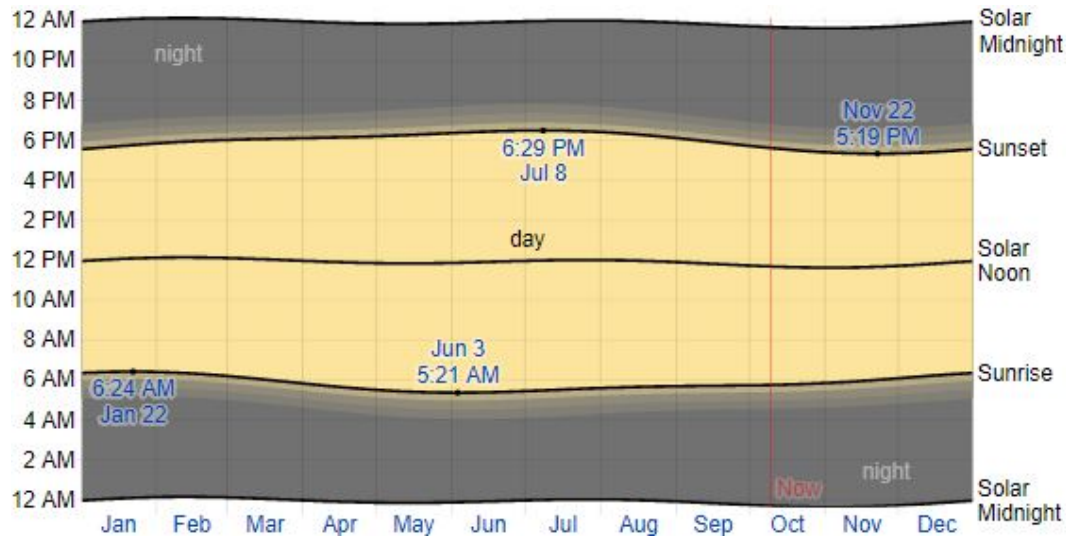


Figure 20. Baler sunrise and sunset with twilight in May [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Baler, the average percentage of the sky covered by clouds experiences extreme seasonal variation over the course of the year. The clearer part of the year in Baler begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

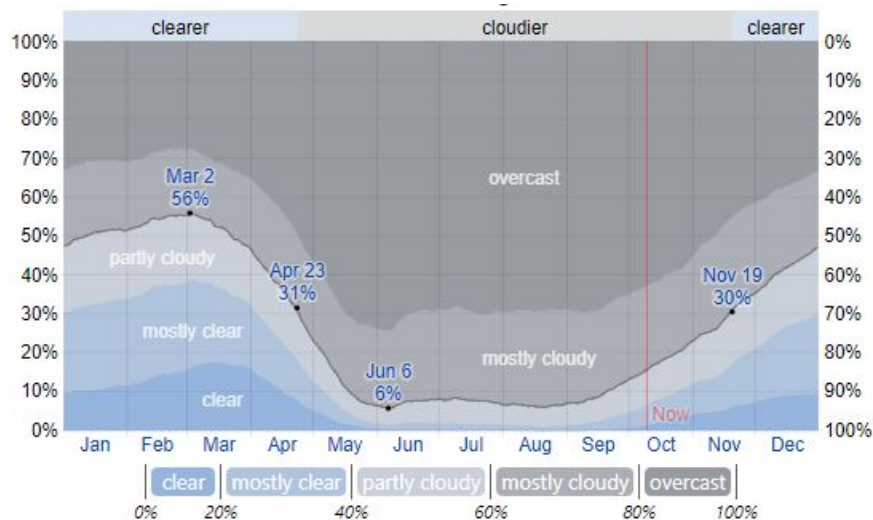


Figure 21. Baler cloud cover categories in May [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Baler experiences significant seasonal variation over the course of the year. The windier part of the year lasts from mid-October to early March, while the calmer time of the year lasts from early March to mid-October.

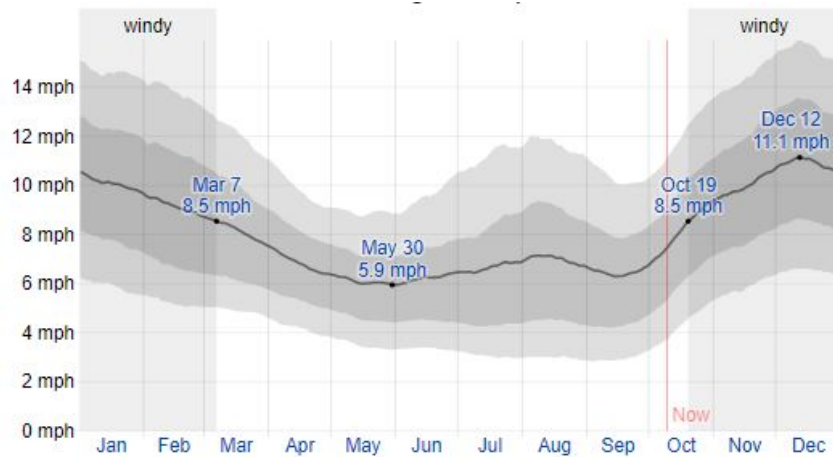


Figure 22. Baler average wind speed in May [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the south during early June to mid-June; from the east from mid-June to mid-July and mid-September to early June; and from the west from mid-July to mid-September.

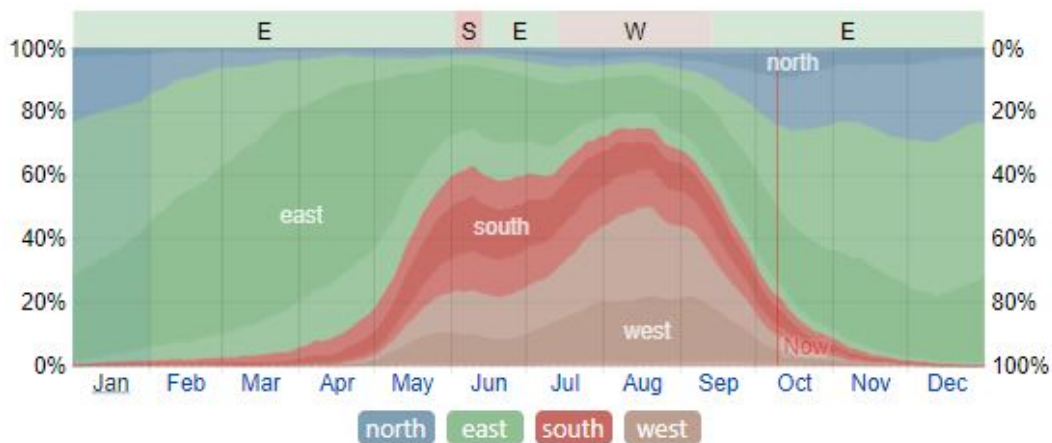


Figure 23. Baler wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The least amount of rainfall occurs in February. The average in this month is 153 mm. Most of the precipitation here falls in November, averaging 457 mm.

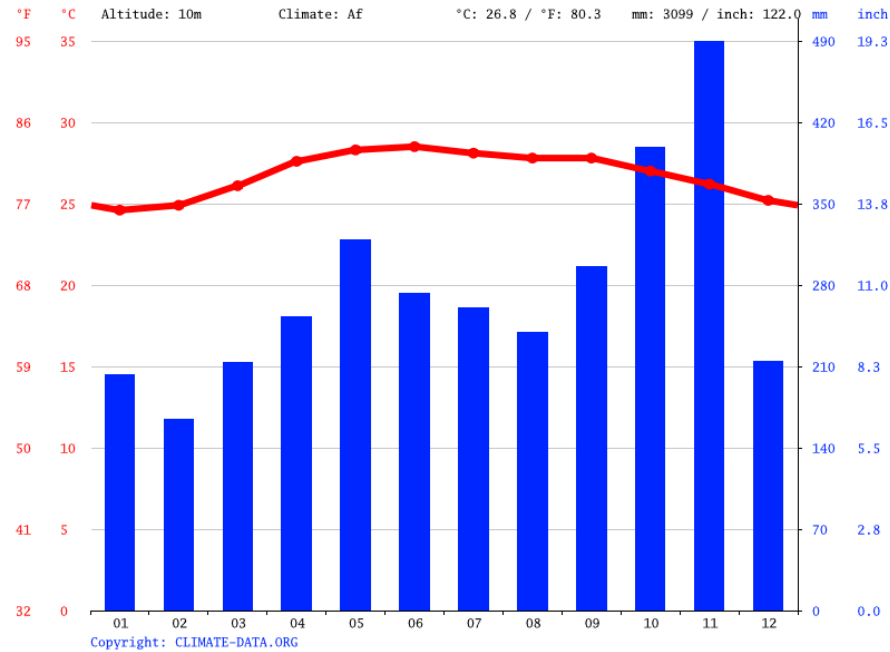


Figure 24. Baler climate graph (Weather by month) [via Climate-data.org]

Baler experiences significant seasonal variation in monthly rainfall.



Figure 25. Baler daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

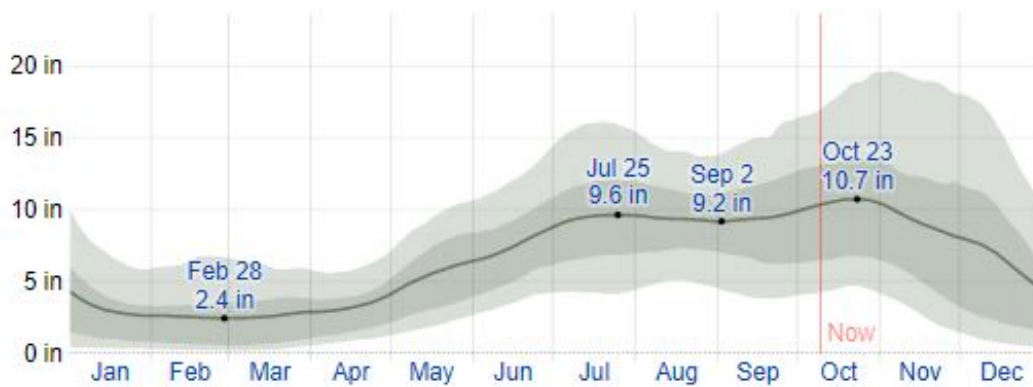


Figure 26. Baler average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity in Baler is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, staying within 3% of 97% throughout.

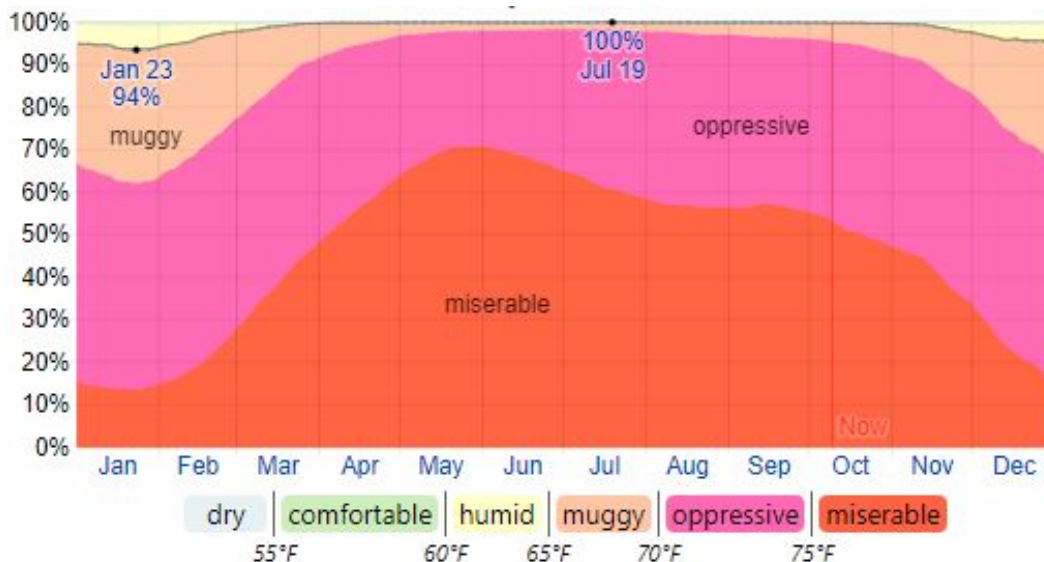


Figure 27. Baler humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

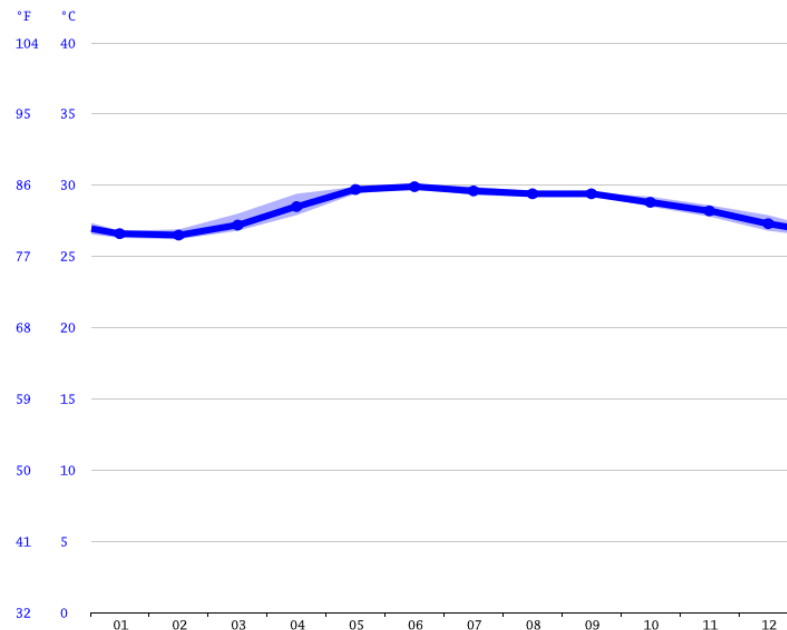


Figure 28. Baler water temperature [via Climate-data.org]

Table 04. Baler water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	26.3	26.2	26.8	27.9	29.4	29.8	29.3	29.2	29.3	28.5	27.8	26.8
Avg. Water Temperature (°C)	26.6	26.5	27.2	28.5	29.7	29.9	29.6	29.4	29.4	28.8	28.2	27.3
Max. Water Temperature (°C)	26.8	26.9	28.0	29.4	29.9	30.1	29.9	29.6	29.5	29.2	28.6	27.9

The annual water temperature for Baler (Philippine Sea) is on average 28.4°C.

The month with the highest water temperature is June with 30.1°C. The lowest water temperature of 26.2°C will be reached in February.

The highest average water temperature for this location is 30.1°C and is reached on average around June 07. By contrast, the lowest average water temperature 26.20°C around February 29.

Catarman



The city of Catarman is located in Northern Samar. On average, the temperatures are always high. December is the most wet month and should be avoided if you are not a big fan of rain. Over the course of the year, the temperature typically varies from 23.3°C to 32.2°C and is rarely below 21°C or above 34°C.



Region: **Eastern Visayas (Region VIII)**
 Province: **Northern Samar**
 Altitude: **6 m above sea level**
 Coordinates: **12°27'N 124°39'E**
 Climate: **Tropical**
 Rainfall: **Significant rainfall throughout the year**
 Avg. annual temp.: **26.7°C**
 Annual rainfall: **3147 mm**

Figure 29. Location within the Philippines

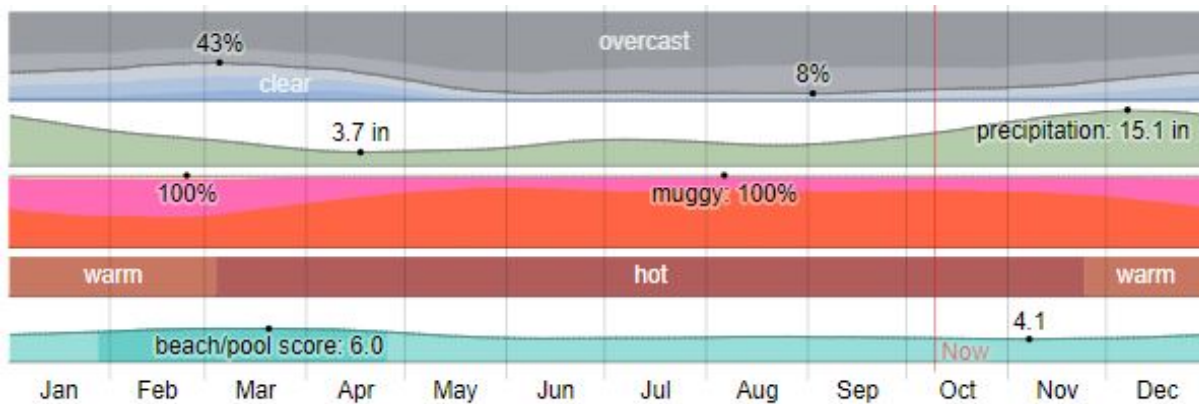


Figure 30. Catarman climate summary [via Weatherspark.com]

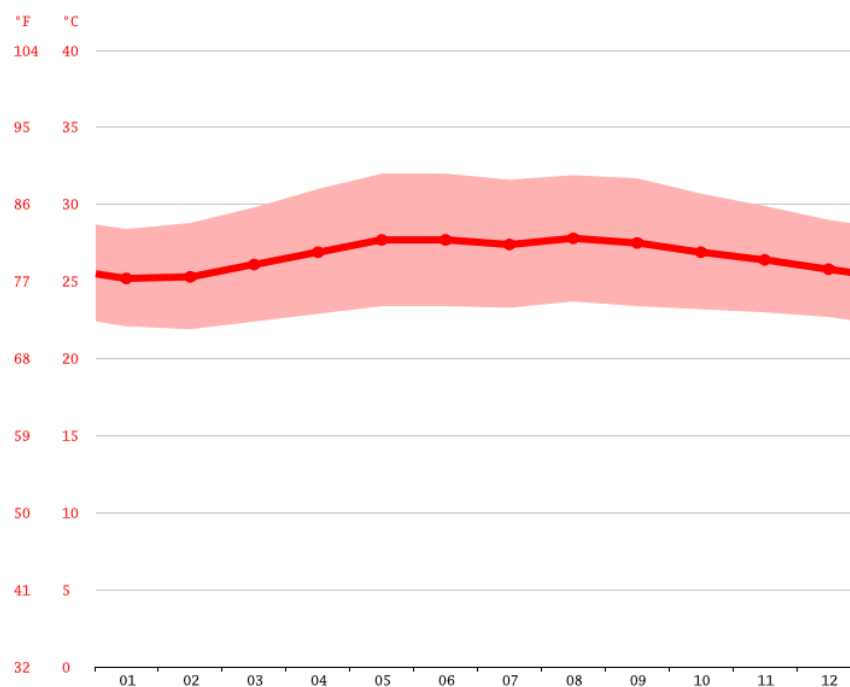
Between the driest and wettest months, the difference in precipitation is 378 mm. During the year, the average temperatures vary by 2.6°C.

Table 05. Catarman weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	25.2	25.3	26.1	26.9	27.7	27.7	27.4	27.8	27.5	26.9	26.4	25.8
Min. Temperature (°C)	22.1	21.9	22.4	22.9	23.4	23.4	23.3	23.7	23.4	23.2	23.0	22.7
Max. Temperature (°C)	28.4	28.8	29.8	31.0	32.0	32.0	31.6	31.9	31.7	30.7	29.9	29.0
Precipitation/ Rainfall (mm)	407	234	201	160	124	177	208	150	171	354	459	502

Temperature

At an average temperature of 27.8°C, August is the hottest month of the year. January has the lowest average temperature of the year. It is 25.2°C.

**Figure 31. Catarman average temperature [via Climate-data.org]**

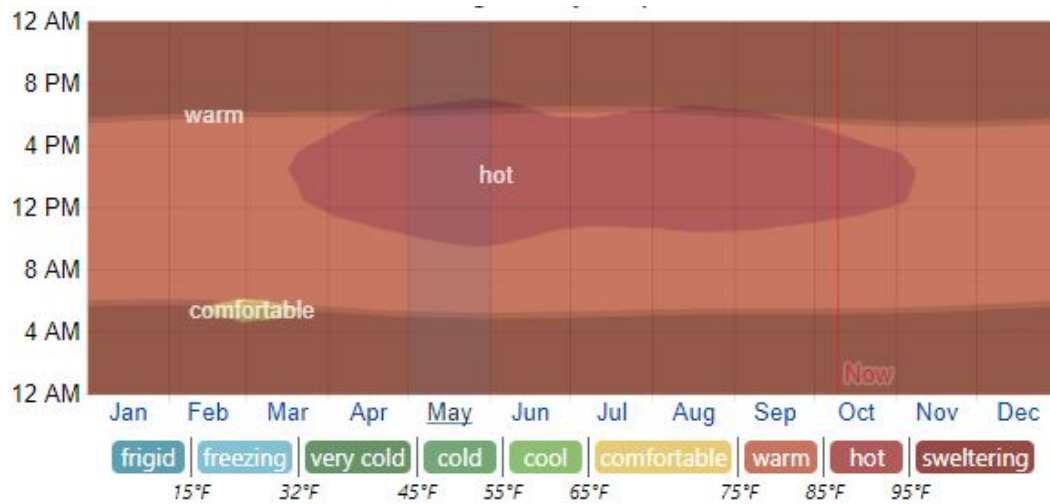


Figure 32. Catarman average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Catarman, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 24 minutes of daylight and the longest day is June 21, with 12 hours, 52 minutes of daylight.

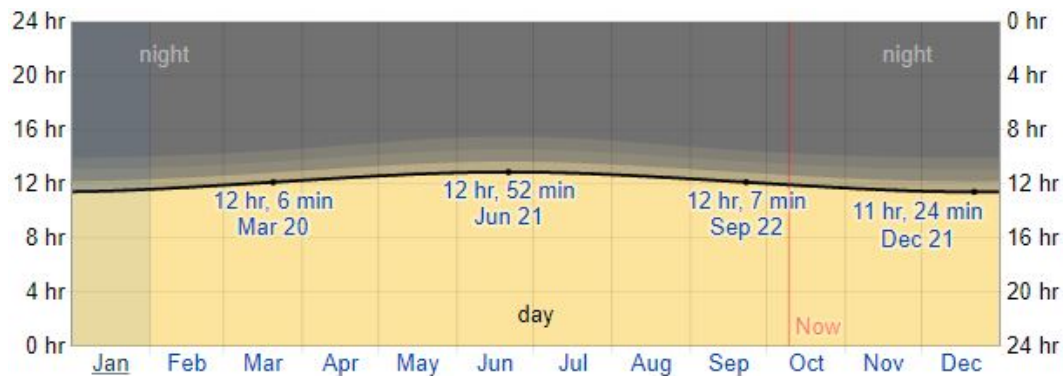


Figure 33. Catarman hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:14 AM on May 31, and the latest sunrise is at 6:07 AM on January 25. The earliest sunset is at 5:12 PM on November 18, and the latest sunset is at 6:11 PM on July 9.

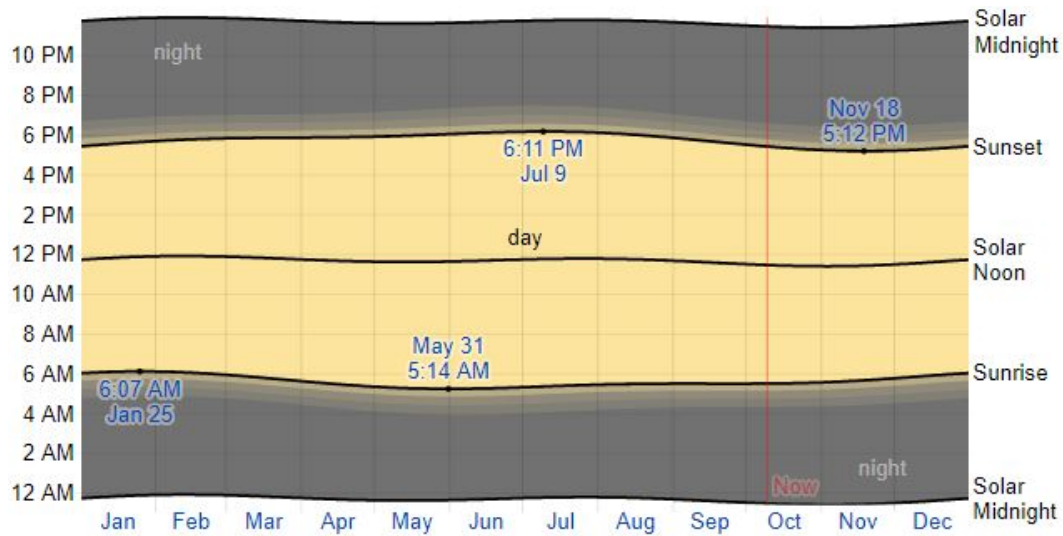


Figure 34. Catarman sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Catarman, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Catarman begins early December and ends late April. The cloudier part of the year begins late April and ends early December.

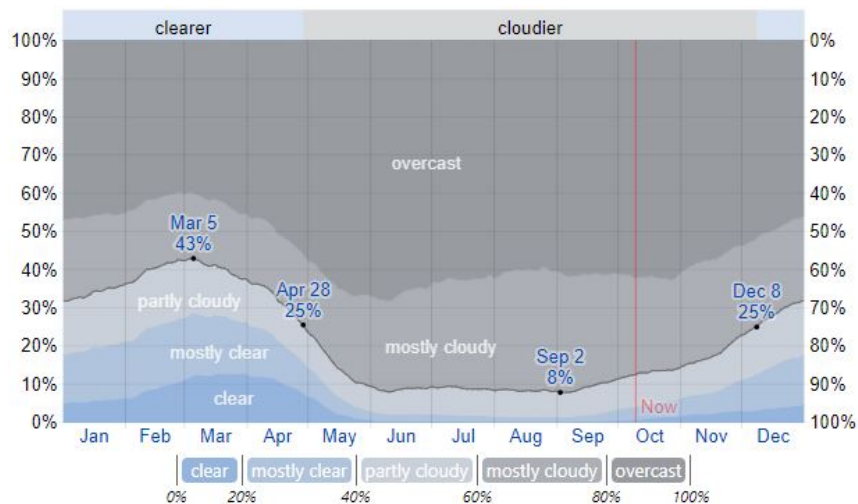


Figure 35. Catarman cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Baler experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early November to early April, while the calmer time of the year lasts from early April to early November.

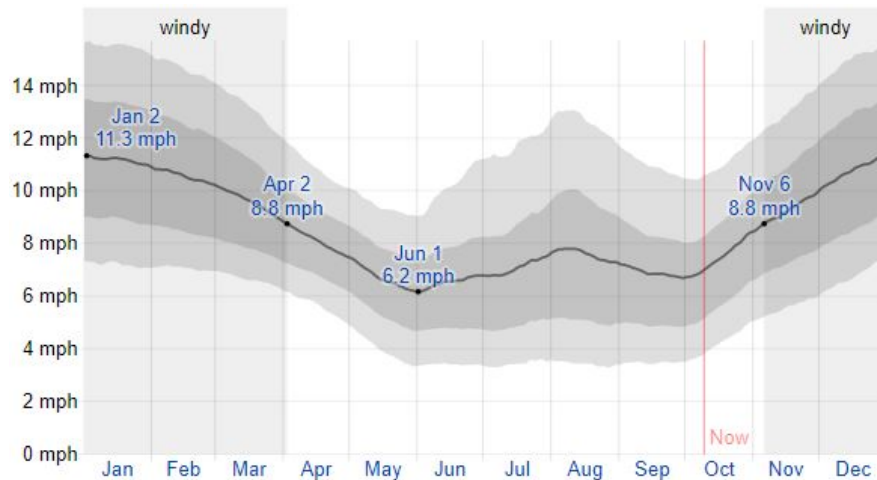


Figure 36. Catarman average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during early July to early October; and from the east from early October to mid-July.

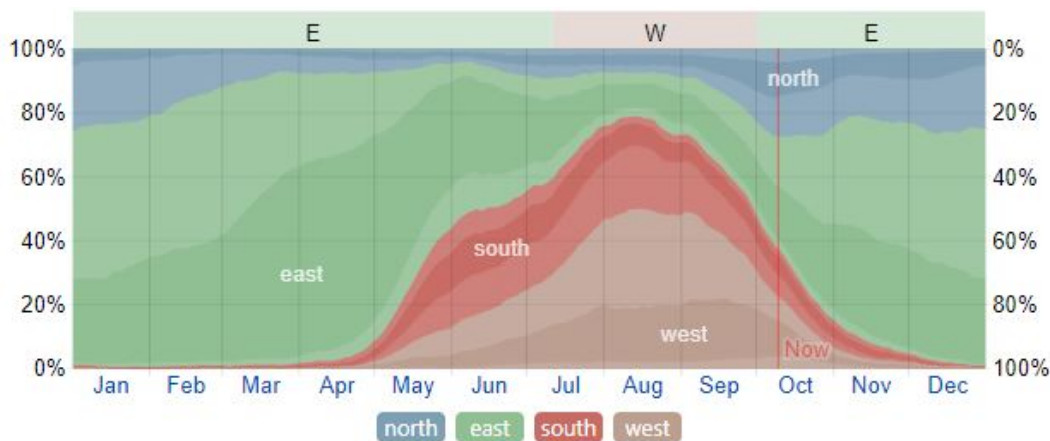


Figure 37. Catarman wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

Precipitation is the lowest in May, with an average of 124 mm. With an average of 502 mm, the most precipitation in December.

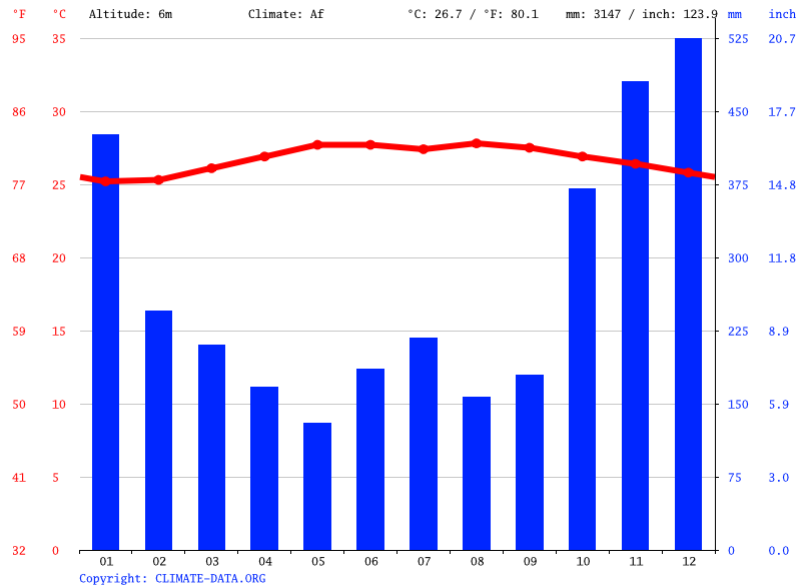


Figure 38. Catarman climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Catarman varies significantly throughout the year.



Figure 39. Catarman daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

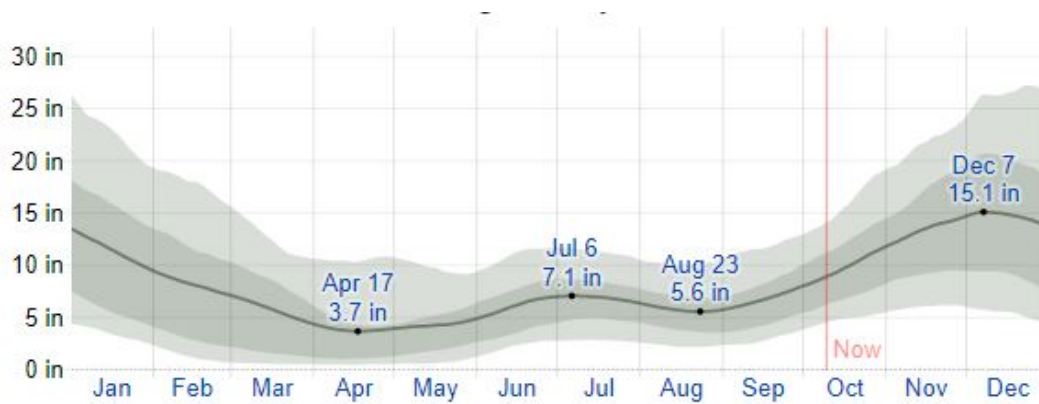


Figure 40. Catarman average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity in Catarman is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, remaining a virtually constant 100% throughout.

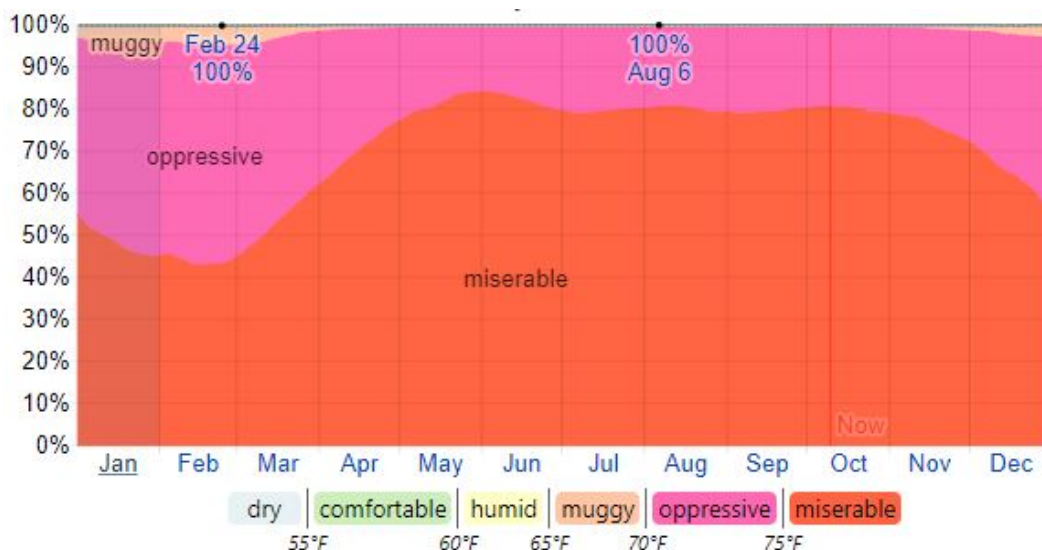


Figure 41. Catarman humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

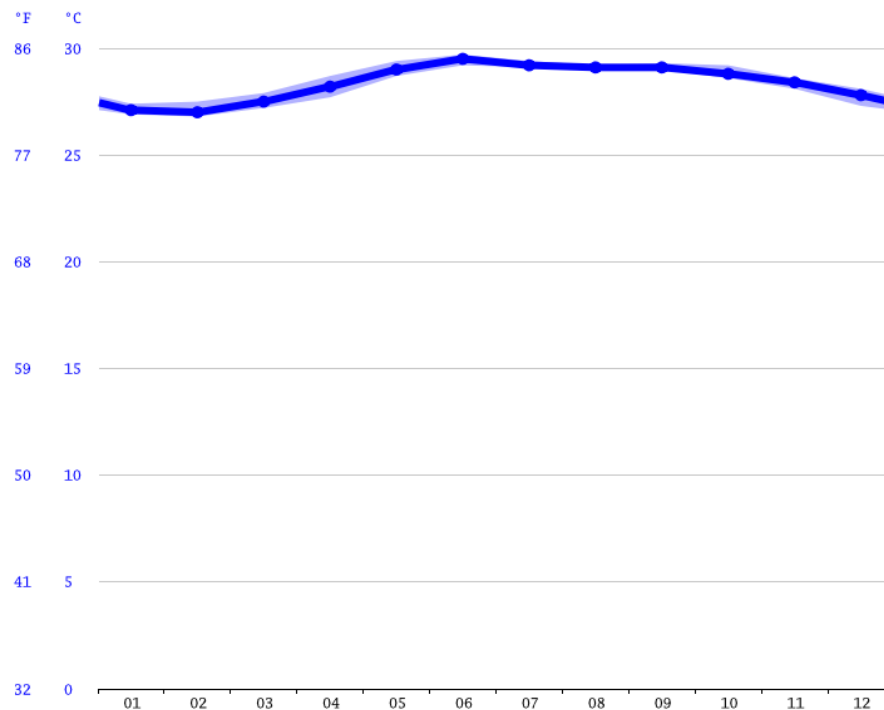


Figure 42. Catarman water temperature [via Climate-data.org]

Table 06. Catarman water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	26.9	26.8	27.2	27.7	28.7	29.2	29.1	29.0	29.0	28.6	28.1	27.3
Avg. Water Temperature (°C)	27.1	27.0	27.5	28.2	29.0	29.5	29.2	29.1	29.1	28.8	28.4	27.8
Max. Water Temperature (°C)	27.4	27.5	27.9	28.7	29.4	29.7	29.4	29.2	29.3	29.2	28.6	28.1

The annual water temperature for Catarman (Philippine Sea) is on average 28.4°C.

The month with the highest water temperature is June with 29.7°C. The lowest water temperature of 26.8°C will be reached in February.

The highest average water temperature for this location is 29.7°C and is reached on average around June 10. By contrast, the lowest average water temperature 26.8°C around February 05.

Surigao City



Along with Baguio City and eastern Samar, Surigao, the teardrop shaped island, receives the greatest amount of rainfall in the Philippines (PAGASA, 2020). The climate in Surigao is hot, oppressive, and overcast. Over the course of the year, the temperature typically varies from 24.4°C to 32.2°C and is rarely below 23°C or above 34°C.



Region: **Caraga (Region XIII)**
 Province: **Surigao del Norte**
 Altitude: **8 m above sea level**
 Coordinates: **9°54'18"N 126°4'0"E**
 Climate: **Tropical**
 Rainfall: **Significant rainfall throughout the year**
 Avg. annual temp.: **27.0°C**
 Annual rainfall: **3582 mm**

Figure 43. Location within the Philippines

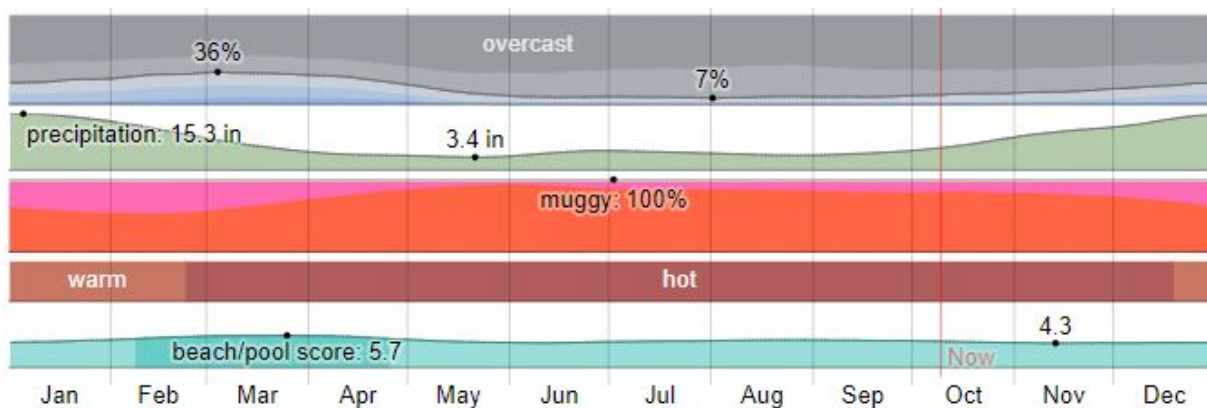


Figure 44. Surigao City climate summary [via Weatherspark.com]

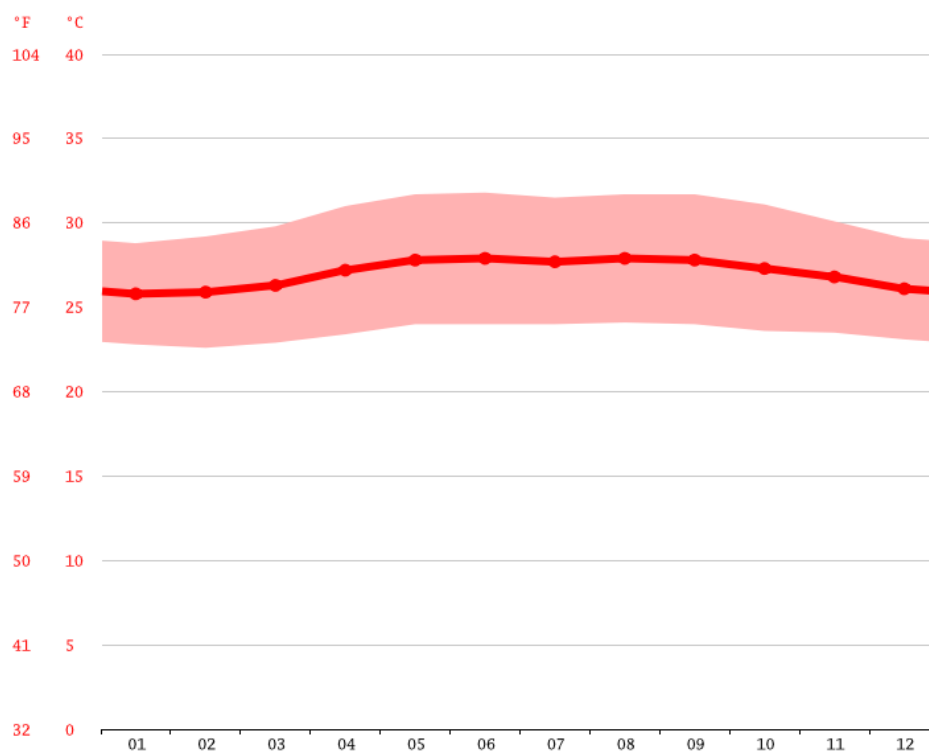
Between the driest and wettest months, the difference in precipitation is 440 mm. The average temperatures vary during the year by 2.1°C.

Table 07. Surigao City weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	25.8	25.9	26.3	27.2	27.8	27.9	27.7	27.9	27.8	27.3	26.8	26.1
Min. Temperature (°C)	22.8	22.6	22.9	23.4	24.0	24.0	24.0	24.1	24.0	23.6	23.5	23.1
Max. Temperature (°C)	28.8	29.2	29.8	31.0	31.7	31.8	31.5	31.7	31.7	31.1	30.1	29.1
Precipitation/ Rainfall (mm)	555	409	360	250	165	132	167	147	159	267	399	572

Temperature

At an average temperature of 27.9°C, June is the hottest month of the year. In January, the average temperature is 25.8°C. It is the lowest average temperature of the whole year.

**Figure 45. Surigao City average temperature [via Climate-data.org]**

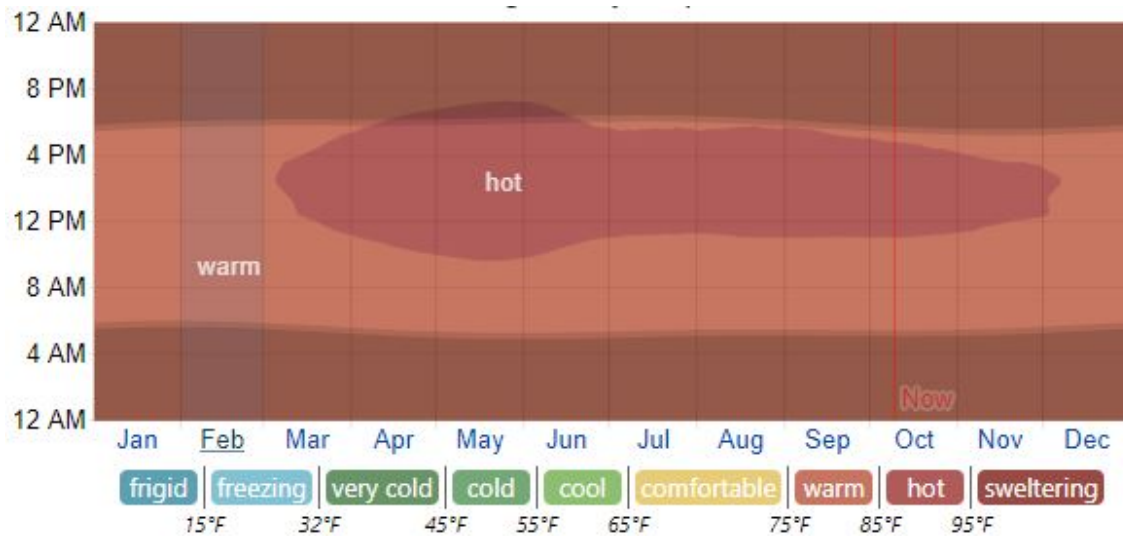


Figure 46. Surigao City average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Surigao City, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 33 minutes of daylight and the longest day is June 21, with 12 hours, 42 minutes of daylight.

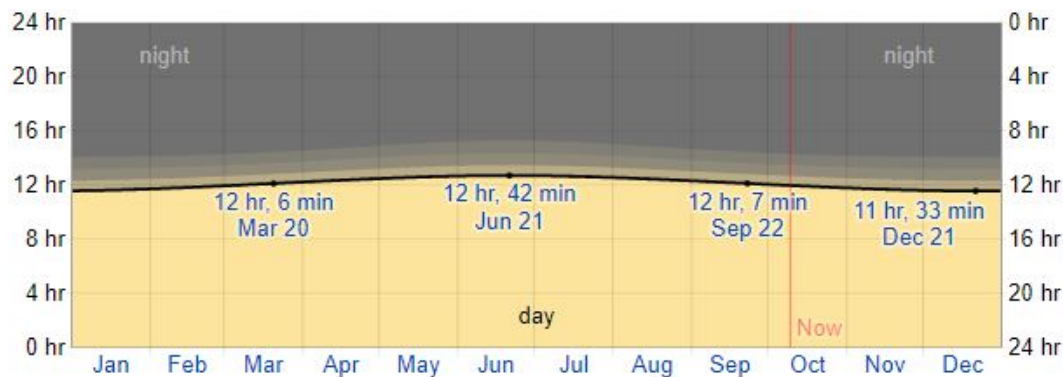


Figure 47. Surigao City hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:16 AM on May 30, and the latest sunrise is at 6:00 AM on January 28. The earliest sunset is at 5:12 PM on November 15, and the latest sunset is at 6:03 PM on July 12.

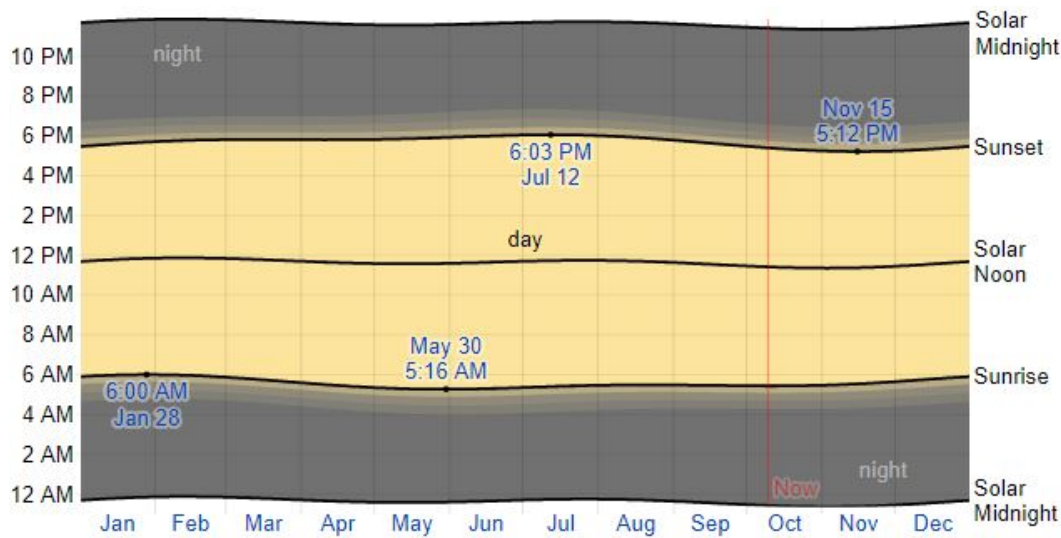


Figure 48. Surigao City sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Surigao City, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Surigao City begins late December and ends early May. The cloudier part of the year begins early May and ends late December.

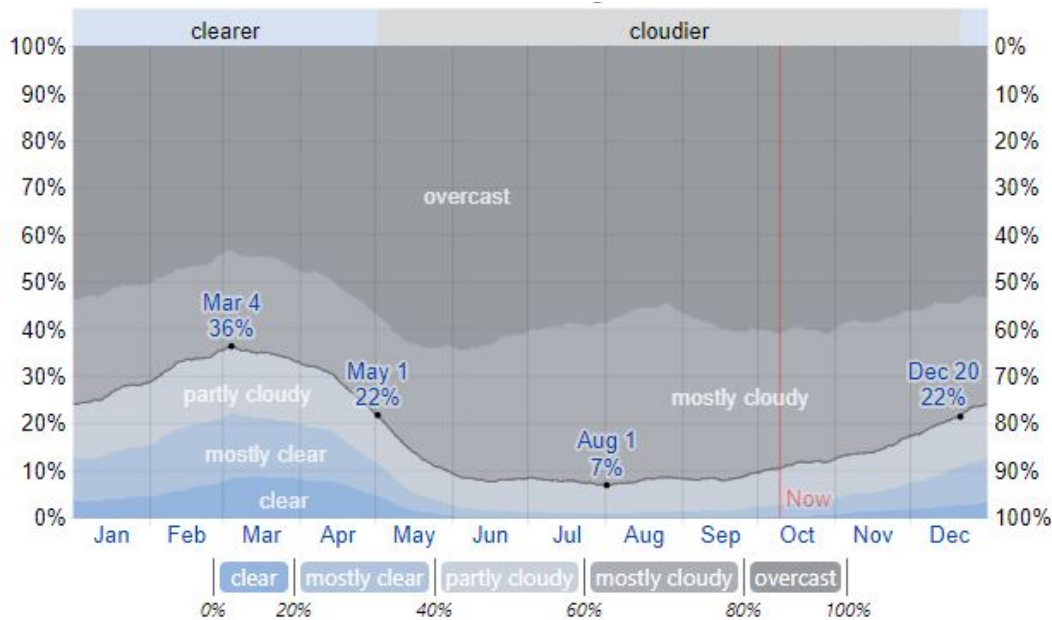


Figure 49. Surigao City cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Surigao City experiences significant seasonal variation over the course of the year. The windier part of the year lasts from late November to mid-April, while the calmer time of the year lasts from mid-April to late November.

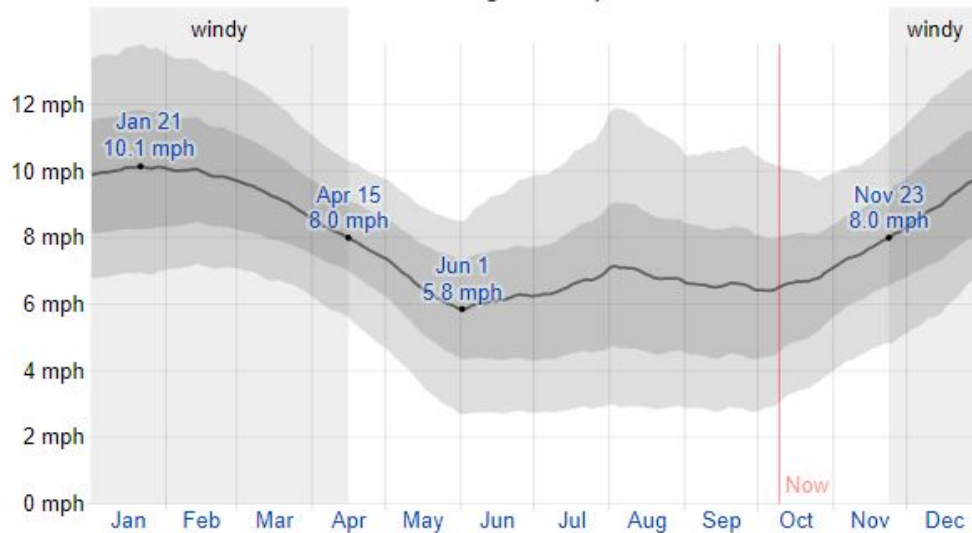


Figure 50. Surigao City average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during late July to mid-October; and from the east from mid-October to late June.

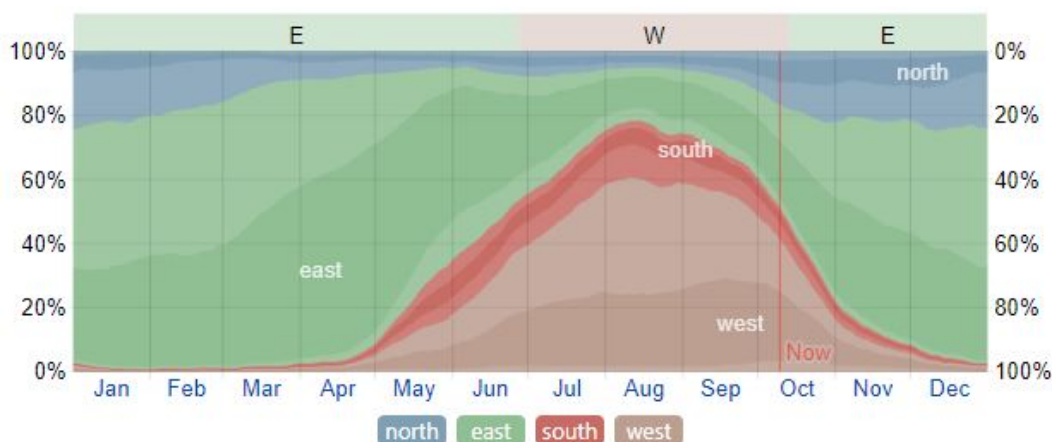


Figure 51. Surigao City wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

Precipitation is the lowest in June, with an average of 132 mm. Most precipitation falls in December, with an average of 572 mm.

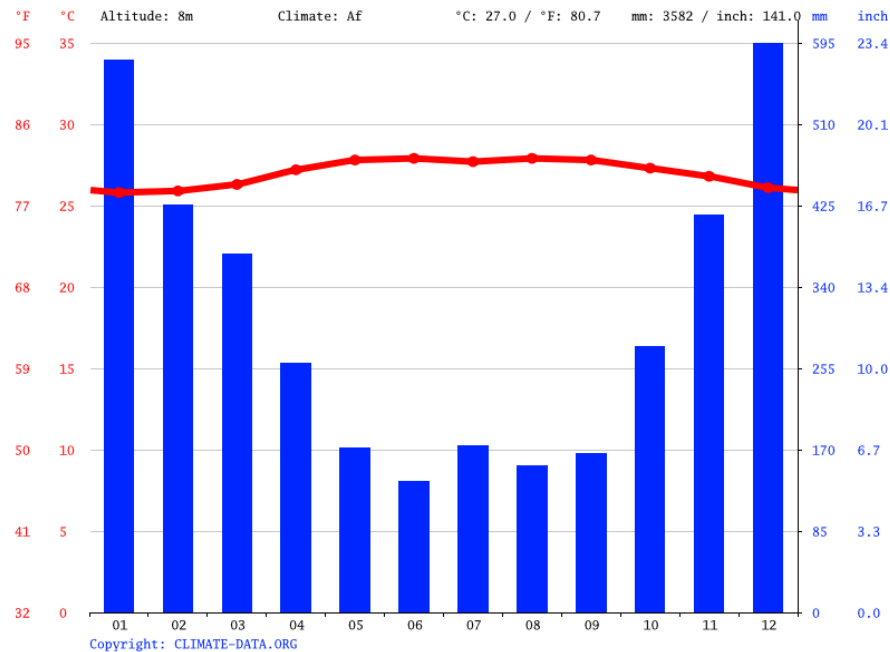


Figure 52. Surigao City climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Surigao City varies significantly throughout the year.



Figure 53. Surigao City daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.



Figure 54. Surigao City average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Surigao City is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, remaining a virtually constant 100% throughout.

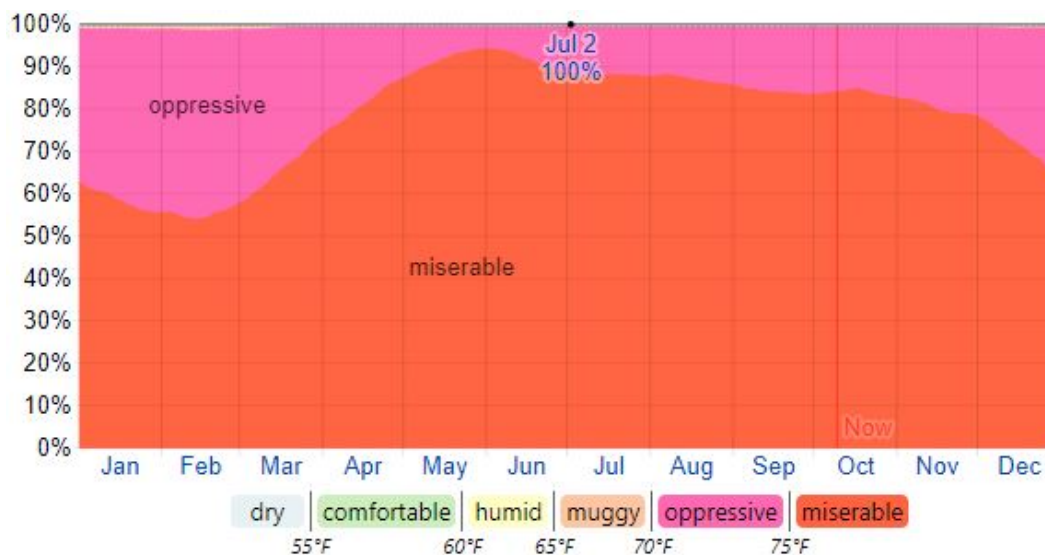


Figure 55. Surigao City humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

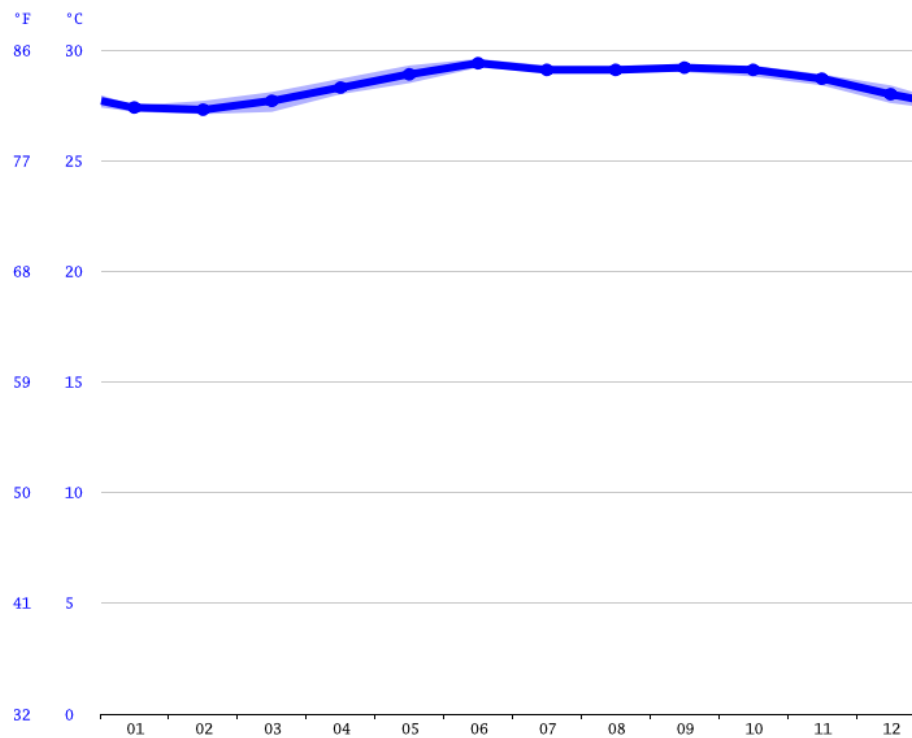


Figure 56. Surigao City water temperature [via Climate-data.org]

Table 08. Surigao City water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	27.2	27.1	27.2	28.0	28.5	29.2	29.0	29.0	29.0	28.8	28.4	27.6
Avg. Water Temperature (°C)	27.4	27.3	27.7	28.3	28.9	29.4	29.1	29.1	29.2	29.1	28.7	28.0
Max. Water Temperature (°C)	27.5	27.7	28.1	28.7	29.3	29.6	29.3	29.3	29.3	29.3	28.9	28.4

The average water temperature during the year located in Surigao (Surigao Strait) at 28.5°C.

At about 29.6°C is the maximum of the water temperatures over the months. This will be reached in June. The low is 27.1°C and is measured in February.

Tropical monsoon climate (Am)

Cebu City



The city of Cebu has a lengthy wet season and a short dry season, with only the months of March and April falling into the latter season. The coldest month is January which is a good month for travel since temperatures are relatively high.



Figure 57. Location within the Philippines

Region:	Central Visayas (Region VII)
Province:	Cebu (geographically only)
Altitude:	28 m above sea level
Coordinates:	9°54'18"N 126°4'0"E
Climate:	Tropical
Rainfall:	Significant rainfall throughout the year the short dry season has little effect.
Avg. annual temp.:	27.5°C
Annual rainfall:	1607 mm

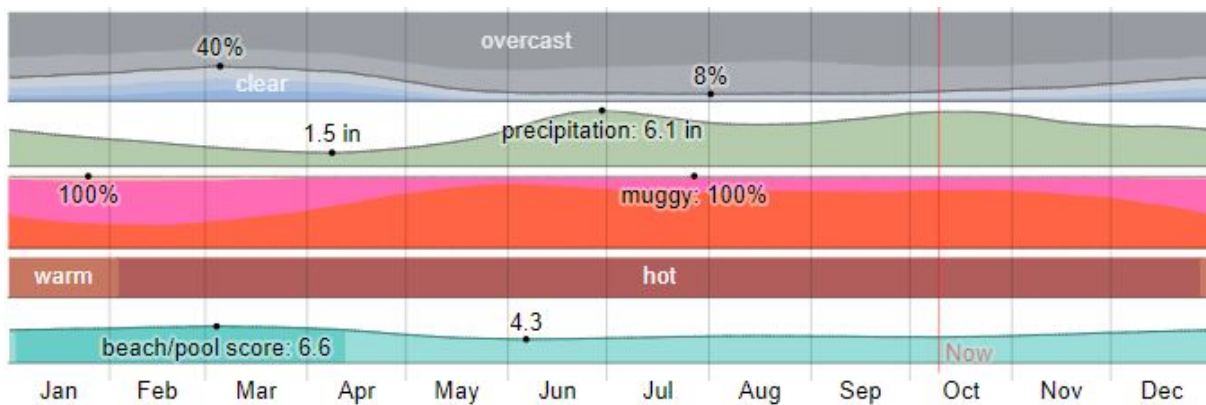


Figure 58. Cebu City climate summary [via Weatherspark.com]

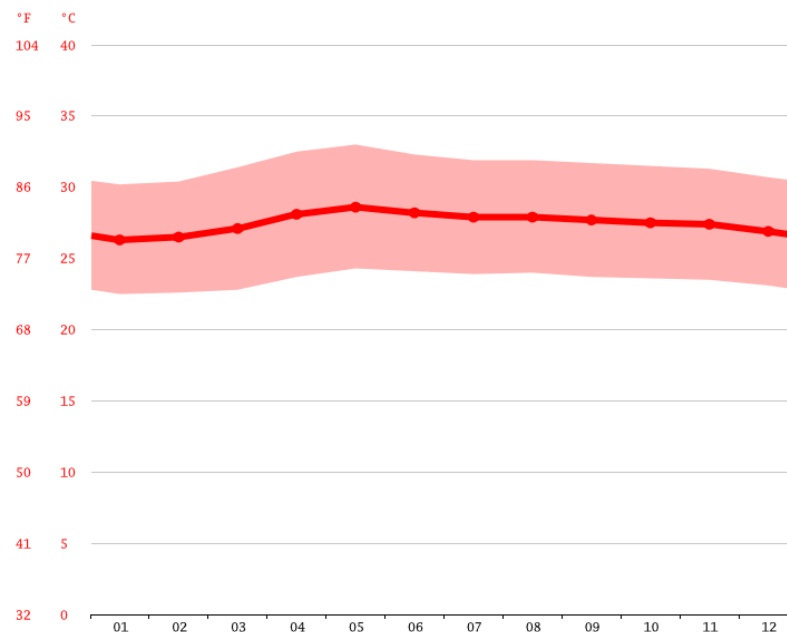
There is a difference of 134 mm of precipitation between the driest and wettest months. Throughout the year, temperatures vary by 2.3°C.

Table 09. Cebu City weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	26.3	26.5	27.1	28.1	28.6	28.2	27.9	27.9	27.7	27.5	27.4	26.9
Min. Temperature (°C)	22.5	22.6	22.8	23.7	24.3	24.1	23.9	24.0	23.7	23.6	23.5	23.1
Max. Temperature (°C)	30.2	30.4	31.4	32.5	33.0	32.3	31.9	31.9	31.7	31.5	31.1	30.7
Precipitation/ Rainfall (mm)	103	79	59	65	115	176	192	164	174	193	166	121

Temperature

May is the warmest month of the year. The temperature in May averages 28.6°C. January is the coldest month, with temperatures averaging 26.3°C.

**Figure 59. Cebu City average temperature [via Climate-data.org]**

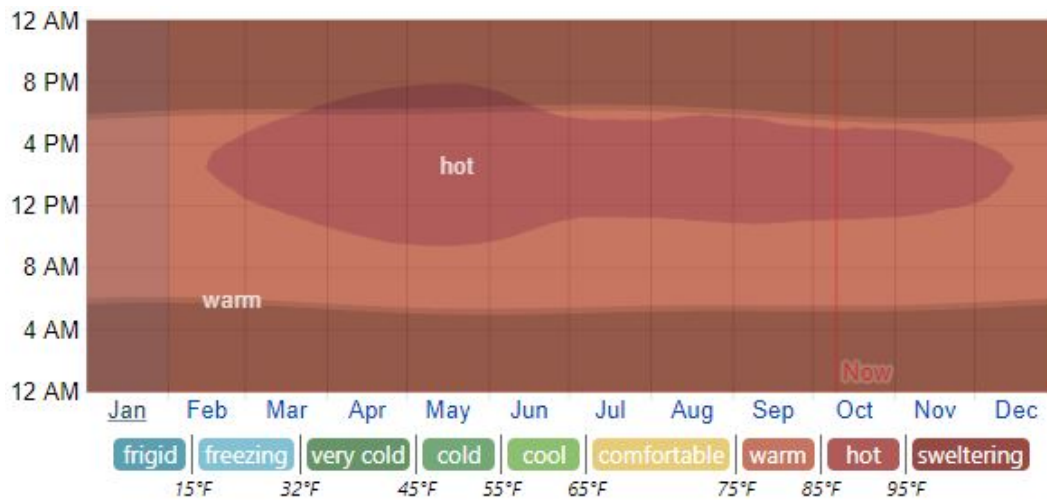


Figure 60. Cebu City average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Cebu City, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 31 minutes of daylight and the longest day is June 21, with 12 hours, 44 minutes of daylight.

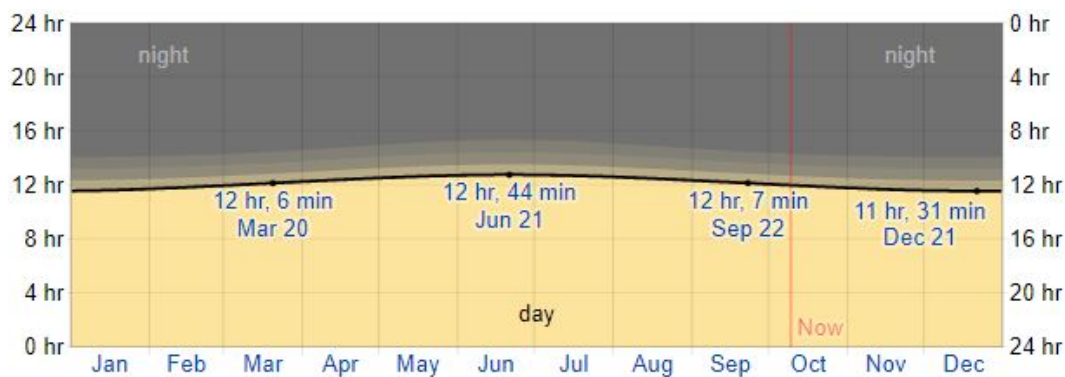


Figure 61. Cebu City hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:21 AM on May 29, and the latest sunrise is at 6:07 AM on January 27. The earliest sunset is at 5:18 PM on November 17, and the latest sunset is at 6:10 PM on July 11.

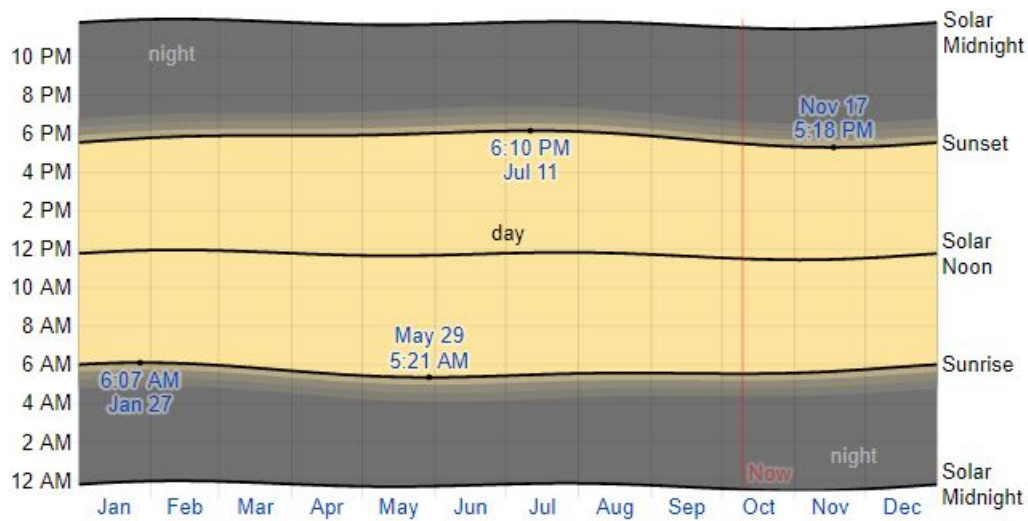


Figure 62. Cebu City sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Cebu City, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Cebu City begins mid-December and ends late April. The cloudier part of the year begins late April and ends mid-December.

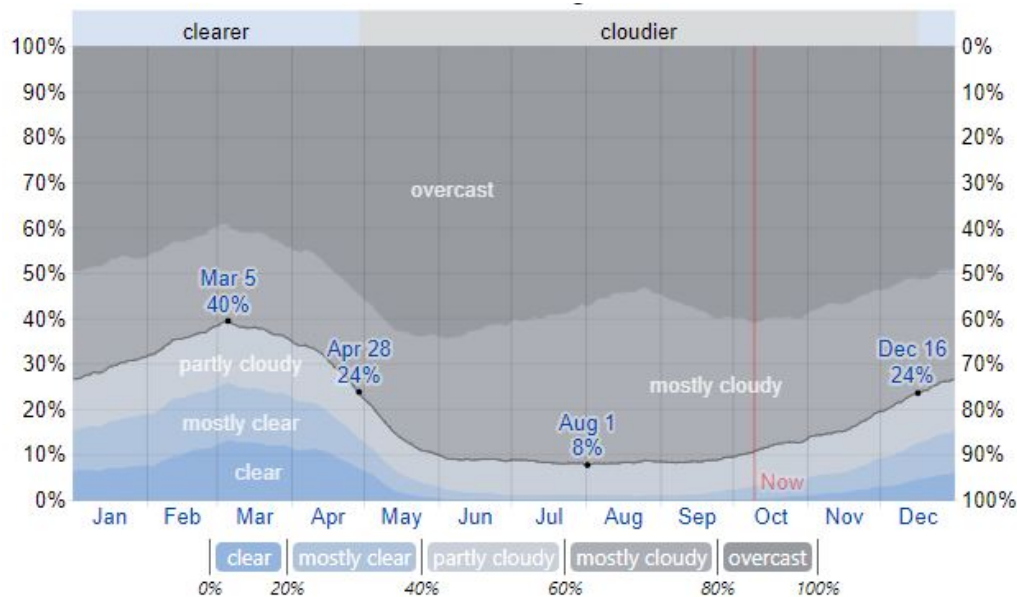


Figure 63. Cebu City cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Cebu City experiences significant seasonal variation over the course of the year. The windier part of the year lasts from late November to mid-April, while the calmer time of the year lasts from mid-April to late November.

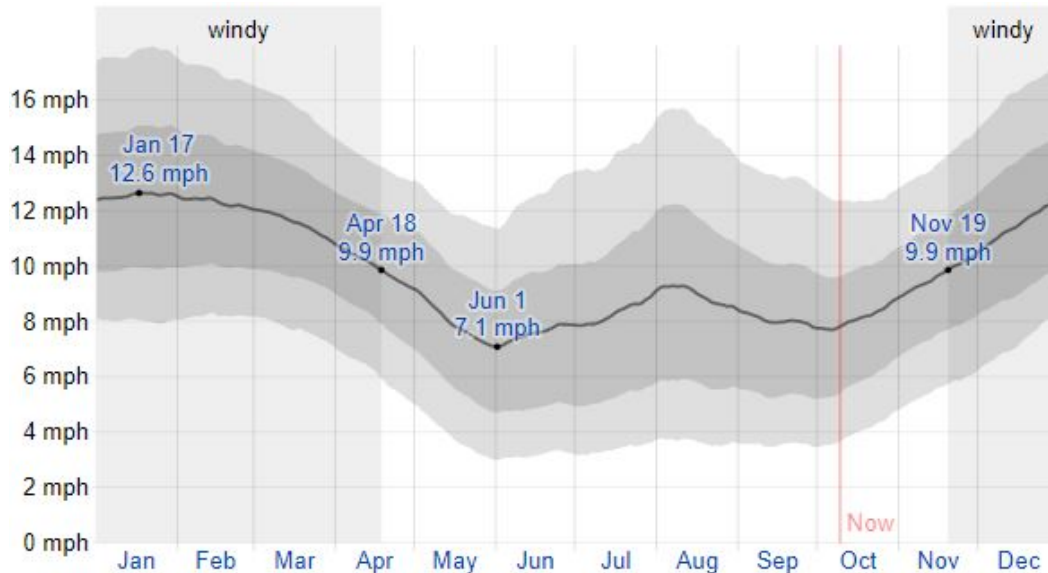


Figure 64. Cebu City average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during late June to mid-October; and from the east from mid-October to late June.

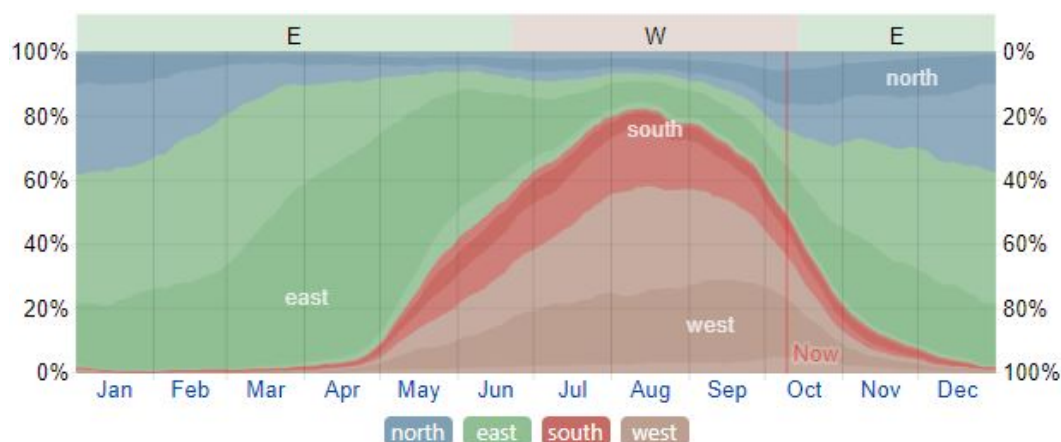


Figure 65. Cebu City wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is March, with 59 mm of rain. Most of the precipitation here falls in October, averaging 193 mm.

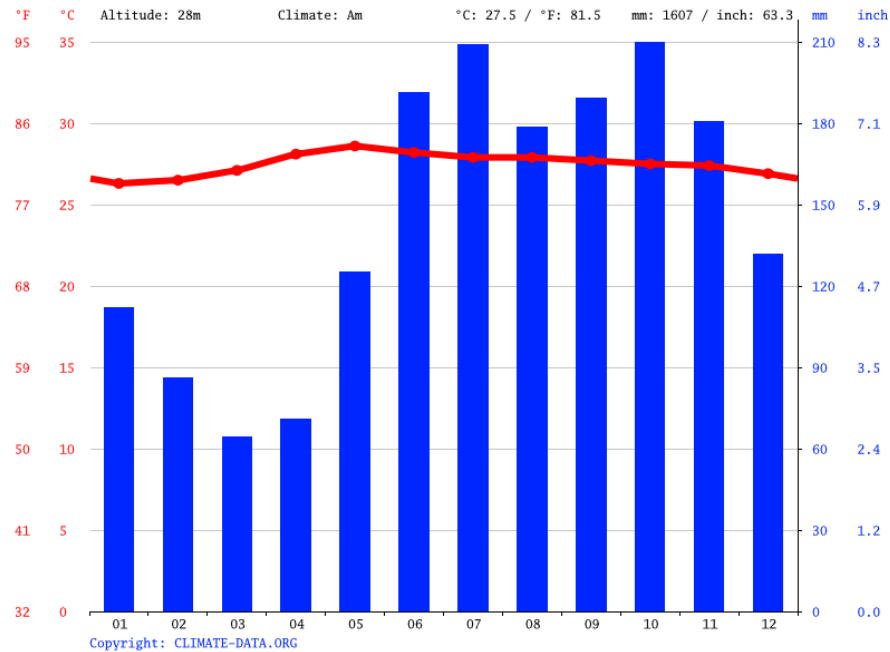


Figure 66. Cebu City climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Cebu City varies significantly throughout the year.



Figure 67. Cebu City daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

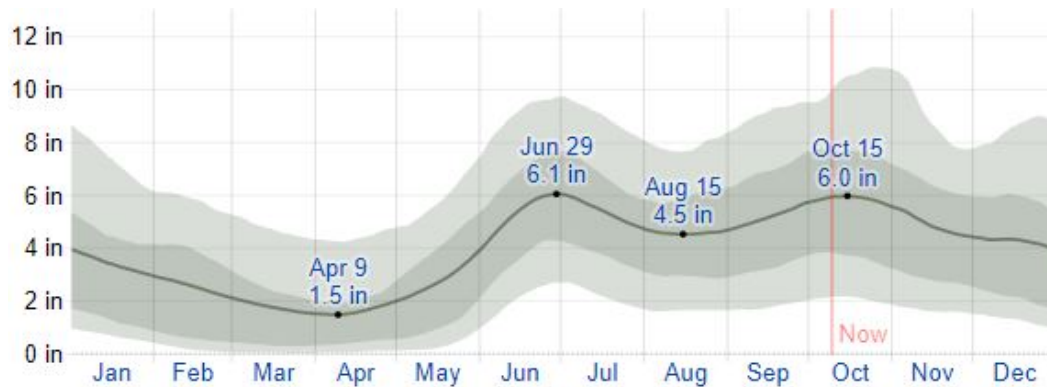


Figure 68. Cebu City average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Cebu City is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, remaining a virtually constant 100% throughout.

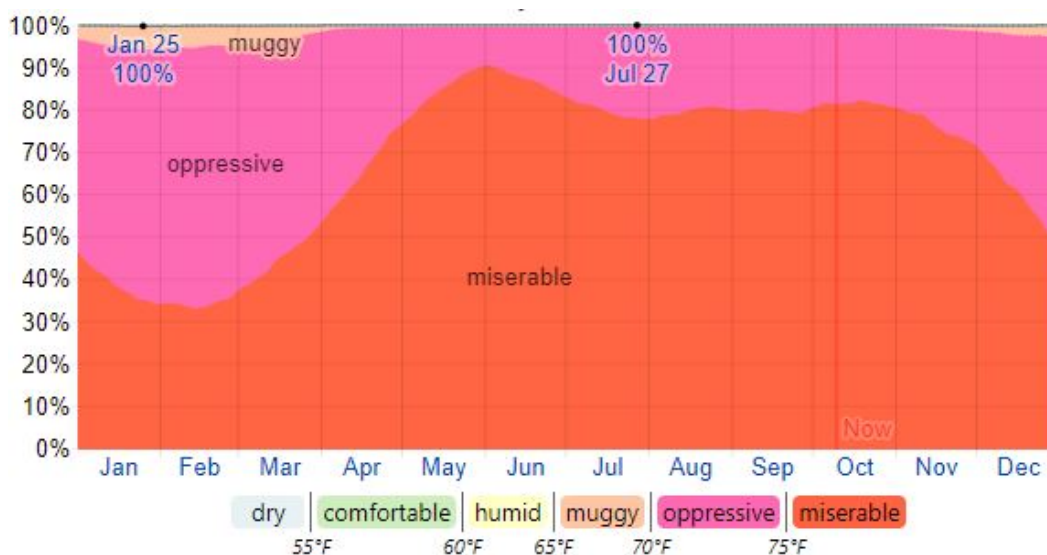


Figure 69. Cebu City humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

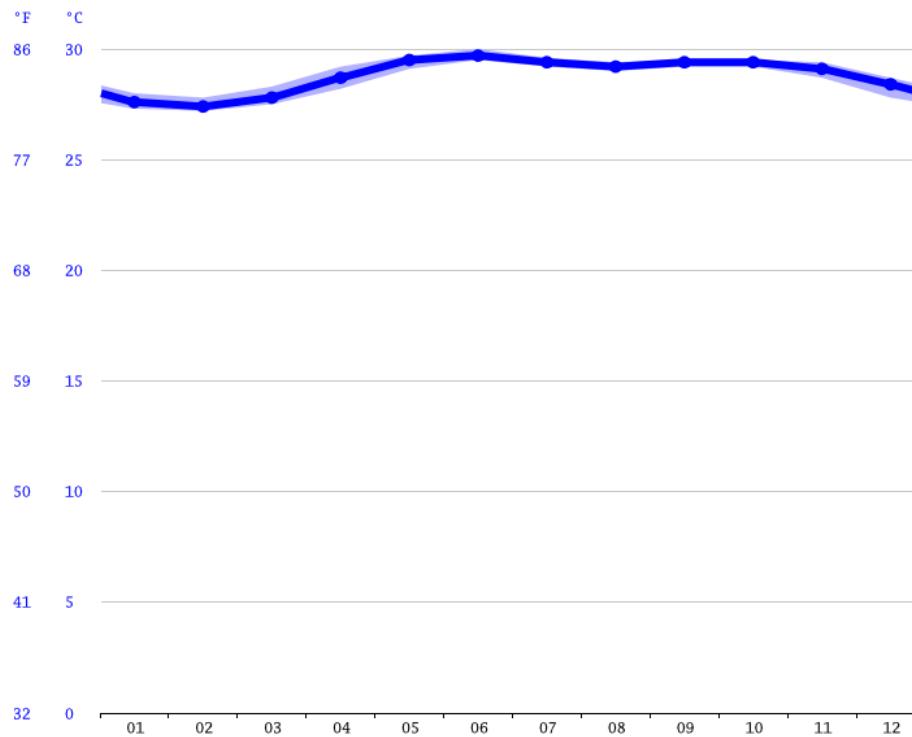


Figure 70. Cebu City water temperature [via Climate-data.org]

Table 10. Cebu City water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	27.3	27.2	27.5	28.2	29.1	29.5	29.2	29.0	29.2	29.2	28.7	27.8
Avg. Water Temperature (°C)	27.6	27.4	27.8	28.7	29.5	29.7	29.4	29.2	29.4	29.1	28.0	27.8
Max. Water Temperature (°C)	28.0	27.8	28.3	29.2	29.7	30.0	29.6	29.4	29.5	29.5	29.4	28.7

In Cebu City (Bohol Sea), a water temperature of about 28.8°C is achieved in the annual average.

The lowest water temperatures per month are reached in February at around 27.2°C. The average highest water temperatures are around 30.0°C and are measured during June.

The closest Ocean of Cebu City is Bohol Sea with roughly 3.24km.

Tanay



The municipality of Tanay is located in the province of Rizal. It has short, hot, and overcast summers and short, warm, and partly cloudy winters. Tanay is oppressive and wet year round. The temperature varies from 22.2°C to 33.9°C and is rarely below 20°C or above 36°C.



Region:	Calabarzon (Region IV-A)
Province:	Rizal
Altitude:	9 m above sea level
Coordinates:	14°29'50"N 121°17'11"E
Climate:	Tropical
Rainfall:	Significant rainfall during most months of the year
Avg. annual temp.:	27.1°C
Annual rainfall:	2410 mm

Figure 71. Location within the Philippines

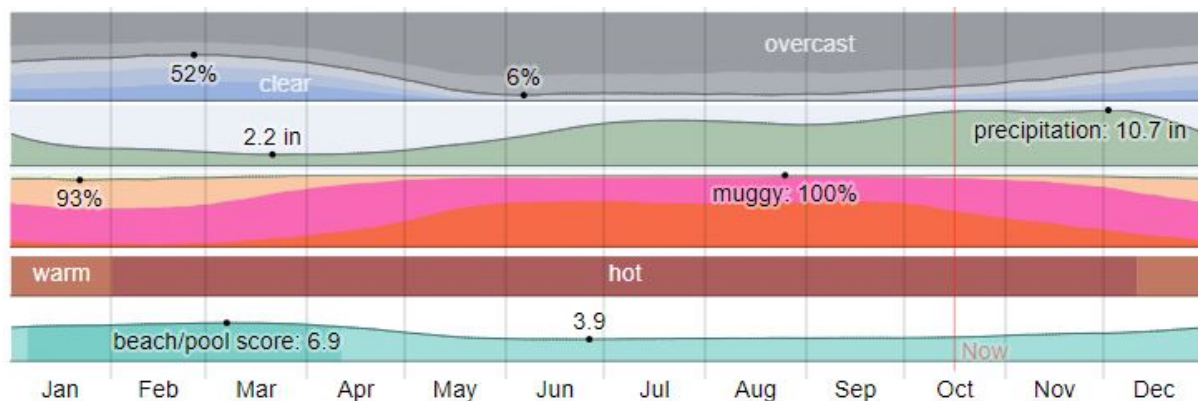


Figure 72. Tanay climate summary [via Weatherspark.com]

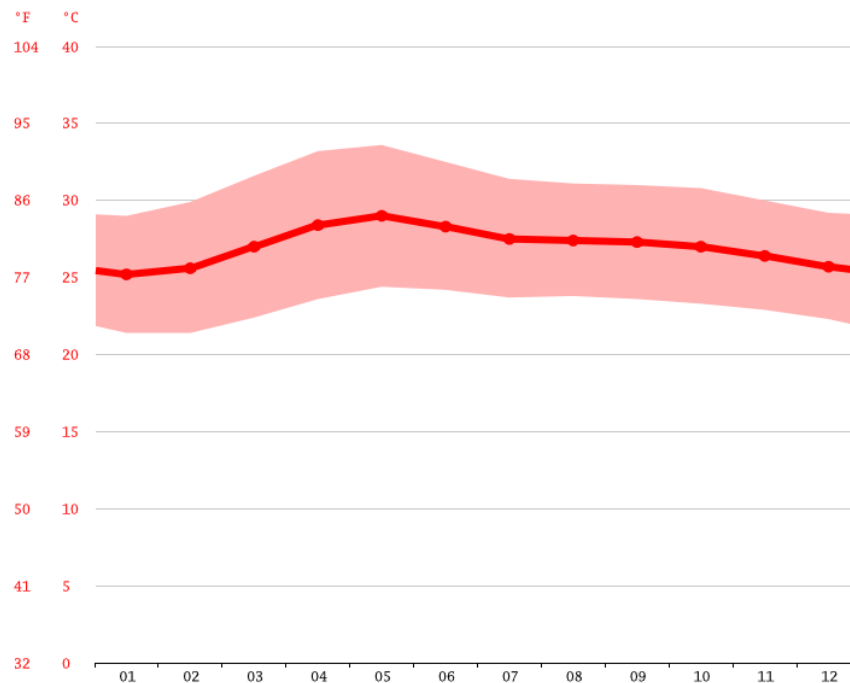
The precipitation varies 333 mm between the driest month and the wettest month. The average temperatures vary during the year by 38.8°C.

Table 11. Tanay weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	25.2	25.6	27.0	28.4	29.0	28.3	27.5	27.4	27.3	27.0	26.4	25.7
Min. Temperature (°C)	21.4	21.4	22.4	23.6	24.4	24.2	23.7	23.8	23.6	23.3	22.9	22.3
Max. Temperature (°C)	29.0	29.9	31.6	33.2	33.6	32.5	31.4	31.1	31.0	30.8	30.0	29.2
Precipitation/Rainfall (mm)	69	34	34	50	162	268	362	367	333	287	260	184

Temperature

With an average of 29.0°C, May is the warmest month. In January, the average temperature is 25.2°C. It is the lowest average temperature of the whole year.

**Figure 73. Tanay average temperature [via Climate-data.org]**

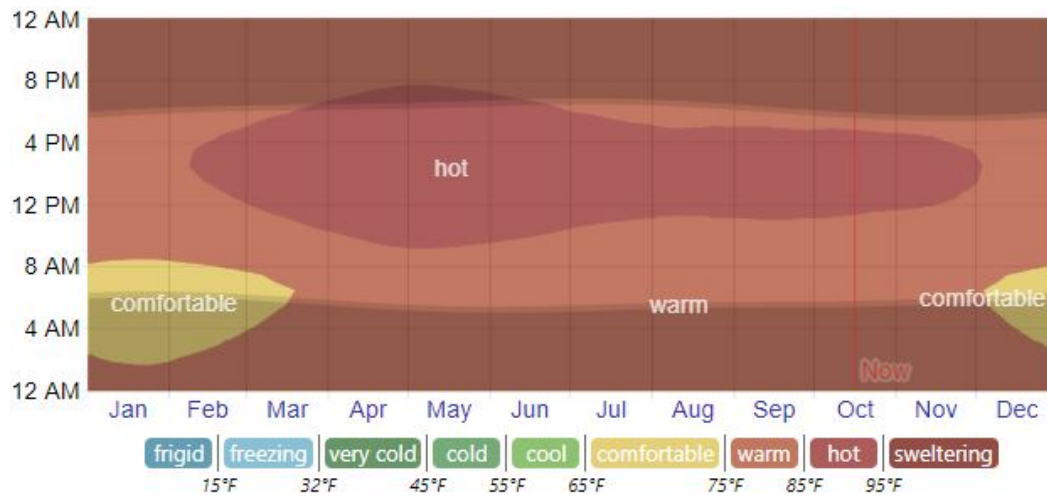


Figure 74. Tanay average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Tanay, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 16 minutes of daylight and the longest day is June 21, with 12 hours, 59 minutes of daylight.

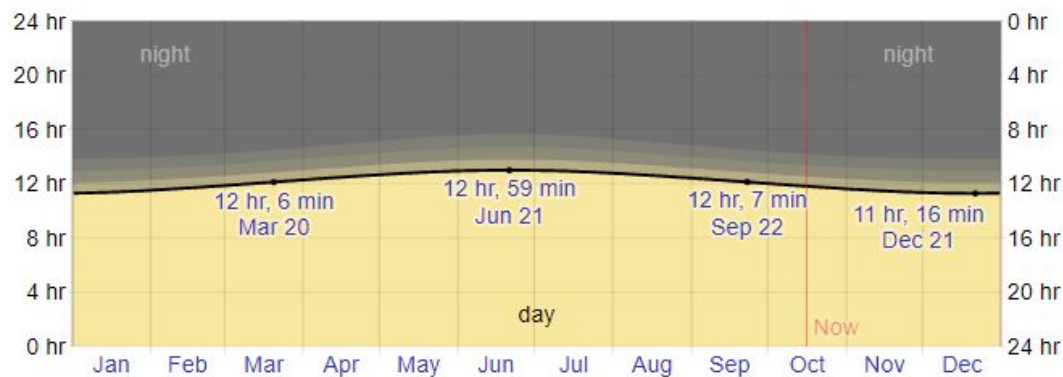


Figure 75. Tanay hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:24 AM on June 1, and the latest sunrise is at 6:23 AM on January 23. The earliest sunset is at 5:22 PM on November 21, and the latest sunset is at 6:28 PM on July 8.

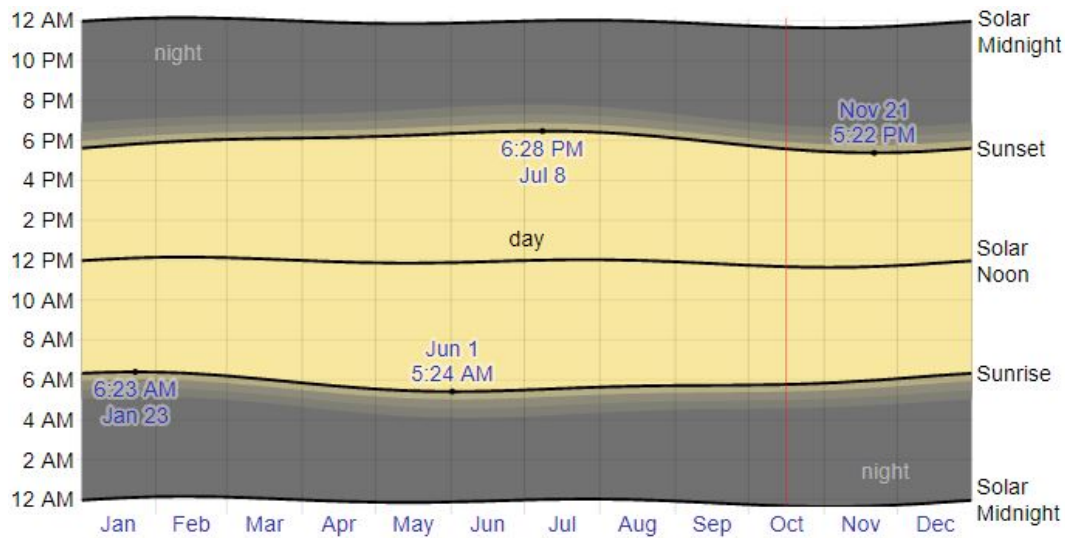


Figure 76. Tanay sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Tanay, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Tanay begins late November and ends late April. The cloudier part of the year begins late April and ends late November.

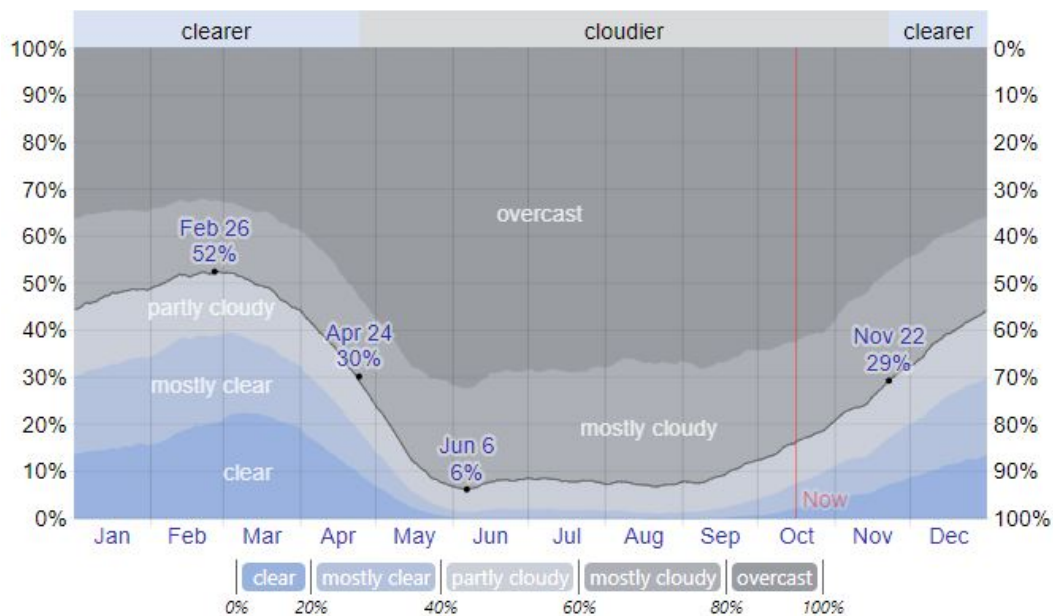


Figure 77. Tanay cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Tanay experiences significant seasonal variation over the course of the year. The windier part of the year lasts from late October to early April, while the calmer time of the year lasts from early April to late October.

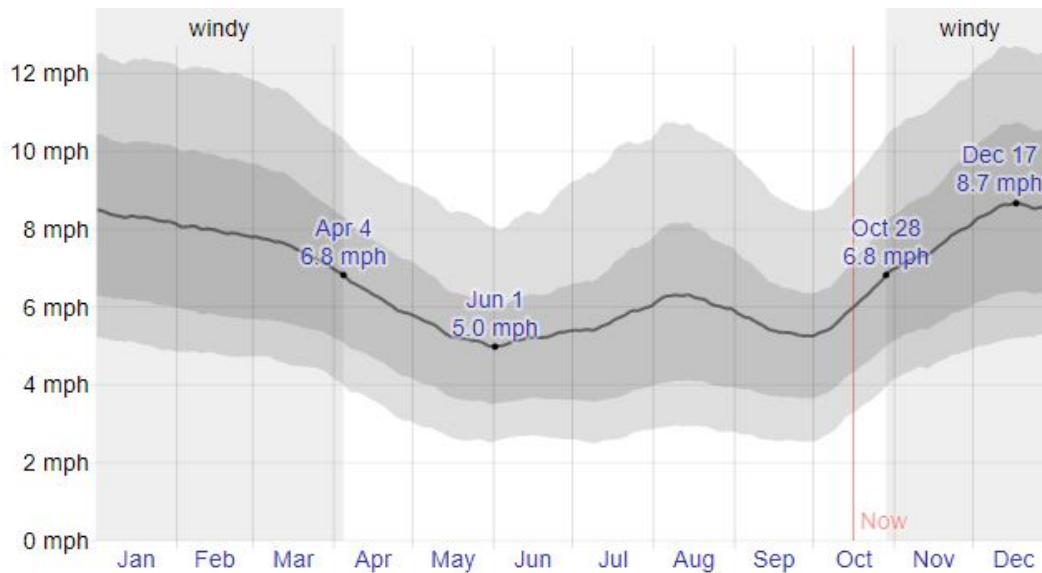


Figure 78. Tanay average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during late May to late September and from the east from late September to late May.

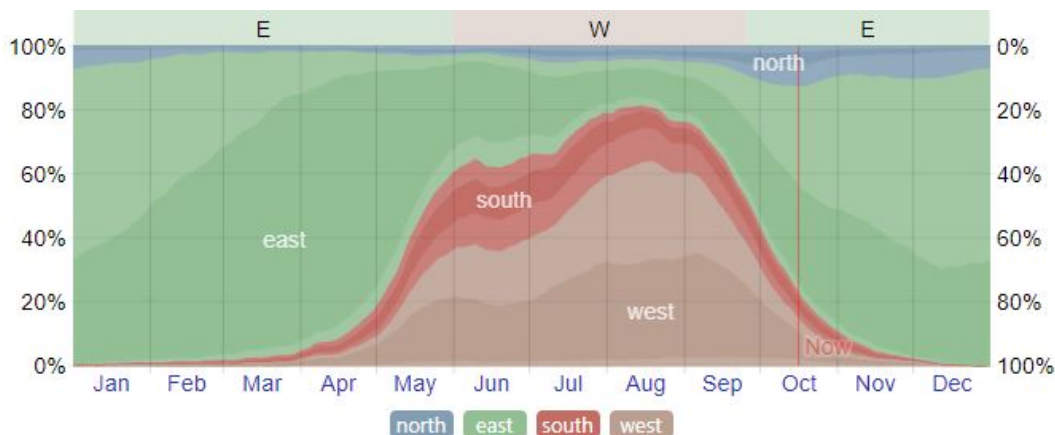


Figure 79. Tanay wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is February, with 34 mm of precipitation. Most precipitation falls in August, averaging 367 mm.

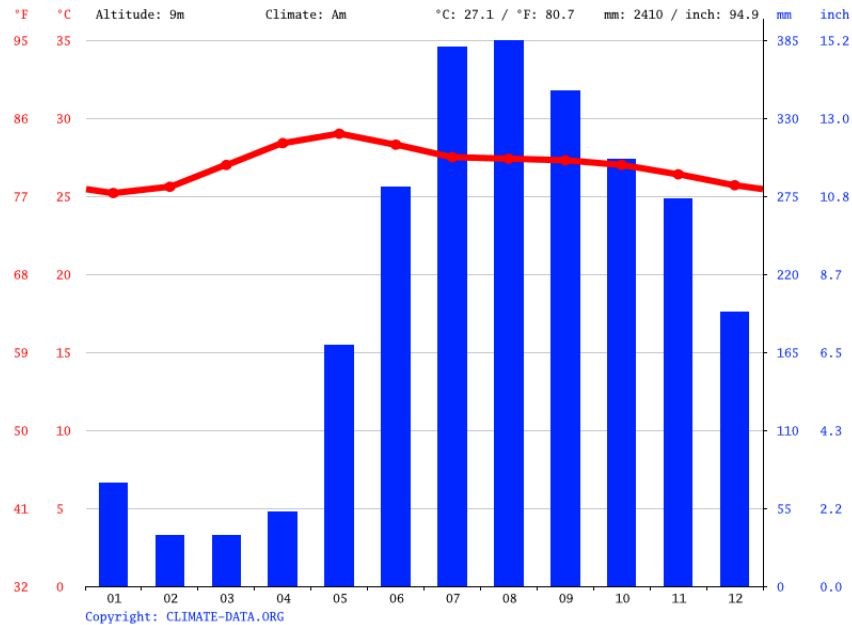


Figure 80. Tanay climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Tanay varies significantly throughout the year.



Figure 81. Tanay daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

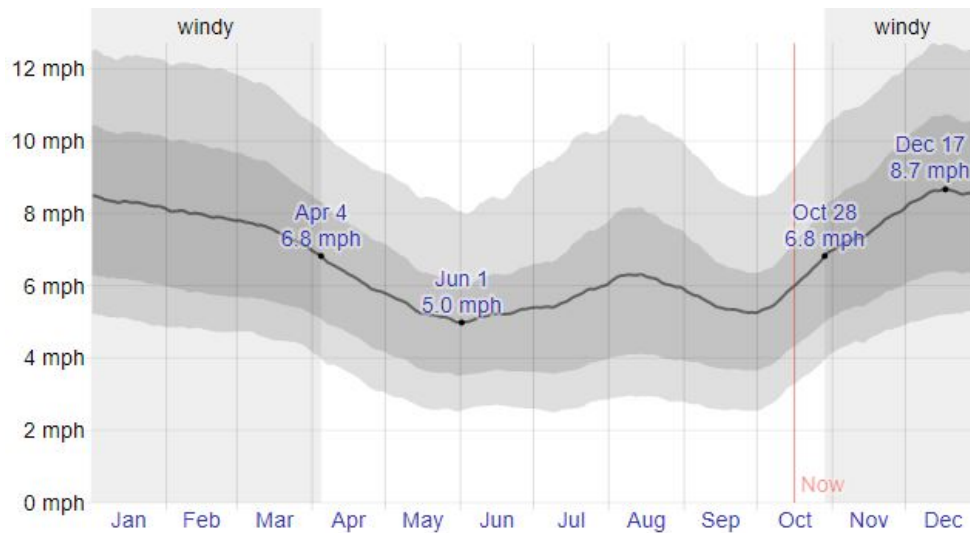


Figure 82. Tanay average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Tanay is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, staying within 3% of 97% throughout.

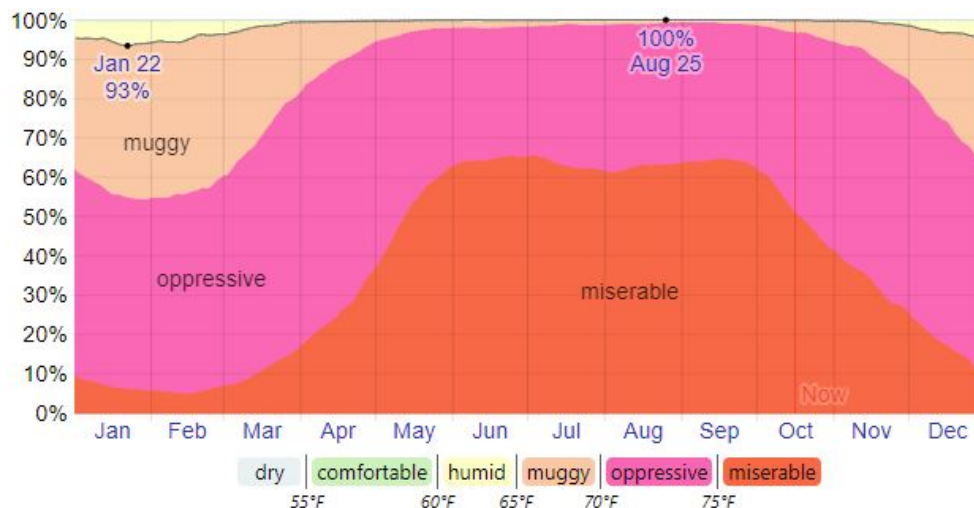


Figure 83. Tanay humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Masbate City



Masbate City's climate is hot, oppressive, windy, and overcast. Over the course of the year, the temperature varies and is rarely below 22°C or above 35°C. The best time of year to visit Masbate for hot-weather activities is from early January to mid-April.



Region:	Bicol Region (Region V)
Province:	Masbate
Altitude:	15 m above sea level
Coordinates:	12°22'N 123°37'E
Climate:	Tropical
Rainfall:	Significant rainfall throughout the year. The short dry season has little effect.
Avg. annual temp.:	27.6°C
Annual rainfall:	1955 mm

Figure 84. Location within the Philippines

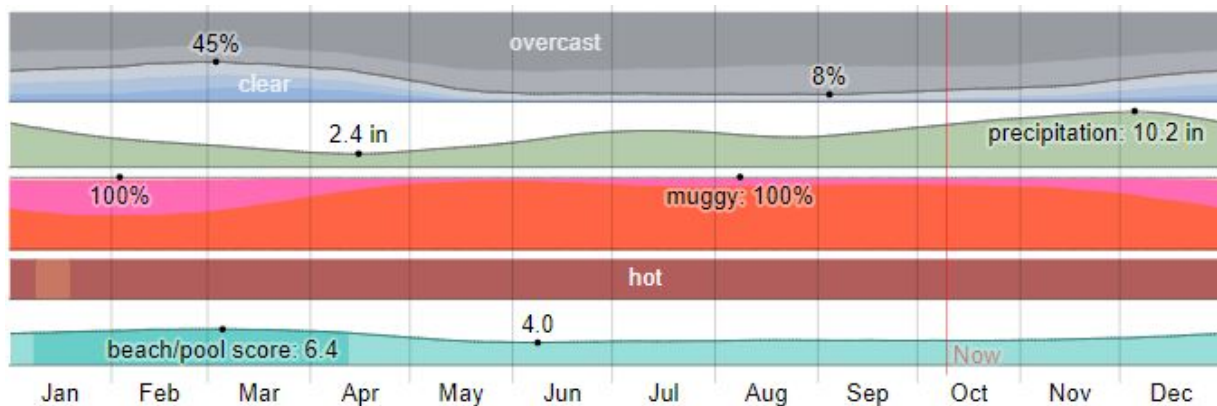


Figure 85. Masbate climate summary [via Weatherspark.com]

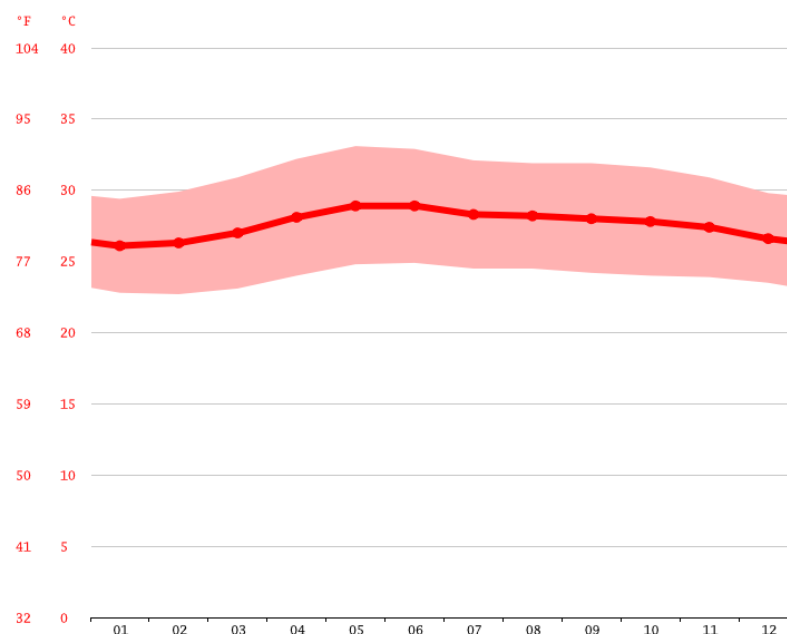
There is a difference of 206 mm of precipitation between the driest and wettest months. Throughout the year, temperatures vary by 2.8°C.

Table 12. Masbate City weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	26.1	26.3	27.0	28.1	28.9	28.9	28.3	28.2	28.0	27.8	27.4	26.6
Min. Temperature (°C)	22.8	22.7	23.1	24.0	24.8	24.9	24.5	24.5	24.2	24.0	23.9	23.5
Max. Temperature (°C)	29.4	29.9	30.9	32.2	33.1	32.9	32.1	31.9	31.9	31.6	30.9	29.8
Precipitation/ Rainfall (mm)	187	81	70	43	112	147	184	193	206	242	241	249

Temperature

May is the warmest month of the year. The temperature in May averages 28.9°C. January is the coldest month, with temperatures averaging 26.1°C.

**Figure 86. Masbate City average temperature [via Climate-data.org]**

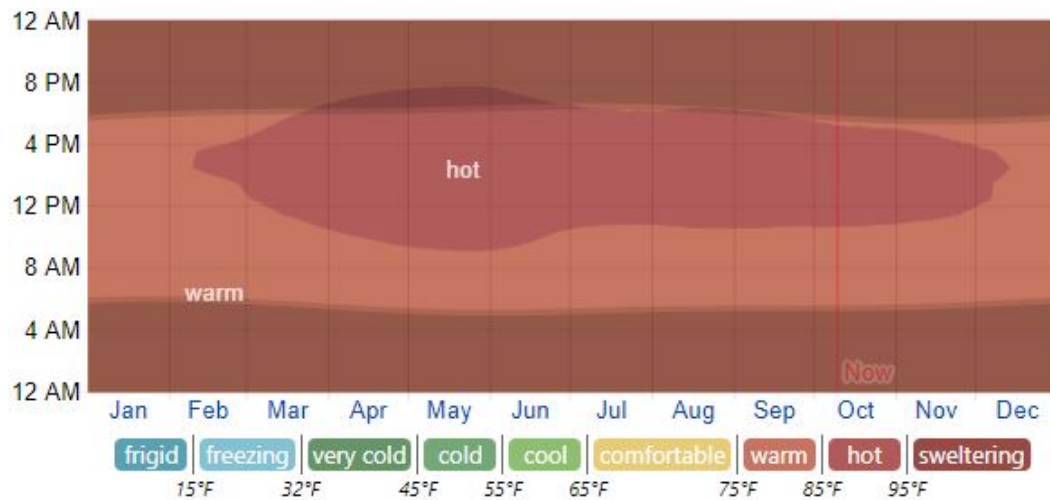


Figure 87. Masbate City average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Masbate City, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 24 minutes of daylight and the longest day is June 21, with 12 hours, 51 minutes of daylight.

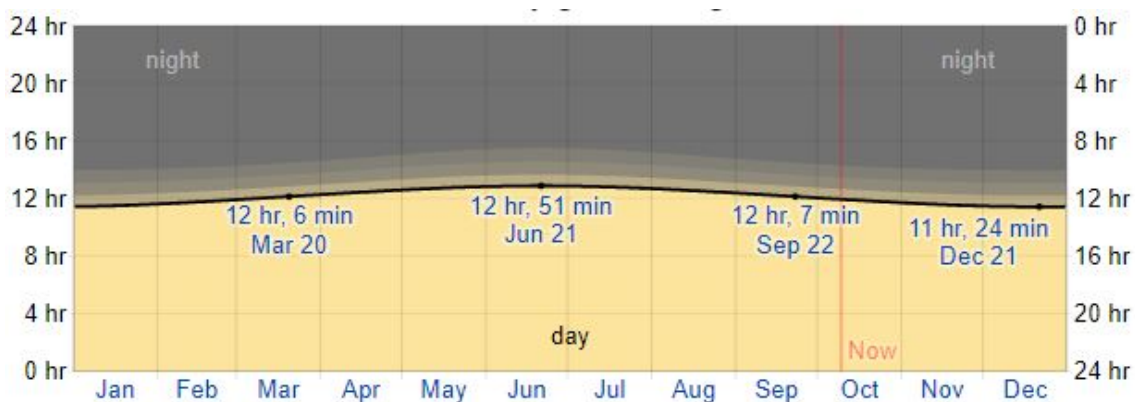


Figure 88. Masbate City hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:19 AM on May 31, and the latest sunrise is at 6:11 AM on January 25. The earliest sunset is at 5:16 PM on November 18, and the latest sunset is at 6:15 PM on July 10.

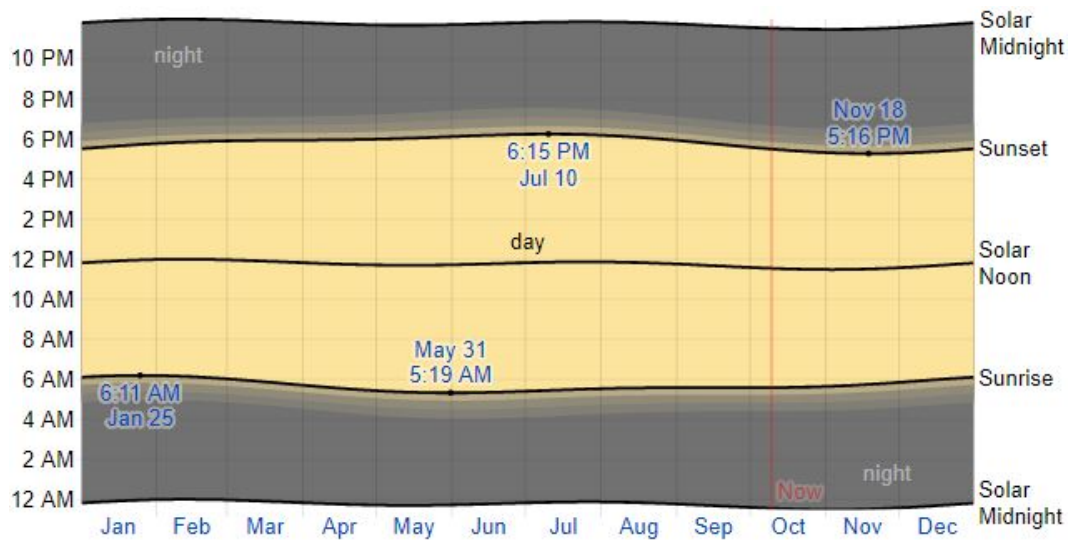


Figure 89. Masbate City sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Masbate City, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Masbate City begins early December and ends late April. The cloudier part of the year begins late April and ends early December.

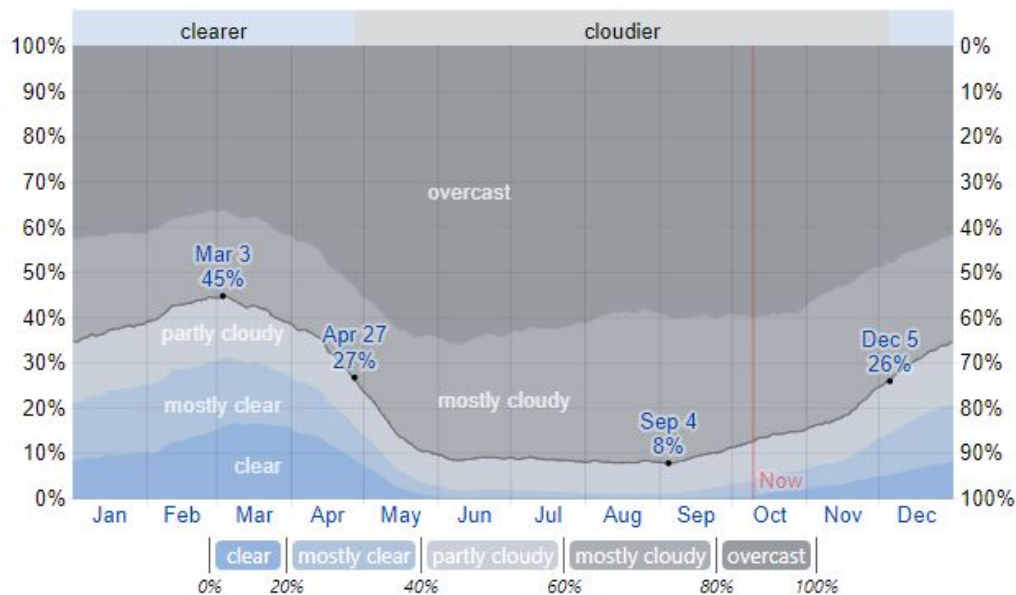


Figure 90. Masbate cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Masbate City experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early November to late March, while the calmer time of the year lasts from late March to early November.

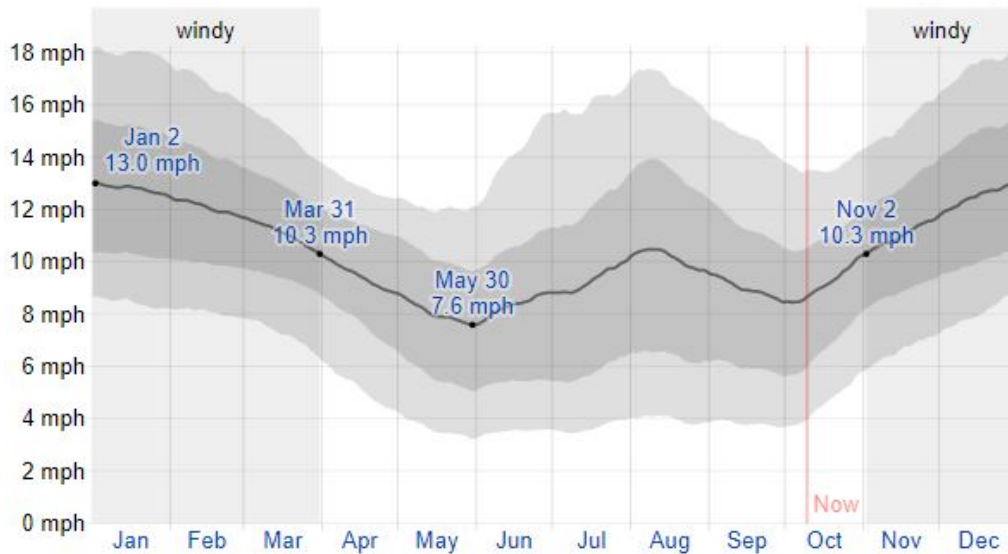


Figure 91. Masbate City average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the south during late June to late September; from the west from late June to early October; and from the east from early October to late June.

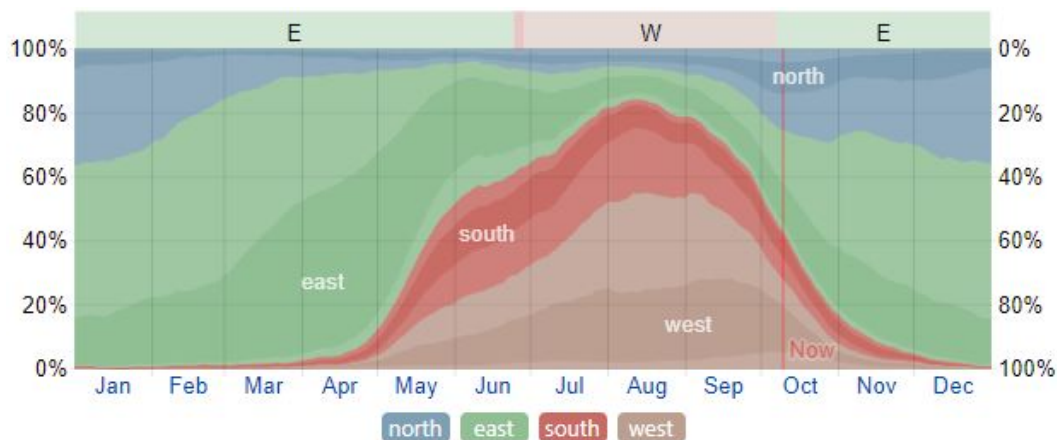


Figure 92. Masbate City wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is April, with 43 mm of rain. Most of the precipitation here falls in December, averaging 249 mm.

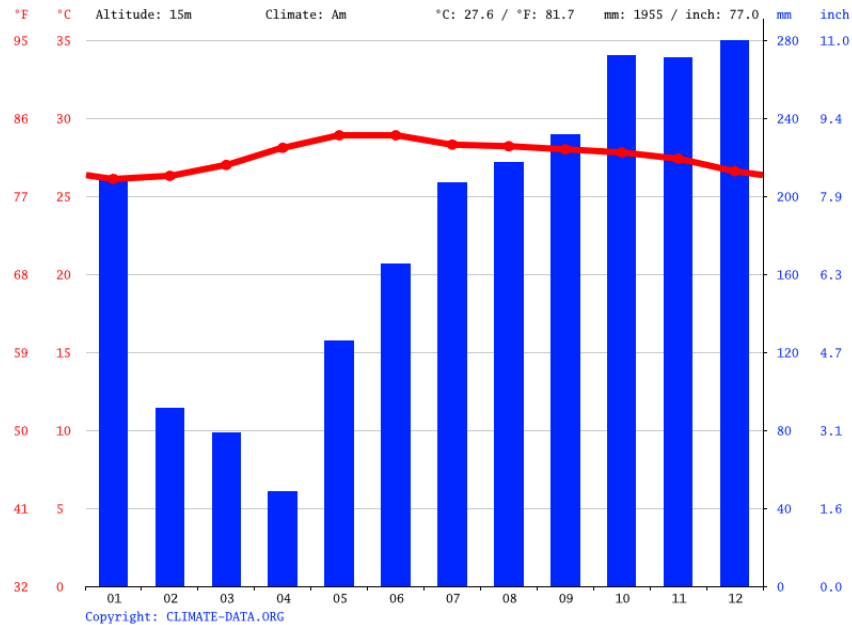


Figure 93. Masbate City climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Masbate City varies significantly throughout the year.



Figure 94. Masbate City daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

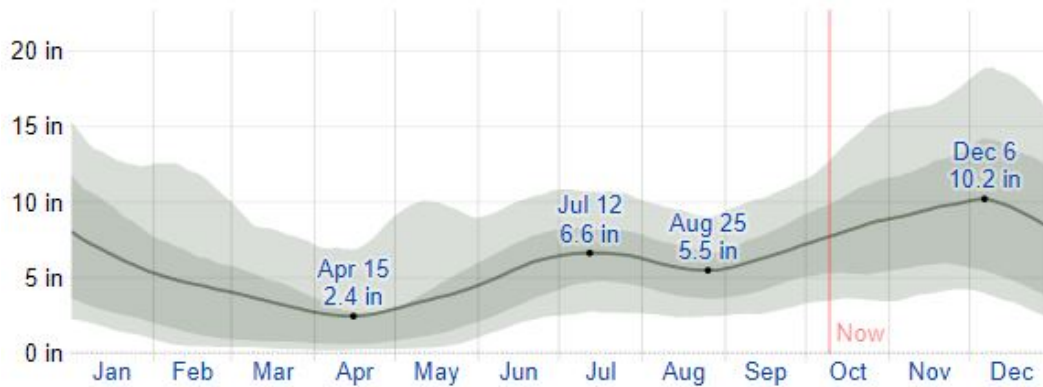


Figure 95. Masbate City average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Masbate City is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, remaining a virtually constant 100% throughout.

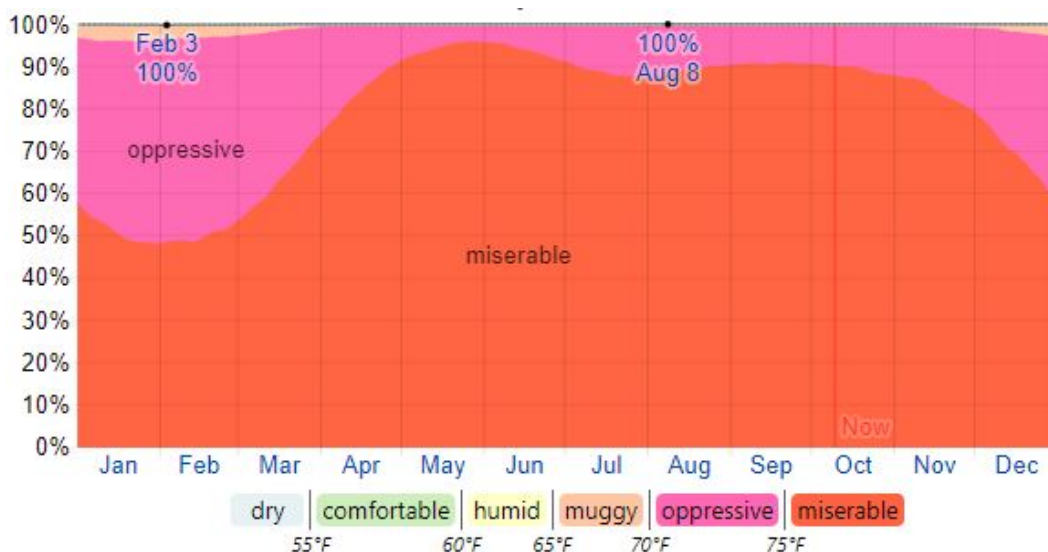


Figure 96. Masbate City humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

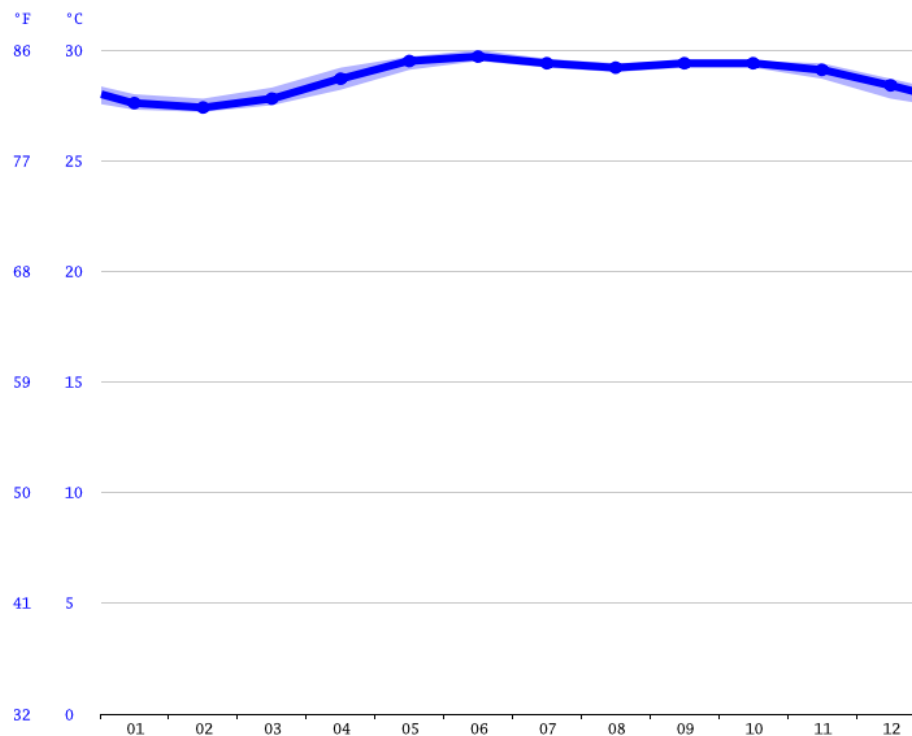


Figure 97. Masbate City water temperature [via Climate-data.org]

Table 13. Masbate City water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	26.5	26.3	26.8	27.7	28.8	29.4	29.0	28.9	29.0	28.8	28.0	27.1
Avg. Water Temperature (°C)	26.7	26.6	27.2	28.3	29.3	29.7	29.2	29.0	29.2	28.9	28.4	27.6
Max. Water Temperature (°C)	27.0	27.0	27.8	29.0	29.6	29.9	29.4	29.2	29.3	29.1	28.8	28.0

In Masbate City (Samar Sea), a water temperature of about 28.3°C is achieved in the annual average.

The lowest water temperatures per month are reached in February at around 26.3°C. The average highest water temperatures are around 29.9°C and are measured during June.

Mabalacat



The climate in Mabalacat during the wet season is oppressive and overcast; the dry season is muggy and partly cloudy, and it is hot year round. Over the course of the year, the temperature typically varies from 21.7°C to 34.4°C and is rarely below 19°C or above 36°C. The best time of year to visit Mabalacat for hot-weather activities is from early December to early April.



Region: **Central Luzon (Region III)**
 Province: **Pampanga**
 Altitude: **109 m above sea level**
 Coordinates: **15°13'N 120°35'E**
 Climate: **Tropical**
 Rainfall: **Significant rainfall most months of the year, with a short dry season**
 Avg. annual temp.: **26.8°C**
 Annual rainfall: **2830 mm**

Figure 98. Location within the Philippines

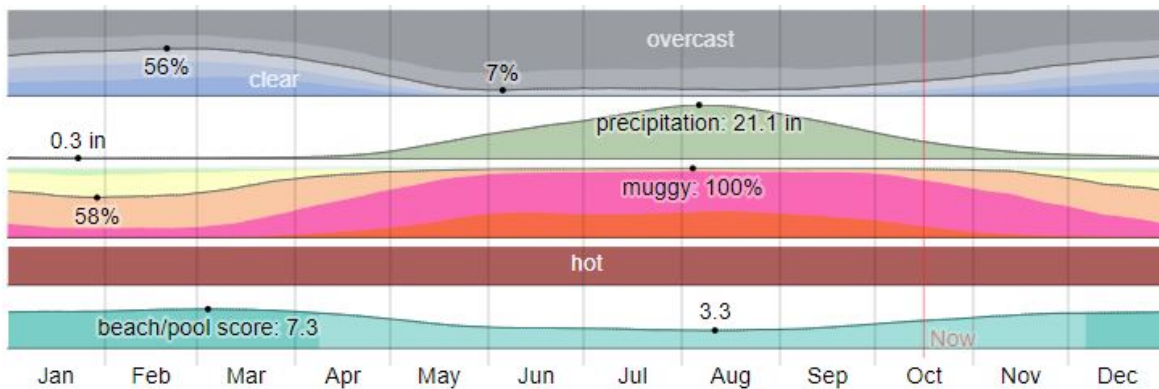


Figure 99. Mabalacat climate summary [via Weatherspark.com]

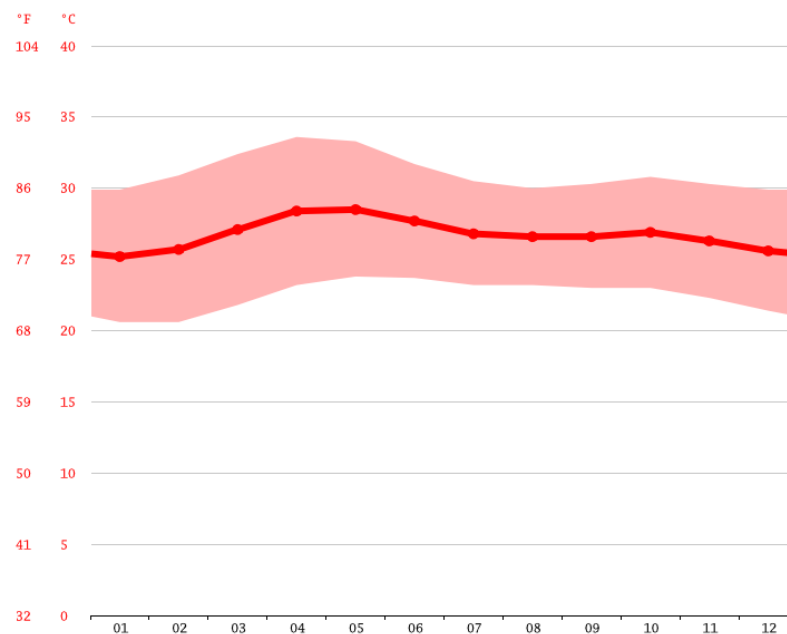
There is a difference of 660 mm of precipitation between the driest and wettest months. Throughout the year, temperatures vary by 3.3°C.

Table 14. Mabalacat weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	25.2	25.7	27.1	28.4	28.5	27.7	26.8	26.6	26.6	26.9	26.3	25.6
Min. Temperature (°C)	20.6	20.6	21.8	23.3	23.8	23.7	23.2	23.2	23.0	23.0	22.3	21.4
Max. Temperature (°C)	29.9	30.9	32.4	33.6	33.3	31.7	30.5	30.0	30.3	30.8	30.3	29.9
Precipitation/ Rainfall (mm)	9	9	20	48	227	418	638	669	461	201	94	36

Temperature

May is the warmest month of the year. The temperature in April averages 28.5°C. January is the coldest month, with temperatures averaging 25.2°C.

**Figure 100. Mabalacat average temperature [via Climate-data.org]**

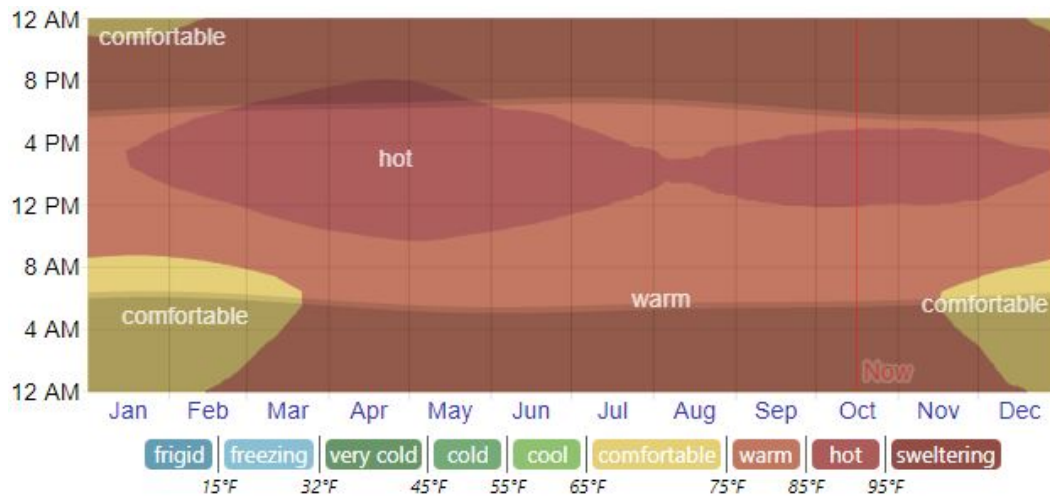


Figure 101. Mabalacat average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Mabalacat, the length of the day varies over the course of the year. The shortest day is December 21, with 11 hours, 14 minutes of daylight and the longest day is June 21, with 13 hours, 2 minutes of daylight.

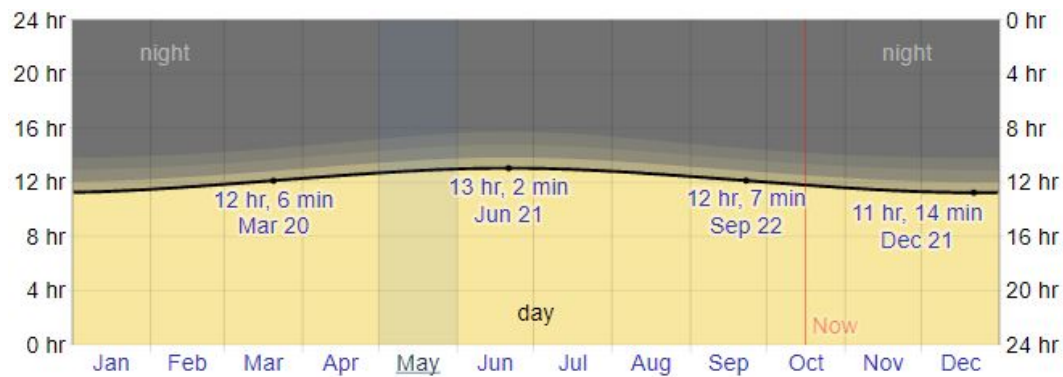


Figure 102. Mabalacat hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:26 AM on June 3, and the latest sunrise is at 6:27 AM on January 22. The earliest sunset is at 5:24 PM on November 21, and the latest sunset is at 6:32 PM on July 8.

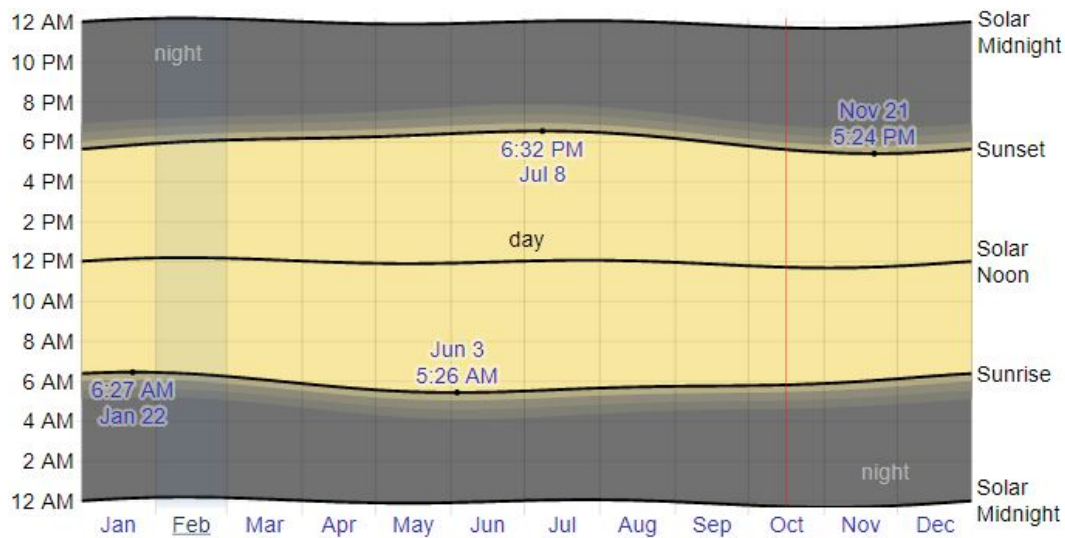


Figure 103. Mabalahat sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Mabalahat, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Mabalahat begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

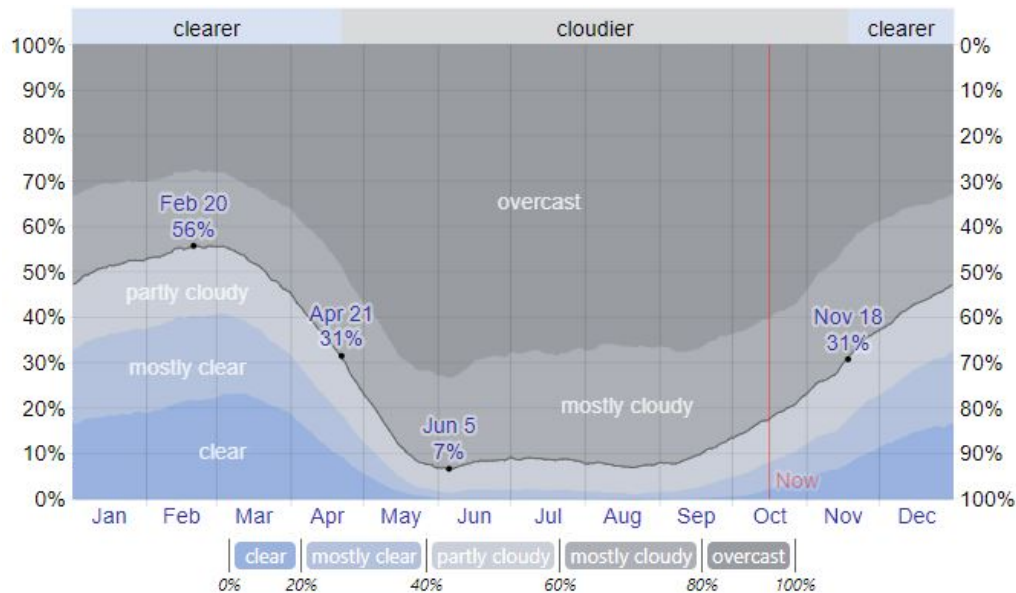


Figure 104. Mabalahat cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Mabalacat experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early November to early April, while the calmer time of the year lasts from early April to early November.

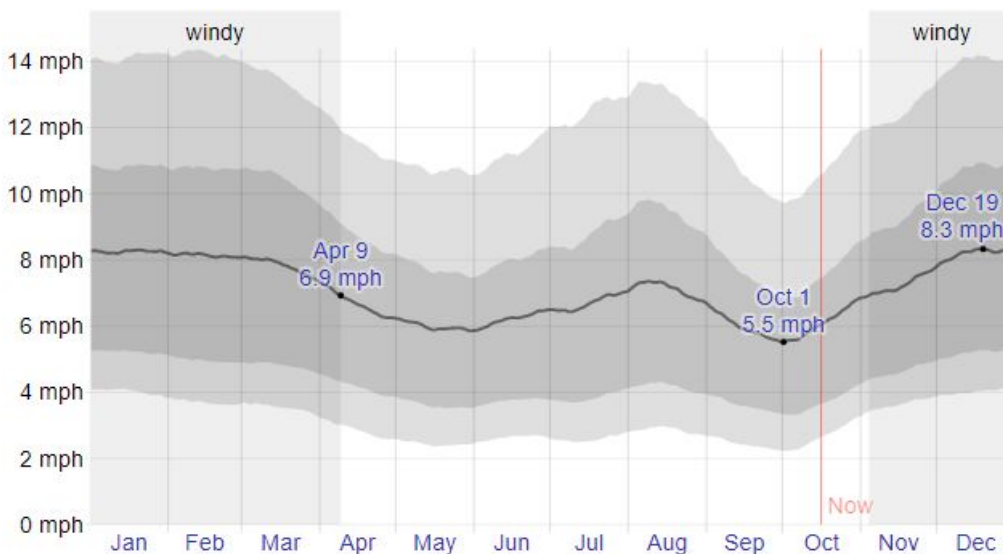


Figure 105. Mabalacat average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during late May to early June and from early July to late September; from the south from early June to early July; and from the east from late September to late May.

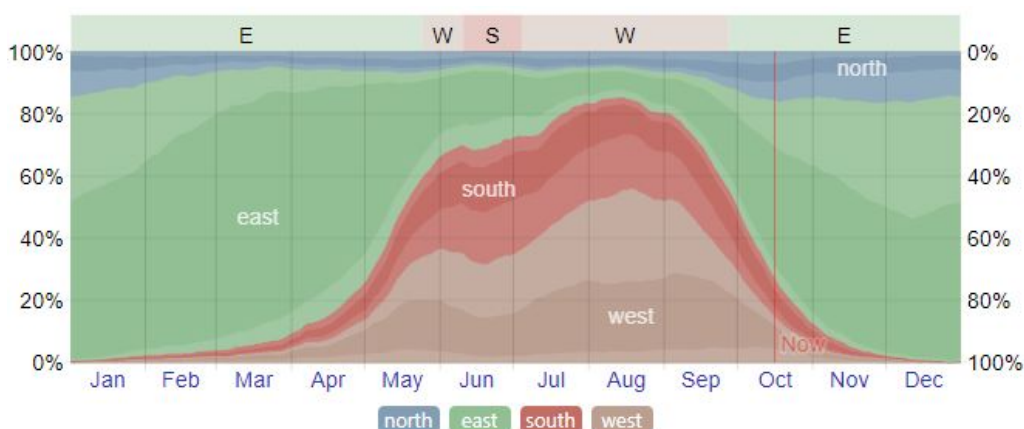


Figure 106. Mabalacat wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is January, with 9 mm of rain. Most of the precipitation here falls in August, averaging 669 mm.

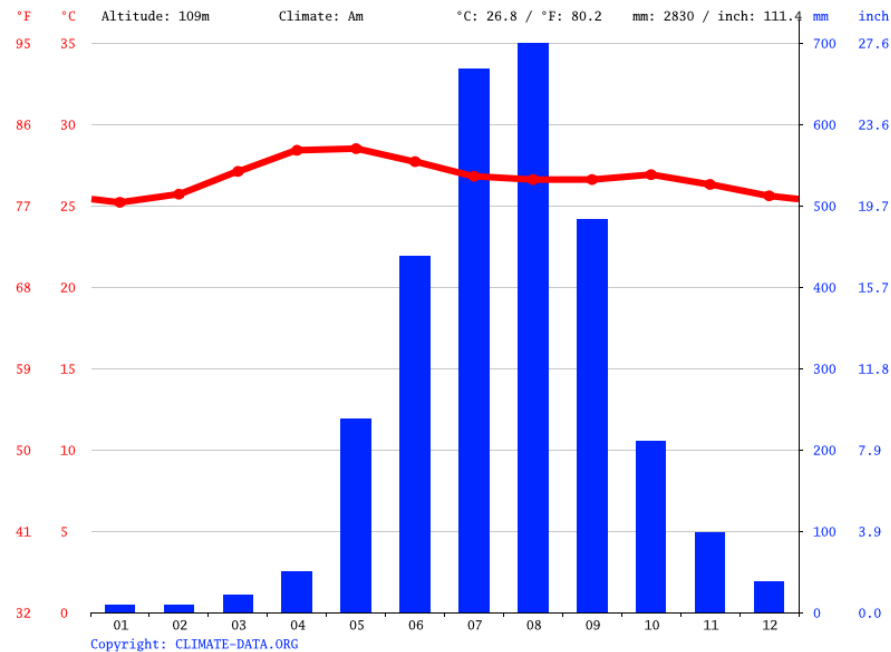


Figure 107. Mabalacat climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Mabalacat varies significantly throughout the year.

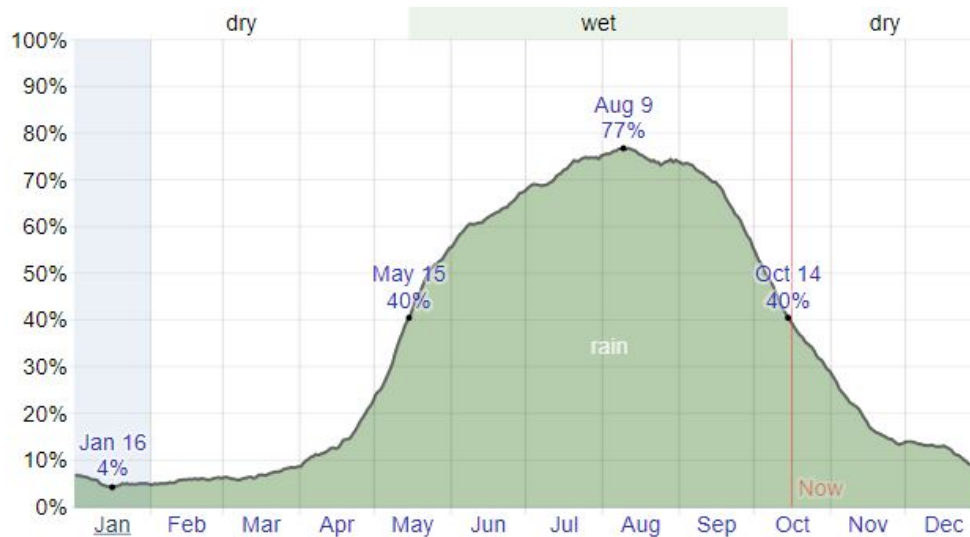


Figure 108. Mabalacat daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

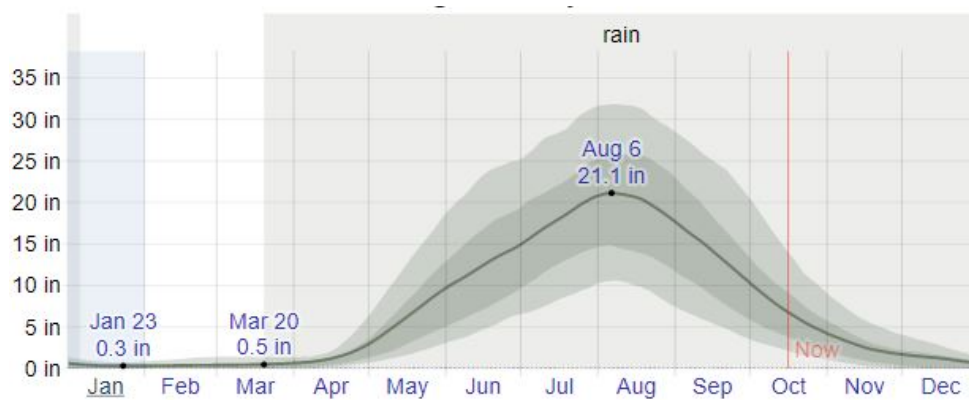


Figure 109. Mabalacat average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Mabalacat is muggy, oppressive, or miserable at least 68% of the time. The muggiest day of the year is August 4, with muggy conditions 100% of the time.

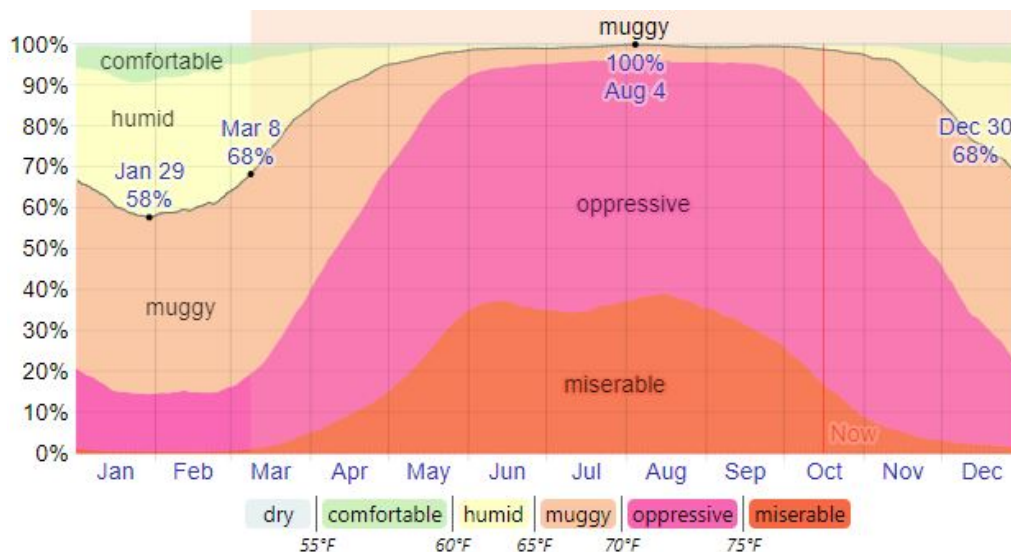


Figure 110. Mabalacat humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Tropical savanna climate (Aw)

Laoag



Laoag has warm to hot temperatures year round. Temperature dips slightly during the winter months between December to February. Characterized by two well-pronounced seasons; dry and wet and is classified as mild and pleasant climate. The city is shielded from northeast monsoon and trade winds by the mountain ranges of Cordillera and Sierra Madre but is exposed to the southwest monsoon and cyclone storms.



Figure 111. Location within the Philippines

Region:	Ilocos Region (Region I)
Province:	Ilocos Norte
Altitude:	15 m above sea level
Coordinates:	18°12'N 120°36'E
Climate:	Tropical
Rainfall:	Significant rainfall during summers while winters have very little.
Avg. annual temp.:	26.7°C
Annual rainfall:	2169 mm

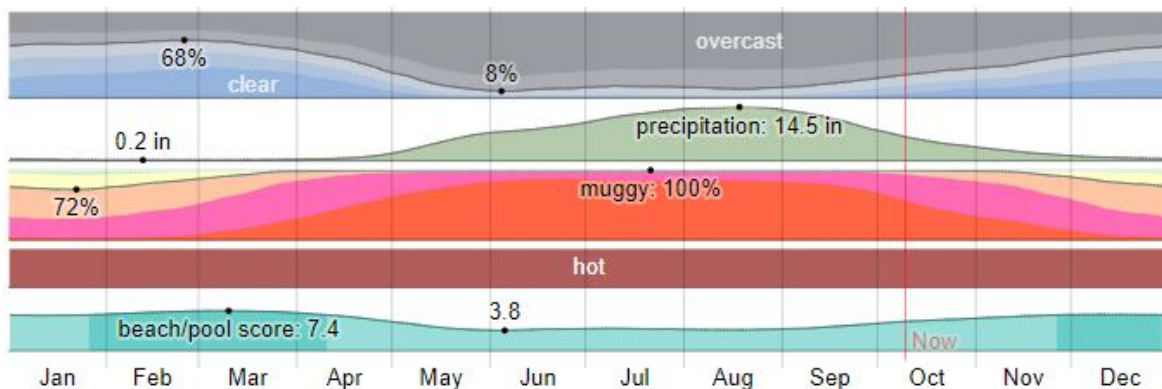


Figure 112. Laoag climate summary [via Weatherspark.com]

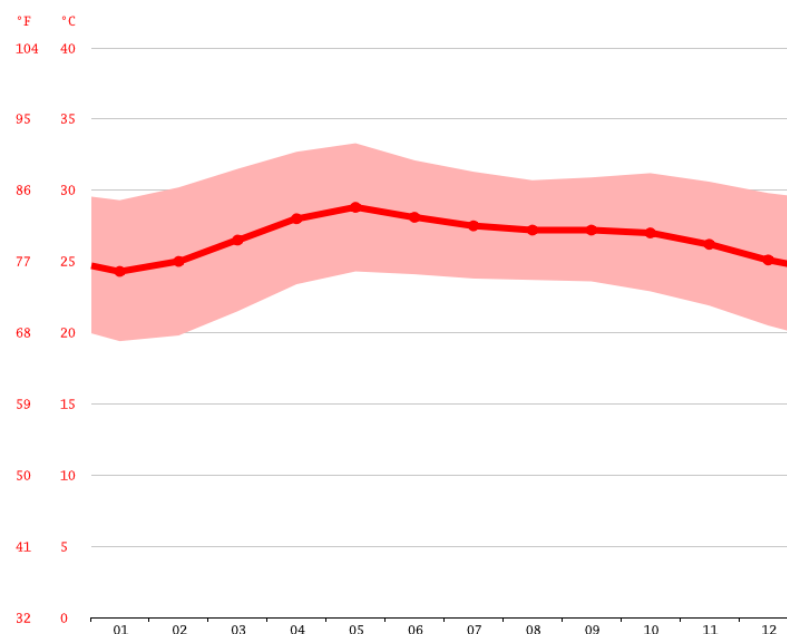
The precipitation varies 564 mm between the driest month and the wettest month. Throughout the year, temperature vary by 4.5°C.

Table 15. Laoag weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	24.3	25.0	26.5	28.0	28.8	28.1	27.5	27.2	27.2	27.0	26.2	25.1
Min. Temperature (°C)	19.4	19.8	21.5	23.4	24.3	24.1	23.8	23.7	23.6	22.9	21.9	20.5
Max. Temperature (°C)	29.3	30.2	31.5	32.7	33.3	32.1	31.3	30.7	30.9	31.2	30.6	29.8
Precipitation/ Rainfall (mm)	4	2	3	15	144	354	455	566	409	148	56	13

Temperature

With an average of 28.8°C, May is the warmest month. January is the coldest month, with temperature averaging 24.3°C.

*Figure 113. Laoag average temperature [via Climate-data.org]*

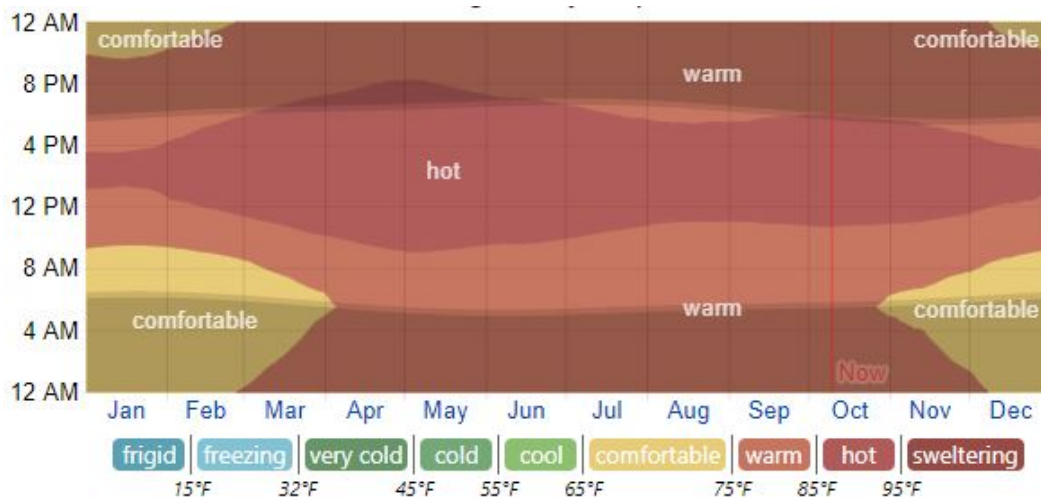


Figure 114. Laoag average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Laoag, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 2 minutes of daylight and the longest day is June 21, with 13 hours, 13 minutes of daylight.

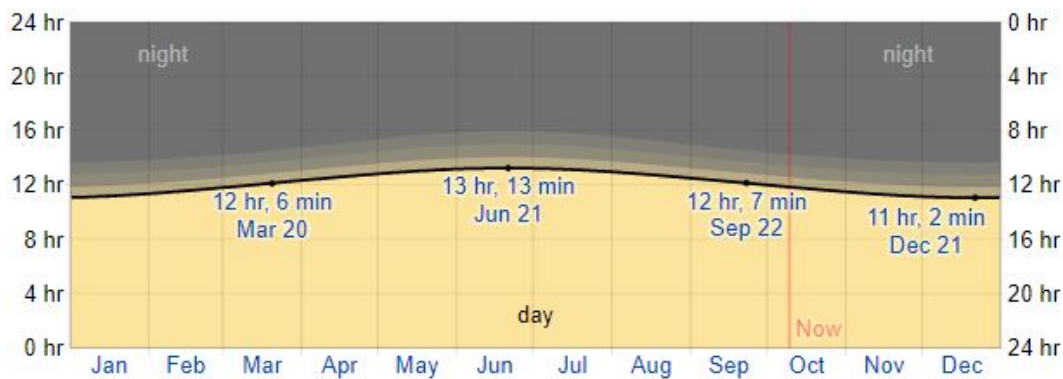


Figure 115. Laoag hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:20 AM on June 5, and the latest sunrise is at 6:32 AM on January 19. The earliest sunset is at 5:19 PM on November 24, and the latest sunset is at 6:37 PM on July 6.

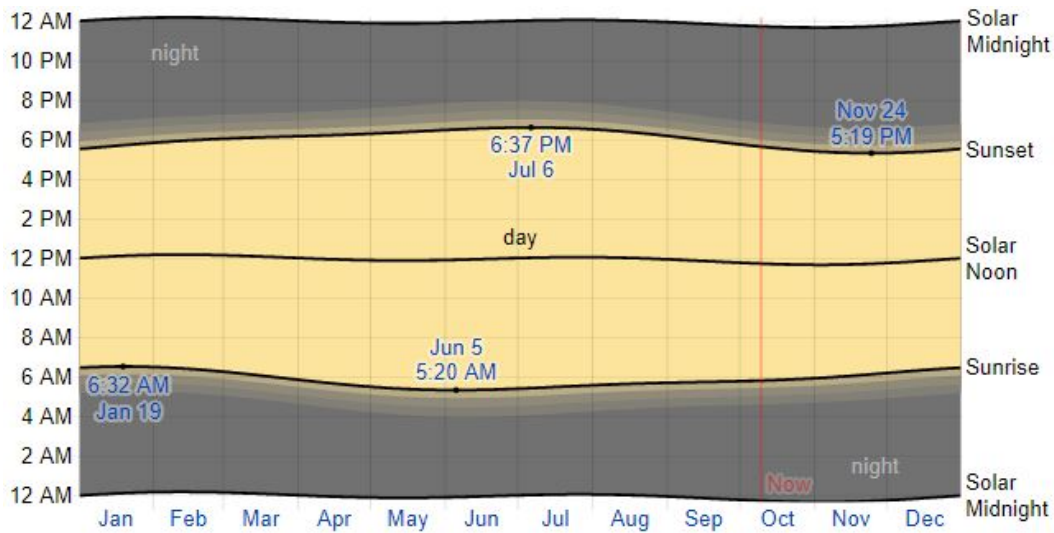


Figure 116. Laoag sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Laoag, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Laoag begins early November and ends late April. The cloudier part of the year begins late April and ends early November.

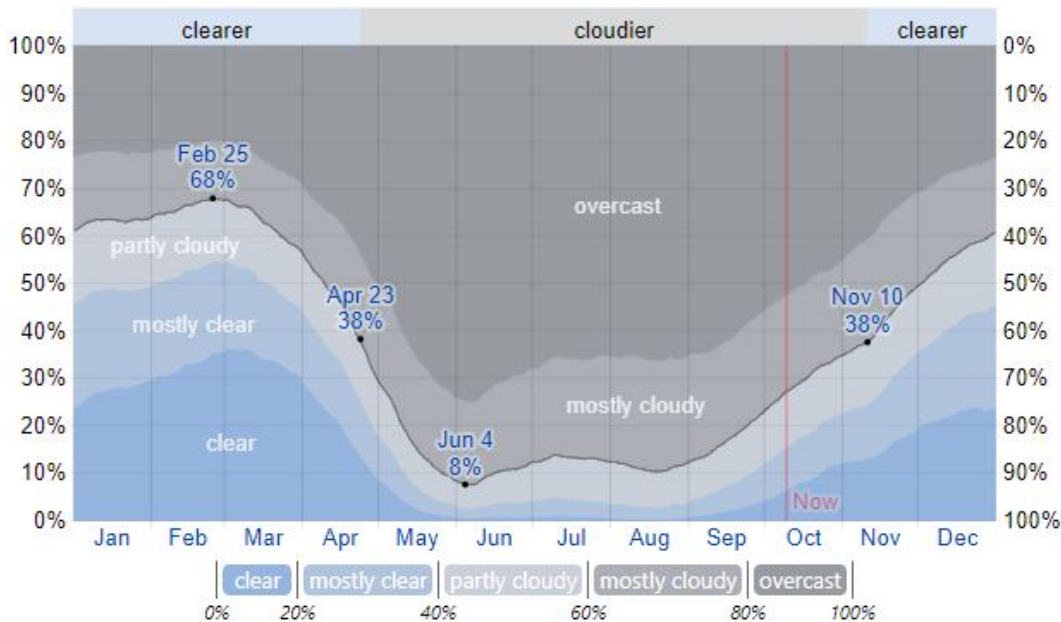


Figure 117. Laoag cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Laoag experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early October to late February, while the calmer time of the year lasts from late February to early October.

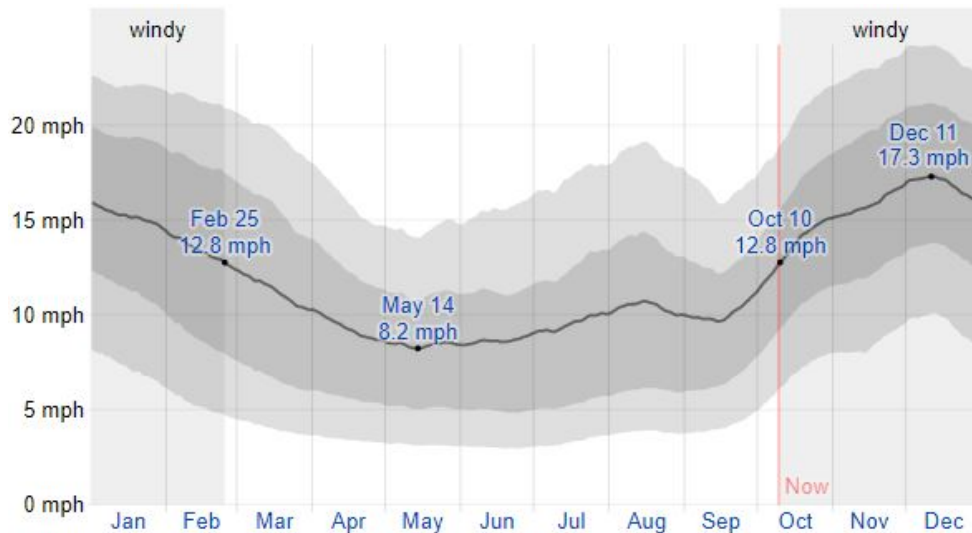


Figure 118. Laoag average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during mid-May to early June and from early July to late July and from late August to early September; from the south from early June to early July and from late July to late August; and from the east from early September to mid-May.

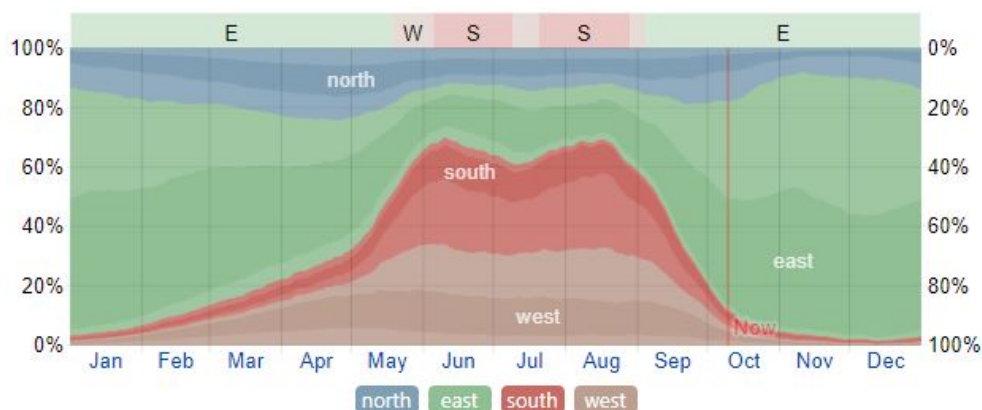


Figure 119. Laoag wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is February, with 2 mm of rain. Most of the precipitation here falls in August, averaging 566 mm.

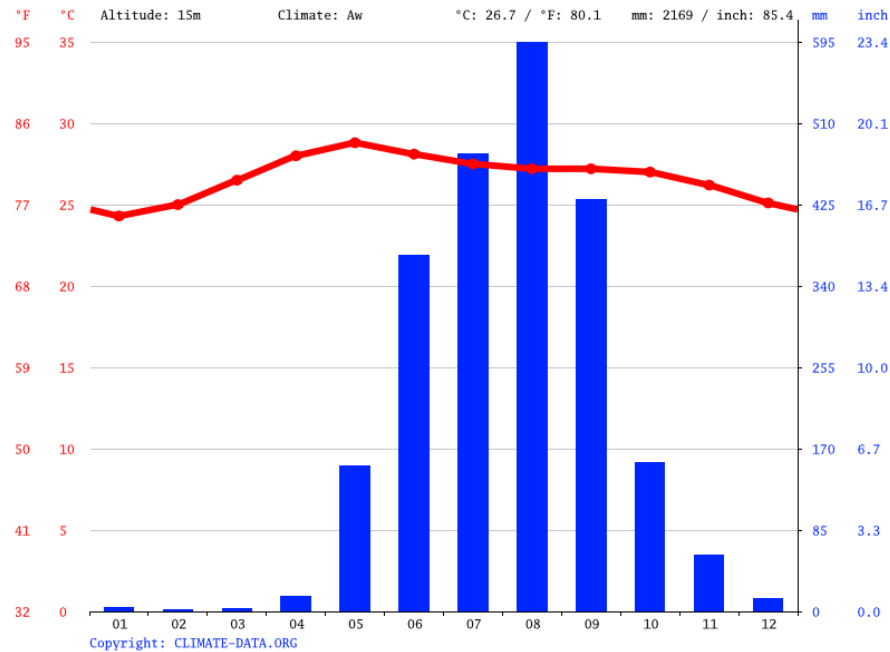


Figure 120. Laoag climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Laoag varies significantly throughout the year.

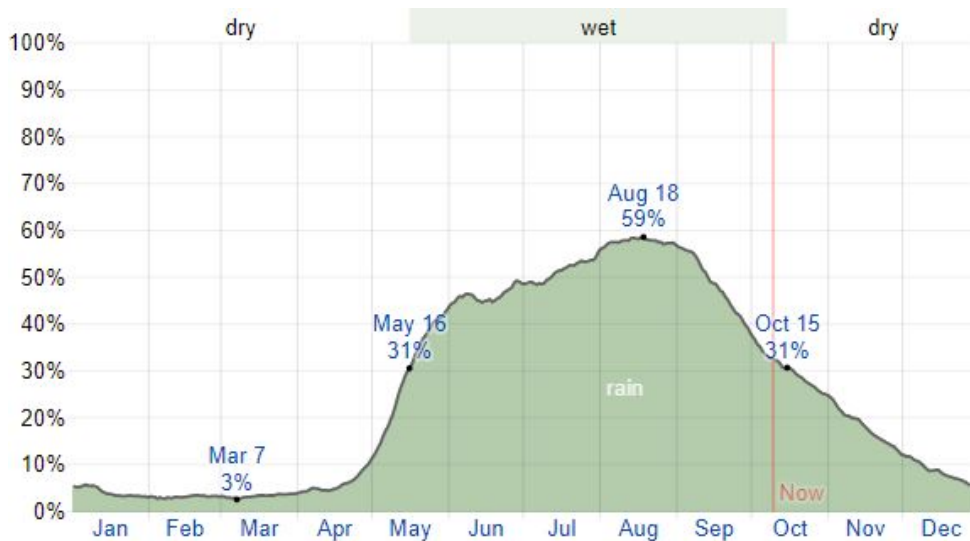


Figure 121. Laoag daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

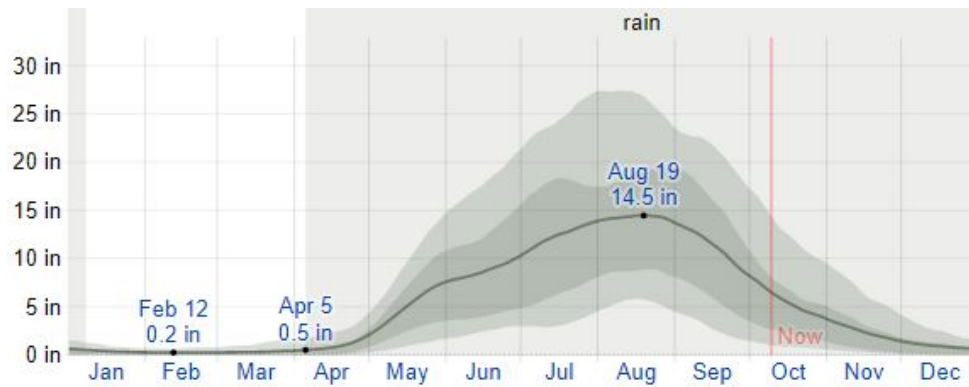


Figure 122. Laoag average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Laoag experiences some seasonal variation in the perceived humidity. The muggier period of the year lasts from early February to late December, during which time the comfort level is muggy, oppressive, or miserable at least 79% of the time.

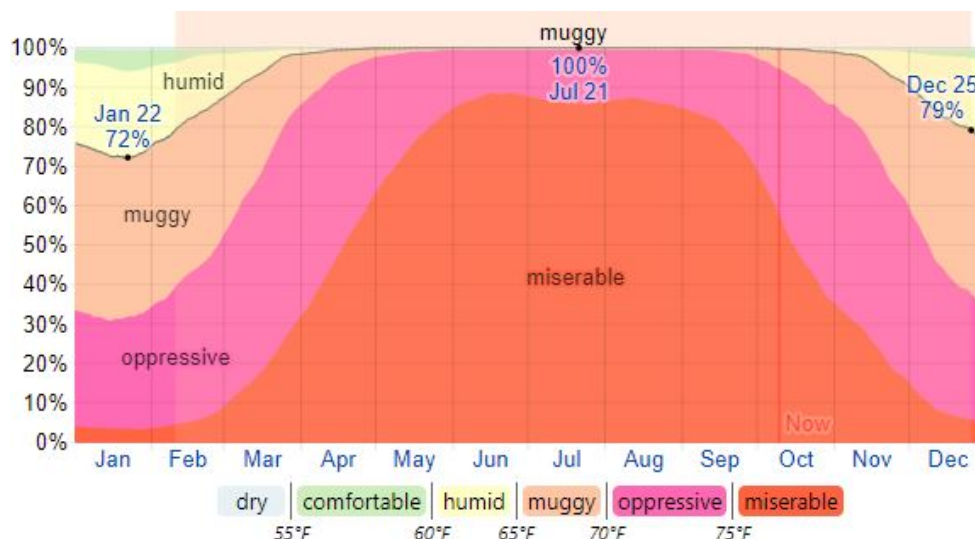


Figure 123. Laoag humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

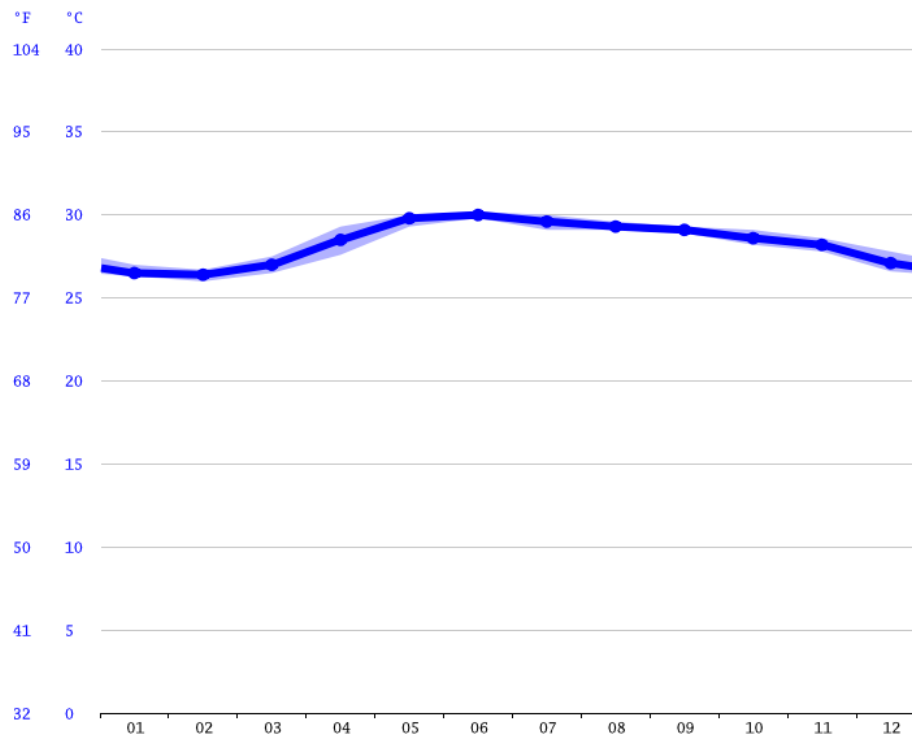


Figure 124. Laoag water temperature [via Climate-data.org]

Table 16. Laoag water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	26.3	26.0	26.5	27.6	29.3	29.8	29.1	29.1	28.9	28.2	27.8	26.6
Avg. Water Temperature (°C)	26.5	26.4	27.0	28.5	29.8	30.0	29.6	29.3	29.1	28.6	28.2	27.1
Max. Water Temperature (°C)	27.0	26.7	27.5	29.3	30.0	30.2	30.0	29.6	29.3	29.1	28.6	27.8

In Laoag (South China Sea), a water temperature of about 28.3°C is achieved in the annual average.

The lowest water temperatures per month are reached in February at around 26.0°C. The average highest water temperatures are around 30.0°C and are measured during June.

Manila



Manila, along with the rest of the Philippines lies entirely within the tropics. Its proximity to the equator means that temperatures are hot year-round especially during the daytime. Humidity levels are usually very high all year round, making the temperature feel hotter than it is. Manila has a distinct dry season from late December through early April, and a relatively lengthy wet season that covers the remaining period with slightly cooler temperatures during the daytime. In the wet season, it rarely rains all day, but rainfall is very heavy during short periods.



Region:	National Capital Region (NCR)
Altitude:	10 m above sea level
Coordinates:	14°35'45"N 120°58'38"E
Climate:	Tropical
Rainfall:	Summers have more rainfall.
Avg. annual temp.:	27.3°C
Annual rainfall:	2047 mm

Figure 125. Location within the Philippines

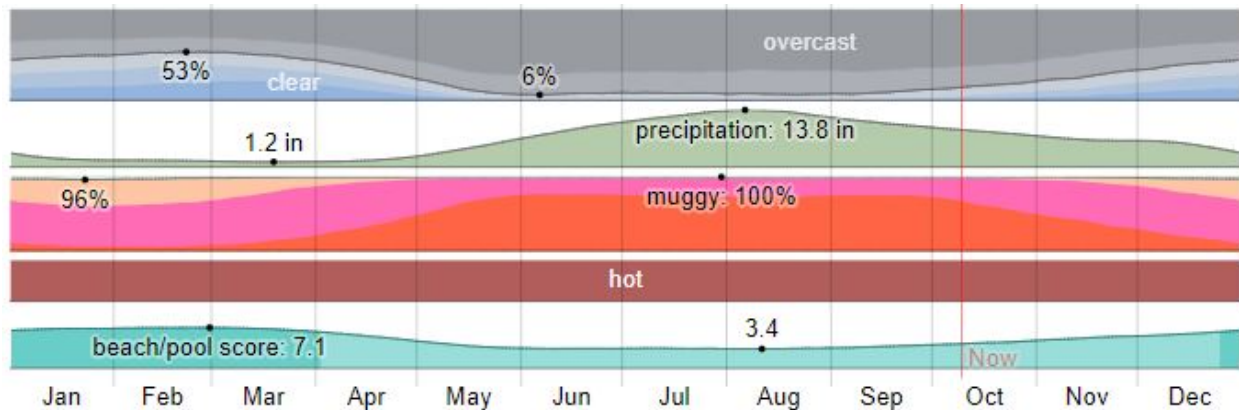


Figure 126. Manila climate summary [via Weatherspark.com]

The precipitation varies 564 mm between the driest month and the wettest month. Throughout the year, temperature vary by 4.5°C.

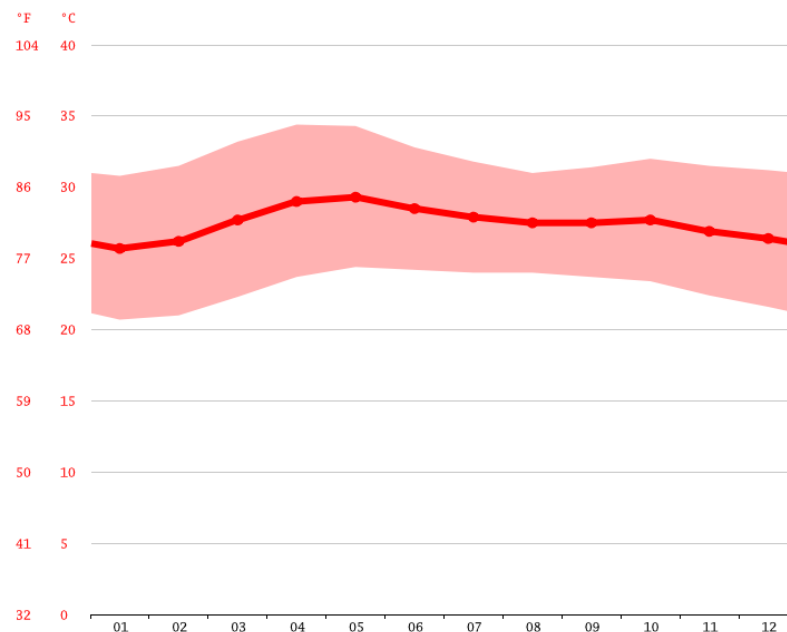
Table 17. Manila weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	25.7	26.1	27.5	28.8	29.3	28.3	27.5	27.3	27.2	27.3	26.8	25.9
Min. Temperature (°C)	21.6	21.6	22.7	24	24.9	24.6	24.1	24.1	23.9	23.7	23.1	22.2
Max. Temperature (°C)	29.8	30.6	32.	33.7	33.8	32.1	31.0	30.5	30.6	30.9	30.5	29.7
Precipitation/ Rainfall (mm)	17	8	13	26	125	273	407	441	346	193	135	63

The precipitation varies 433 mm between the driest month and the wettest month. Throughout the year, temperature vary by 3.6°C.

Temperature

May is the hottest month of the year with an average of 29.3°C. The coldest month of the year is January with an average temperature of 25.7°C.

**Figure 127. Manila average temperature [via Climate-data.org]**

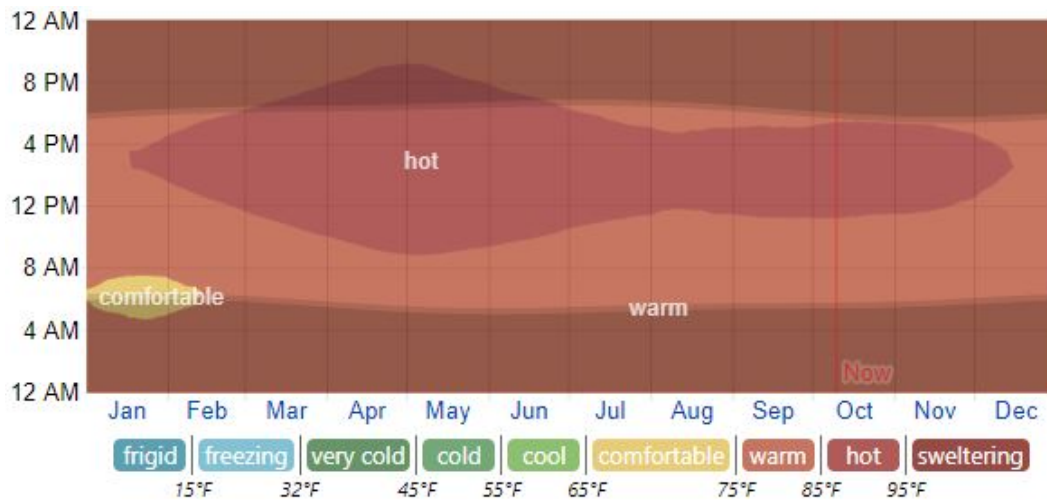


Figure 128. Manila average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Manila, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 16 minutes of daylight and the longest day is June 21, with 13 hours, 0 minutes of daylight.



Figure 129. Manila hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:25 AM on June 3, and the latest sunrise is at 6:25 AM on January 23. The earliest sunset is at 5:23 PM on November 20, and the latest sunset is at 6:29 PM on July 8.

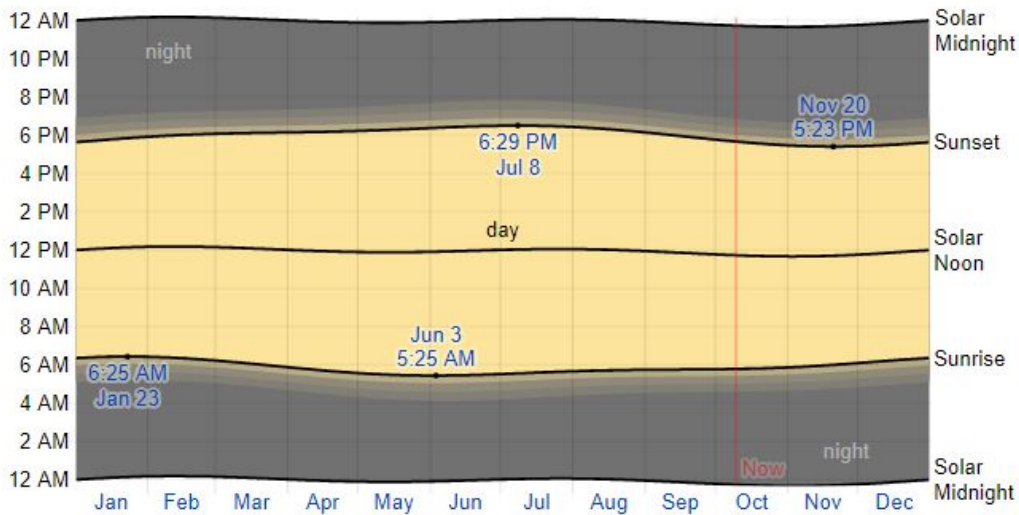


Figure 130. Manila sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Manila, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Manila begins late November and ends late April. The cloudier part of the year begins late April and ends late November.

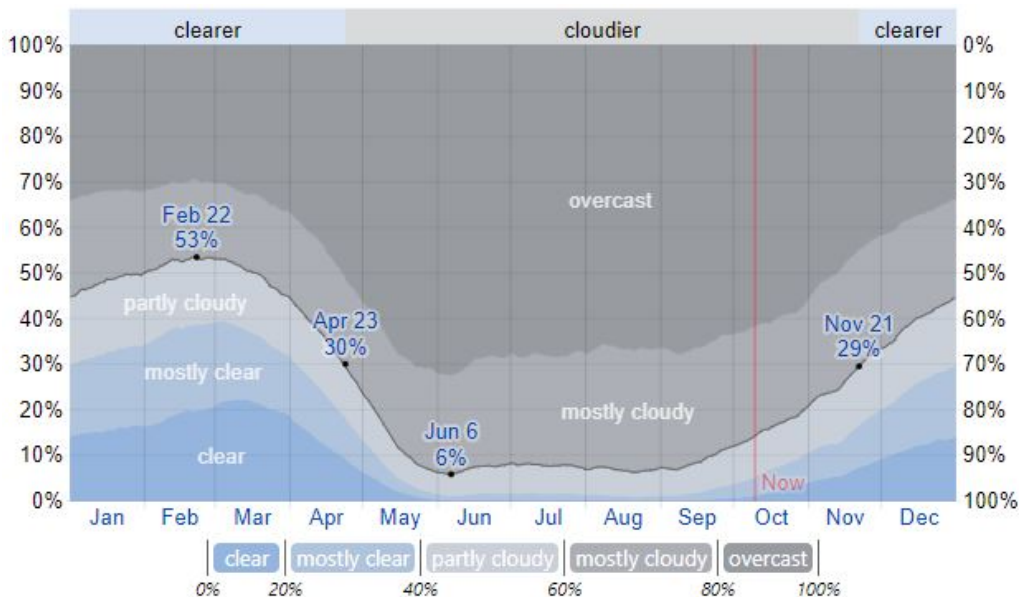


Figure 131. Manila cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Manila experiences significant seasonal variation over the course of the year. The windier part of the year lasts from late October to late March, while the calmer time of the year lasts from late March to late October.

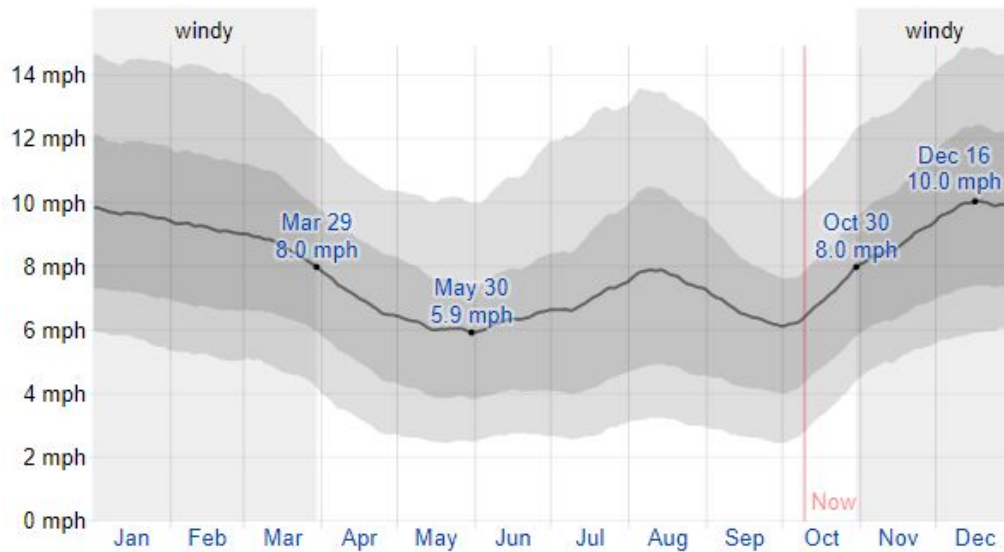


Figure 132. Manila average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during late May to late September; and from the east from late September to late May.

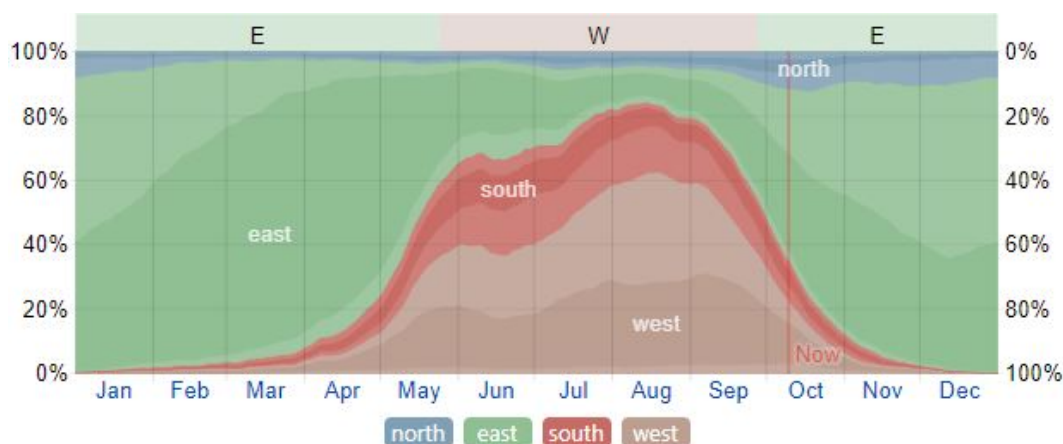


Figure 133. Manila wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is February, with 8 mm of rain. In August, the precipitation reaches its peak, with an average of 441 mm.

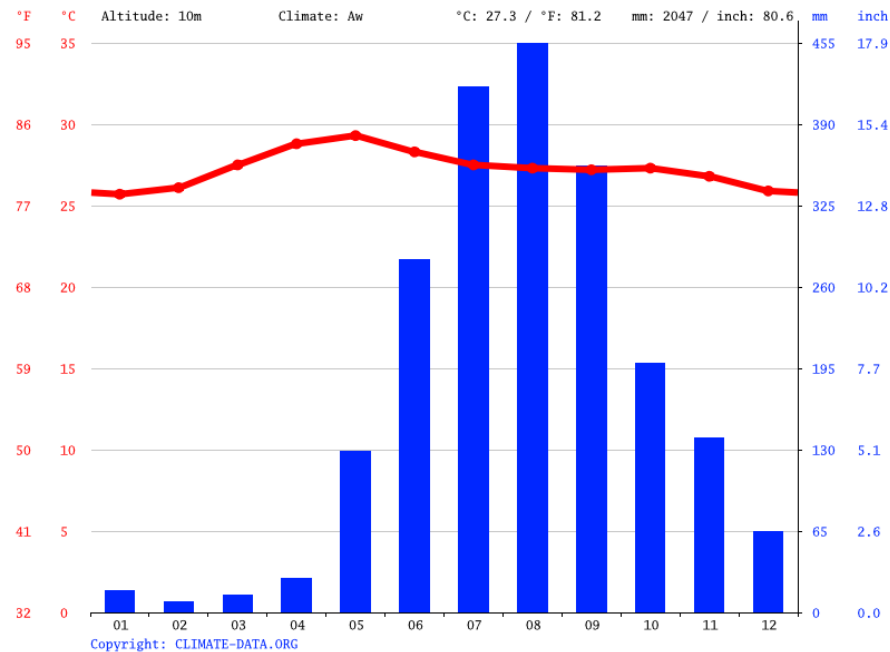


Figure 134. Manila climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Manila varies significantly throughout the year.

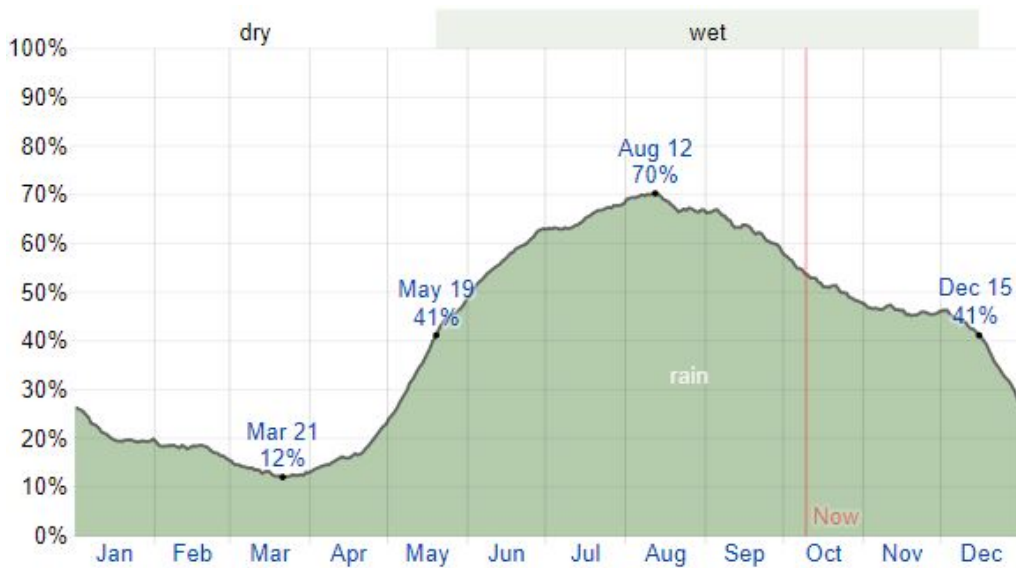


Figure 135. Manila daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

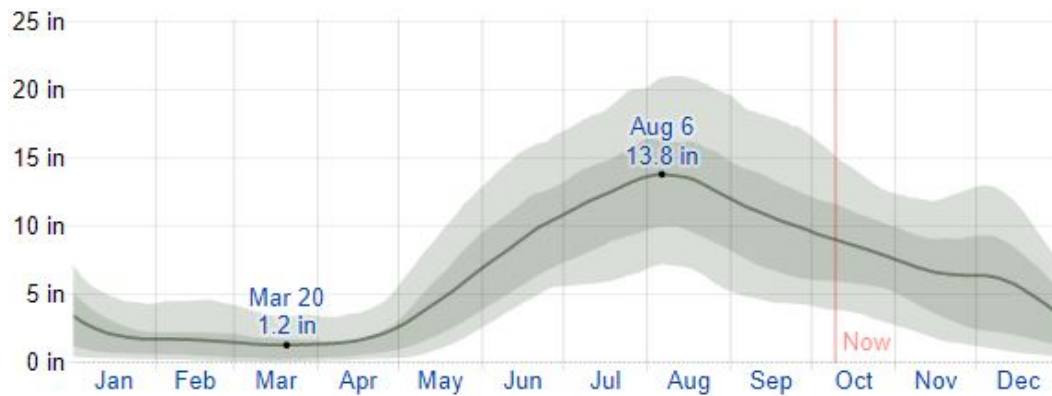


Figure 136. Manila average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Manila, as measured by the percentage of time in which the humidity comfort level is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, staying within 2% of 98% throughout.

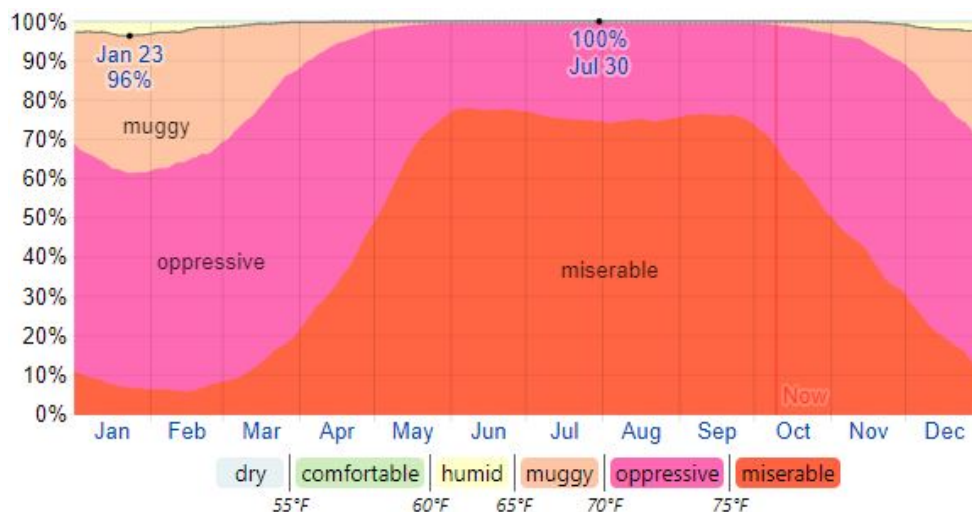


Figure 137. Manila humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

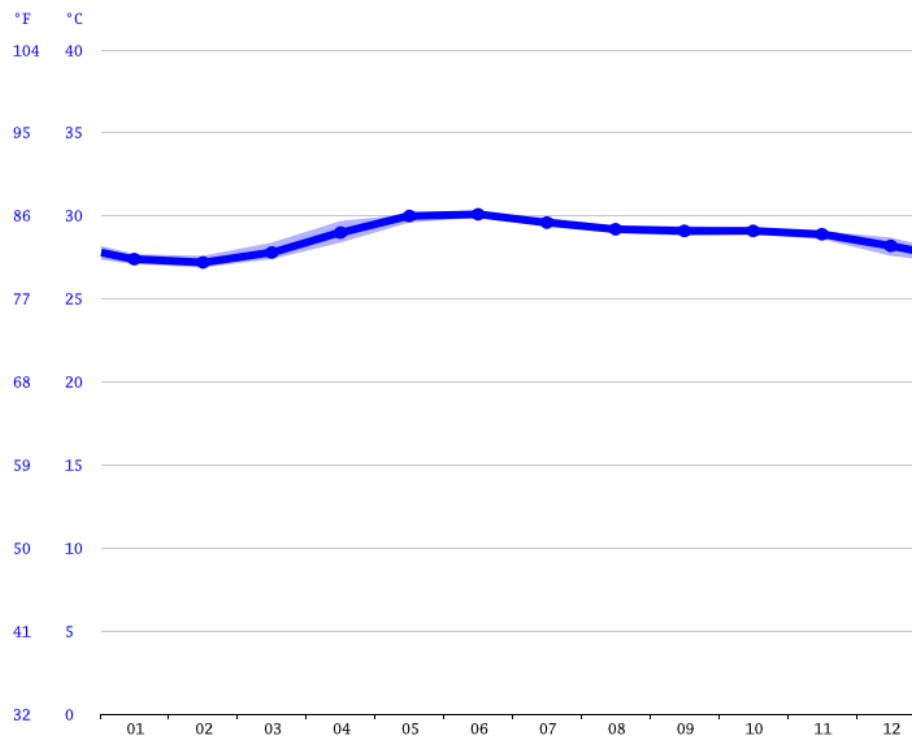


Figure 138. Manila water temperature [via Climate-data.org]

Table 18. Manila water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	26.5	26.5	27.0	28.2	29.7	29.7	28.9	28.8	29.1	28.6	27.9	27.0
Avg. Water Temperature (°C)	26.7	26.7	27.6	28.9	30.1	30.0	29.3	29.0	29.3	29.0	28.4	27.5
Max. Water Temperature (°C)	27.0	27.0	28.2	29.8	30.2	30.3	29.7	29.5	29.5	29.3	28.6	27.9

The water temperature in Manila (South China Sea) is on annual average at about 28.5°C.

In June, the highest water temperature is reached with a monthly average of 30.0°C. Whereas in January the lowest average water temperatures are expected with about 26.50°C.

Puerto Princesa



In Puerto Princesa, the wet season is overcast, the dry season is windy and mostly cloudy, and it is hot and oppressive year round. Over the course of the year, the temperature typically varies from 24.4°C to 32.2°C and is rarely below 22°C or above 33°C. The best time of year to visit Puerto Princesa for hot-weather activities is from late December to early April.



Region:	MIMAROPA (Region IV-B)
Province:	Palawan (geographically only)
Altitude:	22m above sea level
Coordinates:	9°45'N 118°45'E
Climate:	Tropical
Rainfall:	Summers have more rainfall.
Avg. annual temp.:	27.2°C
Annual rainfall:	1684 mm

Figure 139. Location within the Philippines

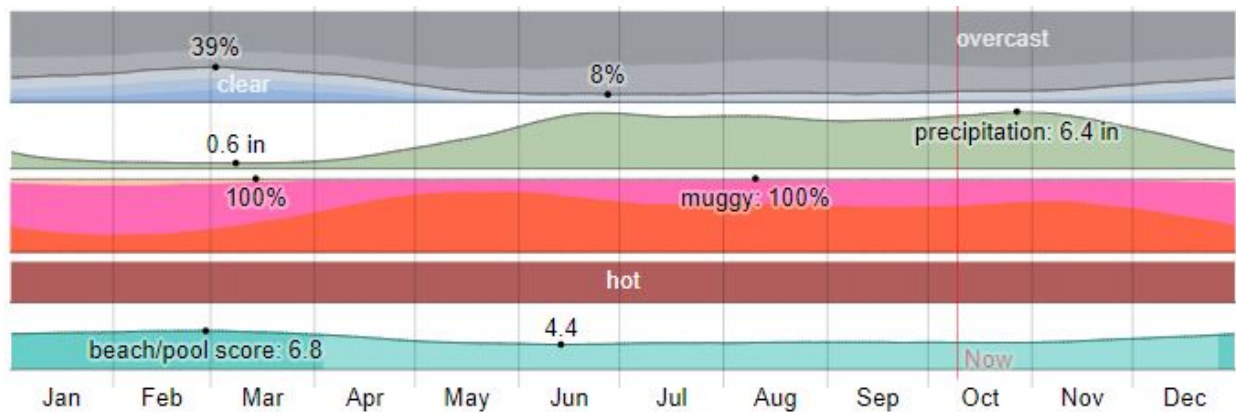


Figure 140. Puerto Princesa climate summary [via Weatherspark.com]

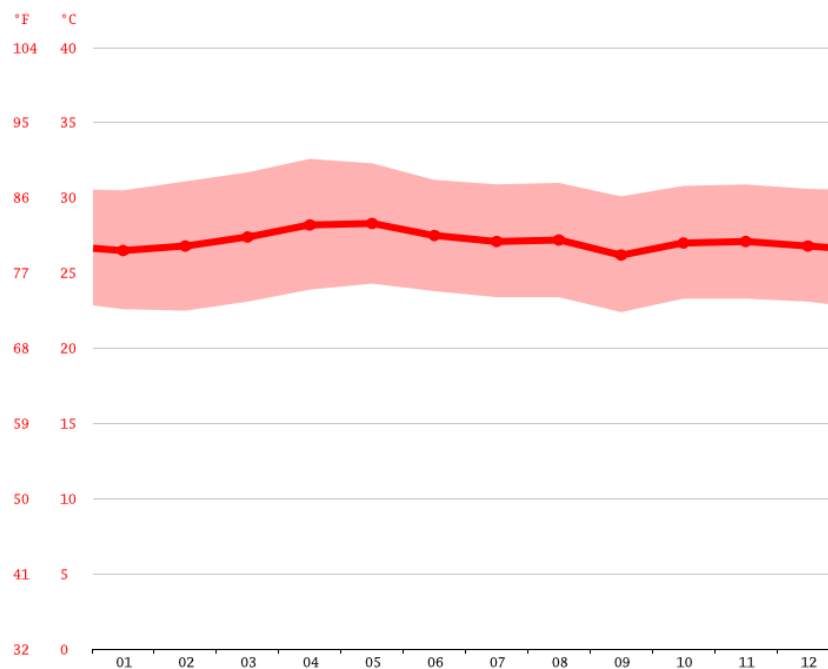
The precipitation varies 212 mm between the driest month and the wettest month. Throughout the year, temperature vary by 2.1°C.

Table 19. Puerto Princesa weather by month (Weather averages)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	26.5	26.8	27.4	28.2	28.3	27.5	27.1	27.2	26.2	27.0	27.1	26.8
Min. Temperature (°C)	22.6	22.5	23.1	23.9	24.3	23.8	23.4	23.4	22.4	23.3	23.3	23.1
Max. Temperature (°C)	30.5	31.1	31.7	32.6	32.3	31.2	30.9	31.0	30.1	30.8	30.9	30.6
Precipitation/ Rainfall (mm)	40	21	35	47	153	174	192	197	202	226	233	164

Temperature

May is the hottest month of the year with an average of 28.3°C. The coldest month of the year is September with an average temperature of 26.2°C.

**Figure 141. Puerto Princesa average temperature [via Climate-data.org]**

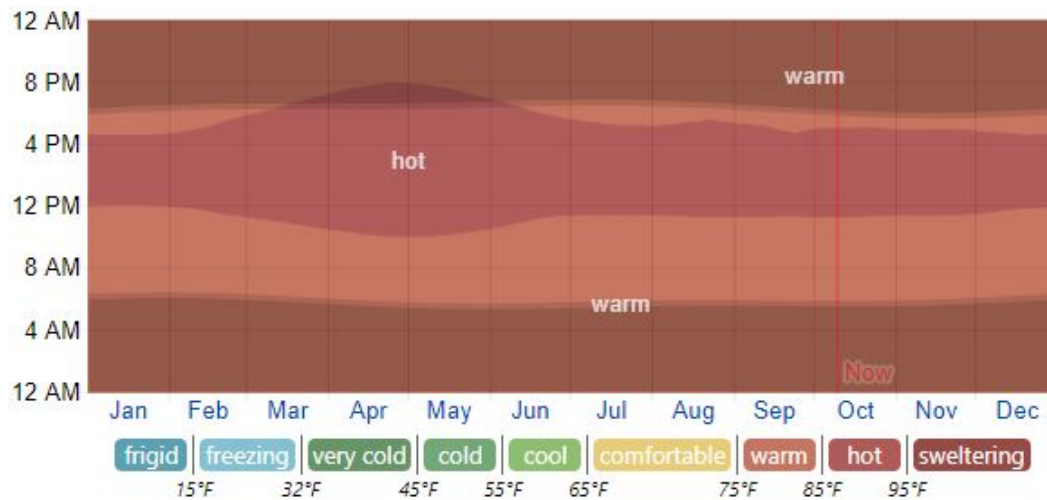


Figure 142. Puerto Princesa average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Puerto Princesa, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 33 minutes of daylight and the longest day is June 21, with 12 hours, 42 minutes of daylight.

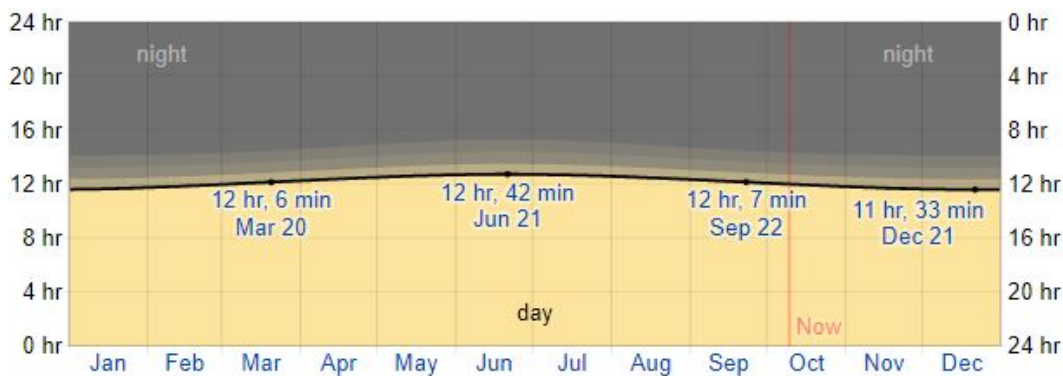


Figure 143. Puerto Princesa hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:43 AM on May 28, and the latest sunrise is at 6:27 AM on January 28. The earliest sunset is at 5:39 PM on November 15, and the latest sunset is at 6:30 PM on July 12.

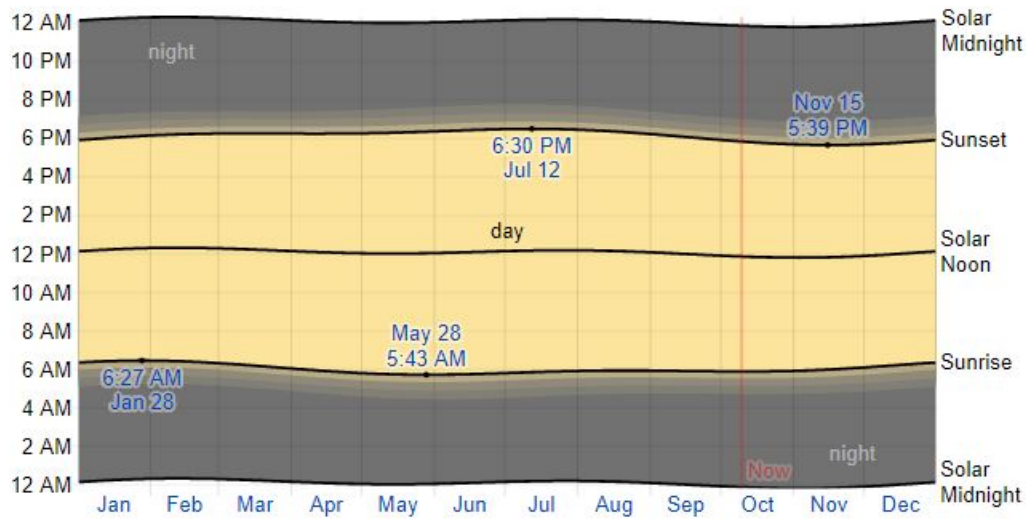


Figure 144. Puerto Princesa sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Puerto Princesa, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Puerto Princesa begins late November and ends late April. The cloudier part of the year begins late April and ends late November.

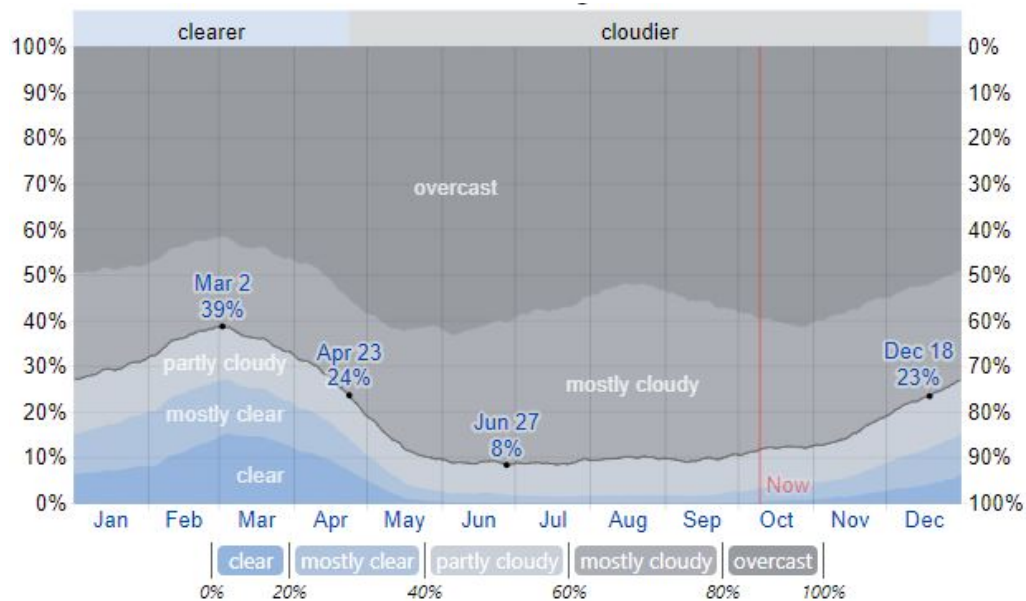


Figure 145. Puerto Princesa cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Puerto Princesa experiences significant seasonal variation over the course of the year. The windier part of the year lasts from late November to late March, while the calmer time of the year lasts from late March to late November.

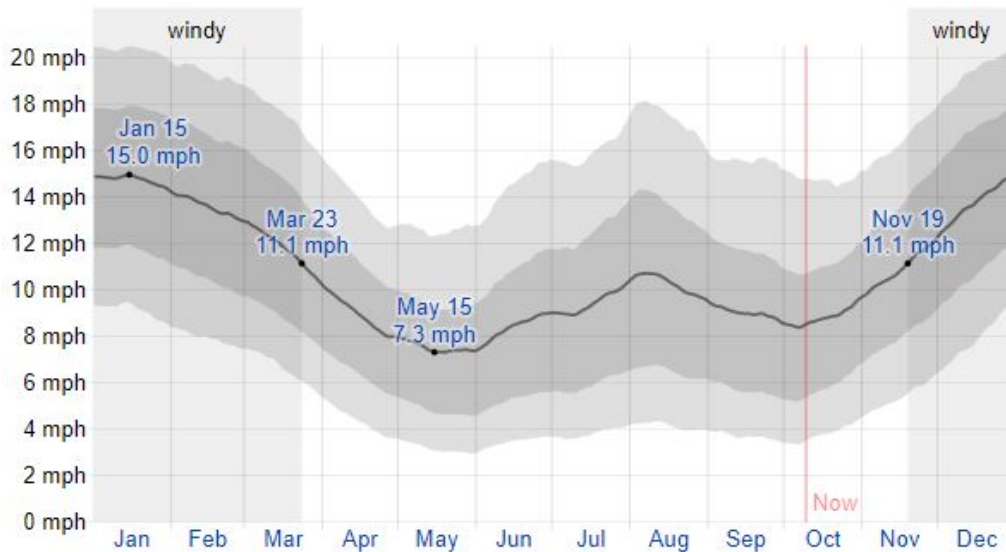


Figure 146. Puerto Princesa average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the south during late May to early September; from the west from early September to mid-October; and from the east from mid-October to late May.

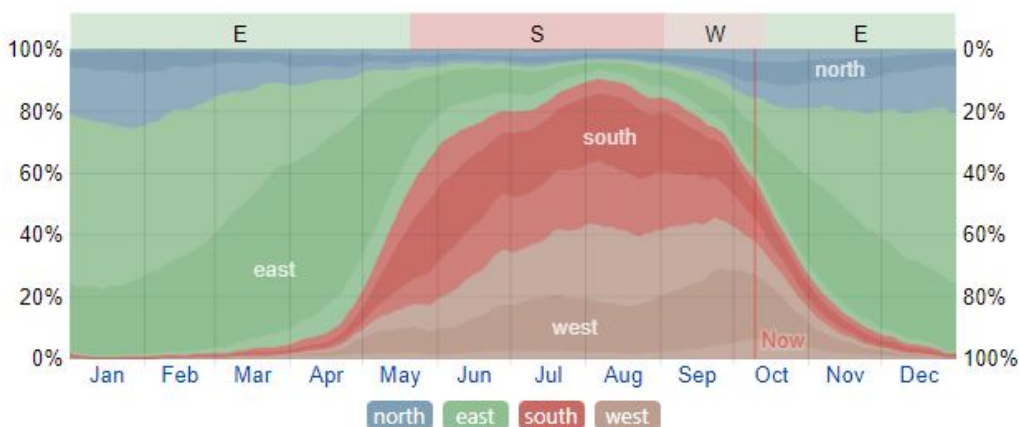


Figure 147. Puerto Princesa wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is February, with 21 mm of rain. The greatest amount of precipitation occurs in November, with an average of 233 mm.

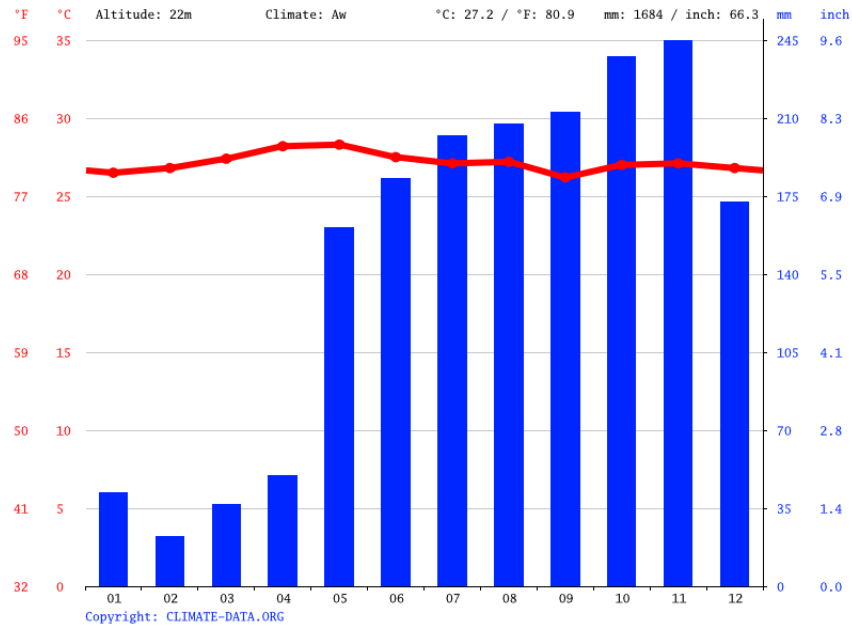


Figure 148. Puerto Princesa climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Manila varies significantly throughout the year.



Figure 149. Puerto Princesa daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

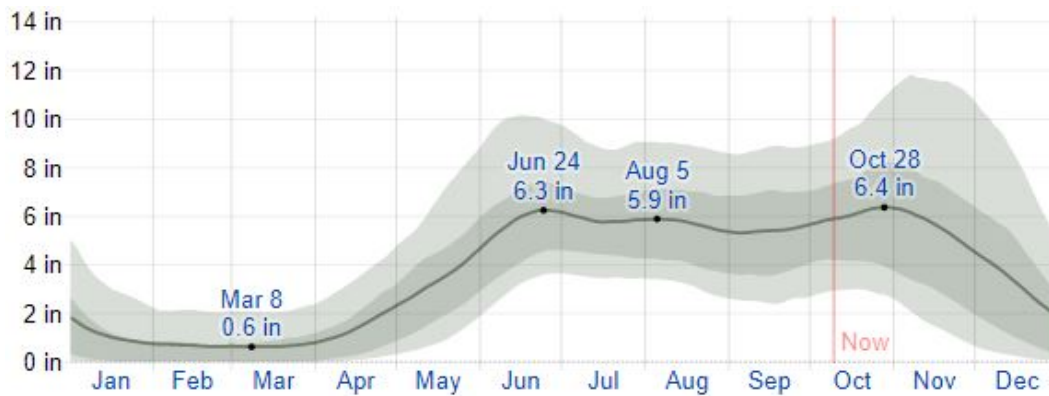


Figure 150. Puerto Princesa average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Puerto Princesa, as measured by the percentage of time in which the humidity comfort level is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, remaining a virtually constant 100% throughout.

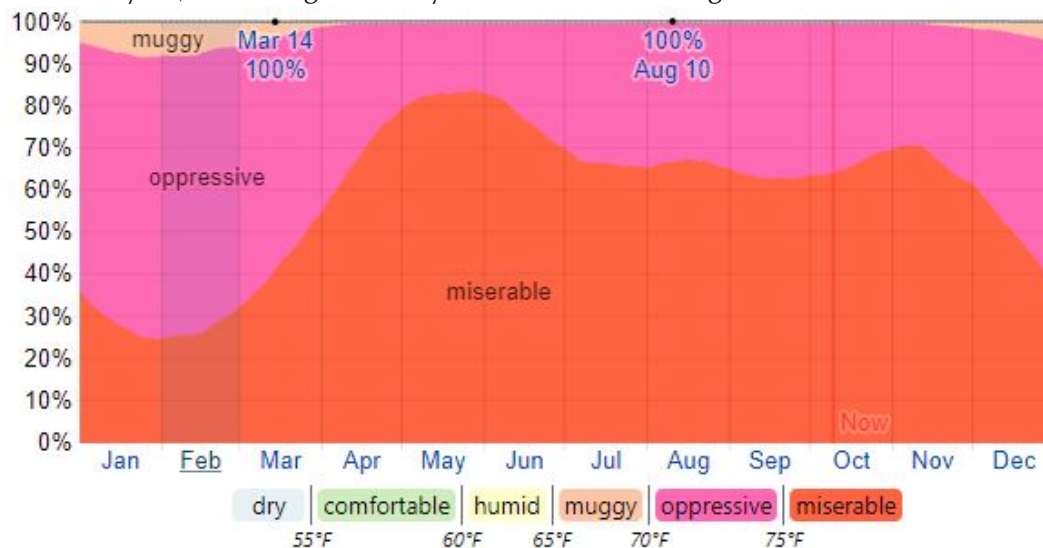


Figure 151. Puerto Princesa humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Water Temperature

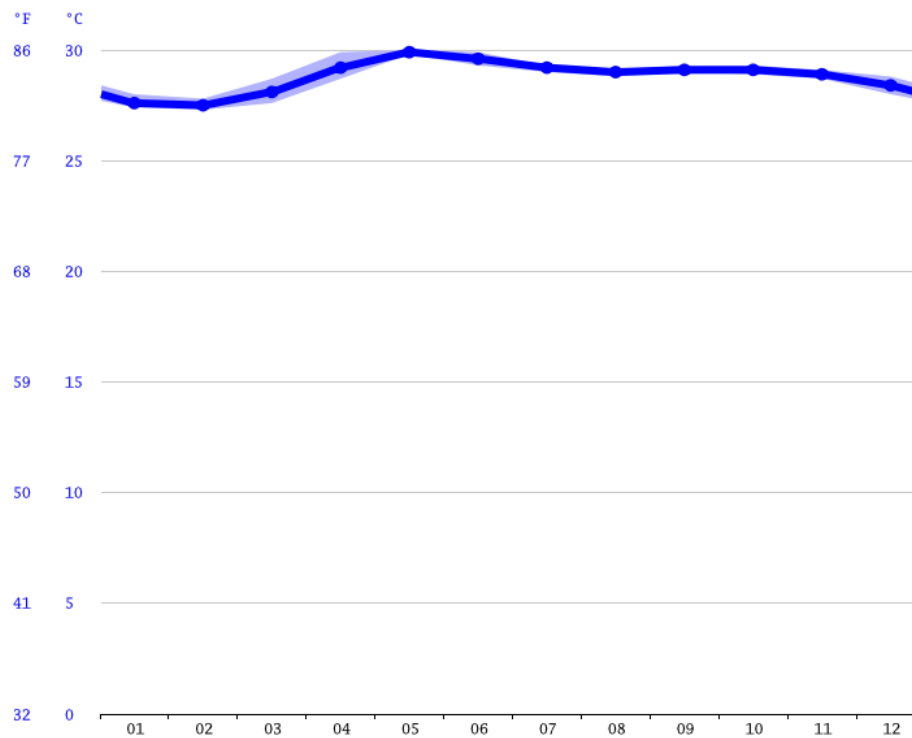


Figure 152. Puerto Princesa water temperature [via Climate-data.org]

Table 20. Puerto Princesa water temperature [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. Water Temperature (°C)	27.4	27.3	27.6	28.7	29.8	29.3	29.0	28.8	29.0	28.9	28.7	28.0
Avg. Water Temperature (°C)	27.6	27.5	28.1	29.2	29.9	29.6	29.2	29.0	29.1	29.1	28.9	28.4
Max. Water Temperature (°C)	28.0	27.8	28.7	29.9	30.0	29.9	29.3	29.1	29.3	29.3	29.1	28.8

The water temperature in Puerto Princesa (Sulu Sea) is on annual average at about 28.8°C.

In May, the highest water temperature is reached with a monthly average of 30.0°C. Whereas in February the lowest average water temperatures are expected with about 27.3°C.

The closest Ocean of Puerto Princesa is Sulu Sea with roughly 2.01 km.

Tuguegarao



Temperature in the Philippines averages 34°C but Tuguegarao extends to 38°C making the capital of Cagayan one of the warmest in the country (Rosell, 2014). Tuguegarao, tagged as the “Hottest City in the Philippines”, recorded the country’s highest temperature of 42.2°C on August 19, 1912 and on May 11, 1969 (Gascon, 2014). The city experiences high year-round humidity and hotter days are expected in May.



Figure 153. Location within the Philippines

Region:	Cagayan Valley (Region II)
Province:	Cagayan
Altitude:	30 m above sea level
Coordinates:	17°37'N 121°43'E
Climate:	Tropical
Rainfall:	Significant rainfall during summers while winters have very little.
Avg. annual temp.:	27.2°C
Annual rainfall:	1756 mm

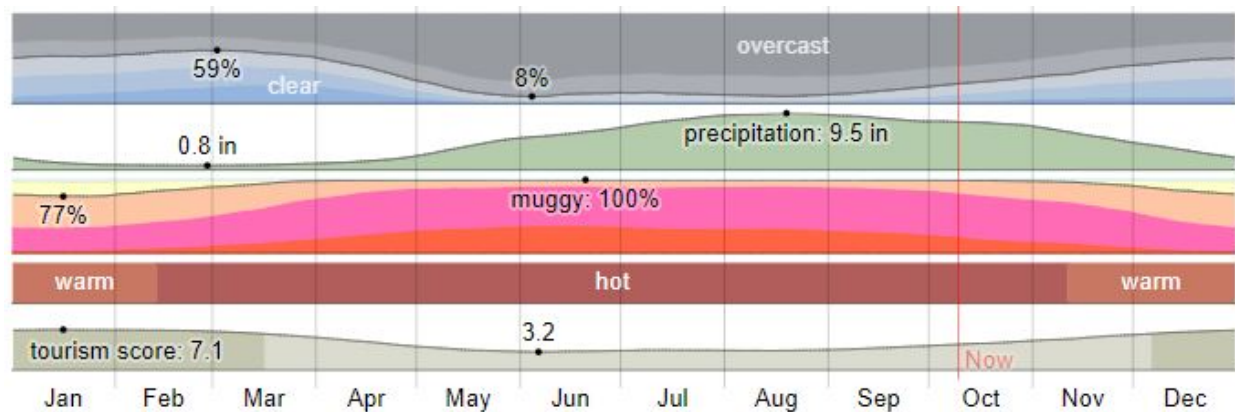


Figure 154. Tuguegarao climate summary [via Weatherspark.com]

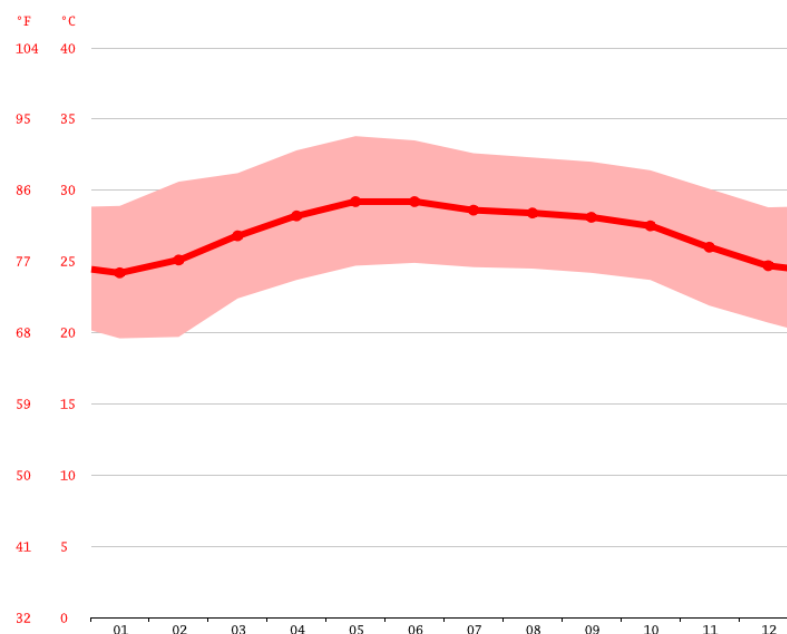
The precipitation varies 268 mm between the driest month and the wettest month. Throughout the year, temperatures vary by 5.0°C.

Table 21. Tuguegarao weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	24.2	25.1	26.8	28.2	29.2	29.2	28.6	28.4	28.1	27.5	26.0	24.7
Min. Temperature (°C)	19.6	19.7	22.4	23.7	24.7	24.9	24.6	24.5	24.2	23.7	21.9	20.7
Max. Temperature (°C)	28.9	30.6	31.2	32.8	33.8	33.5	32.6	32.3	32.0	31.4	30.1	28.8
Precipitation/ Rainfall (mm)	37	22	35	46	112	163	201	237	209	282	290	122

Temperature

With an average of 29.2°C, May is the warmest month. January is the coldest month, with temperature averaging 24.2°C.

**Figure 155. Tuguegarao average temperature [via Climate-data.org]**

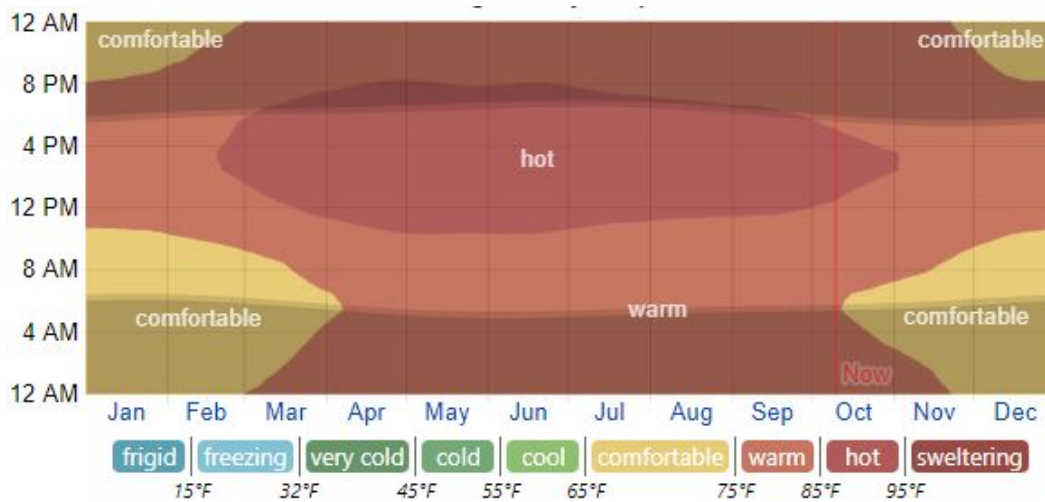


Figure 156. Tuguegarao average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Tuguegarao, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 5 minutes of daylight and the longest day is June 21, with 13 hours, 11 minutes of daylight.

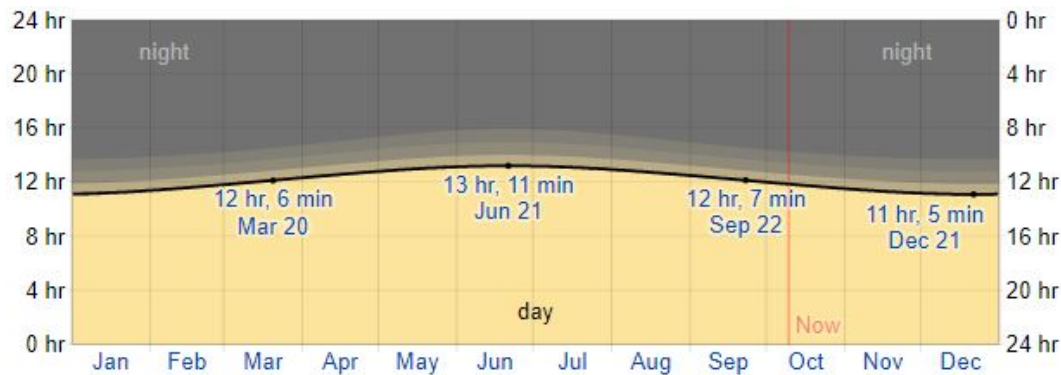


Figure 157. Tuguegarao hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:17 AM on June 3, and the latest sunrise is at 6:27 AM on January 20. The earliest sunset is at 5:16 PM on November 24, and the latest sunset is at 6:32 PM on July 6.

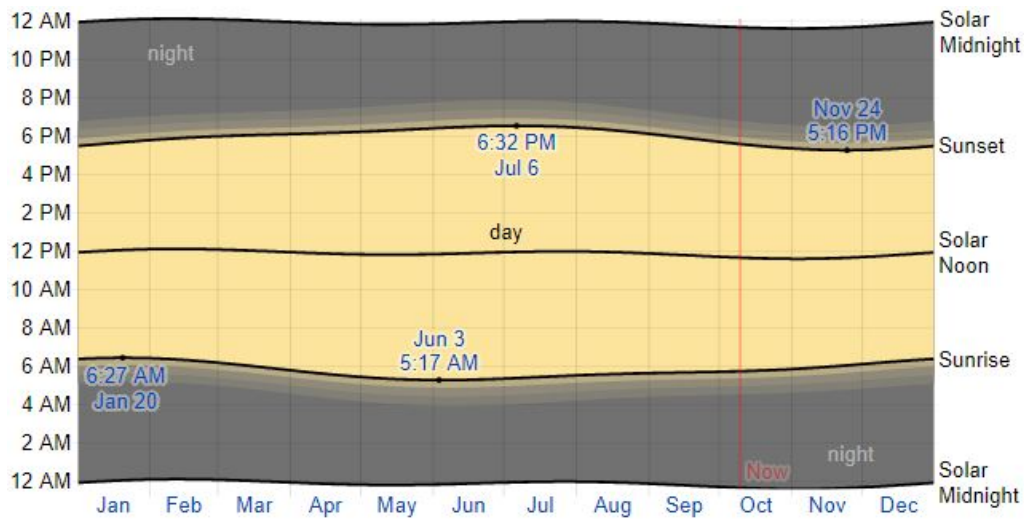


Figure 158. Tuguegarao sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Tuguegarao, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Tuguegarao begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

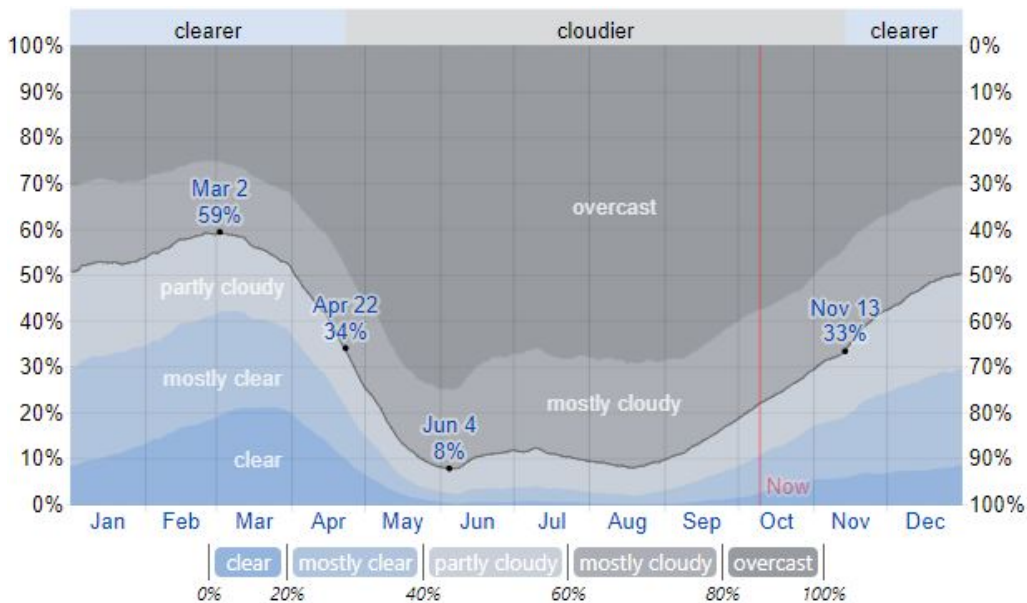


Figure 159. Tuguegarao cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Tuguegarao experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early October to early April, while the calmer time of the year lasts from early April to early October.

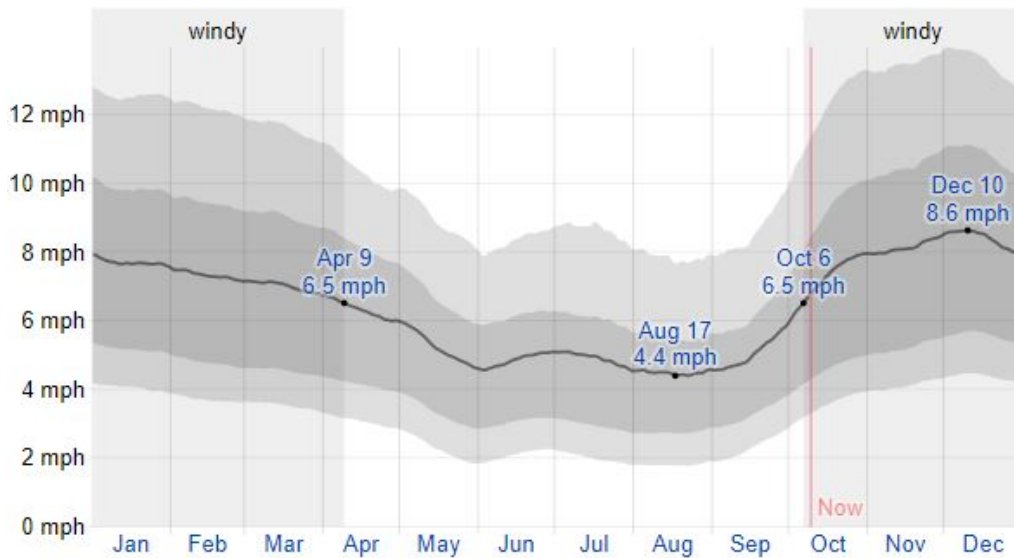


Figure 160. Tuguegarao average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the south during late May to late August; and from the east from late August to mid-May.

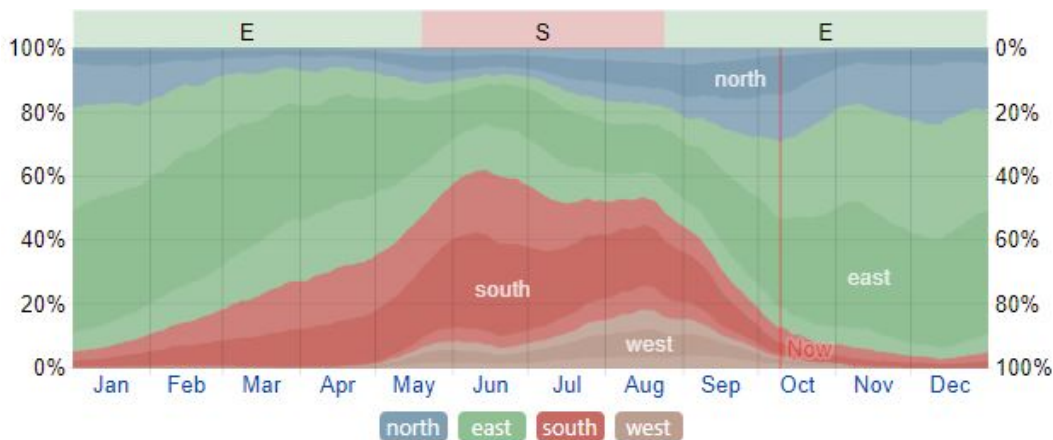


Figure 161. Tuguegarao wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is February, with 22 mm of rain. Most of the precipitation here falls in August, averaging 290 mm.

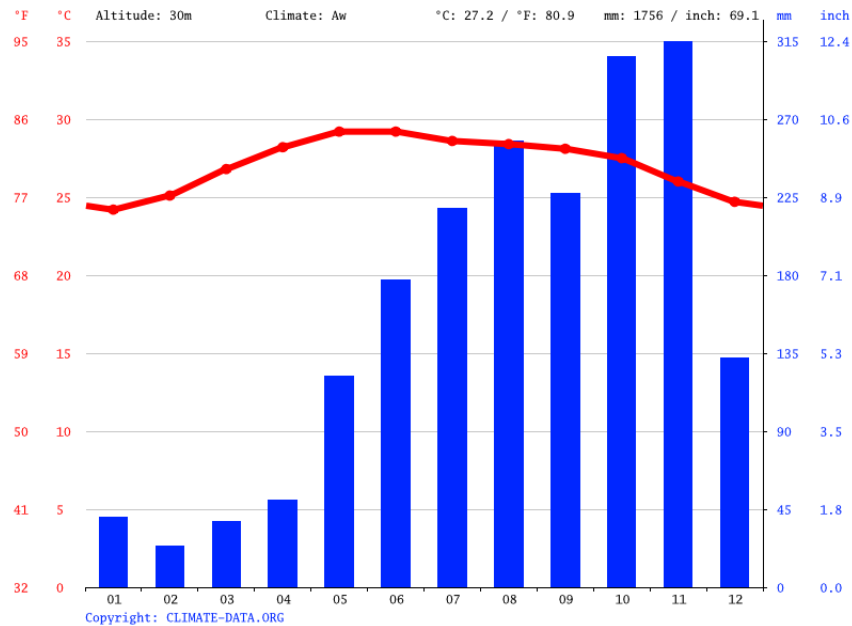


Figure 162. Tuguegarao climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Tuguegarao varies significantly throughout the year.



Figure 163. Tuguegarao daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

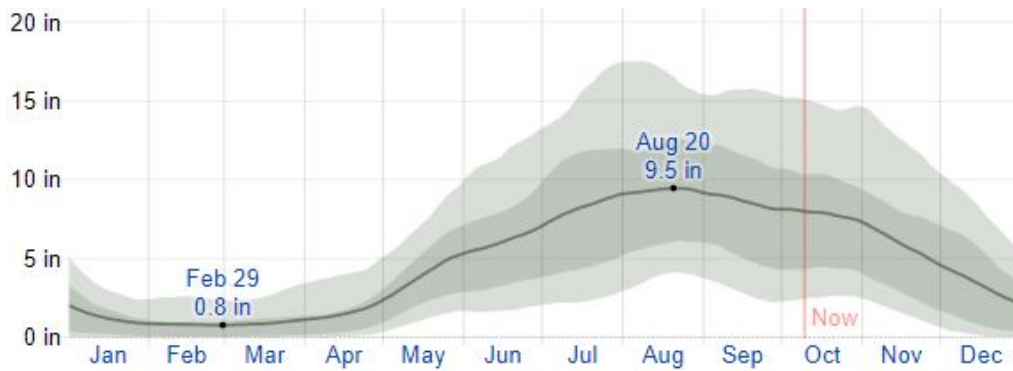


Figure 164. Tuguegarao average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Tuguegarao experiences some seasonal variation in the perceived humidity. The muggier period of the year lasts from early February to late December, during which time the comfort level is muggy, oppressive, or miserable at least 83% of the time.

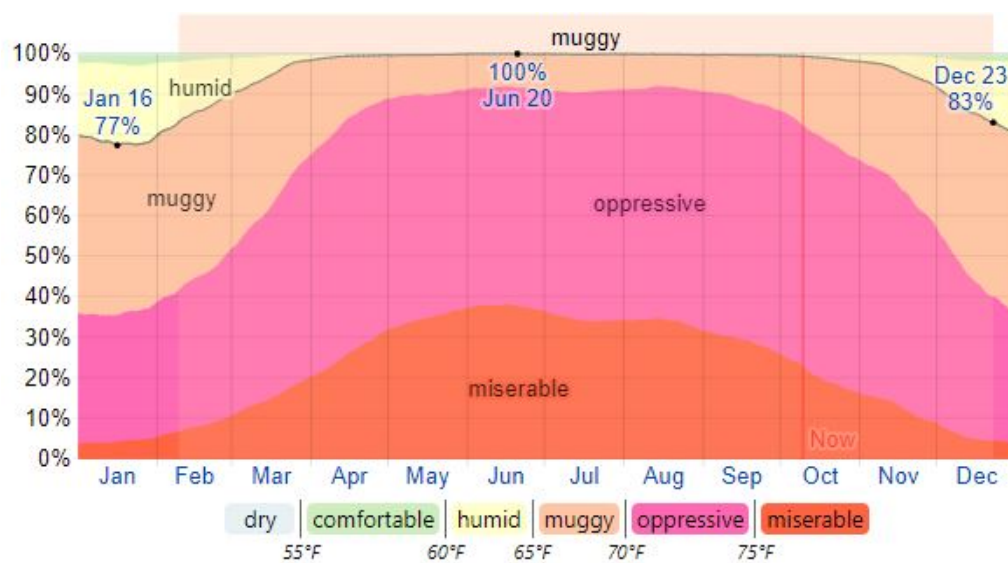


Figure 165. Tuguegarao humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Subtropical highland oceanic climate (Cwb)

Baguio City



Baguio City is known for its mild climate owing to its high elevation. The lowest recorded temperature is 6.3°C on January 18, 1961 and in contrast, the all-time high of 30.4°C is recorded on March 15, 1988 during the 1988 El Niño season. The temperature seldom exceeds 26°C even during the warmest part of the year. Like many other cities with a subtropical highland climate, Baguio receives noticeably less precipitation during its dry season. However, the city has an extraordinary amount of precipitation during the rainy season from June to October.



Region: **Cordillera Administrative Region (CAR)**
 Province: **Benguet (geographically only)**
 Altitude: **1457 m above sea level**
 Coordinates: **16°25'48"N 120°34'12"E**
 Climate: **Tropical**
 Rainfall: **Less rainfall in winter than in summer.**
 Avg. annual temp.: **19.3°C**
 Annual rainfall: **3148 mm**

Figure 166. Location within the Philippines

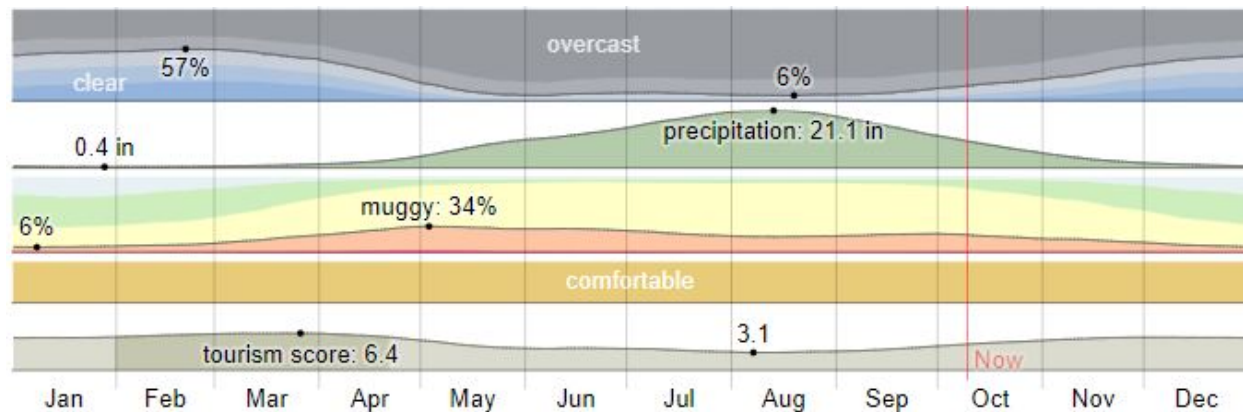


Figure 167. Baguio City climate summary [via Weatherspark.com]

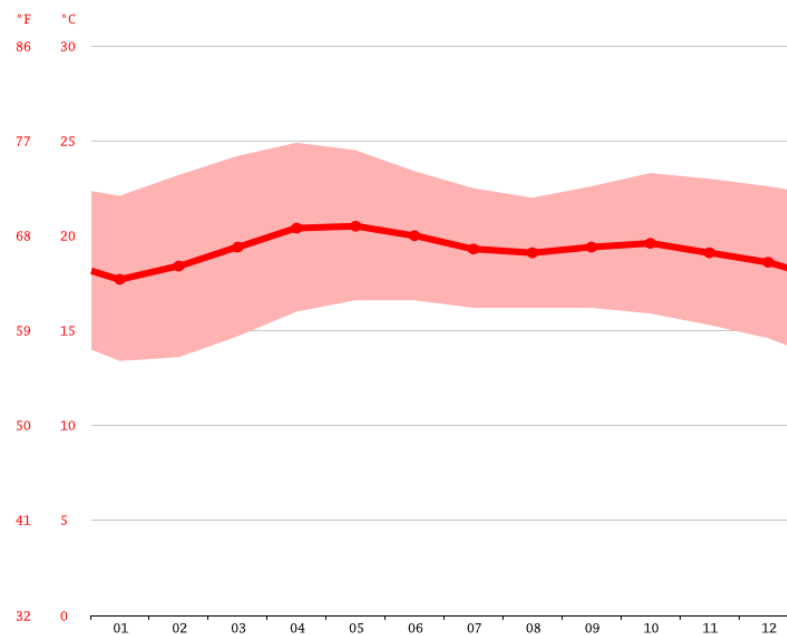
The difference in precipitation between the driest month and the wettest month is 758 mm. During the year, the average temperatures vary 2.8°C.

Table 22. Baguio weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	17.7	18.4	19.4	20.4	20.5	20.0	19.3	19.1	19.6	19.6	19.1	18.6
Min. Temperature (°C)	13.4	13.6	14.7	16.0	16.6	16.6	16.2	16.2	16.2	15.9	15.3	14.6
Max. Temperature (°C)	22.1	23.2	24.2	24.9	24.5	23.4	22.5	22.0	22.6	23.3	23.0	22.6
Precipitation/ Rainfall (mm)	11	10	33	94	253	419	528	768	569	319	116	28

Temperature

The warmest month of the year is May, with an average temperature of 20.5 °C. January has the lowest average temperature of the year. It is 17.7 °C.

**Figure 168. Baguio City average temperature [via Climate-data.org]**

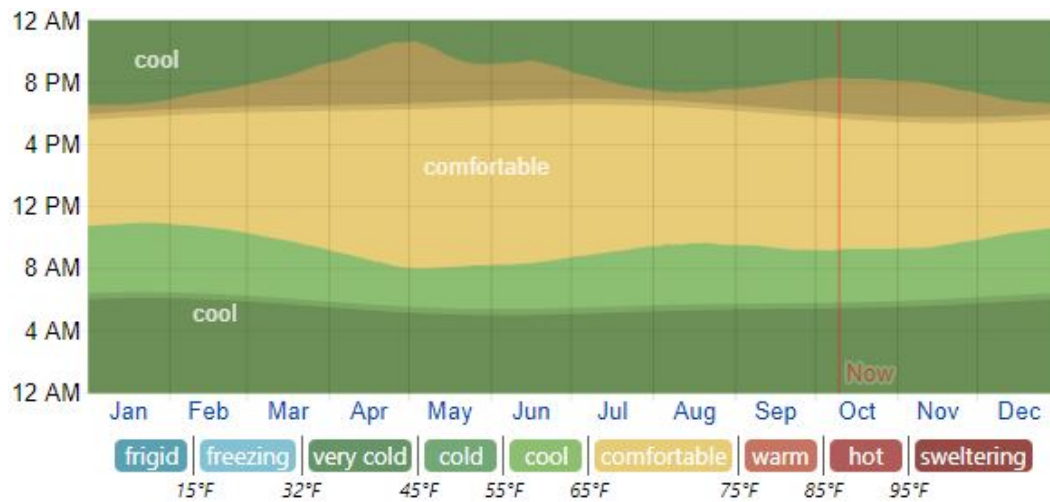


Figure 169. Baguio City average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Baguio City, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 9 minutes of daylight and the longest day is June 21, with 13 hours, 6 minutes of daylight.

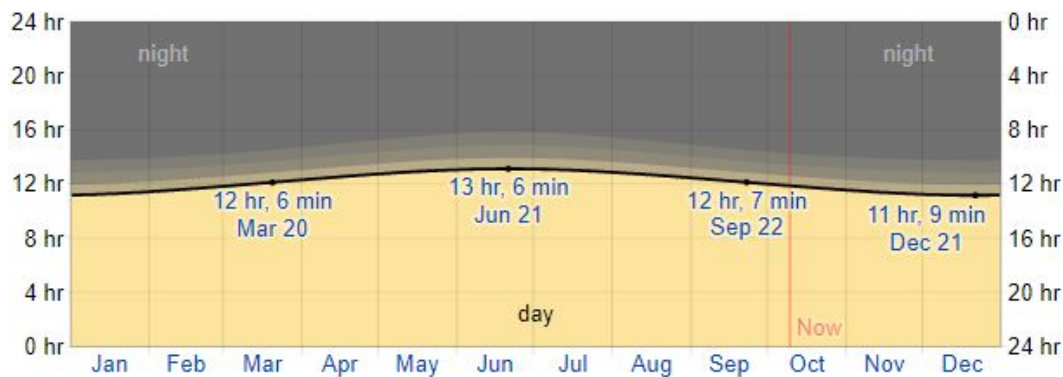


Figure 170. Baguio City hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:24 AM on June 3, and the latest sunrise is at 6:29 AM on January 22. The earliest sunset is at 5:22 PM on November 23, and the latest sunset is at 6:34 PM on July 7.

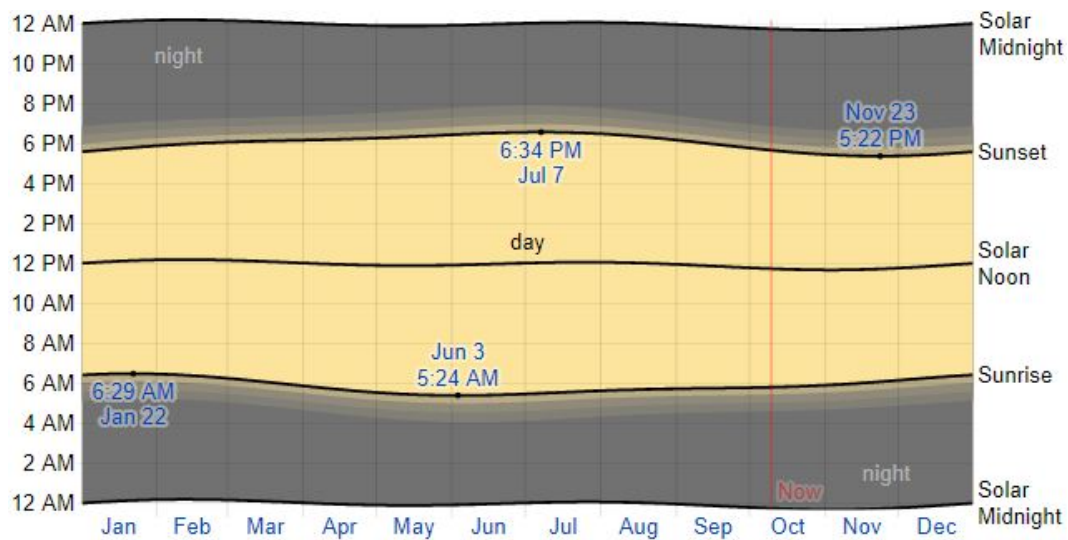


Figure 171. Baguio City sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Baguio City, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Baguio City begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

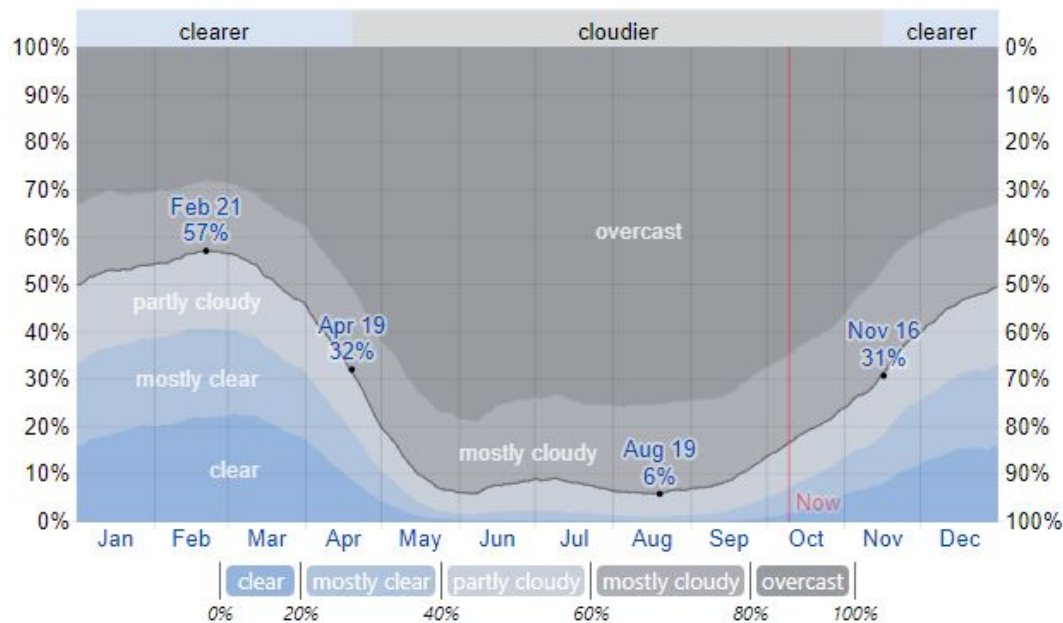


Figure 172. Baguio City cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Baguio City experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early June to mid-September, while the calmer time of the year lasts from mid-September to early June.

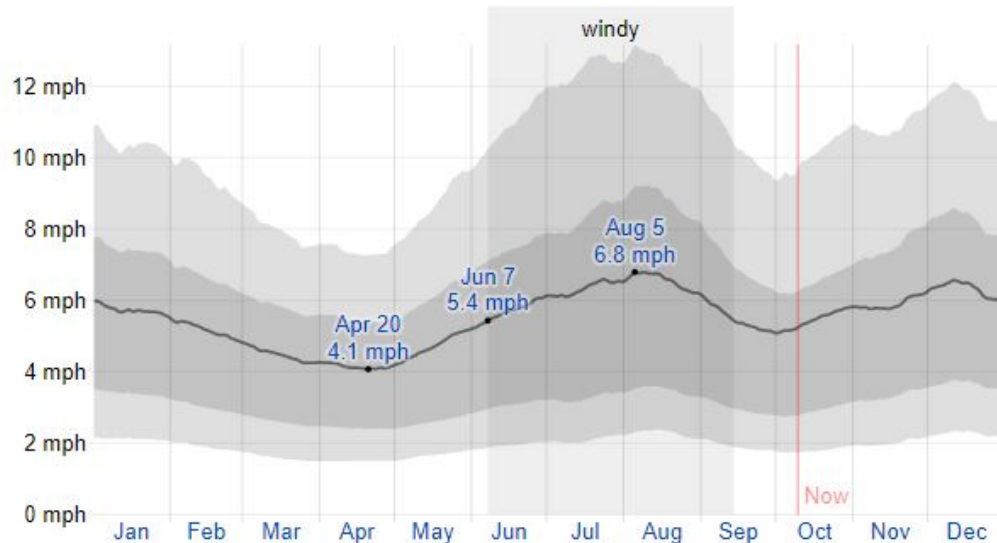


Figure 173. Baguio City average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during early May to early June and from early July to late September; from the south from early June to mid-July; and from the east from late September to early May.

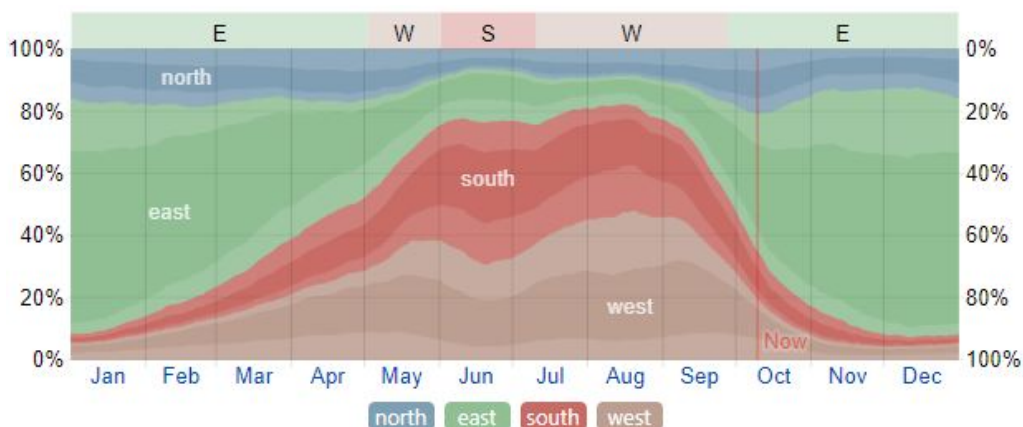


Figure 174. Baguio City wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The driest month is February, with 10 mm of rainfall. With an average of 768 mm, the most precipitation falls in August.

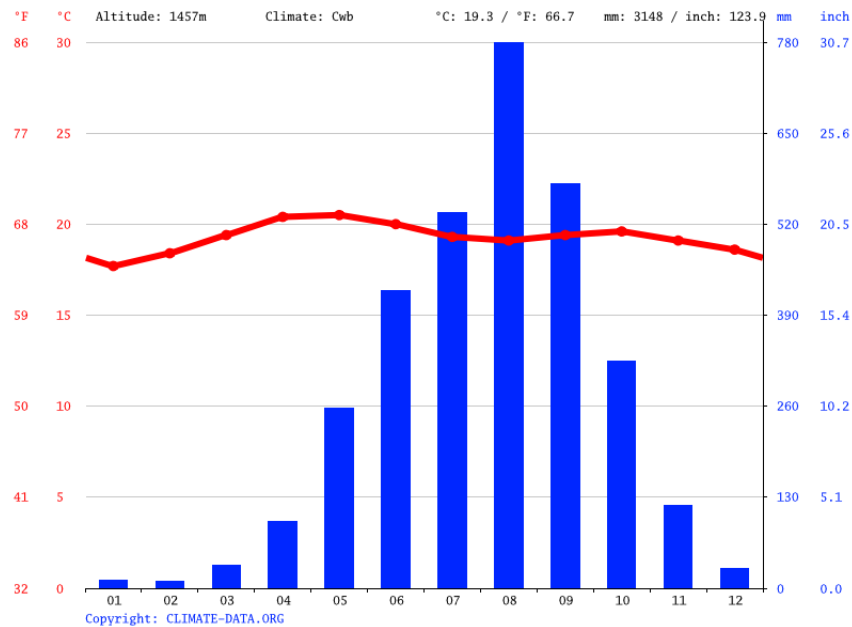


Figure 175. Baguio climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Baguio City varies significantly throughout the year.

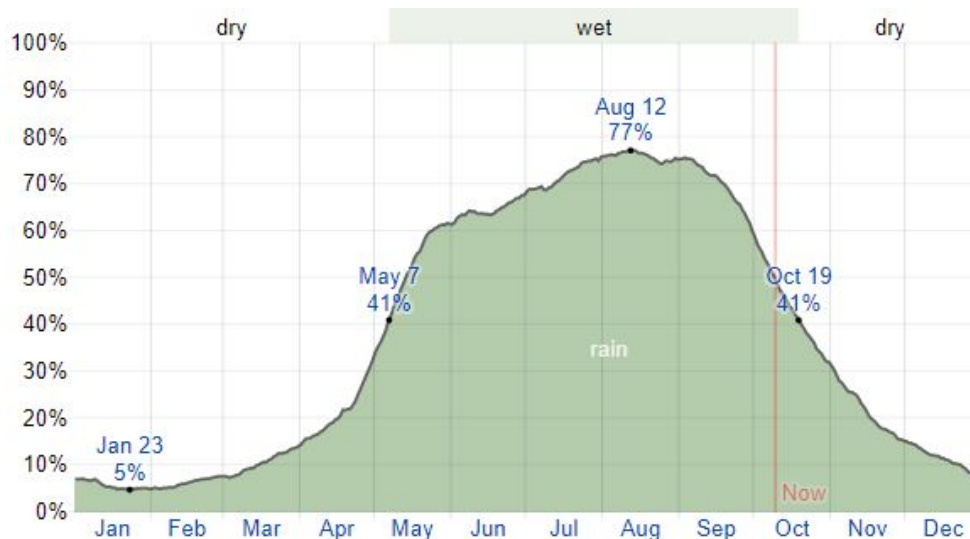


Figure 176. Baguio City daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

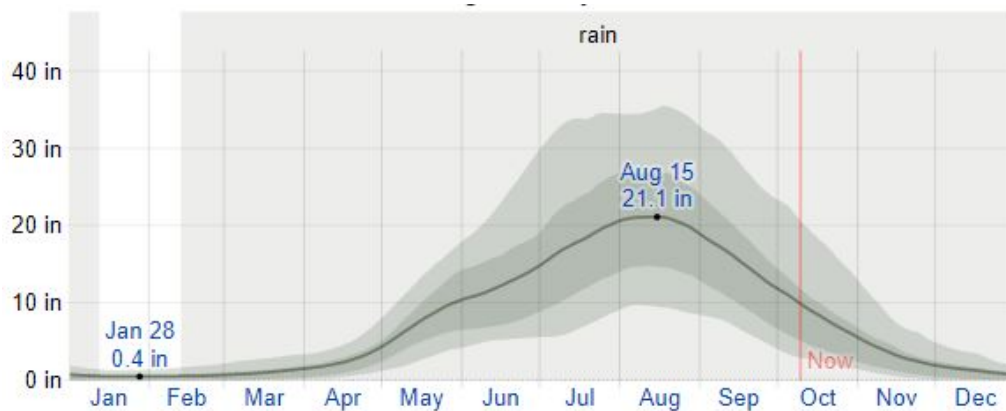


Figure 177. Baguio City average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Baguio City experiences some seasonal variation in the perceived humidity. The muggier period of the year lasts from early March to late November, during which time the comfort level is muggy, oppressive, or miserable at least 13% of the time.

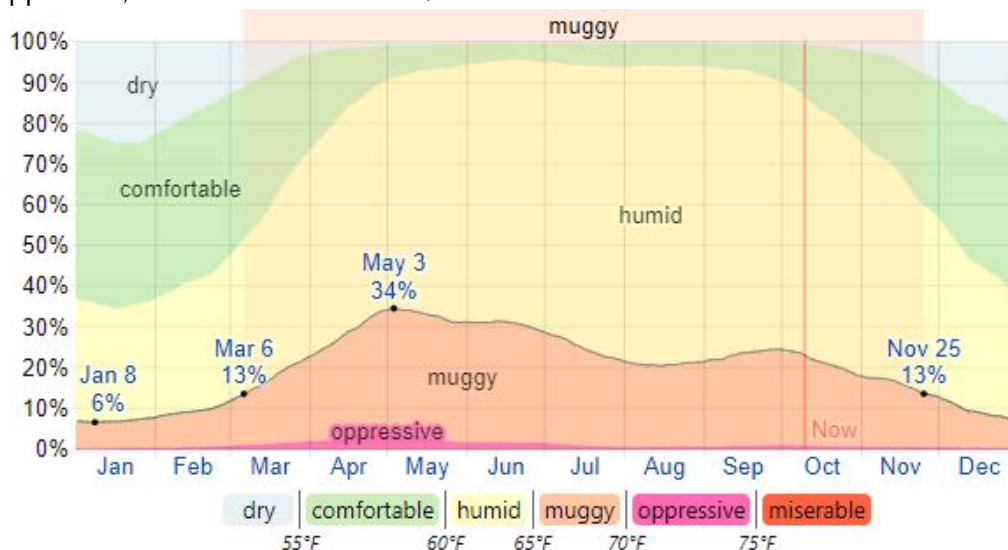


Figure 178. Baguio City humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

La Trinidad



The municipality of La Trinidad is located in and is the capital of the province of Benguet. The wet season is overcast, the dry season is partly cloudy, and it is comfortable year round. Over the course of the year, the temperature typically varies from 13.3°C to 23.9°C and is rarely below 11°C or above 26°C. The best time of year to visit La Trinidad for warm-weather activities is from late January to late April.



Region: **Cordillera Administrative Region (CAR)**
 Province: **Benguet**
 Altitude: **1267 m above sea level**
 Coordinates: **16°28'N 120°35'E**
 Climate: **Tropical**
 Rainfall: **Significant rainfall in most months of the year.**
 Avg. annual temp.: **20.0°C**
 Annual rainfall: **2836 mm**

Figure 179. Location within the Philippines

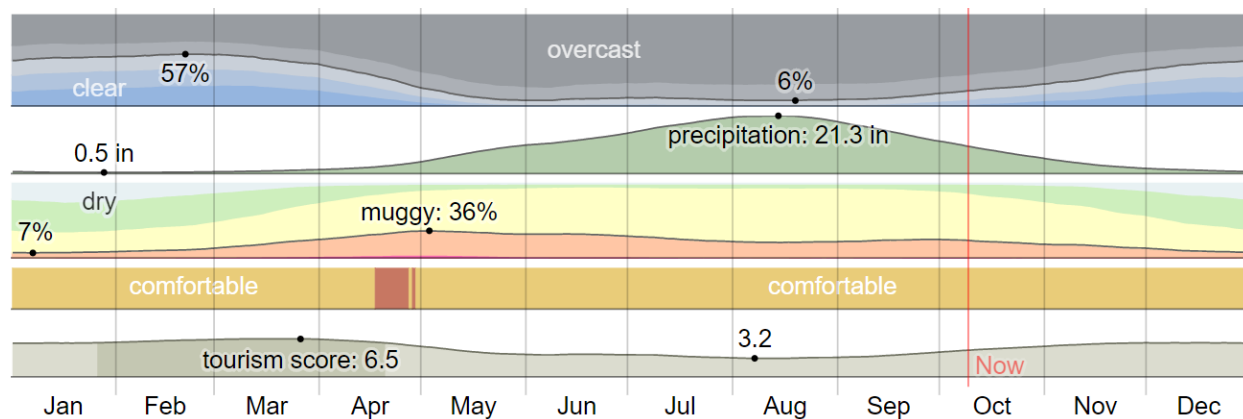


Figure 180. La Trinidad Climate Summary [via Weatherspark.com]

Table 23. La Trinidad weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	18.4	18.9	20.1	21.2	21.3	20.7	20.0	19.7	20.1	20.2	19.8	19.2
Min. Temperature (°C)	14.0	14.1	15.3	16.6	17.3	17.2	16.8	16.8	16.8	16.5	15.9	15.1
Max. Temperature (°C)	22.9	23.8	25.0	25.8	25.4	24.2	23.3	22.7	23.4	24.0	23.7	23.3
Precipitation/Rainfall (mm)	9	9	34	92	229	388	404	739	514	278	113	27

The difference in precipitation between the driest month and the wettest month is 730 mm. During the year, the average temperatures vary 2.9°C.

Temperature

The warmest month of the year is May, with an average temperature of 21.3 °C. January has the lowest average temperature of the year. It is 18.4°C.

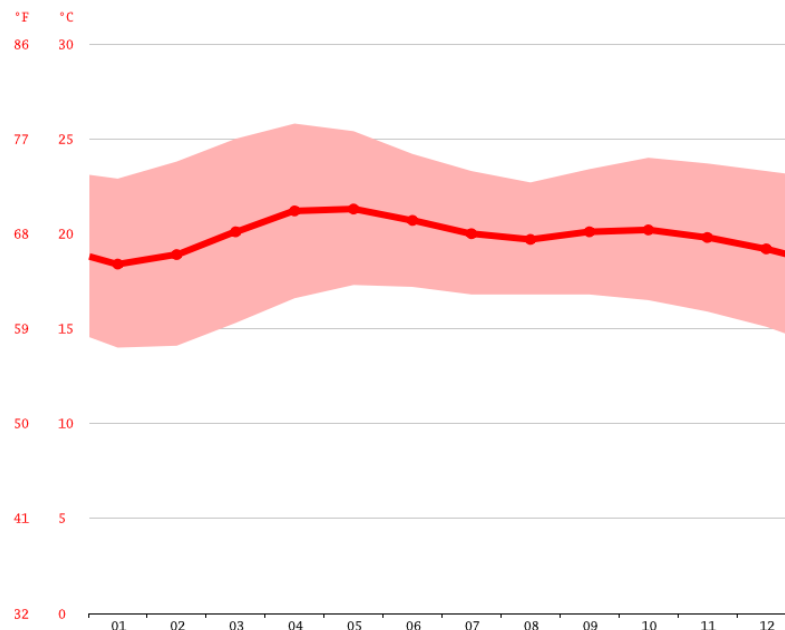


Figure 181. La Trinidad average temperature [via Climate-data.org]

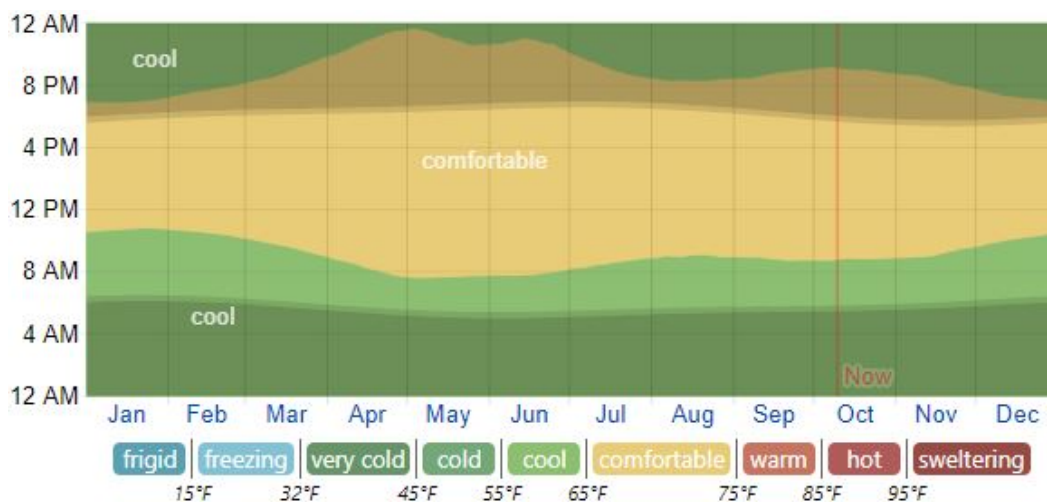


Figure 182. La Trinidad average hourly temperature [via Weatherspark.com]

Sun

La Trinidad's length of the day varies over the course of the year. The shortest day is December 21, with 11 hours, 9 minutes of daylight. The longest day is June 21, with 13 hours, 7 minutes of daylight.

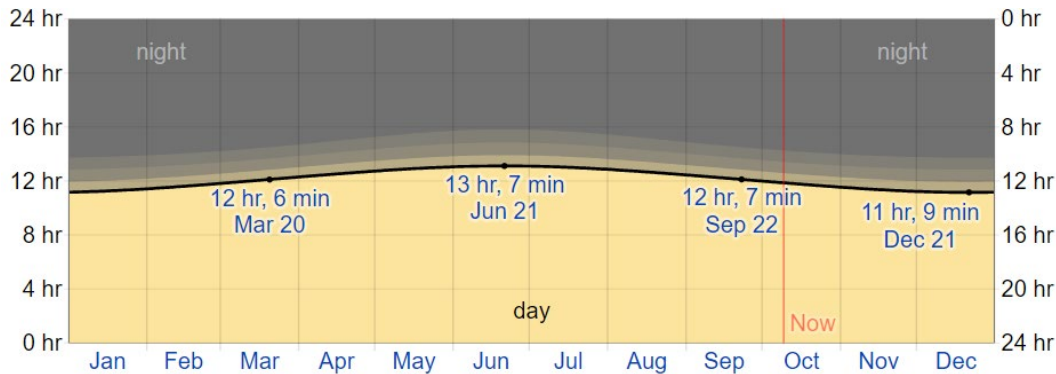


Figure 183. La Trinidad hours of daylight and twilight

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:24 AM on June 3, and the latest sunrise is at 6:29 AM on January 21. The earliest sunset is at 5:22 PM on November 22, and the latest sunset is at 6:34 PM on July 7.

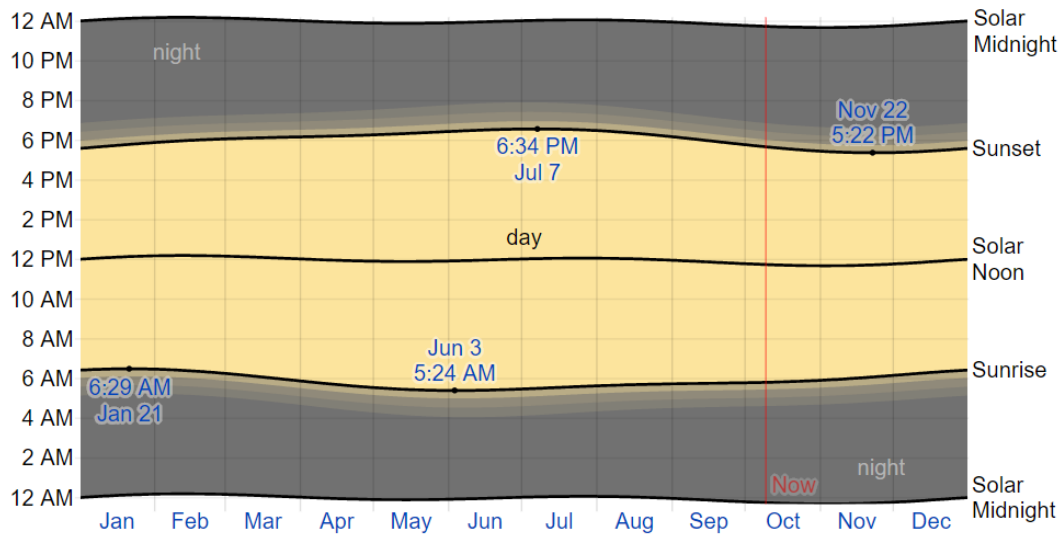


Figure 184. La Trinidad sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

La Trinidad experiences seasonal variation over the course of the year. The clearer sky coverage part of the year begins mid-November and lasts until mid-April. The cloudier part of the year begins mid-April and ends mid-November.

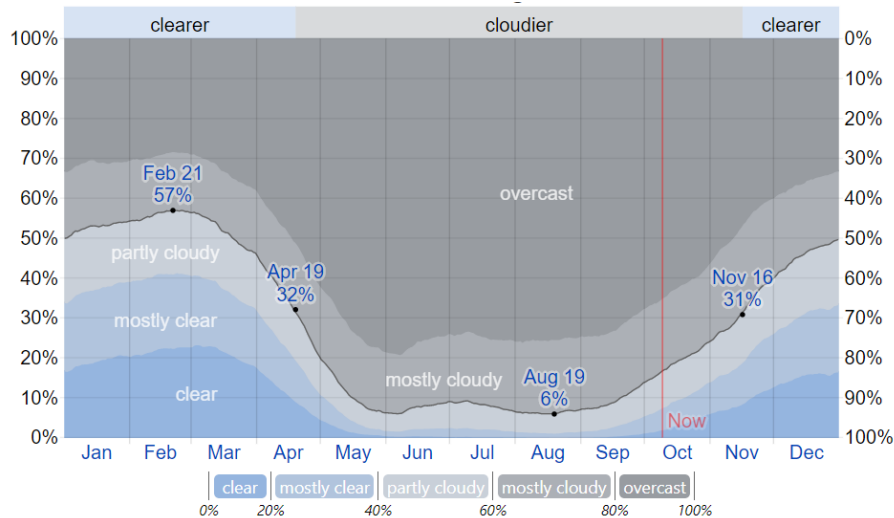


Figure 185. La Trinidad cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Precipitation

The driest month is January, with 9 mm of rainfall. With an average of 739 mm, the most precipitation falls in August.

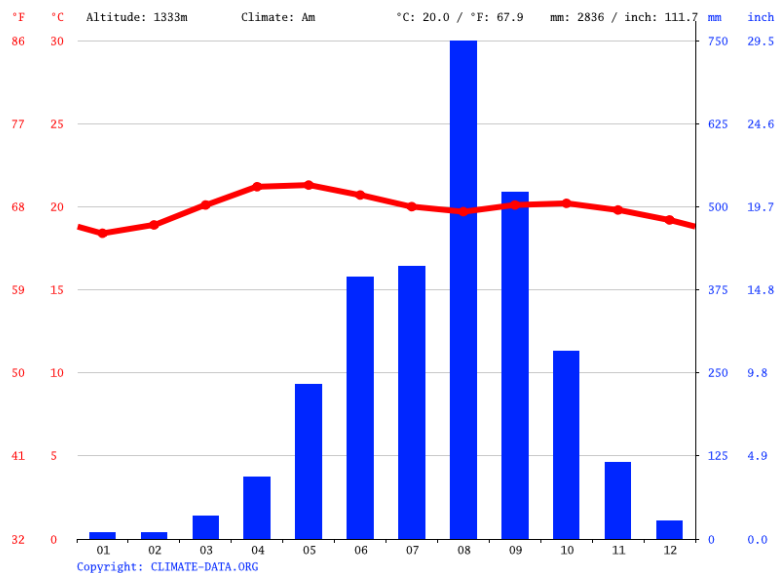


Figure 186. La Trinidad climate graph (Weather by month) [via Climate-data.org]

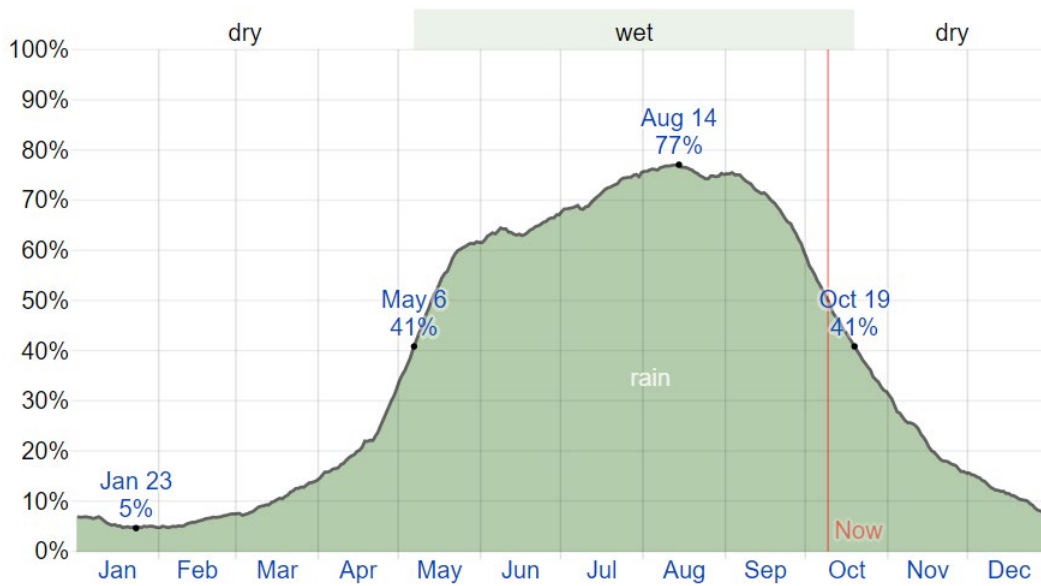


Figure 187. La Trinidad daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

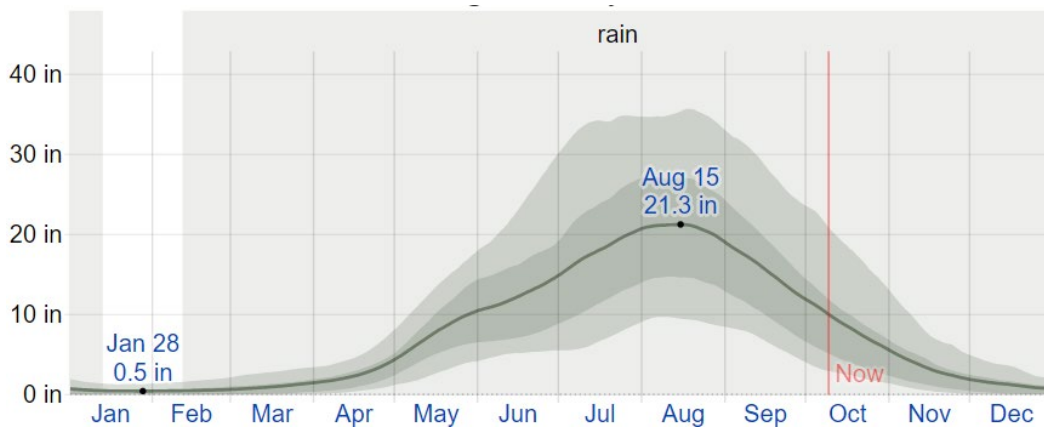


Figure 188. La Trinidad average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Diadi



In Diadi, summers are short, hot, oppressive, and overcast; the winters are short, comfortable, muggy, and partly cloudy; and it is wet year round. Over the course of the year, the temperature typically varies from 18.3°C to 32.8°C and is rarely below 16°C or above 36°C. The best time of year to visit Diadi for warm-weather activities is from mid-December to late March.



Region: **Cagayan Valley (Region II)**
 Province: **Nueva Vizcaya**
 Altitude: **1397 m above sea level**
 Coordinates: **16°38'N 121°21'E**
 Climate: **warm and temperate**
 Rainfall: **Summers have significant rainfall, while the winters have very little.**

Figure 189. Location within the Philippines

Avg. annual temp.: **19.6°C**
 Annual rainfall: **2538 mm**

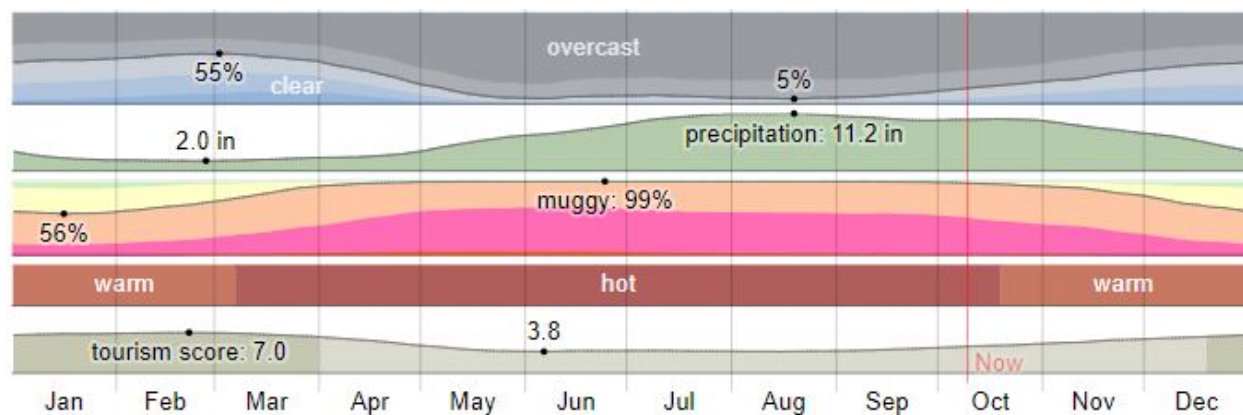


Figure 190. Diadi climate summary [via Weatherspark.com]

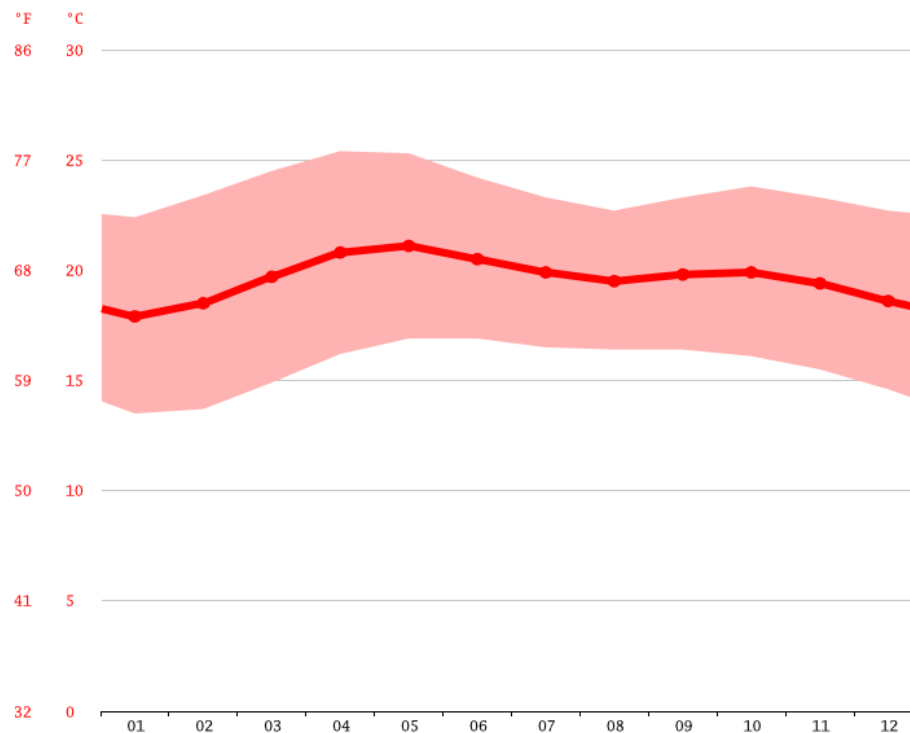
The difference in precipitation between the driest month and the wettest month is 485 mm. During the year, the average temperatures vary 3.2°C.

Table 24. Diadi weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	17.9	18.5	19.7	20.8	21.1	20.5	19.9	19.5	19.8	19.9	19.4	18.6
Min. Temperature (°C)	13.5	13.7	14.9	16.2	16.9	16.9	16.5	16.4	16.4	16.1	15.5	14.6
Max. Temperature (°C)	22.4	23.4	24.5	25.4	25.3	24.2	23.3	22.7	23.3	23.8	23.3	22.7
Precipitation/Rainfall (mm)	29	21	63	119	213	259	403	506	374	265	212	74

Temperature

The temperatures are highest on average in May, at around 21.1°C. January is the coldest month, with temperatures averaging 17.9°C.

**Figure 191. Diadi average temperature [via Climate-data.org]**

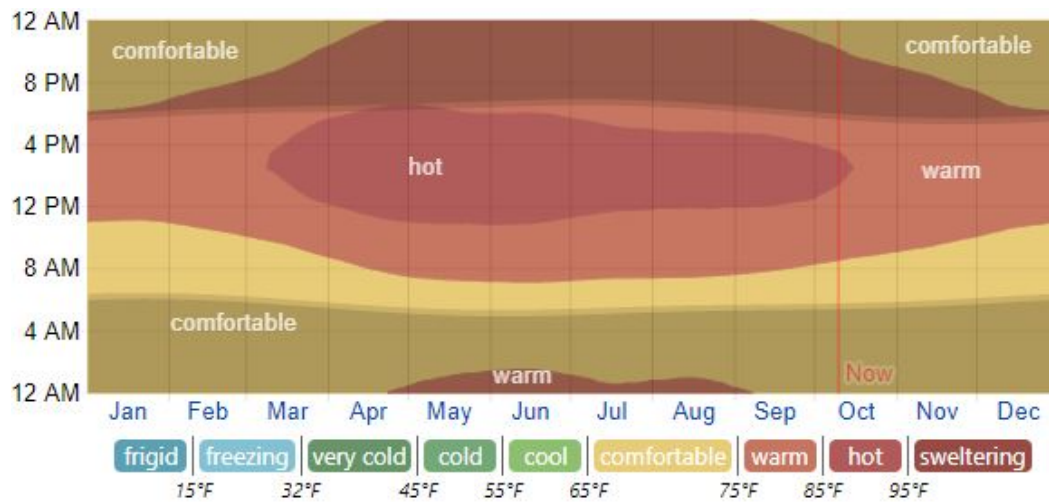


Figure 192. Diadi average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Diadi, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 8 minutes of daylight and the longest day is June 21, with 13 hours, 8 minutes of daylight.

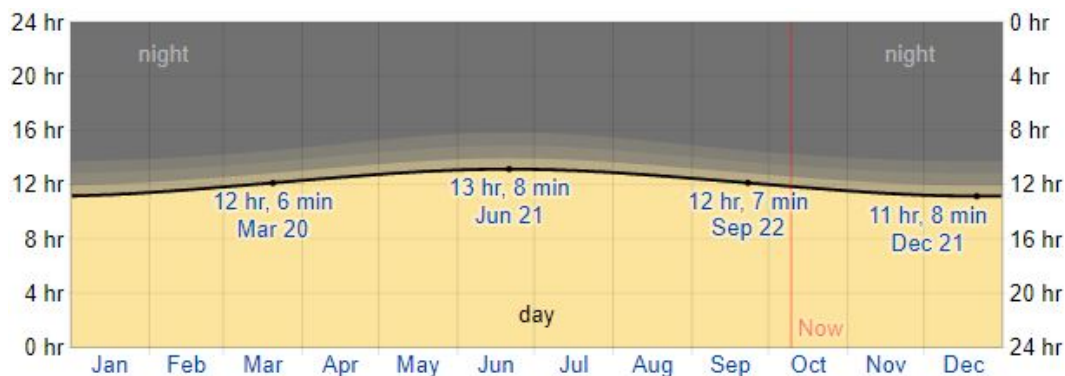


Figure 193. Diadi hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:20 AM on June 4, and the latest sunrise is at 6:27 AM on January 21. The earliest sunset is at 5:19 PM on November 22, and the latest sunset is at 6:31 PM on July 7.

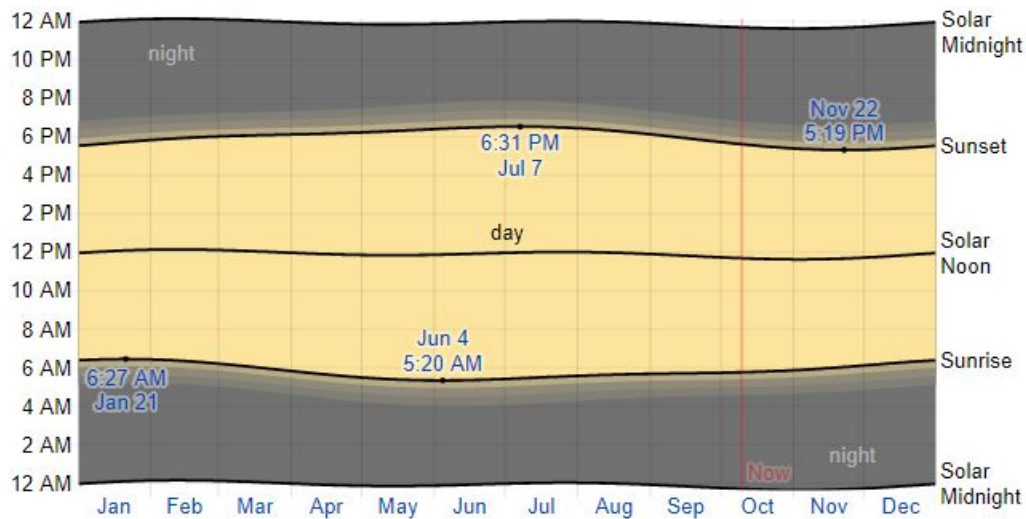


Figure 194. Diadi sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Diadi, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Diadi begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

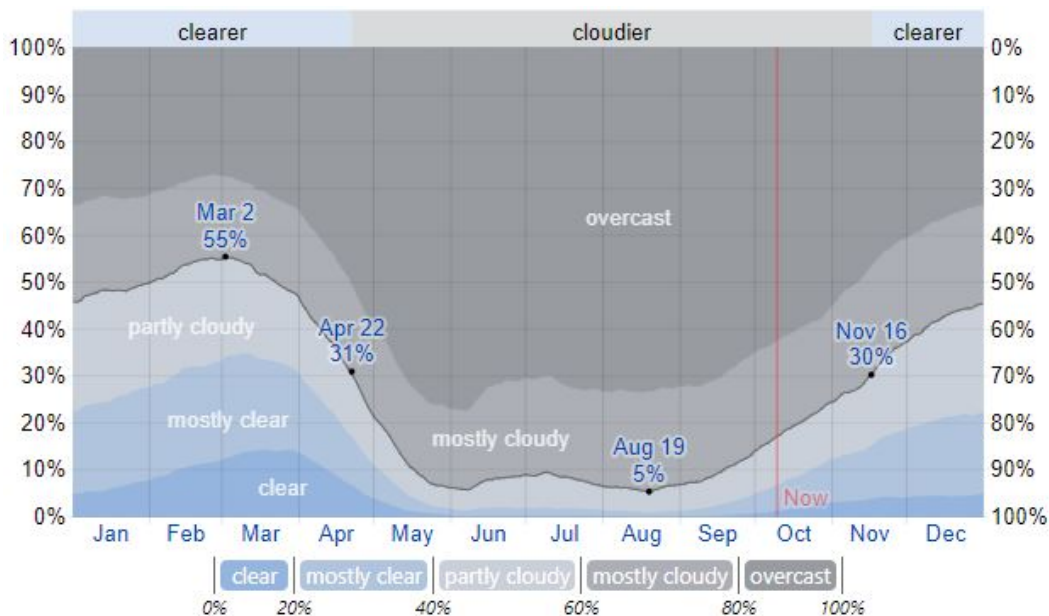


Figure 195. Diadi cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Diadi experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early October to mid-February, while the calmer time of the year lasts from mid-February to early October.

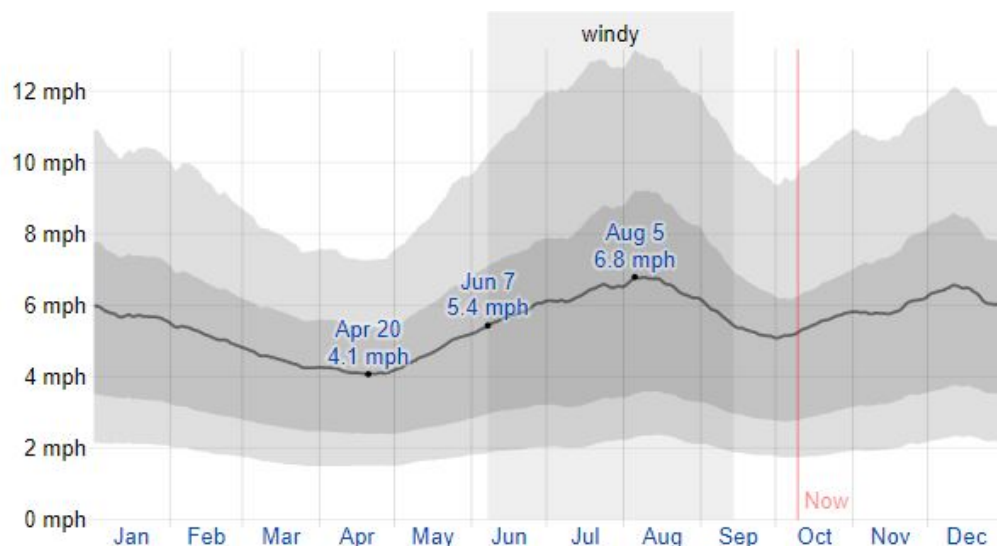


Figure 196. Diadi average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the south during late May to early July; from the east from early July to late-July and from early September to late May; and from the west from late July to early September.

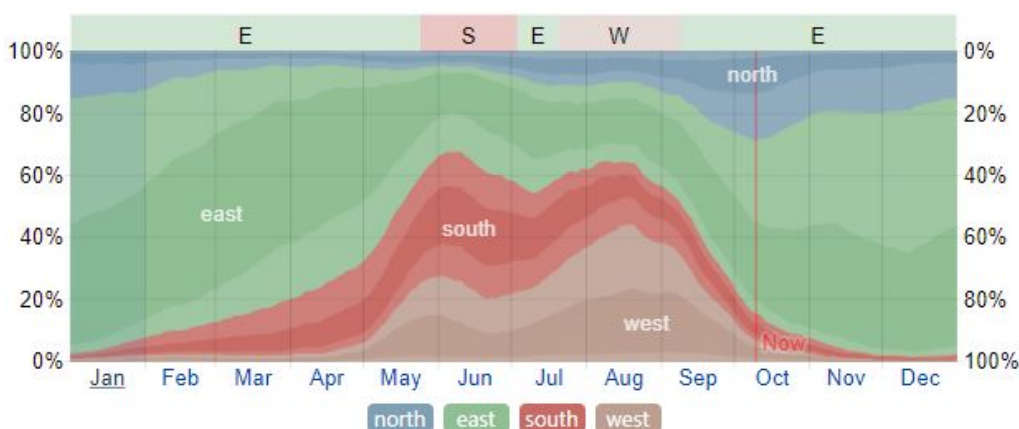


Figure 197. Diadi wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The least amount of rainfall occurs in February, with an average of 21 mm. Most of the precipitation here falls in August, averaging 506 mm.

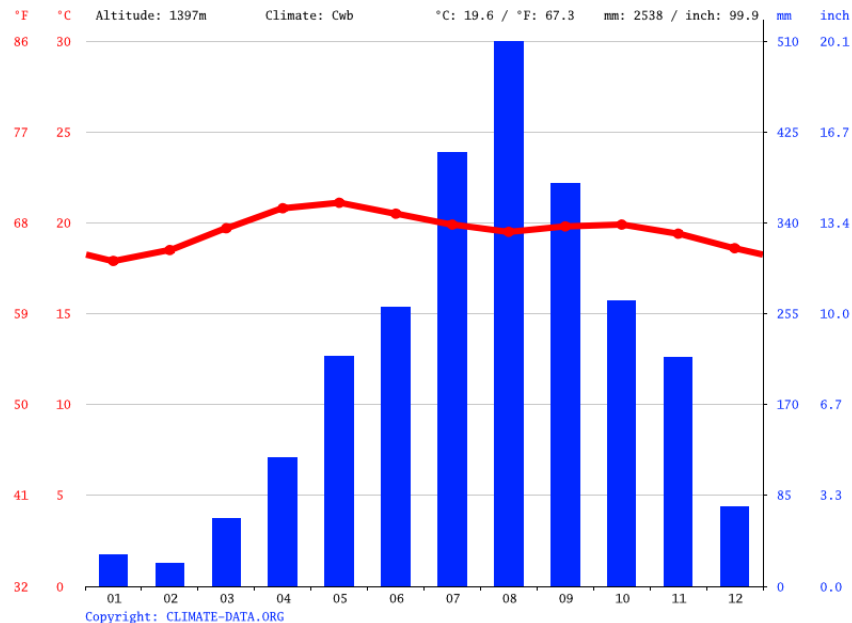


Figure 198. Diadi climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Diadi varies significantly throughout the year.

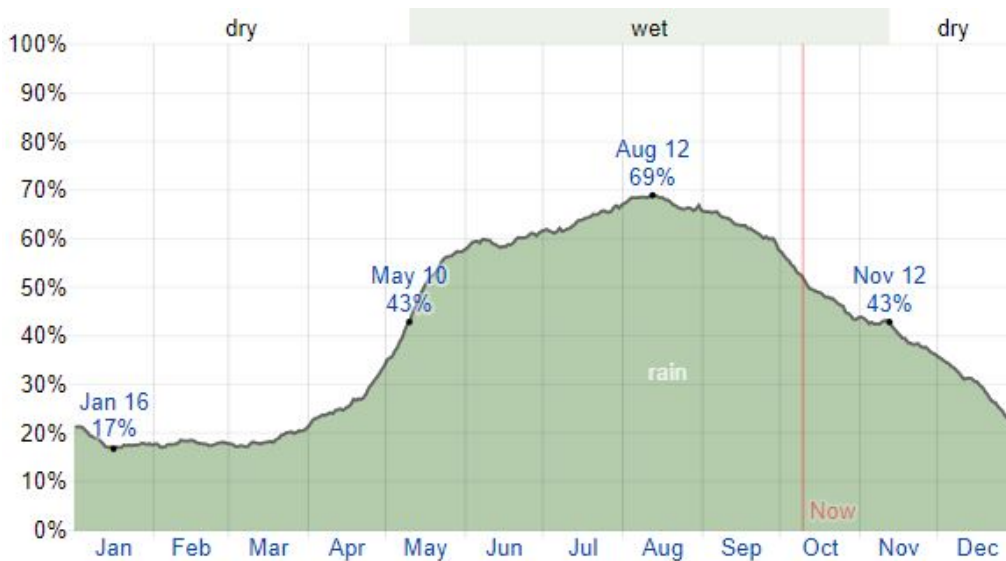


Figure 199. Diadi daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

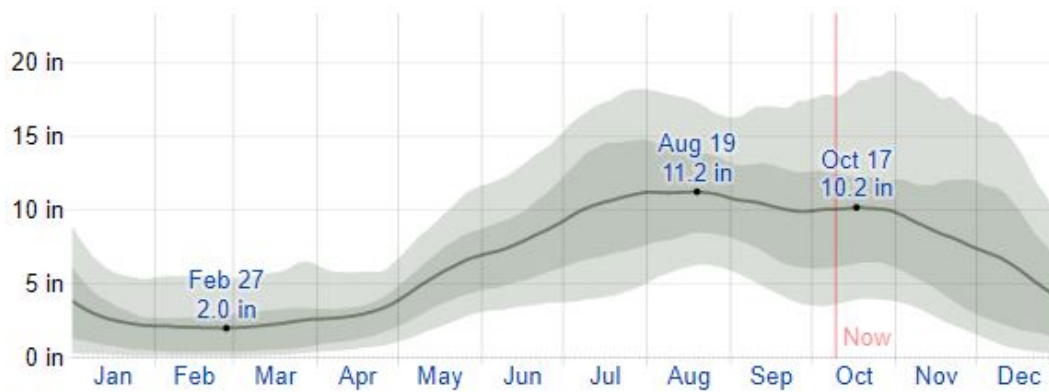


Figure 200. Diadi average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Diadi experiences significant seasonal variation in the perceived humidity. The muggier period of the year lasts from late February to mid-December, during which time the comfort level is muggy, oppressive, or miserable at least 67% of the time.

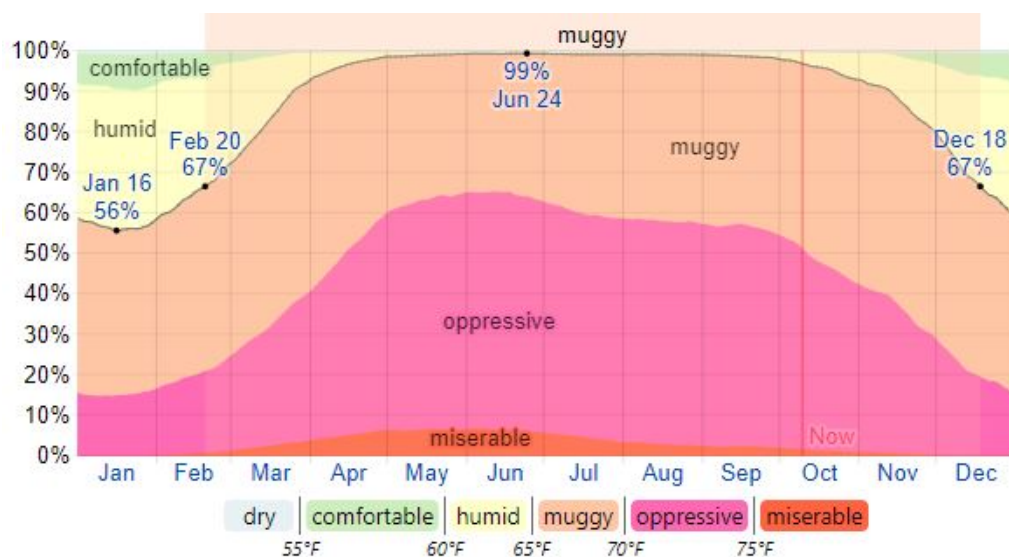


Figure 201. Diadi humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Sagada



In Sagada, the wet season is humid and overcast, the dry season is partly cloudy, and it is comfortable year round. Over the course of the year, the temperature typically varies from 12.7°C to 24.4°C and is rarely below 10°C or above 26°C. The best time of year to visit Sagada for warm-weather activities is from mid-February to late April.



Figure 202. Location within the Philippines

Region: **Cordillera Administrative Region (CAR)**
 Province: **Mountain Province**
 Altitude: **1504 m above sea level**
 Coordinates: **17°05'N 120°54'E**
 Climate: **mild, and generally warm and temperate**
 Rainfall: **Less rainfall in winter than in summer**

Avg. annual temp.: **19.0°C**

Annual rainfall: **3004 mm**

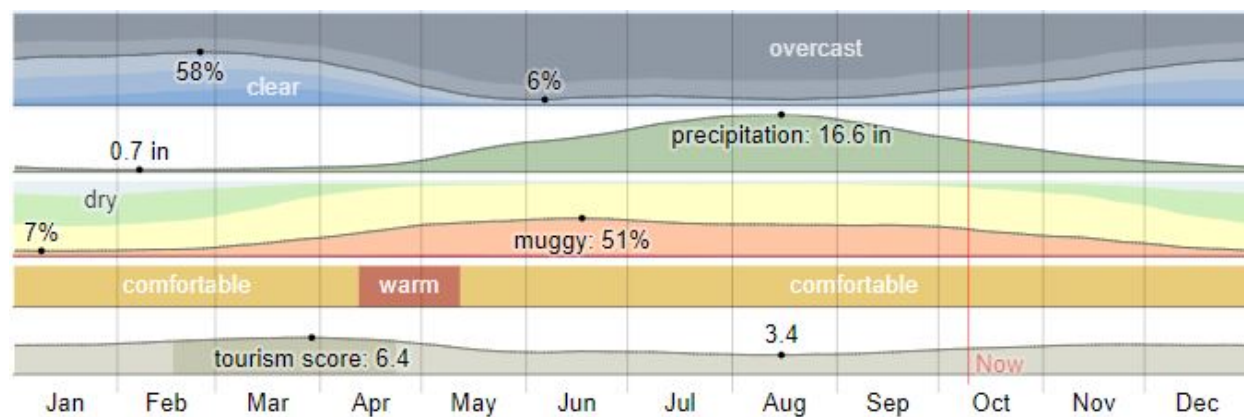


Figure 203. Sagada climate summary [via Weatherspark.com]

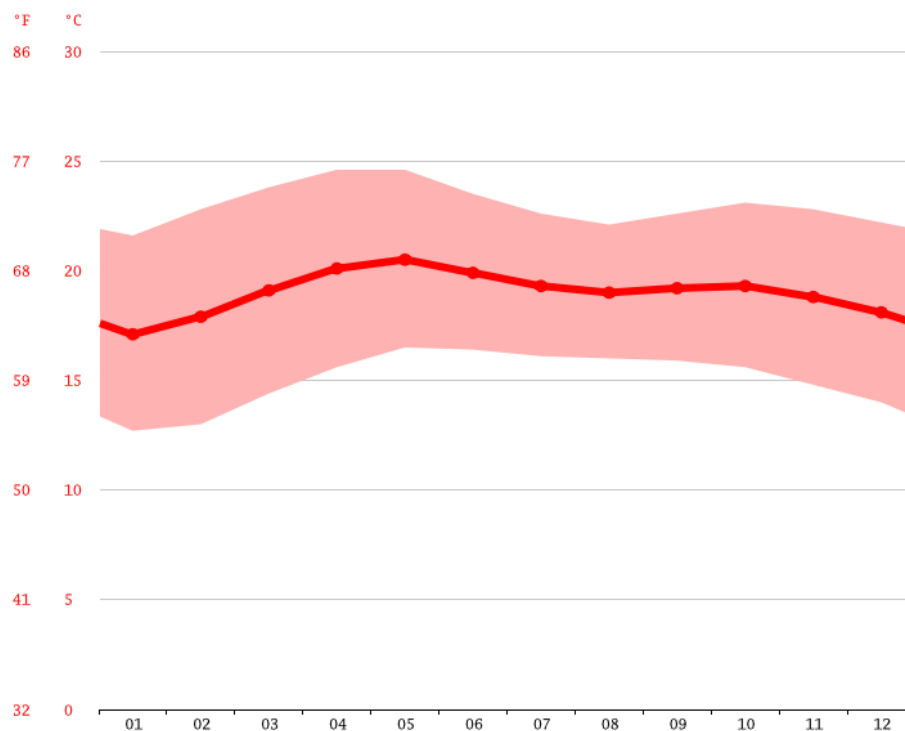
The difference in precipitation between the driest month and the wettest month is 487 mm. During the year, the average temperatures vary 3.4°C.

Table 25. Sagada weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	17.1	17.9	19.1	20.1	20.5	19.9	19.3	19.0	19.2	19.3	18.8	18.1
Min. Temperature (°C)	12.7	13.0	14.4	15.6	16.5	16.4	16.1	16.0	15.9	15.6	14.8	14.0
Max. Temperature (°C)	21.6	22.8	23.8	24.6	24.6	23.5	22.6	22.1	22.6	23.1	22.8	22.2
Precipitation/ Rainfall (mm)	61	39	85	154	299	35	389	526	39	283	296	132

Temperature

The temperatures are highest on average in May, at around 20.5°C. January is the coldest month, with temperatures averaging 17.1°C.

*Figure 204. Sagada average temperature [via Climate-data.org]*

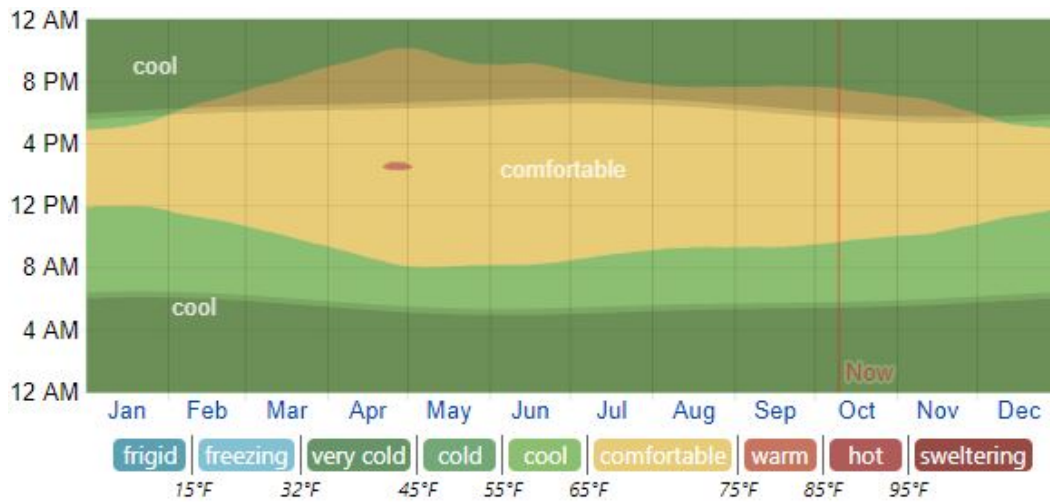


Figure 205. Sagada average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Sagada, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 7 minutes of daylight and the longest day is June 21, with 13 hours, 9 minutes of daylight.

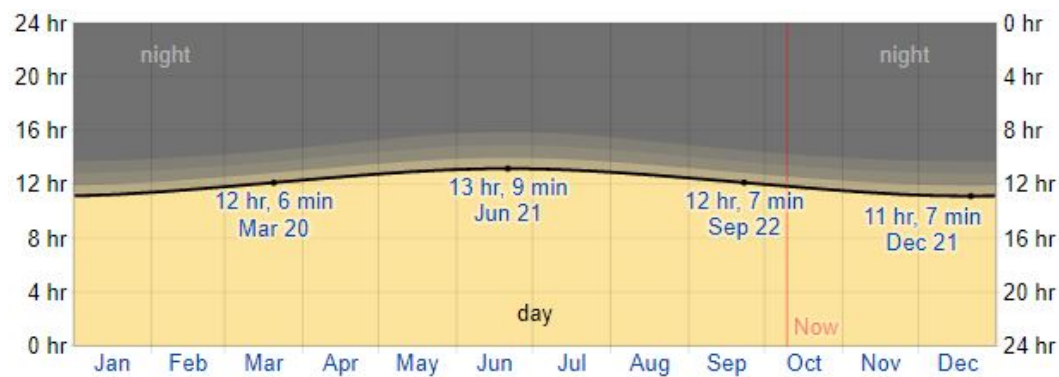


Figure 206. Sagada hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night).

The earliest sunrise is at 5:21 AM on June 4, and the latest sunrise is at 6:29 AM on January 20. The earliest sunset is at 5:20 PM on November 22, and the latest sunset is at 6:34 PM on July 7.

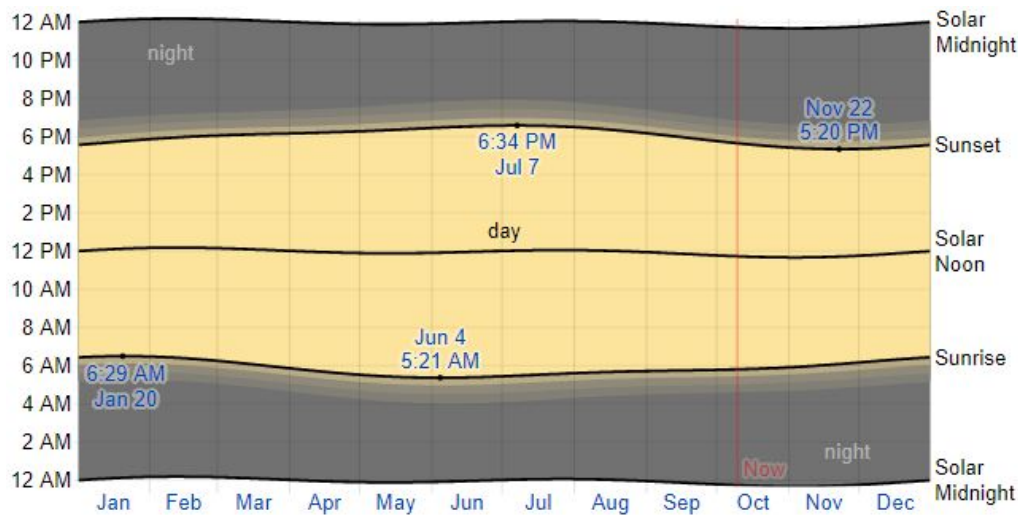


Figure 207. Sagada sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Sagada, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Sagada begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

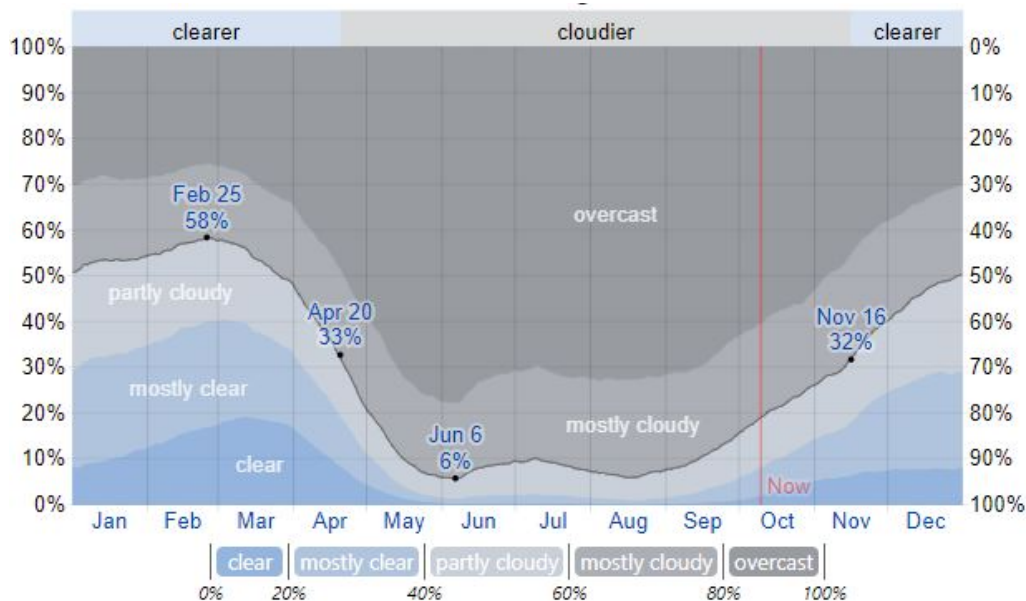


Figure 208. Sagada cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Sagada experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early October to early February, while the calmer time of the year lasts from early February to early October.

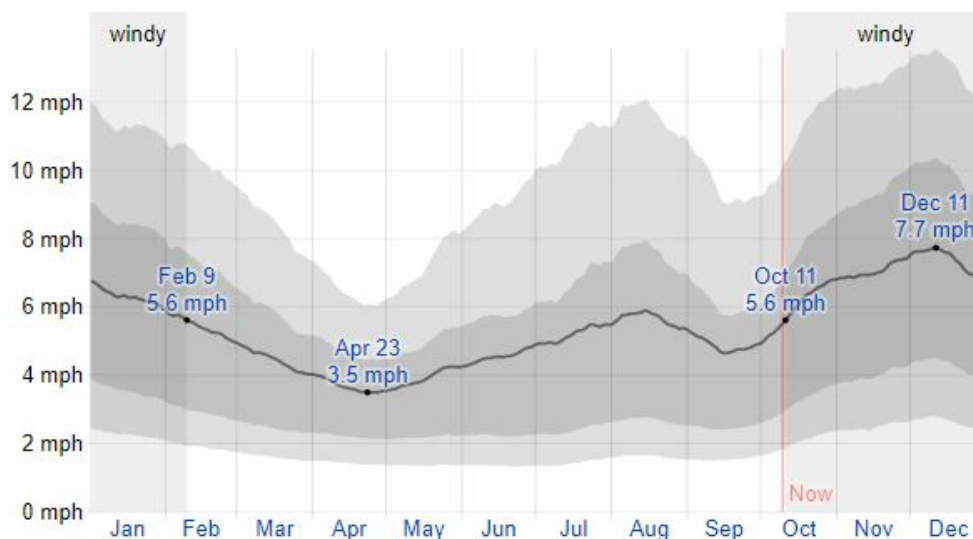


Figure 209. Sagada average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during early May to early June and from early July to mid-September; from the south from early June to mid-July; and from the east from mid-September to mid-May.

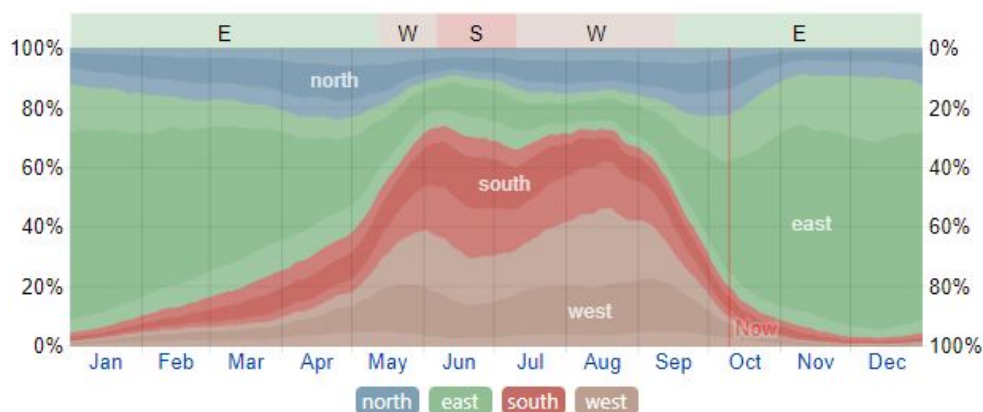


Figure 210. Sagada wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The least amount of rainfall occurs in February, with an average of 39 mm. Most of the precipitation here falls in August, averaging 526 mm.

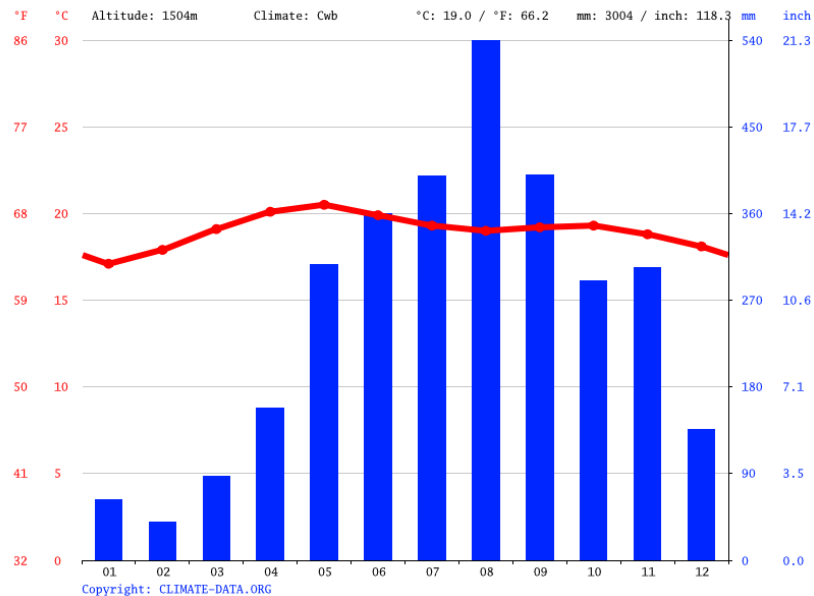


Figure 211. Sagada climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Sagada varies significantly throughout the year.



Figure 212. Sagada daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

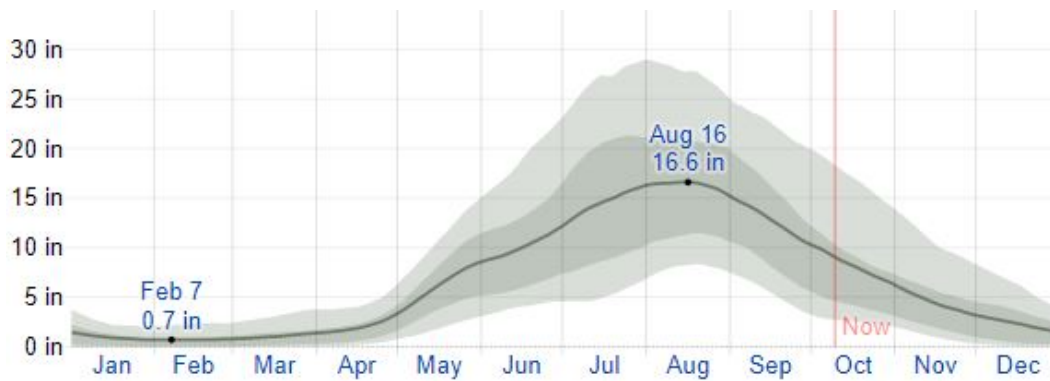


Figure 213. Sagada average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Sagada experiences significant seasonal variation in the perceived humidity. The muggier period of the year lasts from mid-March to late November, during which time the comfort level is muggy, oppressive, or miserable at least 18% of the time.

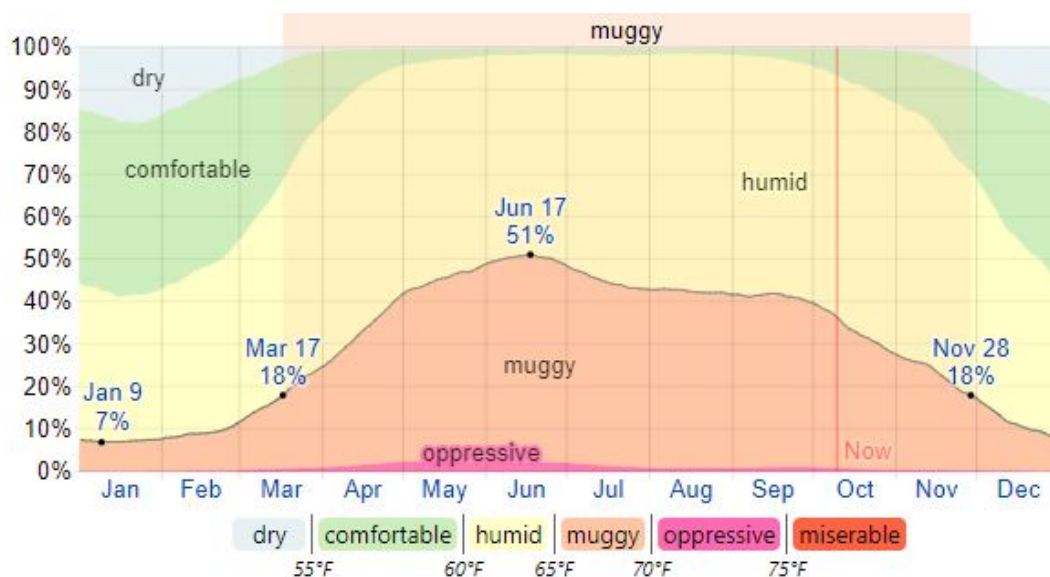


Figure 214. Sagada humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Oceanic climate (Cfb)

Dagdag



Dagdag, formerly Poblacion, is a barangay in the municipality of Sagada, in Mountain Province. In Dagdag, the wet season is humid and overcast, the dry season is partly cloudy, and it is comfortable year round. Over the course of the year, the temperature typically varies from 12.7°C to 24.4°C and is rarely below 10°C or above 26°C. The best time of year to visit Dagdag for warm-weather activities is from mid-February to late April.



Figure 215. Location within the Philippines

Region: **Cordillera Administrative Region (CAR)**
 Province: **Mountain Province**
 Altitude: **1499 m above sea level**
 Coordinates: **17° 4'N 120°54'E**
 Climate: **mild, and generally warm and temperate**
 Rainfall: **Summers have more rainfall**
 Avg. annual temp.: **19.0°C**
 Annual rainfall: **2974 mm**

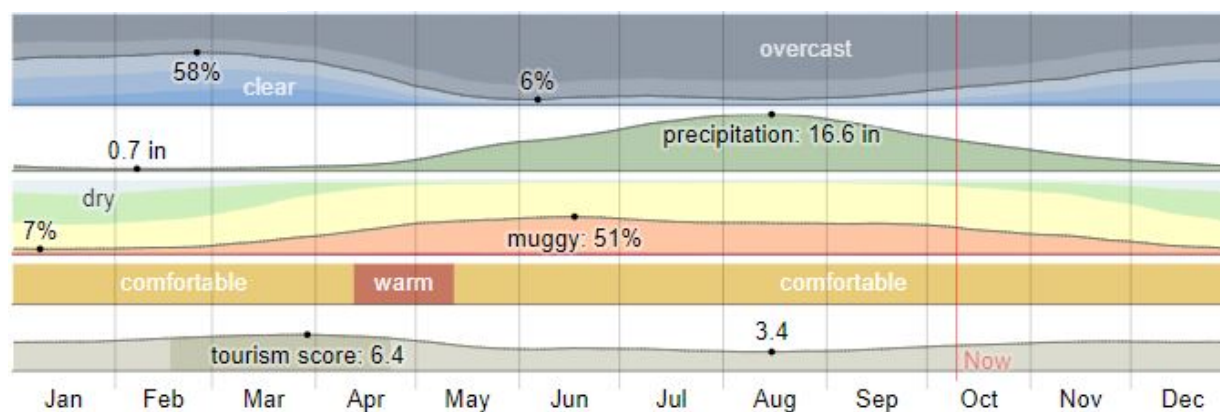


Figure 216. Dagdag climate summary [via Weatherspark.com]

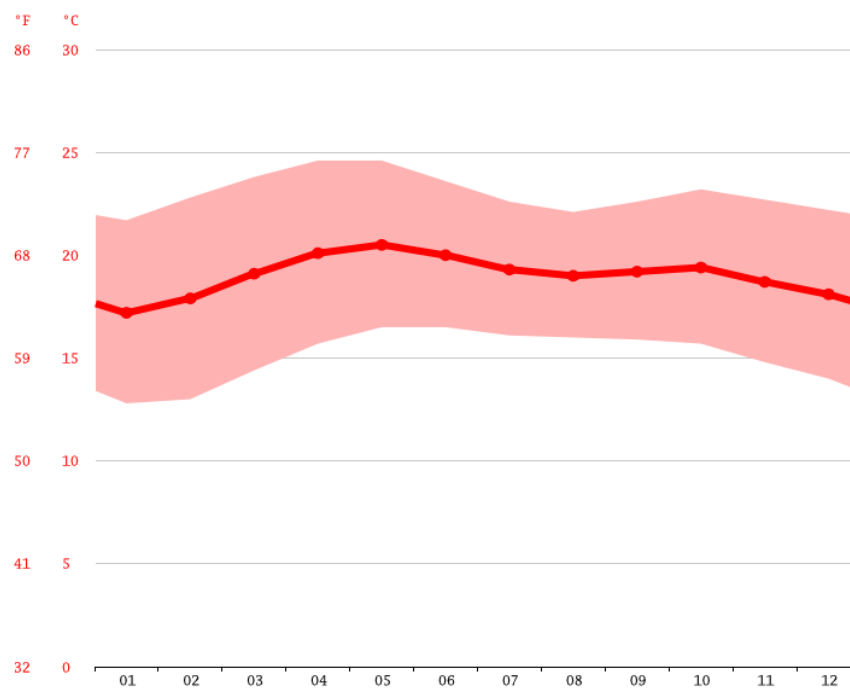
The difference in precipitation between the driest month and the wettest month is 489 mm. During the year, the average temperatures vary 3.3°C.

Table 26. Dagdag weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	17.2	17.9	19.1	20.1	20.5	20.0	19.3	19.0	19.2	19.4	18.7	18.1
Min. Temperature (°C)	12.8	13.0	14.4	15.7	16.5	16.5	16.1	16.0	15.9	15.7	14.8	14.0
Max. Temperature (°C)	21.7	22.8	23.8	24.6	24.6	23.5	22.6	22.1	22.6	23.2	22.7	22.2
Precipitation/Rainfall (mm)	59	38	83	153	296	347	385	527	389	279	290	128

Temperature

The temperatures are highest on average in May, at around 20.5°C. January is the coldest month, with temperatures averaging 17.1°C.

**Figure 217. Dagdag average temperature [via Climate-data.org]**

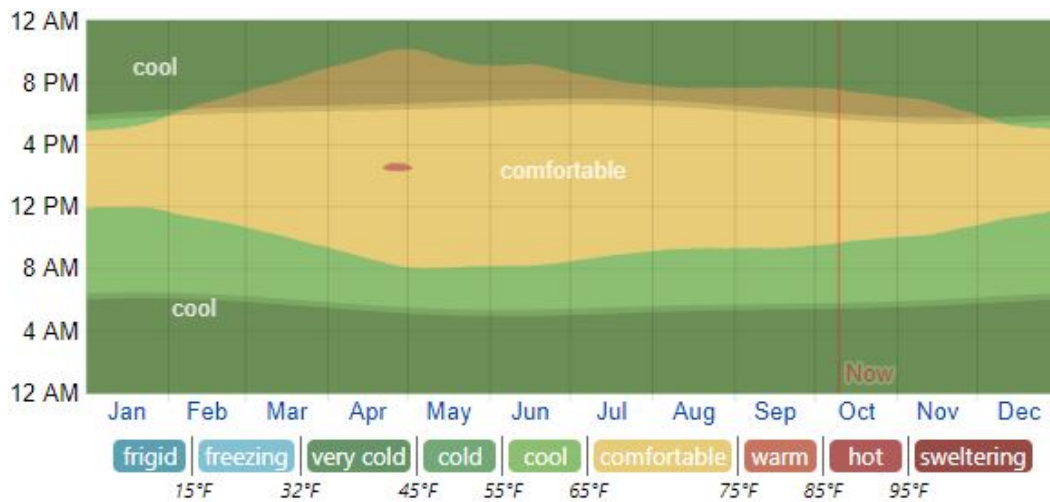


Figure 218. Dagdag average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Dagdag, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 7 minutes of daylight and the longest day is June 21, with 13 hours, 9 minutes of daylight.

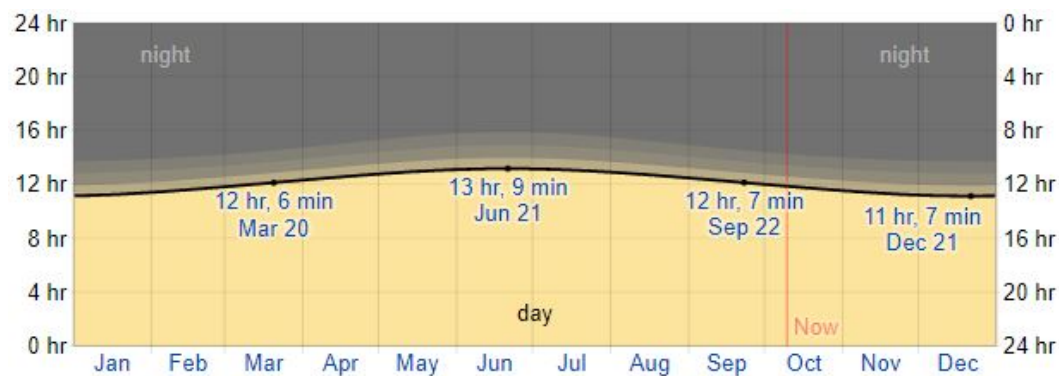


Figure 219. Dagdag hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:21 AM on June 4, and the latest sunrise is at 6:29 AM on January 20. The earliest sunset is at 5:20 PM on November 22, and the latest sunset is at 6:34 PM on July 7.

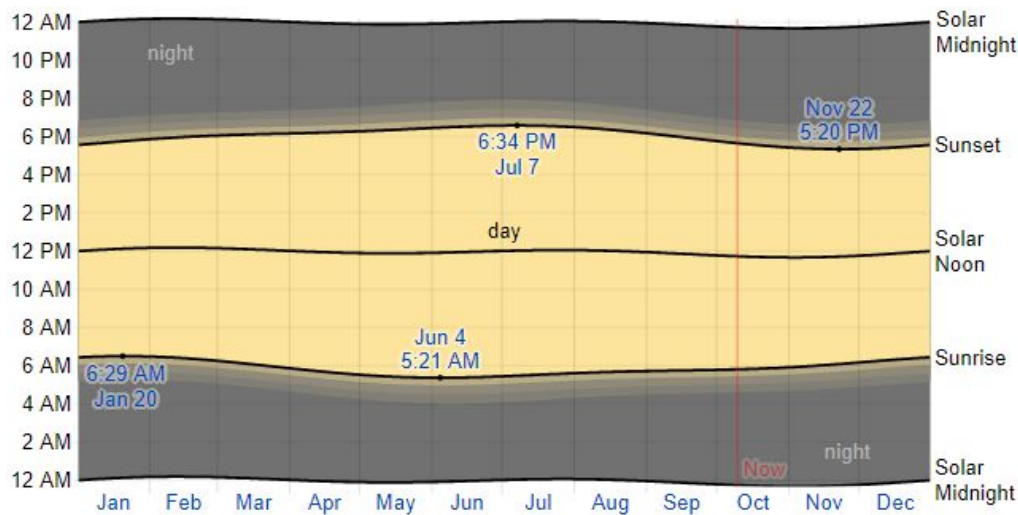


Figure 220. Dagdag sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Dagdag, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Dagdag begins mid-November and ends late April. The cloudier part of the year begins late April and ends mid-November.

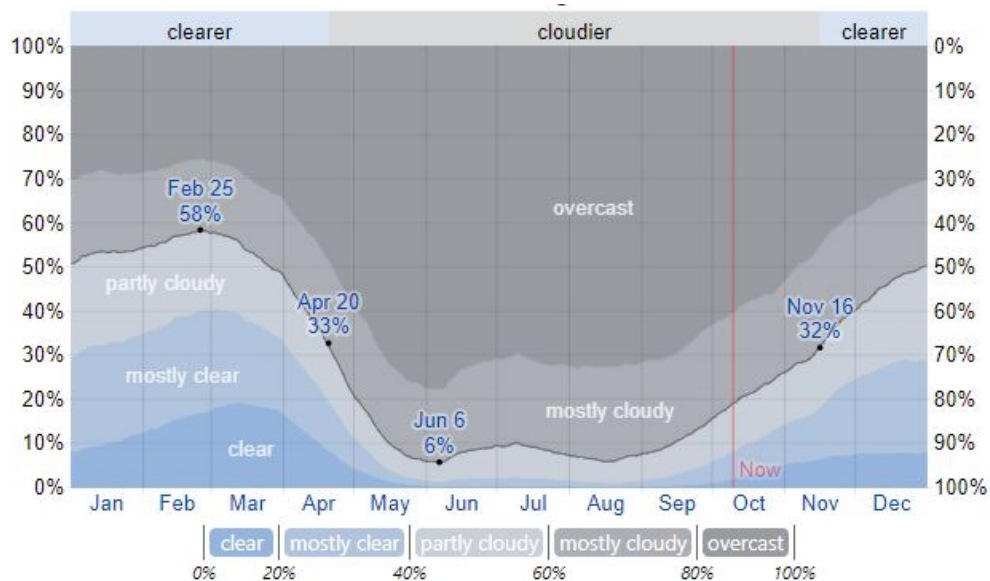


Figure 221. Dagdag cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Dagdag experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early October to early February, while the calmer time of the year lasts from early February to early October.

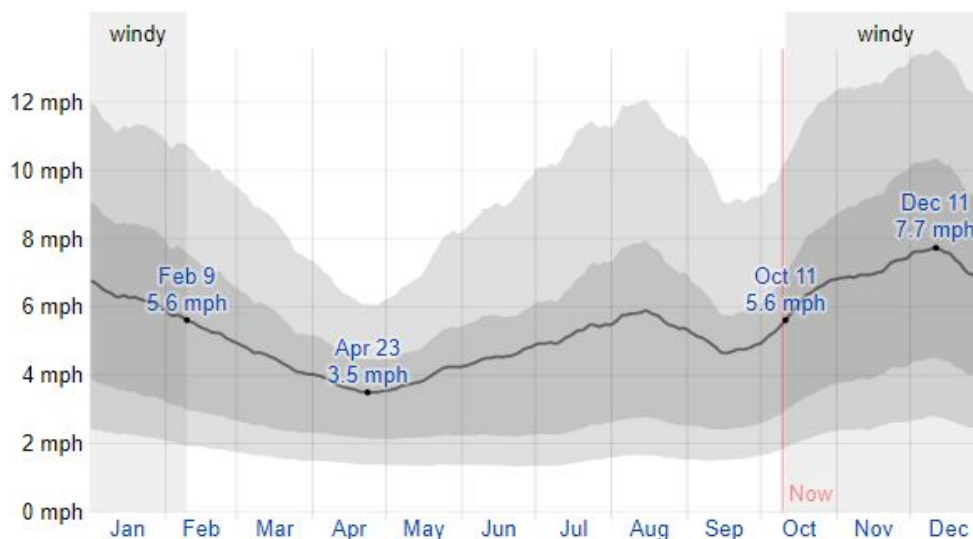


Figure 222. Dagdag average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the west during early May to early June and from early July to mid-September; from the south from early June to mid-July; and from the east from mid-September to mid-May.

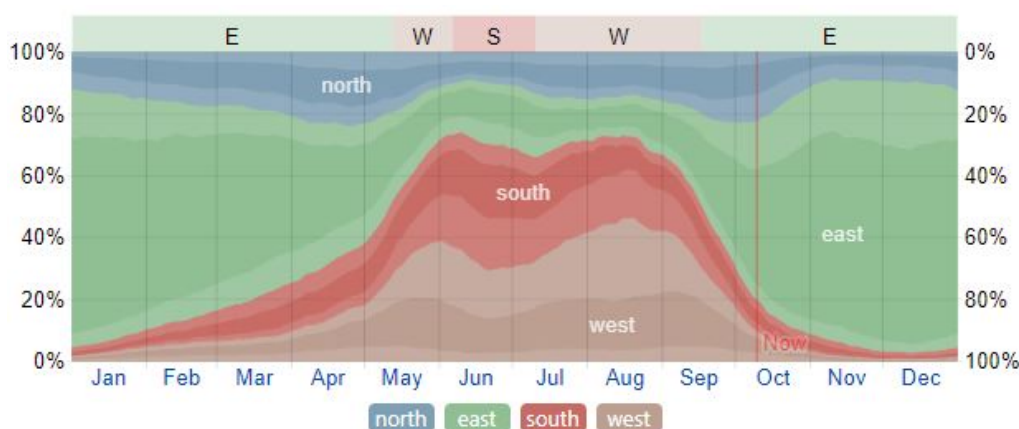


Figure 223. Dagdag wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The least amount of rainfall occurs in February, with an average of 38 mm. Most of the precipitation here falls in August, averaging 527 mm.

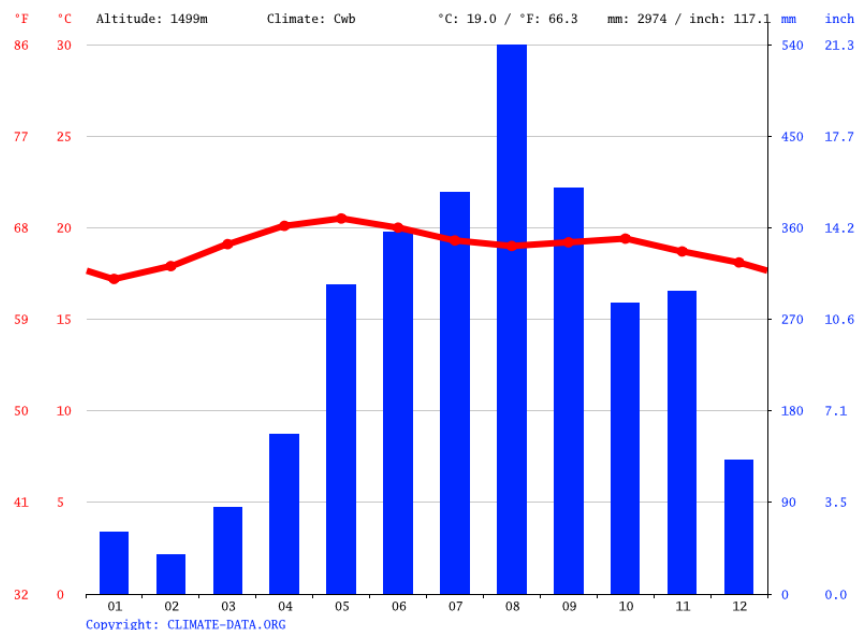


Figure 224. Dagdag climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Dagdag varies significantly throughout the year.



Figure 225. Dagdag daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

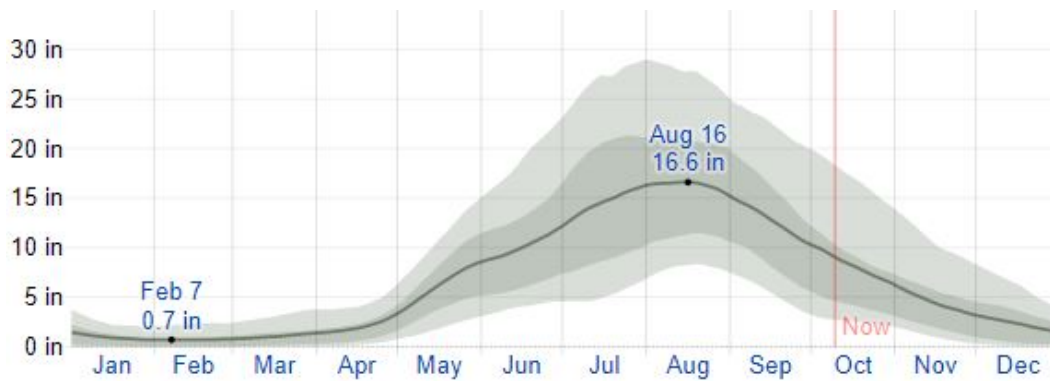


Figure 226. Dagdag average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Dagdag experiences significant seasonal variation in the perceived humidity. The muggier period of the year lasts from mid-March to late November, during which time the comfort level is muggy, oppressive, or miserable at least 18% of the time.

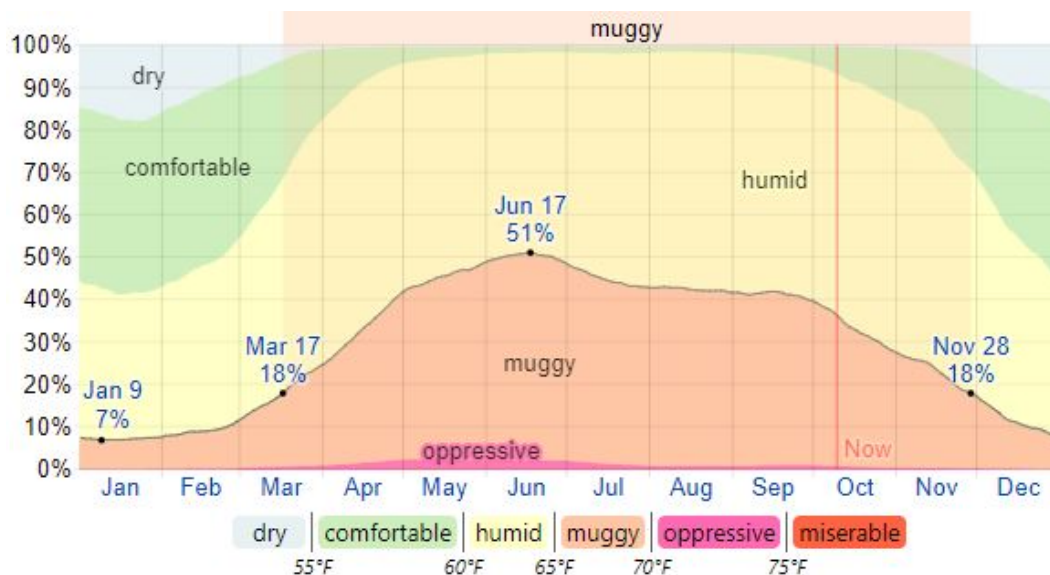


Figure 227. Dagdag humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Malisbong



Malisbong/Malisbeng is a barangay located in Palimbang, Sultan Kudarat, Mindanao. The climate here is hot, oppressive, and overcast. Over the course of the year, the temperature typically varies from 25°C to 31.7°C and is rarely below 24°C or above 34°C. The best time of the year to visit Malisbeng for hot-weather activities is from early December to mid-April.



Figure 228. Location within the Philippines

Region: **Soccsksargen (Region XII)**
 Province: **Sultan Kudarat**
 Altitude: **1747 m above sea level**
 Coordinates: **6°13'N 124°12'E**
 Climate: **warm and temperate**
 Rainfall: **Summers have a good deal of rainfall, while winters have very little**

Avg. annual temp.: **18.2°C**

Annual rainfall: **3122 mm**

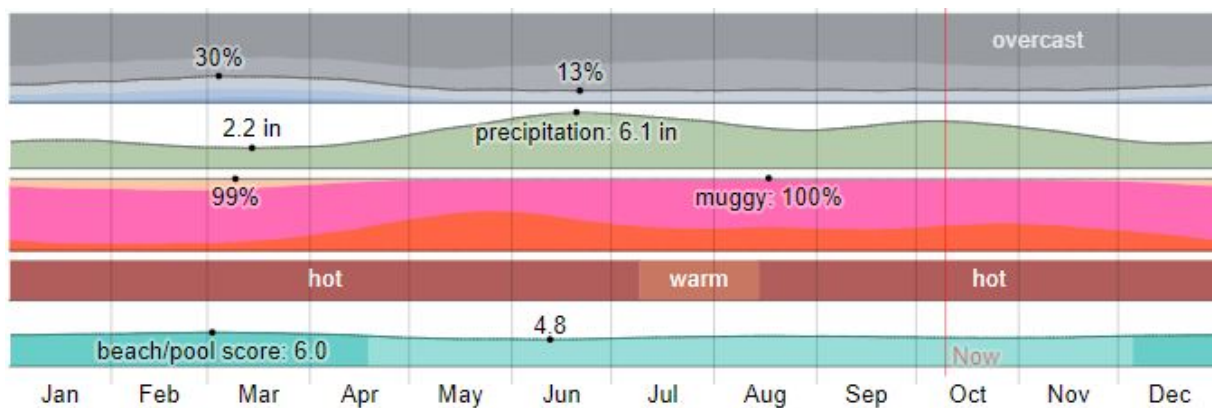


Figure 229. Malisbong climate summary [via Weatherspark.com]

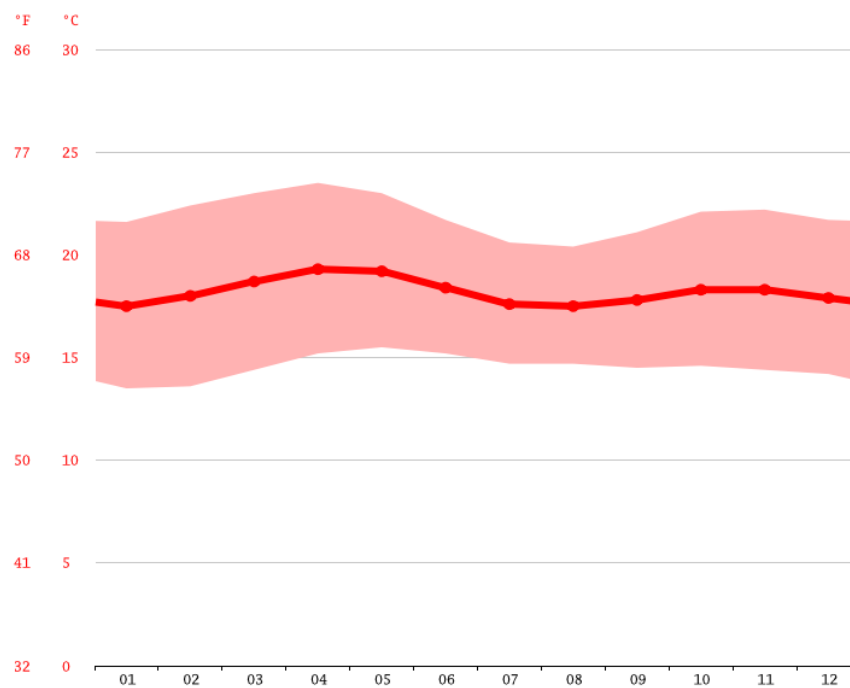
The difference in precipitation between the driest month and the wettest month is 495 mm. During the year, the average temperatures vary 1.8°C.

Table 27. Malisbong weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	17.5	18.0	18.7	19.3	19.2	18.4	17.6	17.5	17.8	18.3	18.3	17.9
Min. Temperature (°C)	13.5	13.6	14.4	15.2	15.5	15.2	14.7	14.7	14.5	14.6	14.4	14.2
Max. Temperature (°C)	21.6	22.4	23.0	23.5	23	21.7	20.6	20.4	21.1	22.1	22.2	21.7
Precipitation/ Rainfall (mm)	68	39	36	72	259	385	528	531	444	349	246	165

Temperature

The temperatures are highest on average in April, at around 19.3°C. January is the coldest month, with temperatures averaging 17.5°C.

*Figure 230. Malisbong average temperature [via Climate-data.org]*

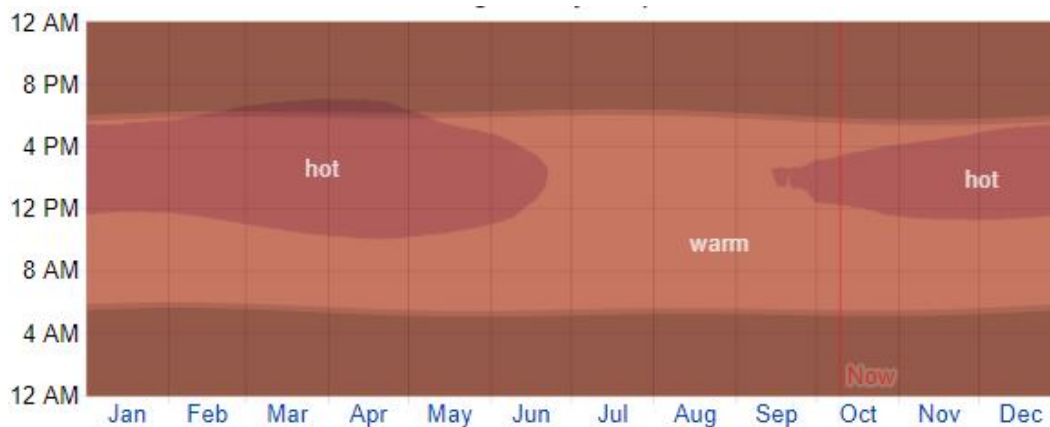


Figure 231. Malsibong average hourly temperature [via Weatherspark.com]

The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

Sun

In Malsibong, the length of the day does not vary substantially over the course of the year. The shortest day is December 21, with 11 hours, 46 minutes of daylight and the longest day is June 21, with 12 hours, 29 minutes of daylight.

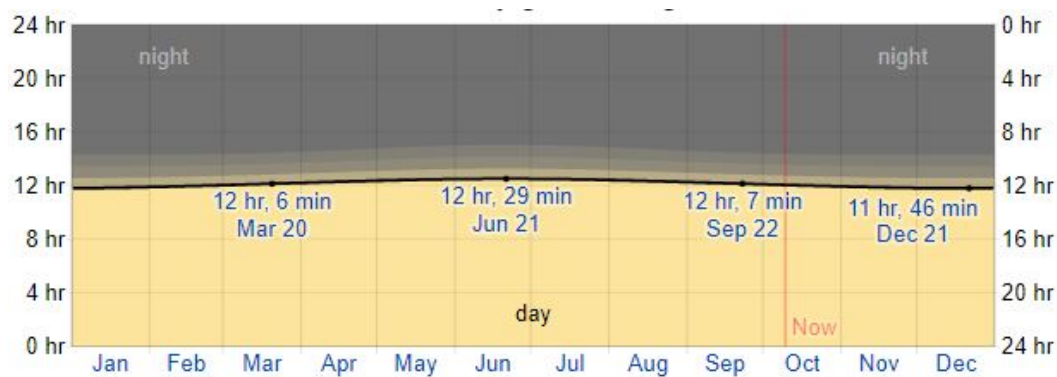


Figure 232. Malsibong hours of daylight and twilight [via Weatherspark.com]

The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: fully daylight, twilight (civil, nautical, and astronomical), and full night.

The earliest sunrise is at 5:26 AM on May 25, and the latest sunrise is at 6:00 AM on February 2. The earliest sunset is at 5:22 PM on November 11, and the latest sunset is at 6:01 PM on July 16.

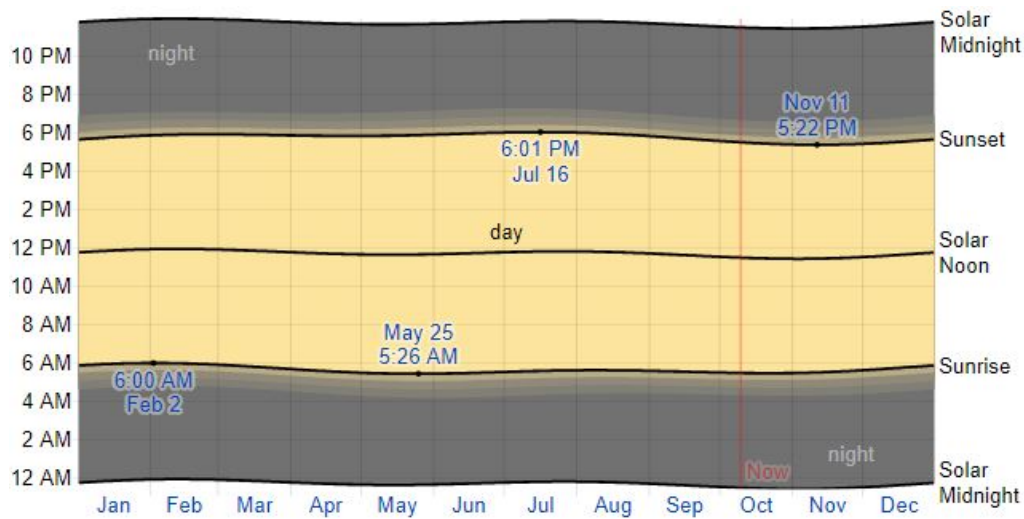


Figure 233. Malisbong sunrise and sunset with twilight [via Weatherspark.com]

The solar day over the course of the year. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

Clouds

In Malisbong, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Malisbong begins mid-January and ends late April. The cloudier part of the year begins late April and ends mid-January.

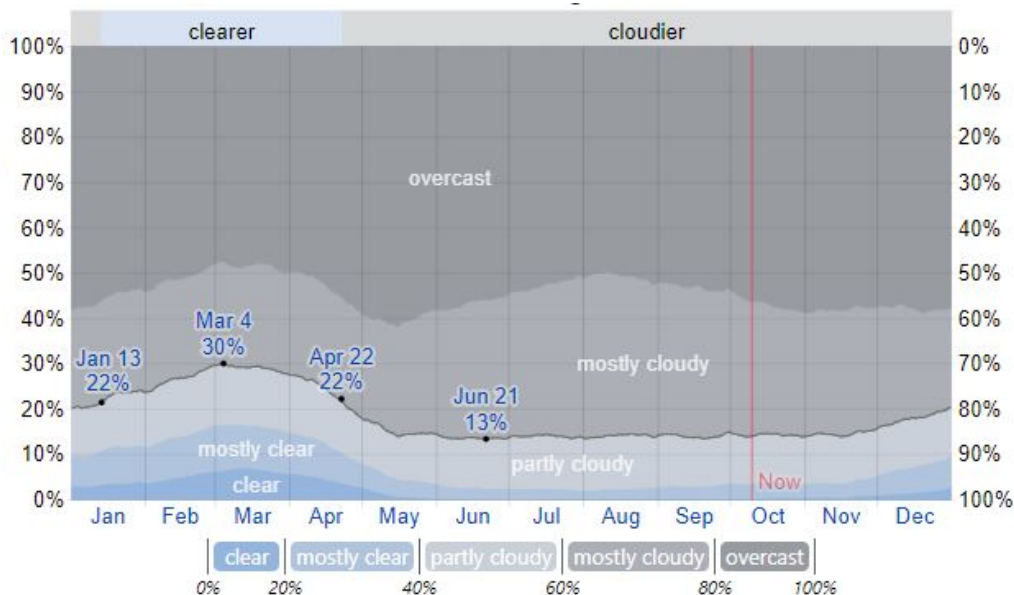


Figure 234. Malisbong cloud cover categories [via Weatherspark.com]

The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Wind

The average hourly wind speed in Malisbong experiences significant seasonal variation over the course of the year. The windier part of the year lasts from early June to mid-September, while the calmer time of the year lasts from mid-September to early June.

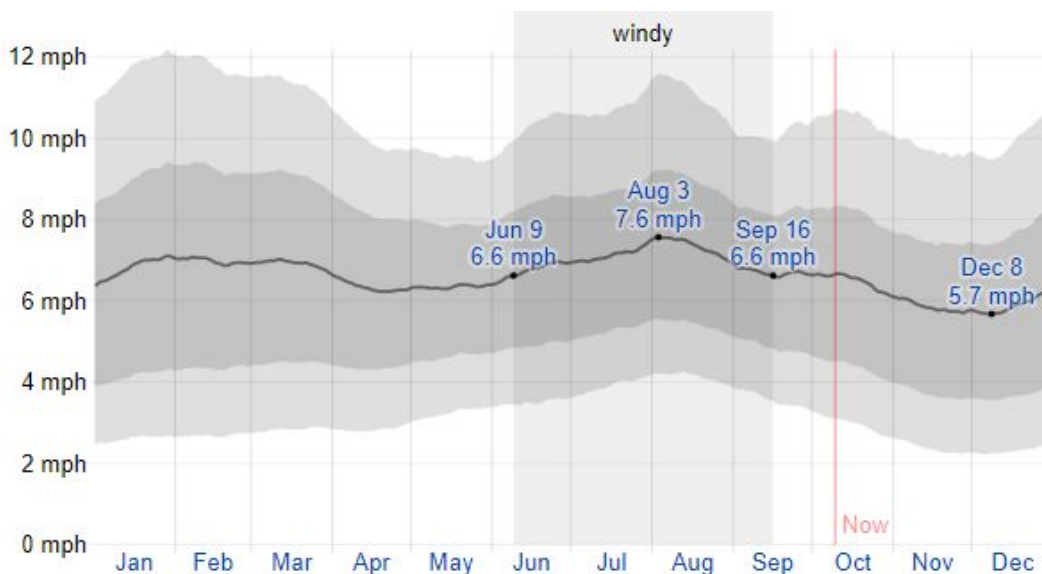


Figure 235. Malisbong average wind speed [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands.

The wind is most often from the south during early May to mid-September; from the west from mid-September to mid-November; and from the east from mid-November to mid-May.

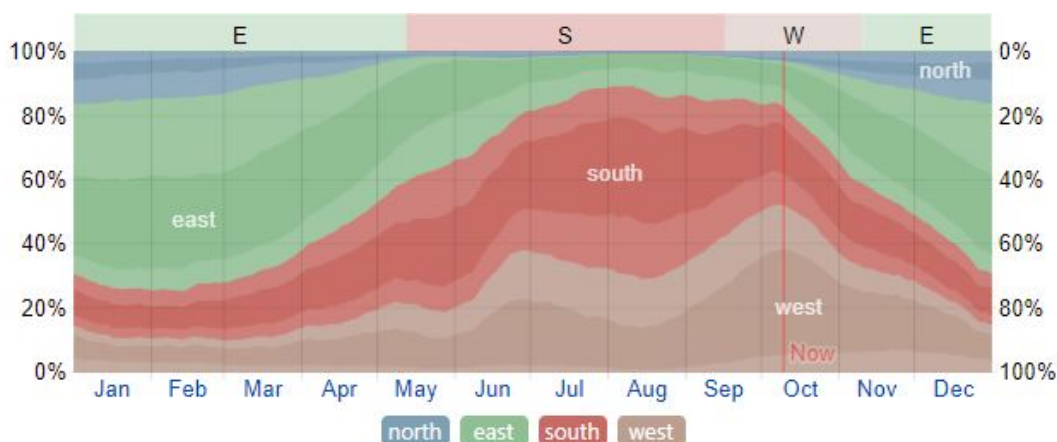


Figure 236. Malisbong wind direction [via Weatherspark.com]

The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

Precipitation

The least amount of rainfall occurs in March, with an average of 36 mm. Most of the precipitation here falls in August, averaging 531 mm.

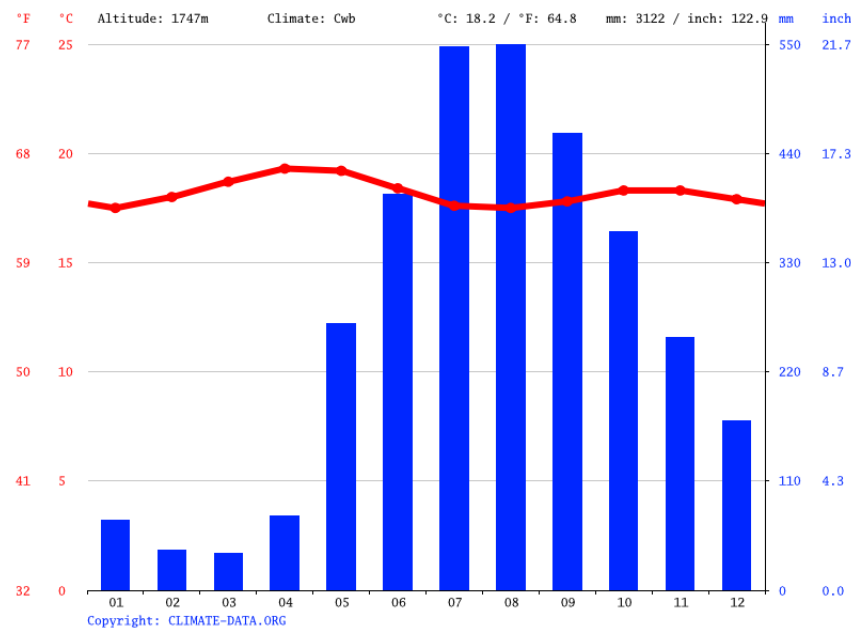


Figure 237. Malisbong climate graph (Weather by month) [via Climate-data.org]

The chance of wet days in Malisbong varies significantly throughout the year.



Figure 238. Malisbong daily chance of precipitation [via Weatherspark.com]

The percentage of days in which various types of precipitation are observed, excluding trace quantities: rain alone.

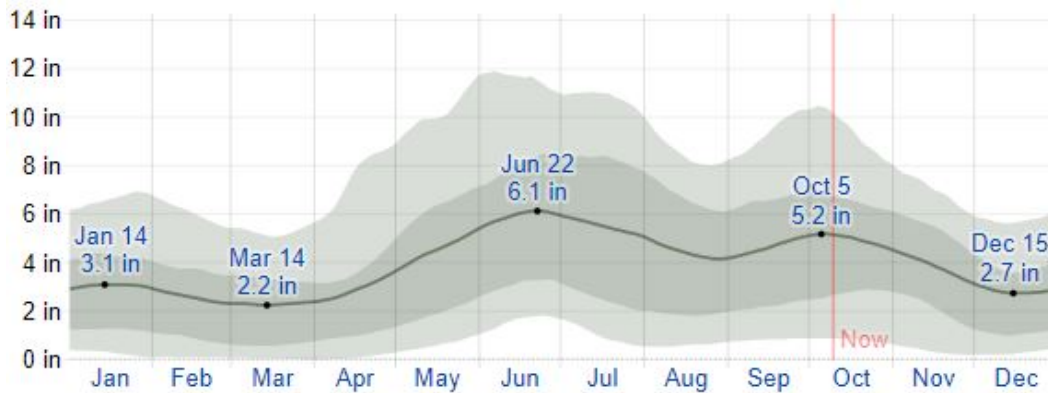


Figure 239. Malisbong average monthly rainfall [via Weatherspark.com]

The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. This thin-dotted line is the corresponding average liquid-equivalent snowfall.

Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

The perceived humidity level in Malisbong is muggy, oppressive, or miserable. It does not vary significantly over the course of the year, remaining a virtually constant 100% throughout.

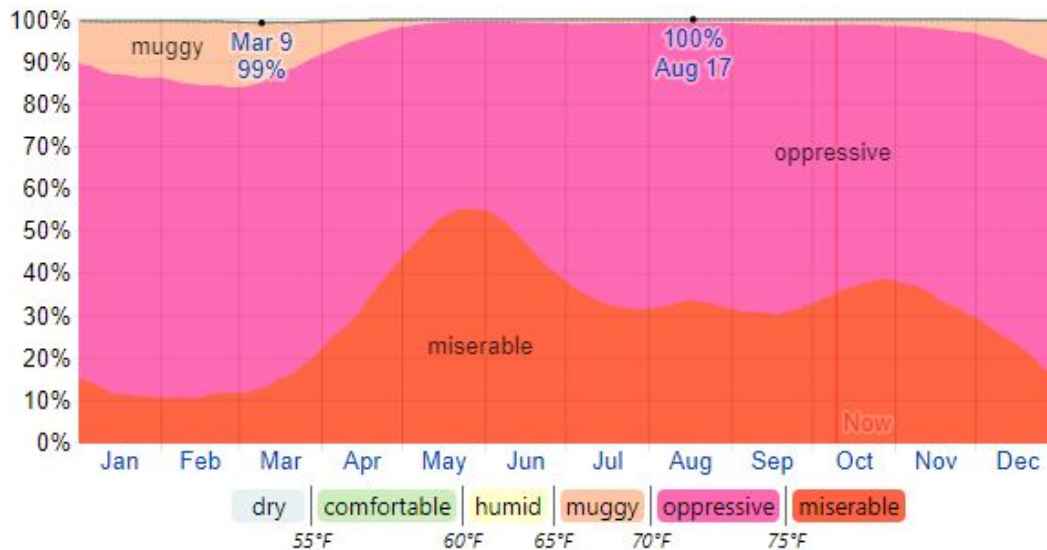


Figure 240. Malisbong humidity comfort levels [via Weatherspark.com]

The percentage of time spent at various humidity comfort levels, categorized by dew point.

Tinoc



The municipality of Tinoc is located in the province of Ifugao. The best time to visit Tinoc is from January until March and November and December, when there is pleasant temperature and little rainfall. It has a moderate climate prevailing.



Figure 241. Location within the Philippines

Region:	Cordillera Administrative Region (CAR)
Province:	Ifugao
Altitude:	1506 m above sea level
Coordinates:	16°42'N 120°54'E
Climate:	warm and temperate
Rainfall:	There is much less rainfall in winter
Avg. annual temp.:	19.0°C
Annual rainfall:	2630 mm

The least amount of rainfall occurs in February, with an average of 25 mm. Most of the precipitation here falls in August, averaging 508 mm.

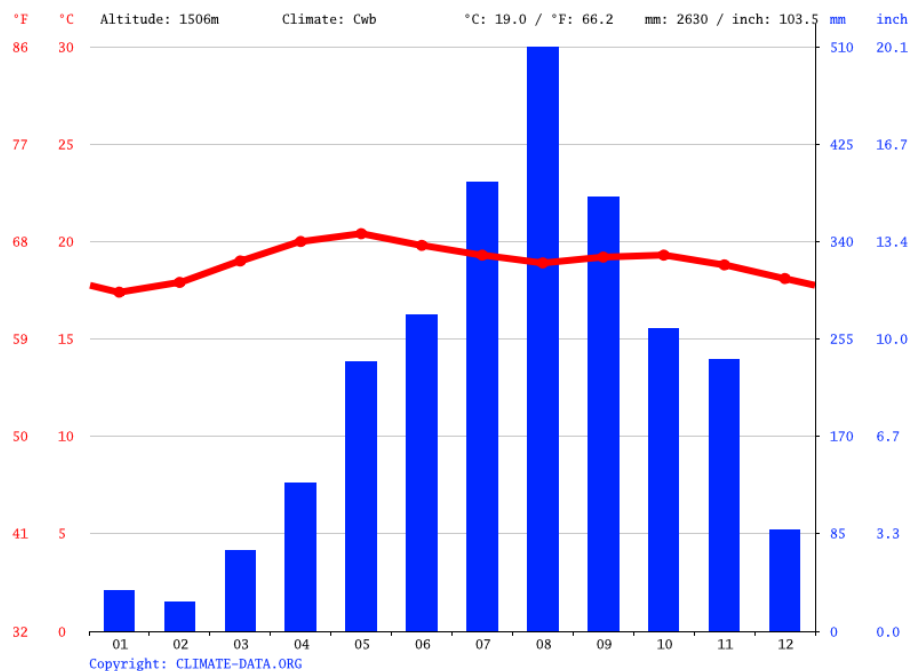


Figure 242. Tinoc climate graph (Weather by month) [via Climate-data.org]

The temperatures are highest on average in May, at around 20.4°C. January is the coldest month, with temperatures averaging 17.4°C.

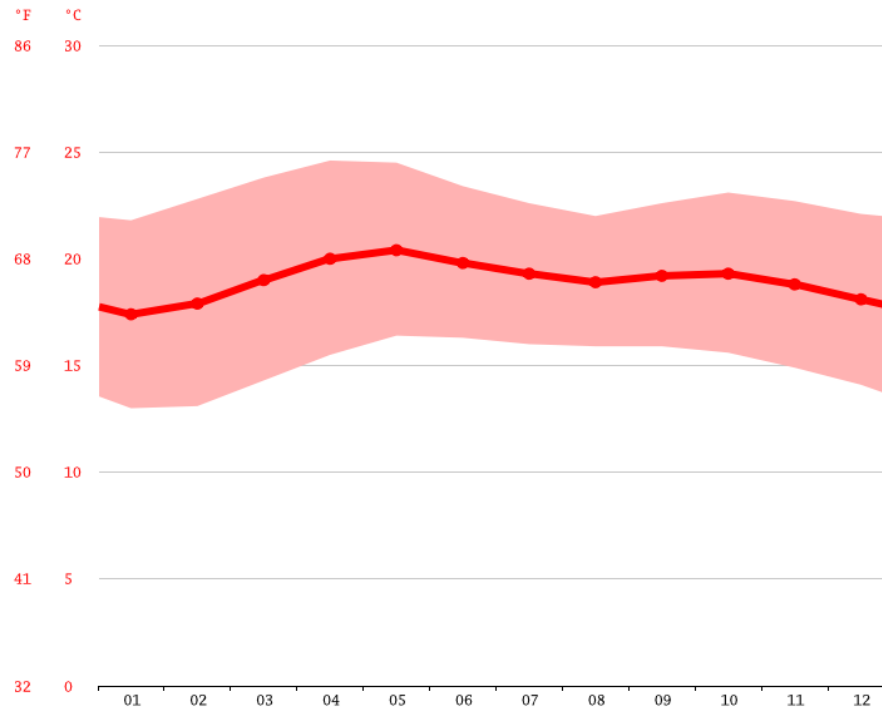


Figure 243. Tinoc average temperature [via Climate-data.org]

Table 28. Tinoc weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	17.4	17.9	19.0	20.0	20.4	19.8	19.3	18.9	19.2	19.3	18.8	18.1
Min. Temperature (°C)	13.0	13.1	14.3	15.5	16.4	16.3	16.0	15.9	15.9	15.6	14.9	14.1
Max. Temperature (°C)	21.8	22.8	23.8	24.6	24.5	23.4	22.6	22.0	22.6	23.1	22.7	22.1
Precipitation/Rainfall (mm)	35	25	70	129	234	275	390	508	377	263	236	88

The difference in precipitation between the driest month and the wettest month is 483 mm. During the year, the average temperatures vary 3.0°C.

Makingking



Makingking is located in Demang, Sadanga, Sagada, Mountain Province. In Makingking, the wet season is humid and overcast, the dry season is partly cloudy, and it is comfortable year round. Over the course of the year, the temperature typically varies from 12.7°C to 24.4°C and is rarely below 10°C or above 26°C. The best time of year to visit Makingking for warm-weather activities is from mid-February to late April.



Figure 244. Location within the Philippines

Region: **Cordillera Administrative Region (CAR)**
 Province: **Mountain Province**
 Altitude: **1504 m above sea level**
 Coordinates: **17°10'N 121°02'E**
 Climate: **warm and temperate**
 Rainfall: **Summers have a good deal of rainfall, while winters have very little**
 Avg. annual temp.: **18.8°C**
 Annual rainfall: **3066 mm**

The least amount of rainfall occurs in February, with an average of 42 mm. Most of the precipitation here falls in August, averaging 537 mm.

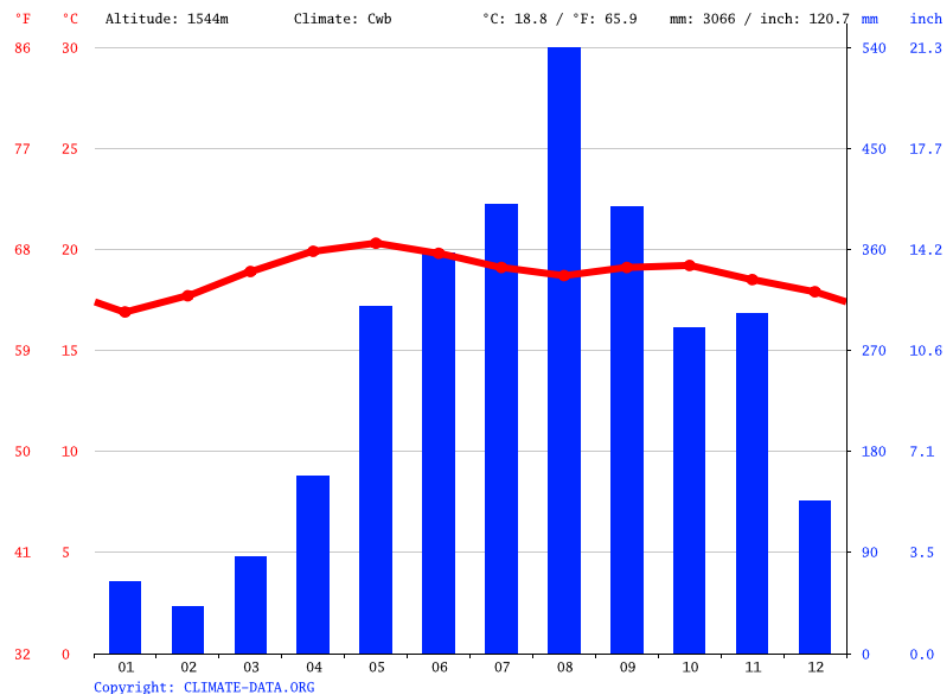


Figure 245. Makingking climate graph (Weather by month) [via Climate-data.org]

The temperatures are highest on average in May, at around 20.3°C. January is the coldest month, with temperatures averaging 16.9°C.

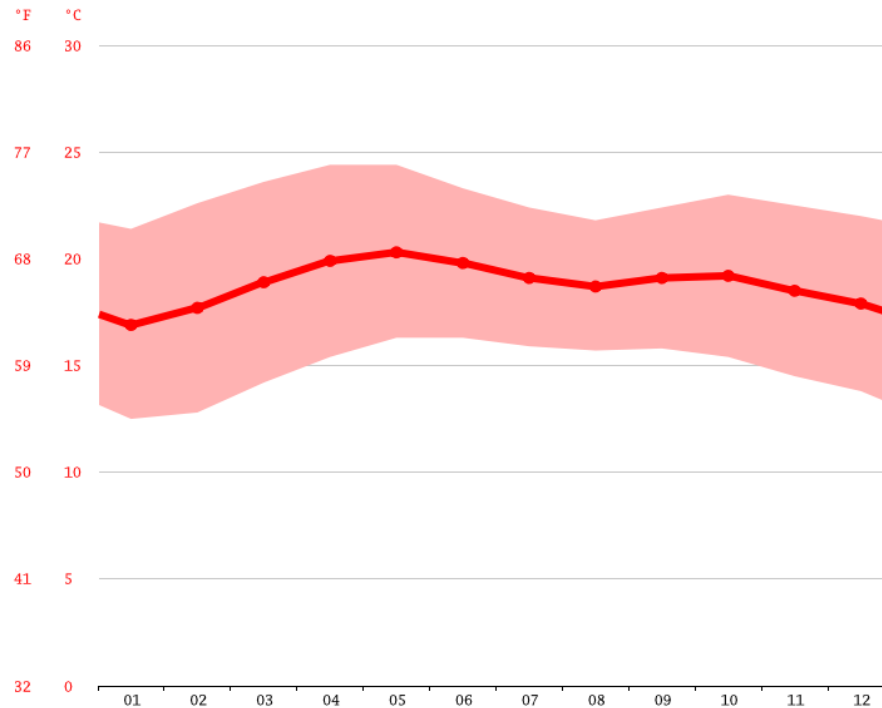


Figure 246. Makinging average temperature [via Climate-data.org]

Table 29. Makinging weather by month (Weather averages) [via Climate-data.org]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	16.9	17.7	18.9	19.9	20.3	19.8	19.1	18.7	19.1	19.2	18.5	17.9
Min. Temperature (°C)	12.5	12.8	14.2	15.4	16.3	16.3	15.9	15.7	15.8	15.4	14.5	13.8
Max. Temperature (°C)	21.4	22.6	23.6	24.4	24.4	23.3	22.4	21.8	22.4	23.0	22.5	22.0
Precipitation/Rainfall (mm)	64	42	86	157	307	355	398	537	396	288	301	135

The difference in precipitation between the driest month and the wettest month is 495 mm. During the year, the average temperatures vary 3.4°C.

CONCLUSION

The Köppen–Geiger climate classification is the most widely recognized and used classification in the Philippines. It is a tool used to identify, classify, describe, and simplify climate similarities and differences between geographical areas in the country to improve the scientific understanding of the climate. Based on Köppen–Geiger climate classification, Philippines has five types of climates: tropical rainforest climate (Af), tropical monsoon climate (Am), tropical savanna climate (Aw), subtropical highland oceanic climate (Cwb), and oceanic climate (Cfb). The country has wet season and dry season based upon the amount of rainfall.

Altitude is a significant factor in the variation of temperature. On the other hand, latitude plays a minor role in the change of the temperature in different parts of the country. The variation between the mean annual temperature of the southernmost station and that of the northernmost station is almost negligible. Thus, there is essentially no difference in the mean annual temperature of places in Luzon, Visayas or Mindanao with respect to their latitude and longitude. It is the altitude, which affects the locations' mean annual temperature.

Humidity is the amount of water vapor in the air. In other words, it is the moisture content of the atmosphere. The Philippines has a high relative humidity due to high temperatures and the surrounding bodies of water. The combination of warm temperature and high relative and absolute humidity results to high sensible temperature throughout the archipelago. It is especially uncomfortable during March to May, when temperature and humidity attain their maximum levels.

In the Philippines, the amount of rainfall is a crucial climatic element and is the most determining factor that considered in building design. There are variations in rainfall distribution throughout the country from one place to another due to the location of the mountain ranges and the direction of the winds.

Climate is one of the influential factors that can affect both urban planning and architectural design. Due to geographical positions of different parts of the Philippines, topography, height above sea level, and vegetation, a location's climate develops. Because of all these conditions, different climate classifications exist, and thus different climatic design criteria and approach should be established in order to achieve a net-zero building.

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