Fact Sheet

AIRNow Air Quality Forecasts and Observations

Introduction

The U.S. Environmental Protection Agency's (EPA) AIRNow program collects city-specific smog observation and forecasts for over 300+ metropolitan areas across the country. This data feed provides three types of information:

1. Air quality forecasts. Similar to maximum temperature forecasts, these air quality forecasts represent the maximum smog levels expected for the current, and next day and beyond. These forecasts are issued by meteorologists in each state, collected by the AIRNow program, and distributed freely to weather providers.

2. Current air quality conditions. Like current temperature, the current air quality values provide the highest Air Quality Index (AQI) reading observed in each city.

3. Previous day's AQI maximum. Just like yesterday's maximum temperature, this data value provides the peak AQI reached at any monitor in each city.

Every year over 125 million Americans are exposed to unhealthy levels of smog, primarily ground-level ozone and particulate matter.

Air quality forecasts and current conditions allow the public to avoid exposure and alter their behavior before unhealthy air occurs. Sensitive individuals (e.g., asthmatics, elderly, and children) can use this information to reduce or avoid adverse health effects.

Learn more at www.epa.gov/airnow

New This Year

AIRNow's forecasting program is expanding and several new features have been added:

- Multi-pollutant forecasting AIRNow forecasts are issued year-round for ozone and $PM_{2.5}$ in many cities.

- New parameters In addition to the forecasts, current AQI observations and previous day's AQI peaks are provided for each city.

- Educational resource for Broadcasters The AIRNow site has air quality information specifically for radio/television broadcasters (www.epa.gov/airnow/newsmedia.html).

About the Air Quality Index

The EPA developed the AQI reports levels of ozone, particulate matter, and other common air pollutants on the same scale. An AQI reading of 100 corresponds to a level that is above the national air quality standard—the higher the AQI rating, the greater the health impact.

The AQI is divided into color-coded categories, and each category is identified by a simple informative descriptor. The descriptors are intended to convey to the public information about how air quality within each category relates to public health. The table below defines each of the AQI categories.

AQI and Health Effects Resources:
About the AQI **www.epa.gov/airnow/aqi_cl.pdf**
Air Quality Guide for Ozone **www.epa.gov/airnow/aqguide.pdf**
Smog: Who does it Hurt? **www.epa.gov/airnow/health/smog.pdf**
Ozone and Your Health **www.epa.gov/airnow/ozone-c.pdf**

AQI Numbers	AQI Category (Descriptor)	AQI Color	Color Formulas (RGB)	(CMYK)
0 - 50	Good	Green	0,228,0	224,0,224,30
51 - 100	Moderate	Yellow	255,255,0	0,0,255,0
101 - 150	Unhealthy for Sensitive Groups	Orange	255,126,0	0,132,255,0
151 - 200	Unhealthy	Red	255,0,0	0,255,255,0
201 - 300	Very Unhealthy	Purple	153,0,76	0,153,80,102
301 - 500	Hazardous	Maroon	76,0,38	0,76,38,179

File Format Specifications

Data are stored in an ASCII file, which contains the latest forecasts and observations for all cities. Air quality agencies throughout the United States typically issue these forecasts once or twice a day. Agencies usually submit the forecasts in the late morning to early afternoon hours (local time) with all forecasts completed by 1700 ET (2100 UTC) each day. Current observations are updated each hour. The data file is updated at 10 and 40 minutes past the hour. File specifications follow:

Format: *forecast.csv*

File Contents: The file contains forecasts for the current and next day. For some cities, the file contains forecasts for two to five days. It also contains the current observations for each city and the previous day's maximum AQI readings.

Location of File: The forecast file is available at the DMC's ftp site (provided below). AIRNow can also "push" the forecast file to your ftp site (contact Craig Anderson or Alan Chan at 707-665-9900 for details).

> **FTP site:**
> | | |
> |---|---|
> | Address: | ftp.airnowdata.org |
> | Directory: | outgoing\forecasts |
> | User ID: | WSPuser |
> | Password: | Bobcat8 |

Field Delimiter: | (ASCII character 124)

Report Units: Air Quality Index

Issue date|Valid date|Valid time|Time zone|Record sequence|Data type|Primary|City name|State code|Latitude|Longitude|Pollutant|AQI value|AQI category|Action day|Discussion

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For Data Field Definitions, see table on next page.

Example Records:

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7/7/02| 7/7/02|12:00|MDT|0|F|Y|Dallas|TX|35.6789|-112.3425|Ozone|100|Unhealthy for Sensitive Groups|Yes|"A high pressure system…"
7/7/02| 7/7/02|12:00|MDT|0|F|N|Dallas|TX|35.6789|-112.3425|PM10|90|Moderate|Yes|"A high pressure system…"
7/7/02| 7/8/02|12:00|MDT|0|F|N|Dallas|TX|35.6789|-112.3425|Ozone|93|Moderate|Yes|
7/7/02| 7/8/02|12:00|MDT|0|F|Y|Dallas|TX|35.6789|-112.3425|PM10|110| Unhealthy for Sensitive Groups|Yes|
7/7/02| 7/9/02|12:00|MDT|0|F|Y|Dallas|TX|35.6789|-112.3425|Ozone|50|Good|Yes|
7/7/02| 7/9/02|12:00|MDT|0|F|N|Dallas|TX|35.6789|-112.3425|PM10|45|Good|Yes|
```

Data Field Definitions

Field Name	Length	Units/Format	Description	Sample
Issue date	8	mm/dd/yy	Local date that forecast is issued or made	05/21/02
Valid date	8	mm/dd/yy	Local date that forecast is valid	05/22/02
Valid time[1]	5	hh:mm	Time that a record is valid. Note that for forecasts and yesterday's AQI this field will be blank	21:00
Time zone	3	Text	Time zone for report observations. Note that for forecasts and yesterday's AQI this field will be blank	CDT
Record sequence	3	Numeric	Day number for forecasts. Always reference from zero, where zero is the current day, one for the next day, etc.	fcst - 0 to 5
Data type	1	Text	Type of data: F – Forecast Y – Previous day's AQI O – Hourly Observation	F
Primary [2]	1	Text	Y – primary pollutant (i.e., highest AQI reading) N – not primary	Y
City name	45	Text	City	Charlotte
State code	2	Text	State	NC
Latitude	7	Numeric	Latitude of city (decimal degrees)	41.4585
Longitude	9	Numeric	Latitude of city (decimal degrees)	-121.4342

Pollutant	20	Text	Pollutant
			    Ozone = Ozone
			    PM_{10} = Particulate matter (10 µm)
			    $PM_{2.5}$ = Particulate matter (2.5 µm)
			    CO = Carbon monoxide
			    NO_2 = Nitrogen dioxide
			    SO_2 = Sulfur dioxide
				Ozone

AQI value	3	Numeric	0 to 500	70
AQI Category	40	Text	Good Moderate Unhealthy for sensitive groups Unhealthy Very Unhealthy Hazardous	Moderate
Action day	3	Yes/No	Air quality action day (contact the AIRNow DMC for a current list of action day names)	Yes
Discussion	500	Text	Forecast discussion	

[1] Valid time will be blank for forecasts and previous day's AQI.

[2] "Primary" indicates that different pollutant forecasts for the same city on the same day exist. This field will tell users if a given forecast is the primary pollutant (i.e., maximum) for that day. This should be N for all but one record for a given city and day.

Contacts

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Guidelines for the use of AIRNow data, forecasts, and advisories

- Credit should be given to the appropriate source, either the EPA AIRNow or state/local air quality agency if known.

- Air quality data, forecast values, and advisory statements should not be altered in any way and should be disseminated as received.

- State and local agencies are the authority for issuing Air Quality forecasts and advisories. Forecasts, advisories, advisory names, and notifications should not be altered in anyway.

- Air quality observed and forecast values should be disseminated in accordance with the Air Quality Index (AQI) and corresponding RGB colors as follows

AQI Level	Color	R	G	B
Good	Green	0	228	0
Moderate	Yellow	255	255	0
Unhealthy for Sensitive Groups	Orange	255	126	0
Unhealthy	Red	255	0	0
Very Unhealthy	Purple	153	0	76
Hazardous	Maroon	76	0	38

- All end-users that receive these data should be updated with the most current data available when possible and, in particular, when advisories are issued by the state/local air quality agencies. The AIRNow program updates all data hourly.

- AIRNow observational data are not fully verified or validated and should be considered preliminary. As such, they should not be used to formulate or support regulation, guidance, or any other government or public decision.

- Questions regarding AIRNow data, forecasts, and advisories should be directed to AIRNowDMC@sonomatech.com and white.johne@epa.gov.