



Harvard Forest

Harvard Forest Data Archive

HF300

Harvard Forest Climate Data since 1964

Related Publications (<https://harvardforest.fas.harvard.edu/exist/apps/pubs/pb-id.html?id=hf300>)

Data

- **hf300-01** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-01-annual-m.csv>) : annual (metric) (**preview** (<https://harvardforest.fas.harvard.edu/data/plots/hf300-01.pdf>))
- **hf300-02** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-02-annual-e.csv>) : annual (english) (**preview** (<https://harvardforest.fas.harvard.edu/data/plots/hf300-02.pdf>))
- **hf300-03** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-03-monthly-m.csv>) : monthly (metric) (**preview** (<https://harvardforest.fas.harvard.edu/data/plots/hf300-03.pdf>))
- **hf300-04** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-04-monthly-e.csv>) : monthly (english) (**preview** (<https://harvardforest.fas.harvard.edu/data/plots/hf300-04.pdf>))
- **hf300-05** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-05-daily-m.csv>) : daily (metric) (**preview** (<https://harvardforest.fas.harvard.edu/data/plots/hf300-05.pdf>))
- **hf300-06** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-06-daily-e.csv>) : daily (english) (**preview** (<https://harvardforest.fas.harvard.edu/data/plots/hf300-06.pdf>))
- **hf300-07** (<https://harvardforest.fas.harvard.edu/data/p30/hf300/hf300-07-rscripts.zip>) : R scripts

Overview

- **Lead:** Emery Boose, Ernest Gould
- **Investigators:** Brian Hall, Mark VanScoy
- **Contact: Information Manager** (<mailto:hf-im@lists.fas.harvard.edu>)
- **Start date:** 1964
- **End date:** 2021
- **Status:** ongoing
- **Location:** Prospect Hill Tract (Harvard Forest)
- **Latitude:** +42.53311
- **Longitude:** -72.18968
- **Elevation:** 342 meter
- **Taxa:**
- **Release date:** 2022
- **Revisions:** data updated annually
- **EML file: knb-lter-hfr.300.5** (<https://harvardforest.fas.harvard.edu/data/eml/hf300.xml>)
- **DOI: digital object identifier** (<https://pasta.lternet.edu/package/doi/eml/knb-lter-hfr/300/5>)
- **EDI: data package** (<https://portal.edirepository.org/nis/mapbrowse?packageid=knb-lter-hfr.300.5>)
- **DataONE: data package** (<https://search.dataone.org/#view/https://pasta.lternet.edu/package/metadata/eml/knb-lter-hfr/300/5>)
- **Related links:**
 - **Shaler Meteorological Station at Harvard Forest 1964–2002** (<https://harvardforest.fas.harvard.edu/exist/apps/datasets/showData.html?id=hf000>)
 - **Fisher Meteorological Station at Harvard Forest since 2001** (<https://harvardforest.fas.harvard.edu/exist/apps/datasets/showData.html?id=hf001>)

- **Real-Time Measurements** (<https://harvardforest.fas.harvard.edu/harvard-forest-weather-station>)

- **Study type:** long-term measurement
- **Research topic:** forest-atmosphere exchange; watershed ecology
- **LTER core area:** disturbance
- **Keywords:** air temperature, climate, meteorology, precipitation
- **Abstract:**

This dataset provides daily air temperature and precipitation data from Harvard Forest for long-term climate studies. It combines measurements from the original manual weather station (Shaler, 1964–2002, dataset HF000) with measurements from the current automated weather station (Fisher, since 2001, dataset HF001). Gaps in the Shaler data were filled using data from nearby stations. Data from a 12-month period when both stations were operational were used to adjust the Shaler data to more closely match the Fisher data. This dataset is updated annually.

- **Methods:**

Gaps in the Shaler data were filled using daily data from Amherst MA and Bedford MA downloaded from the National Climatic Data Center. Overlap data when the Shaler and Fisher stations were both operational (2001-07-01 to 2002-06-30) were used to adjust the Shaler data to more closely match the Fisher data. Because daily observation periods were not the same across stations, gap filling and adjustments were based on comparisons of mean air temperature and total precipitation over the entire observation period. Details of the analysis may be found in the R scripts.

- **Use:**

This dataset is released to the public under Creative Commons CC0 1.0 (No Rights Reserved). Please keep the dataset creators informed of any plans to use the dataset. Consultation with the original investigators is strongly encouraged. Publications and data products that make use of the dataset should include proper acknowledgement.

- **Citation:**

Boose E, Gould E. 2022. Harvard Forest Climate Data since 1964. Harvard Forest Data Archive: HF300 (v.5). Environmental Data Initiative: <https://doi.org/10.6073/pasta/03dc1f107ca816675b4983daf7a97dbe>.

Detailed Metadata

hf300-01: annual (metric)

1. year: year
2. airt: average air temperature. Average of daily averages. (unit: celsius / missing value: NA)
3. airtmax: average maximum air temperature. Average of daily maximums. (unit: celsius / missing value: NA)
4. airtmin: average minimum air temperature. Average of daily minimums. (unit: celsius / missing value: NA)
5. airtmmx: extreme maximum air temperature. Maximum of daily maximums. (unit: celsius / missing value: NA)
6. airtmmn: extreme minimum air temperature. Minimum of daily minimums. (unit: celsius / missing value: NA)
7. prec: total precipitation. Includes water equivalent of snow. Sum of daily totals. (unit: millimeter / missing value: NA)

hf300-02: annual (english)

1. year: year
2. airt: average air temperature. Average of daily averages. (unit: fahrenheit / missing value: NA)
3. airtmax: average maximum air temperature. Average of daily maximums. (unit: fahrenheit / missing value: NA)
4. airtmin: average minimum air temperature. Average of daily minimums. (unit: fahrenheit / missing value: NA)
5. airtmmx: extreme maximum air temperature. Maximum of daily maximums. (unit: fahrenheit / missing value: NA)
6. airtmmn: extreme minimum air temperature. Minimum of daily minimums. (unit: fahrenheit / missing value: NA)
7. prec: total precipitation. Includes water equivalent of snow. Sum of daily totals. (unit: inch / missing value: NA)

hf300-03: monthly (metric)

1. date: date
2. airt: average air temperature. Average of daily averages. (unit: celsius / missing value: NA)
3. airtmax: average maximum air temperature. Average of daily maximums. (unit: celsius / missing value: NA)
4. airtmin: average minimum air temperature. Average of daily minimums. (unit: celsius / missing value: NA)
5. airtmmx: extreme maximum air temperature. Maximum of daily maximums. (unit: celsius / missing value: NA)
6. airtmmn: extreme minimum air temperature. Minimum of daily minimums. (unit: celsius / missing value: NA)
7. prec: total precipitation. Includes water equivalent of snow. Sum of daily totals. (unit: millimeter / missing value: NA)

hf300-04: monthly (english)

1. date: date
2. airt: average air temperature. Average of daily averages. (unit: fahrenheit / missing value: NA)
3. airtmax: average maximum air temperature. Average of daily maximums. (unit: fahrenheit / missing value: NA)
4. airtmin: average minimum air temperature. Average of daily minimums. (unit: fahrenheit / missing value: NA)
5. airtmmx: extreme maximum air temperature. Maximum of daily maximums. (unit: fahrenheit / missing value: NA)
6. airtmmn: extreme minimum air temperature. Minimum of daily minimums. (unit: fahrenheit / missing value: NA)

7. prec: total precipitation. Includes water equivalent of snow. Sum of daily totals. (unit: inch / missing value: NA)

hf300-05: daily (metric)

1. date: date
2. airt: average air temperature (unit: celsius / missing value: NA)
3. f.airt: flag for average air temperature
 - E: Estimated. Value estimated from incomplete measurements or from other sources.
4. airtmax: maximum air temperature (unit: celsius / missing value: NA)
5. f.airtmax: flag for maximum air temperature
 - E: Estimated. Value estimated from incomplete measurements or from other sources.
6. airtmin: minimum air temperature (unit: celsius / missing value: NA)
7. f.airtmin: flag for minimum air temperature
 - E: Estimated. Value estimated from incomplete measurements or from other sources.
8. prec: total precipitation. Includes water equivalent of snow. (unit: millimeter / missing value: NA)
9. f.prec: flag for total precipitation
 - E: Estimated. Value estimated from incomplete measurements or from other sources.

hf300-06: daily (english)

1. date: date
2. airt: average air temperature (unit: fahrenheit / missing value: NA)
3. f.airt: flag for average air temperature
 - E: Estimated. Value estimated from incomplete measurements or from other sources.
4. airtmax: maximum air temperature (unit: fahrenheit / missing value: NA)
5. f.airtmax: flag for maximum air temperature
 - E: Estimated. Value estimated from incomplete measurements or from other sources.
6. airtmin: minimum air temperature (unit: fahrenheit / missing value: NA)
7. f.airtmin: flag for minimum air temperature
 - E: Estimated. Value estimated from incomplete measurements or from other sources.
8. prec: total precipitation. Includes water equivalent of snow. (unit: inch / missing value: NA)
9. f.prec: flag for total precipitation
 - E: Estimated. Value estimated from incomplete measurements or from other sources.

hf300-07: R scripts

- Compression: zip
- Format: R script
- Type: script