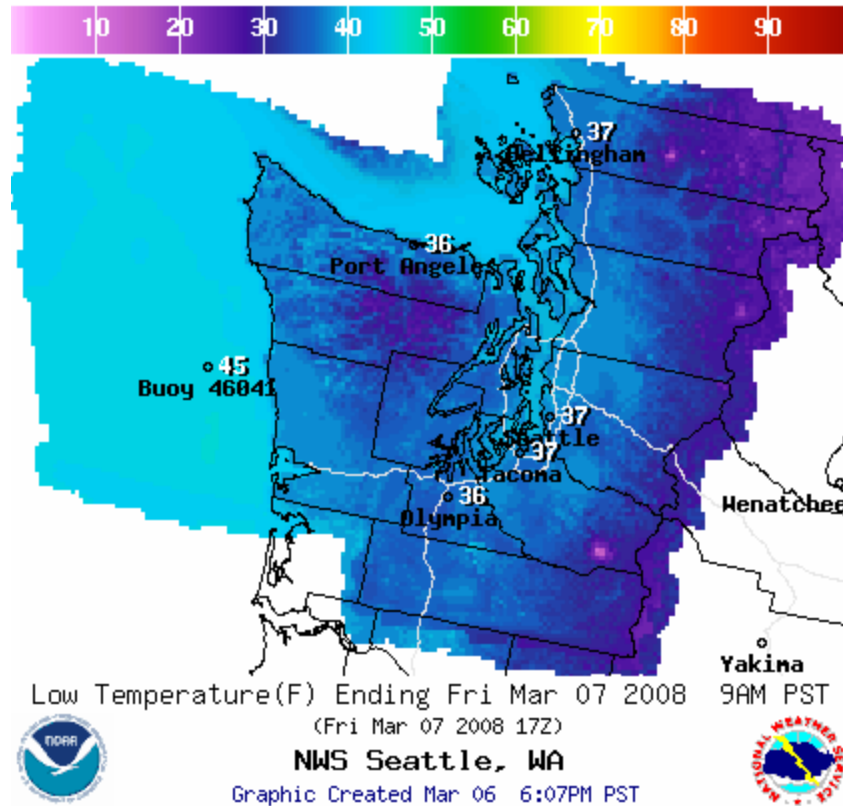


## NATIONAL DIGITAL FORECAST DATABASE



In late 2003, the NWS began making available a number of forecast grids of sensible weather elements in what is called the National Weather Service National Digital Forecast Database (NDFD). The NDFD contains a seamless mosaic of NWS digital forecasts from NWS field offices working in collaboration with NWS National Centers for Environmental Prediction (NCEP). The database is made available to all customers and partners to create a wide range of text, graphic, and image products of their own. With time, a wider array of forecast elements have become available in the database.

Currently, the NDFD can provide our customers with a “neighborhood” forecast, with a single pixel representing a 2.5 x 2.5km grid box (1 x 1nm). Most offices, including WFO Seattle, have this resolution available currently through their homepage map, enabling a refined forecast tool for point specific needs.

A new Interactive Forecast Preparation System (IFPS) has been implemented in the NWS, that provides not only for preparation of familiar text and voice products, but also creates in digital form the data from which these products are prepared. These digital forecasts are put into the NDFD. In essence, the forecaster now enters the forecast variables in digital form instead of redundantly typing several products containing largely the same information. But the real power of a digital database is that it opens the door for providing much more forecast information and in more useful forms. The NDFD will contain much more data than the NWS was previously able to provide, at time scales as small as hourly and space scales of a few kilometers.

Benefits of a digital database are extensive. Partners in the production and dissemination of weather forecast products should find the NDFD a gold mine of information. The latest forecast information, with the exception of time-critical warnings are disseminated. It will eventually contain essentially all the basic information from which forecasts are produced by the NWS and can be viewed on a national, regional, or local level.

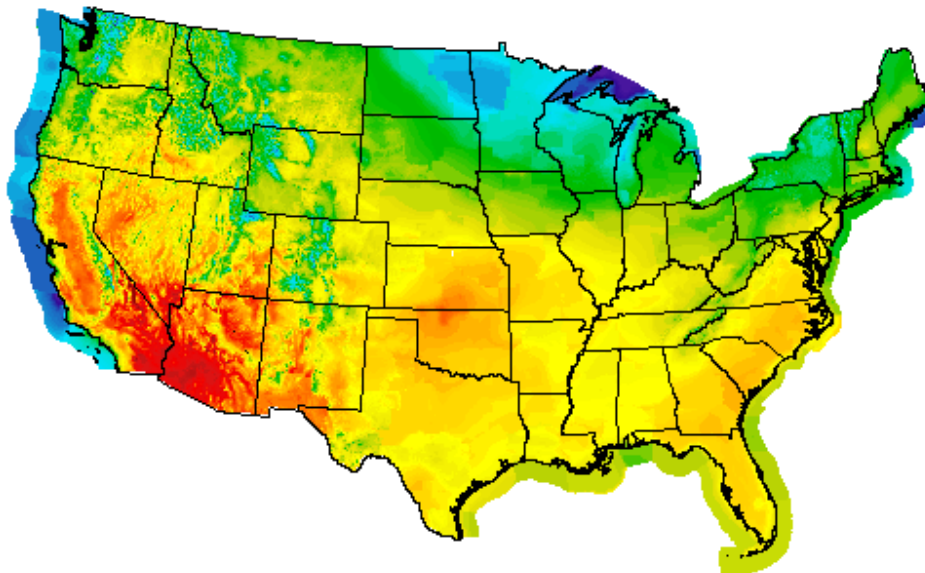
Businesses are able to produce a plethora of applications and products, either general information for radio and television broadcast, or tailored products for specific customers. For example:

- Decision support systems that fit the forecasts to the problem
- Weather information along a path – forecasts for a drive across country with projections matched to user itinerary
- Text generation in more than one language
- Forecasts for vehicles and hand-held devices with Global Positioning Systems (GPS)
- Controls for smart appliances (e.g., heating, cooling, irrigation)
- Graphics for mass media.

Teaming the NDFD with GIS systems provide very powerful capabilities. The NDFD gives customers what they want when they need it.

Commercial products available today that provide point forecasts or large scale graphics sometimes rely on direct model output or the algorithmic interpretation of model output (e.g., MOS). The NDFD is the source of more accurate official NWS forecasts produced by forecasters at WFOs and the National Centers for Environmental Prediction; beyond traditional text products.

Anyone with a computer and access to the Internet can download information from the NDFD to suit his or her needs. No longer does this customer have to wait for the timed broadcast of weather information, but can time the receipt of the specific information needed to his or her schedule.



**NDFD National Mosaic of Temperature**

## **WEATHER DATA AND CLIMATOLOGY**

Trained specialists called Hydro-Meteorology Technicians (HMT) collect weather data at our office and operate a cooperative network of observers across Northwestern Oregon and Southwestern Washington. The HMTs quality control the data from the Automated Surface Observing System (ASOS) as well as other observing systems, such as precipitation gauges. A Local Climate Data (LCD) summary is produced each month for specific sites across the United States. SeaTac airport is one such site. The LCD lists climatological items such as maximum/minimum temperatures and daily records, percent of cloud cover, daily rainfall amounts and snowfall.

Cooperative Observers (COOPs) are volunteer weather observers who take daily records of temperature maximum/minimums and/or rainfall amounts. Our HMTs visit each COOP at least twice a year and perform quality control and maintenance on weather instruments. The HMTs also collect data from the COOPs and prepare it to be sent to our national repository called the National Climatic Data Center (NCDC) in Asheville, North Carolina.

The National Climatic Data Center (NCDC) collects many forms of weather data from radar and satellite images, to forecasts, and observations from airports and upper air balloons. Any type of weather information can be obtained by calling them and ordering the information. Please see the special phone and address page for current ordering information. NCDC is also the only source for 'certified' weather records for use in insurance cases and a court of law.

Climate information may be obtained via the Internet from these sites:  
National Climatic Data Center (NCDC)

*<http://www.ncdc.noaa.gov>*

Western Regional Climate Center

*<http://www.wrcc.dri.edu>*

## SELECTED AREA WEATHER RECORDS

Weather records come and go, but they can be useful to show extremes for both state and at local recording sites. The following information will change from time to time. For the latest values, contact our office to clarify the record you are planning to use. More statewide weather records are available at the Western Regional Climate Data Center – [www.wrcc.dri.edu](http://www.wrcc.dri.edu).

WEATHER ELEMENT	SEATTLE		OLYMPIA		HOQUIAM		BELLINGHAM	
Annual Average High Temperature	59.3°F		60.4°F		57.6°F		57.4°F	
Record High Temperature	100°F	7/20 1994	104°F	8/9 1981	98°F	8/9 1981	96°F	7/26 2006
Annual Average Low Temperature	44.2°F		39.5°F		44.2°F		41.9°F	
Record Low Temperature	0°F	1/31 1950	-8°F	1/1 1979	9°F	12/8 1972	-2°F	1/25 1950
Average Total Annual Rainfall	38.14"		50.98"		69.82"		35.99"	
Record Highest Annual Rainfall	55.14"	1950	66.71"	1950	87.86"	1956	47.18"	1971
Record Lowest Annual Rainfall	23.78"	1952	29.92"	1952	40.79"	1985	22.37"	1952
Average Annual Snowfall	11.7"		17.6"		5.1"		14.2"	