

Climate-Watch, April 2002

National Climatic Data Center - (last update May 8, 2002)



Xilingol (inner Mongolia) Region (Spring 1997 left- Spring 2001 right)
Photo courtesy of U.S. Embassy Beijing

Review

Spring Duststorms in China

Dust and hazy conditions have plagued large portions of north Asia during the late winter-early spring of 2002. According to media reports, in Beijing the **dust storms have been the worst in recent memory**. China's airborne desert -- more than 50,000 tonnes -- dumped itself on the city and then was driven eastward by surface and upper level winds periodically across Japan and Korea and the Pacific ocean. This year's dust storms point out the problem of dealing with increasing desertification in parts of the region. In Beijing, 18 dust storms affected the region in the spring of 2001 and the region is again enduring additional dust storm problems already in early 2002. China is working on a "Green Wall" project whose purpose is to keep out the Gobi desert sand particles.

The **Great Green Wall is to fight the moving sands** in the way the stone and brick Great Wall was built to hold back the Central Asian warrior horsemen. The Great Green Wall is a project to plant a 4,480km (2,800 mile) shelterbelt of trees across the northwest rim of China skirting the Gobi Desert. Although prevention efforts are targeted at tree planting in cities and rural areas, progress has sometimes been slow. Almost one third of this vast country's land mass is desert or is in the process of becoming one, according to official statistics. Throughout China, about 100,000 square kilometers has become desertified over the last 50 years, according to official sources. Since the mid-1980s, desert area has been expanding by about 2,500 square kilometers a year. Of the seven areas within the country where deserts are expanding by 4 percent a year or more, three are in Inner Mongolia. Since the first desert tracking study eight years ago, another

50,000 square kilometers have been reduced to dust and now the Gobi desert is only 250 kilometers (155 miles) from the capital.

Every spring, dust blowing off the Mongolian desert plain chokes northern China, but the problem has worsened in recent years because of improper land use. Overgrazing and deforestation across the north has damaged the fragile ecosystem, rendering oases and rivers dry, and worsening the desert environment. Four years of drought, in what has been termed as the Central Asia's dust-storm zone have also aggravated the drifting desert sands.

Weather Log - April 1-10th, 2002

A **tornado** struck eastern India on April 3rd, killing at least nine people and flattening nearly 500 homes, many of them thatched huts, officials said. According to officials, most of the deaths were caused by collapsing homes and uprooted trees. At least 50 people were injured by the twister, which struck at 3 a.m. on April 2nd, and lasted nearly 20 minutes, reaching wind speeds of up to 60 mph.

A **landslide in Papua New Guinea's rugged, jungle-clad mountains** has killed eight villagers and 22 are missing, presumed buried under mud and debris, the national disaster office said on April 3rd. The disaster office reported, "That particular area is prone to landslides and flooding. There had been heavy rain in the province which caused the landslide." The Post-Courier Newspaper said the area had been hit by 43 landslides in recent times. The exact death toll from the latest landslide may never be known as population statistics are vague in Papua New Guinea's remote villages.

This week is the anniversary of the April 3-4, 1974, super tornado outbreak. It was the **worst tornado outbreak in U.S. history** with 148 twisters touching down in 13 states. Before it was over 16 hours later, 330 people were dead and 5,484 were injured in a damage path covering more than 2,500 miles." See the NCDC April 1999 [Climate Watch](#) and the [NWS special](#) report for more details of the event.

In early April the **Southwest and parts of the East** are so dry that a long, hot wildfire season could be ahead this summer. Plant moisture levels are critically low across the region, said Rick Ochoa of the National Interagency Fire Center in Boise. Rainfall in the southern Rocky Mountains is as little as 30 percent of normal and plants in some Southern California forests are as dry as they would be in autumn. "Our fuel moistures are similar to what they were in 1996, and that was our worst fire season ever," said Raquel Poturalski, spokeswoman for Coconino National Forest in Arizona. "We're looking at a really similar season this year." Wildfires already have broken out this year in Arizona, Southern California and Colorado. "The Southwest might be the epicenter of the fire season this year," Ochoa said. On the East Coast, forest officials from Georgia to Maine are concerned about several years of scant rainfall. In the hardwood forests, leaf buildup on forest floors can become highly flammable.

"The ground is extremely dry. We have had five fires in January burn down under the snow and then resurface," said Jim Downie, spokesman for the Maine Forest Service. "We're going to see

the true effect of the drought over the last couple of years," he said. New England has had some rain in recent weeks, but officials are still preparing for the worst.

Weather Log - April 11-20th, 2002

According to NOAA's [Storm Prediction Center](#), **no one in the United States has died as a result of a tornado so far this year.** This is the furthest the nation has gone into any year without a tornado related death since record keeping began in 1950, according to NOAA scientists. In addition, the nation has experienced significantly fewer tornadoes than average, said Joseph Schaefer, Director of NOAA's Storm Prediction Center in Norman, Okla. So far in 2002, only 59 tornadoes have been reported, much less than the typical count of nearly 200 by April 15. This is the lowest tornado count on this date since 1994.

Before this year, the latest anyone had died in a tornado in the United States was April 12, 1961, Schaefer said. On average, approximately 70 Americans are killed by tornadoes each year, with about 20 by mid-April. An average of 1,200 tornadoes are reported each year. Part of the reason for the low number of tornadoes and no deaths so far has been unusual storm tracks this spring, Schaefer said. "Typically, spring tornadoes develop as storm systems move across the southeastern United States," Schaefer said. "This year, storms have generally moved to the north or stayed over the Gulf Coast." However, Schaefer reminds Americans to be prepared, especially right now during the busiest tornado months of the year - April, May and June. "In a way, a late start to the tornado season is particularly dangerous as people tend to become complacent and do not remain alert to developing weather events," Schaefer noted.

Take a look at the super cell thunderstorms that developed to the lee of Lake Erie on April 15th, 2002. Looking at the [satellite imagery](#) courtesy of the University of Wisconsin- you can see an "enhanced-V" signature typical of supercells in the central United States. The "enhanced- V signatures" are conducive to tornado development. The supercells in eastern Ohio and western Pennsylvania on the 15th caused, heavy rainfall in the 2-3 inch range with local flooding, hail, high winds, and funnel clouds.

Summer came early across parts of the midwest on April 15th. Temperatures soared into the mid to upper 90's in Nebraska. Temperatures were above 90 degree in Omaha and reached 97 degrees at McCook, Nebraska. Temperatures were also hot in parts of Kansas, northwest Missouri, western Iowa and southwest Minnesota. The temperature reached 91 degrees in the St. Paul/Minneapolis area breaking the old daily record of 82 set in 1915 and 1976. This was the earliest in April that 90 or higher was recorded, the previous earliest date was on the 25th of the month back in 1990 when the mercury hit 95 F. The 95 F reading is also the record high for April. At the beginning of April 2002, there was 4-7 inches of snow on the ground. Temperatures will return to more seasonable levels later in the week.

Summer extended eastward to New England from the 17th to the 20th of the month. New all-time record April high temperatures were set in Central Park, NY and in Charleston, SC. with temperatures near or above 95 degrees F. In Philadelphia, PA they had three days in a row of

temperatures near or above 90 degrees F in April. See [Selected U.S. City/State Extremes](#) page for up to date individual city unusual and new monthly records.

Weather Log - April 21-30th, 2002

According to media reports as of April 23rd, Taiwanese authorities are **considering nationwide water rationing** because of the island's **worst drought in two decades**. Since January, the island's capital of Taipei has received just 280 millimeters (11 inches) of rainfall, about 46 percent of the annual average of the past 30 years, according to the Central Weather Bureau. Rainfall in Kaohsiung, the island's second largest city, totaled 42 millimeters (1.7 inches) or 27 percent of the 30-year average, the bureau said.

As of the 23rd, local authorities reported five people were missing and feared dead, and said 270 houses were destroyed by **flash floods**, according to Yusuf Hassan, a spokesman for the U.N. High Commissioner for Refugees. Hassan said he could not confirm those reports. But he said 250 families were stranded at a UNHCR transit camp at Qala-i-Nau, a provincial capital 340 miles west of Kabul, the Afghan capital, where the destruction was reported.

According to media reports, in Connecticut, scientists and naturalists, amazed at the **furious pace of spring**, say it constitutes an acceleration of nature's deliberate ways not seen in perhaps 40 or more years. Many songbirds are migrating into the state two weeks early, while trees and shrubs are blossoming and leafing out weeks ahead of normal. Some wildflowers that ordinarily blossom in late April have bloomed, withered and disappeared already. "It used to be the first black and white warbler would show up around the 24th of April and get things going. This year they were in about the 10th or 11th," said Noble S. Proctor, a professor of ornithology and botany at Southern Connecticut State University in New Haven. Proctor has monitored the arrival dates of songbird species in Connecticut for four decades. "It looks like this is one of those years you can throw out your records and expect anything, anytime, anywhere," Proctor said. "It is amazing, it really is. And everybody is talking about it." One danger is the possibility of a severe cold snap, which could kill tender new leaves and flowers and make life difficult for bird species. Variations year to year in the timing of blooms and the arrival of bird species are expected, but those variations can be slight, a few days early or a few days late for one species or another. But a difference of two weeks is extraordinary. Last week's record-setting high temperatures were a factor, most notably in coaxing the trees and shrubs along, but the scientists say it was not the hot spell alone that brought May in April, but months of milder weather.

Media reports that eleven people were killed by **lightning and falling trees** when a severe 30-minute thunderstorm hit the northern part of India's West Bengal state, police said on the 27th. All the deaths occurred on the evening of the 26th, in the storm that packed 80-kilometer (50-mile) per hour winds, said police superintendents in four districts 350 kilometers (220 miles) north of Calcutta, in eastern India.

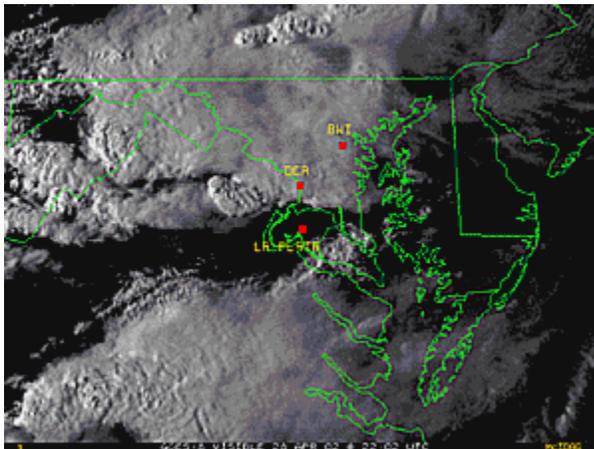
A spring storm in the Tennessee and Ohio Valleys in the U.S., on the 28th caused **tornadoes, high wind and hail**. The storm then moved eastward causing additional damage and spawning killer tornadoes. The tornadoes were part of powerful storms carrying heavy rain and snow. On

the system's northern edge, up to 20 inches of snow fell overnight in Wisconsin. More than 40,000 people were without power in northern Wisconsin on the 28th and wet snow contributed to four traffic deaths in Minnesota. NOAA's National Weather Service meteorologists were **surveying damages on the 29th**, in areas of Maryland, Tennessee, Missouri, Illinois, Ohio, Virginia and Kentucky. In Maryland, a powerful tornado killed three people and leveled parts of La Plata, a small town 25 miles south of Washington, D.C. A tornado in Missouri struck Marble Hill, killing a 12 year-old boy. In Kentucky and Illinois, tornadoes caused one death in each state. In Tennessee, a tornado injured 18 people 30 miles southeast of Nashville, and a tornado touched down in Ohio and caused widespread damages. See the [NOAA News Online](#) report for additional information and satellite images.

The damage assessment team from the Baltimore-Washington forecast office of NOAA's National Weather Service said the **tornado that devastated portions of Charles County in southern Maryland was a F5 on the Fujita Tornado Damage Scale**, a monster of a tornado. That means winds were in the 261-318 mph range, which can lift strong frame homes and blow them off their foundations, send automobiles flying through the air and toss them more than 109 yards, and debark trees. At least 6 homes were completely wiped off their foundation in Charles county with 3 of the homes just east of La Plata. The tornado path length was 24 miles in Charles county and at least 6 miles in Calvert county. The tornado width was 400 yards. The tornado touched down between Risen and Marbury as an F-2 then strengthened to an F-4 as it went through La Plata. The tornado then tracked into Calvery county. There are 3 confirmed deaths and over 90 injuries associated with this tornado.

*** SPECIAL NOTE:

The tornado was initially classified as an F5 but was downgraded to an F4 by the damage assessment team in early May.



NCDC's Satellite Services Group produced the **satellite animation** to the left. The images are made from the GOES-8 visible channel from 2200 UTC through 23:45 UTC on April 28, 2002, using every available scan (generally every 15 minutes). Note the intensification of these eastward moving thunderstorms across eastern Maryland. The thunderstorm crossing just north of La Plata (southernmost red square) generated the tornado.

[larger animation](#)

Historically, on Nov. 9, 1926, a powerful tornado (probably an F-4), known as Maryland's most severe in more than 100 years, hit about five miles southwest of La Plata, leaving 14 people dead and 56 injured as it moved across Charles County. It was the most deadly of what the National Weather Service says have now been five twisters to hit the La Plata area in the last 100 years.

Sunday's was the second worst, followed by two nonfatal twisters that struck 11 minutes apart on July 27, 1994, and a minor one that hit June 5, 1975.

Last year, a powerful tornado inflicted heavy damage in the College Park area, and other tornadoes have struck Southern Maryland several times in the past 10 years.

The twister that touched down in Shenandoah, VA., was measured to be a F2, which is characterized by winds between 113-157 mph that can tear roofs off houses, demolish mobile homes, overturn box cars, lift cars off the ground and snap trees like twigs.

According to the [Storm Prediction Center](#), April 2002 so far has registered 100 tornadoes. During an average April, the United States averages 140 tornadoes. Overall, the nation has recorded 140 tornadoes for the year. The SPC also said the seven total deaths reported this year is below the 24 tornado deaths usually recorded through April.

Note: Hazard event satellite images available courtesy of [NOAA OSEI Satellite Images](#).

Selected U.S. City and State Extremes

The [Selected U.S. City and State Extremes](#) provides a list of new records that were set across the U.S. during April 2002.

Additional Resources

- [Recent Global Daily Data](#)
- [NOAA 2002 Hurricane Season Forecast](#)
- [NCDC El Nino / La Nina](#)
- [NNDC Climate Data Online \(for long-term climate data\)](#)
- [NCDC Climatic Extremes and Weather Events](#)
- [Additional NOAA OSEI Satellite Images](#)(Western Fires, Tropical Storms, etc)
- [NCDC Storm Event Database](#)

Citing the Article

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