

Climate-Watch, May 2002



Advanced Land Imager (ALI), aboard NASA's EO-1 satellite
Photo courtesy of Lawrence Ong, EO-1 Science Team, NASA GSFC

Review

La Plata Tornado Damage

The La Plata tornado path is seen clearly in this panchromatic image acquired on May 1 by the Advanced Land Imager (ALI), flying aboard NASA's EO-1 satellite. La Plata is situated toward the left hand side of this scene and the twister's swath is the bright stripe passing through the town and running eastward 6 miles (10 km) toward the Patuxent River beyond the righthand side of the image. This stripe is the result of the vegetation flattened by the storm. The flattened vegetation reflects more light than untouched vegetation. The ALI is designed to improve upon and extend the measurement heritage begun by the Landsat series of satellites well into the 21st Century. There were 3 confirmed deaths and over 90 injuries associated with this tornado on April 28, 2002.

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

Weather Log - May 1-10th, 2002

In the U.S., according to media reports, rescue crews in helicopters and four-wheel-drive vehicles searched through the steep valleys of Appalachian coal country on the 3rd, after **flash flooding** left at least six people dead and 14 missing. Five inches of rain fell in six hours on the 2nd, sending streams and rivers surging out of their banks in the mountainous area where West

Virginia, Kentucky and Virginia meet. Some communities were cut off by mudslides and others had water up to the eaves of homes in a deluge so powerful that people lashed themselves to the trees. More than 100,000 homes and businesses lost power at the peak of the storm. Another round of rain and flooding is expected as well.

Media reports reported that major transport links slowly reopened on May 4th, amid a massive cleanup operation after **torrential rains caused floods and mudslides in Switzerland and northern Italy**. Switzerland's Gotthard highway and tunnel, a key artery linking northern and southern Europe was reopened midmorning after officials gave the safety all-clear. It had been closed Friday afternoon after mudslides blocked all four lanes. The Gotthard railway route was also back in business. Hundreds of people on trains from the northern Italian city of Milan spent the night in hotels after having to interrupt their journey. In the southern state of Ticino near the Italian border police said the situation was slowly improving. More rain fell in the space of 12 hours on May 3rd, than in a normal month. There were dozens of mudslides and local roads remained closed. Rains tapered off slightly in northern Italy, but fresh landslides overnight continued to block roads and heavy snowfall in the mountains around Alto Adige prompted warnings of avalanches. The heart of the storm moved south on the 4th, dumping sheets of rain on Rome and elsewhere in central Italy. Rainfall continued in the north, and Lake Maggiore was still rising at a rate of about 1-2 centimeters (.4-.8 inches) an hour.

A **tornado** swept through Happy, TX on the night of May 5th, 2002. The tornado killed at least two people and injured others. Although about 20 homes were leveled, everyone in the town of 647 was accounted for, Department of Public Safety trooper Wayne Beighle said. The tornado was one of at least six reported in the state on the 5th. Homes and buildings were damaged by those storms. Happy, TX is located about 30 miles (48 kilometers) south of Amarillo.

The media reported, searchers have **found nearly 200 bodies** after refloating a Bangladesh ferry boat that sank on Friday (3rd) night, a senior government official said on May 6th. Up to 300 people are believed to have been drowned when the ferry sank 100 miles south of Dhaka, in a storm in one of the worst Bangladesh ferry disasters since the 1980s. "The ferry was refloated late on Sunday (5th) night and towed to the shore. The death count has reached nearly 200," said Manzur Elahi, an administrator of Chandpur district where the ferry sank. Survivors from the ferry that sank from the storm said the vessel was carrying about 500 passengers or about twice its legal limit.

A **spring blizzard dumped nearly 30 cm (12 inches) of snow** on Canada's oil industry heartland on the 6th, snarling the morning commute and forcing airlines to cancel flights due to whiteout conditions. In Calgary, the blast of winter prompted officials to urge motorists to stay off highways out of the city of 900,000 people due to slippery conditions and low visibility. Spring snow is not unusual for the region. The Calgary snowfall record for a day in May was exactly 21 years ago, when the city was buried by 48.4 cm (19 inches) of snow. The snow and cold air pushed into the northern Plains of the U.S. and some places across northeast Montana and western North Dakota received record daily snowfall as well.

Weather Log - May 11-20th, 2002

According to media reports, two people were killed and five are missing after [Tropical Cyclone 01A](#) hit the Omani coast, a police official said on the 12th. The police mission in the Zofar governorate, south of Oman, said that rescuers were trying to save persons trapped by flooding. The storm also caused **huge damage to homes and blocked roads**. In a statement carried by regional news agencies, teams were also working to estimate damage to electricity facilities and other damage caused by uprooted trees in the city of Salalah.

On May 14, 2002 Caribou, ME **measured 2.7 inches of snow**. The snow began after daybreak and accumulated during the late morning and midday and then changed to rain in the afternoon. Moderate to heavy snow rates during the event were able to overcome the melting effect of diffuse mid-May solar radiation which usually prevents daytime snow accumulating so late in the season. The prior record for accumulating snow so late in the season was 5.6 inches which fell on May 12, 1996. However, records for the station begin in 1939. There have been earlier historical late season snowstorms which were recorded by stations to the south in New England but no records for these events exist for the Caribou region.

In contrast, **Heat Wave hits India** - A early May heat wave has killed 622 people over the May 9-16th in the sweltering coastal belt of the southern Indian state of Andhra Pradesh. The deaths were mainly among the poor, elderly, and laborers such as agricultural workers and rickshaw pullers, pushed the official toll to 622 since May 10, said D.C. Roshaiyah, the state relief commissioner. The highest number of deaths, 109, were reported in the West Godavari district, followed by 101 in Krishna district. New Delhi and other parts of northern India were also baking in the heat, but southerners were hit the hardest. Temperatures were as high as 41 degrees Celsius (106 degrees Fahrenheit) on Thursday along the coast of the Bay of Bengal, he said.

On the 16th, the temperature had already fallen in the capital, Hyderabad, and in some coastal cities, such as Vijaywada, 270 kilometers (170 miles) to the east. The temperature in Vijaywada dropped from 49 degrees Celsius (120 degrees Fahrenheit) last week to 36 C (97 F) on Thursday, said Meteorological Center director C.V.V. Bhadram in Hyderabad. Most of the region will be a bit cooler with some scattered showers. May, climatologically is the hottest month of the year with the average high temperature at Hyderabad around 40 degrees Celsius (104 degrees Fahrenheit). Andhra Pradesh suffered heat waves in 1996 and 1998. The monsoon season typically runs from June through September bringing needed rainfall and cooler temperatures.

According to media reports, **landslides caused by unusually heavy rains have killed 20 people** in the last 10 days in Uganda, a government official said on May 17th, 2002. According to a Nigerian government source, "The rains have been unusually heavy and falling nonstop, particularly in the mountainous areas." Local authorities in some districts have been telling people to temporarily abandon their homes on the slopes, but they refused." The rain season normally runs from March to April. Floods and landslides have killed at least 46 people in neighboring Kenya.

Weather Log - May 21-31, 2002

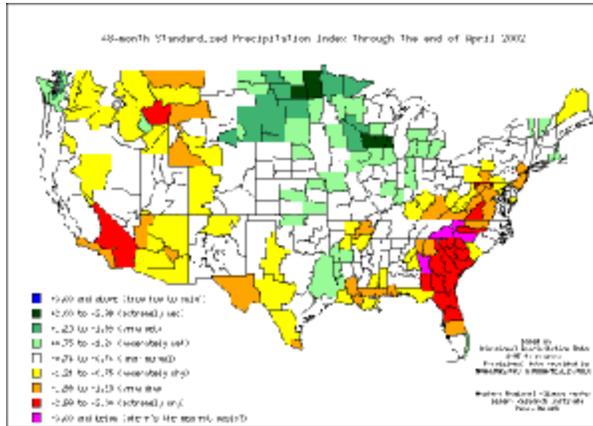
Indian Heat Wave- Update According to media reports, more than 1,030 people have died in a heat wave in the southern state of Andhra Pradesh, the highest one-week toll on record for any Indian heat wave, authorities said (on the 22nd) Wednesday. Most of the victims were elderly and poor. Northern desert winds have led to an abnormally hot May in southern India, with temperatures more than 7 percent above the monthly average. The northern parts of the country have also been baking. All the deaths occurred May 9-15, when temperatures soared to 120 degrees along the Bay of Bengal, said D.C. Roshaiyah, Andhra Pradesh's relief commissioner. **Heavy rains** hit the sweltering capital city of Delhi, India on the 26th received an impressive 1.81" of rain, nearly three times the monthly average in May.

Heavy rains and floods hit parts of Honduras and Nicaragua. According to media reports, residents were evacuated from Managua, the Nicaraguan capital on the 28th, and a dozen communities to the southwest of Managua were cut off by heavy rains that made streets impassable and washed out sections of highways. Managua Mayor Herty Lewites advised inhabitants of the capital to stay indoors until the end of the downpours, which began last week. In San Rafael del Sur, 60 kms (40 miles) southwest of the capital, 14 communities on the Pacific coast were cut off after a section of the highway washed out. State-run Radio Nicaragua reported that a child was swept away and killed by flood currents in a neighborhood in the city's south.

On the 27th. the Honduran government declared a state of emergency after **heavy rains flooded the capital, Tegucigalpa**, and left more than 100,000 people stranded in eastern Honduras. Major floods were reported in Tegucigalpa, where 300 people were evacuated, and in the province of Danli, in southeastern Honduras. In Olancho province, 80 miles (130 kms) east of Tegucigalpa, the rains washed out five bridges, preventing thousands of people from leaving the area.

Media reports indicated, flash floods and mudslides continued across the Caribbean on the 28th after a tropical low unleashed heavy rain across Jamaica, Cuba and Haiti. Twenty-six deaths were reported in Jamaica and Haiti as a result of the storm.

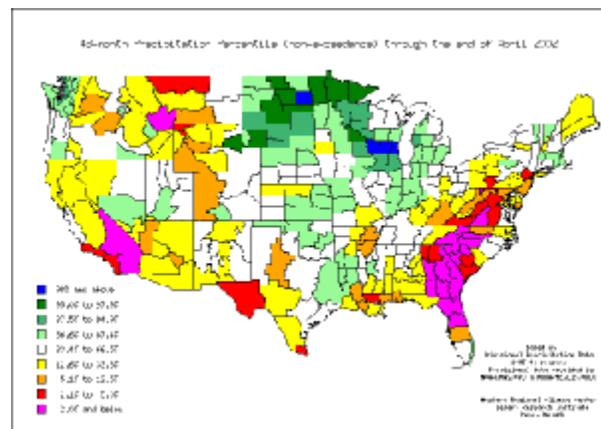
A report issued by Australia's Emergency Management Agency indicates that **natural disasters**, including droughts, floods, fires and frosts, injured 1,468 people and caused \$1.53 (Australian Dollars) billion damage in the past 14 months in Australia. Forty people were killed including nineteen in severe storms. The agency released the figures in an effort to remind people of the dangers associated with natural disasters.



[larger image](#)

In contrast, areas to the east of that region, along the east coast, **especially in the southeast**, were very dry with drought intensifying. Note the difference in rankings between North Carolina and Tennessee. The maps depicted show the Standardized Precipitation Index (SPI), which is a relatively new drought index based only on precipitation, and the precipitation percentiles for the 4-year period. The SPI can be used to monitor conditions on a variety of time scales. This temporal flexibility allows the SPI to be useful in both short-term agricultural and long-term hydrological applications.

Drought has developed over much of the eastern United States during the last four years, with the drought beginning in May 1998, at the end of the last El Nino cycle. Above average precipitation noted by climate divisions with green anomalies were associated with the main U.S. storm track which was from the south central states across the Mississippi and western Ohio Valleys and then across the central Great Lakes. States in these areas generally had average or above average precipitation.



[larger image](#)

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 May 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](#)
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Citing the Article

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