

News item/letter/article/editorial published on 12/11/17 in the

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Statesman	Punjab Keshari (Hindi)	Aaj (Hindi)
The Times of India (N.D.)	The Hindu	Indian Nation
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## RAIN SHADOW SOUTH

The failure of the northeast monsoon will impact the economy of southern India. Government must plan ahead

**O**N WEDNESDAY, TAMIL NADU declared a drought. The state government also announced that more than 140 farmers took their lives between October and December 2016 because of crop failure. The agrarian crisis in the state is a fallout of a weather vagary that hasn't received much notice. The northeast monsoon — critical to the southern peninsula, particularly Tamil Nadu — has been a failure, with overall rainfall between October and December 45.2 per cent below normal. This is the worst since the 48.3 per cent deficit recorded in 2011. In October 2016, 22 districts of Karnataka were declared drought hit. As 2016 drew to a close, South India's combined reservoir levels were 22 percentage points less than the average water availability over the past 10 years. The situation has serious implications for crops like paddy and coconut and will impact milk and sugar production, especially in Karnataka.

The poor northeast monsoon, this year, is a double blow for the southern states. Tamil Nadu, Kerala and south interior Karnataka and coastal Karnataka had already reported respective shortfalls of 19 per cent, 34 per cent, 21 per cent and 21 per cent during the southwest monsoon (June-September). The corresponding deficits of 62 per cent, 61 per cent, 70 per cent and 63 per cent reported for the northeast season makes matters worse for these regions.

The deficit in the northeast monsoon is likely to have implications for the economy. It may also accentuate inter-state river disputes, especially the sharing of Cauvery waters. While it is too early to predict the exact shortfalls in crop production, sowing figures from South India do not portend well. Tamil Nadu, for example, had targeted 14.5 lakh hectares under rice in 2016-17, according to the agriculture ministry. But barely seven lakh hectares was under the plough by January 5. This is 33 per cent less than the five-year sowing average of 10.68 lakh hectares. The shortfall will also impact livelihoods and have repercussions on the mechanisms to deal with crop failure. So far, less than a third of the drought hit areas in Karnataka have been covered by the Pradhan Mantri Gram Fasal Bima Yojana. The northeast monsoon is considered a fringe player in the agro-climate story. But imperatives of the economy and the needs to secure people's livelihoods require a rethinking on that front.

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## Mercury drops to 2.3°C in parts of Capital

NIRNIMESH KUMAR

**NEW DELHI:** With the minimum temperature dipping to 4 degrees Celsius, Delhi experienced the season's coldest day on Wednesday.

### Visibility dips

However, the mercury dipped to 2.3 degrees at Lodhi Road in south Delhi and 2.8 degrees at Akshardham in east Delhi. According to the Safdarjung meteorological department, it was the coldest day in five years, the minimum temperature being three degrees below normal.

At Palam, the minimum temperature was recorded at 4.7 degrees Celsius. The



**WARMING UP:** An elderly man basking in the sun on a cold Wednesday morning in New Delhi. PHOTO: SHIV KUMAR PUSHPAKAR

visibility was recorded at 500 metres at 5.30 a.m. in Safdarjung which later improved to 1,200 metres at 8.30 a.m. and to 2,000 metres at 11.30 a.m.

At Palam, the visibility was 800 metres at 5.30

a.m. as well as at 8.30 a.m. and it improved to 1,000 metres at 11.30 a.m., said the meteorological department.

The humidity oscillated between 100 and 54 per cent. The forecast for

City sees coldest day in five years with the minimum temperature dropping to 4 degrees

Thursday is a mainly clear sky with mist and shallow fog in the morning.

### Trains cancelled

The maximum and minimum temperatures are likely to hover around 17 and 4 degrees Celsius respectively, the forecast said. Meanwhile, 11 north-bound trains were cancelled, while 26 were delayed due to fog, a Railway official said. However, flight operations were reported to be mostly normal.

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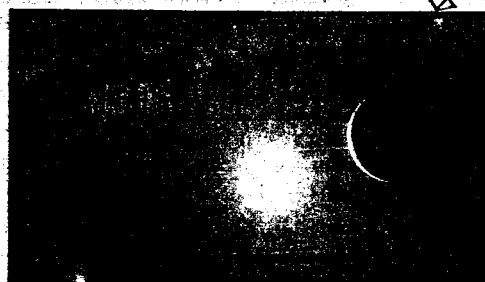
## Telescope to seek habitable planets in nearest star system

SANTIAGO: The European Southern Observatory's Very Large Telescope in Chile will be modified in order to allow it to search more effectively for potentially habitable planets in Alpha Centauri, the nearest star system to Earth.

The ESO said it had signed a deal with Breakthrough Starshot, a venture that aims to deploy thousands of tiny spacecraft to travel to the system and send back pictures.

Starshot, which is backed by Internet billionaire Yuri Milner and physicist Stephen Hawking, will provide funding in order to allow equipment on the Very Large Telescope that studies in the mid-infrared to be adapted to better detect faint planets, the ESO said in a statement on Monday.

The adaptation will have the effect of reducing bright stellar light that



IN SEARCH OF NEW HOMES: An artist's impression released by the European Southern Observatory shows a planet (right) orbiting the star Alpha Centauri. — PHOTO: AP

drowns out relatively dim planets, improving the chances of finding them, it said.

Interest in exploring the sun's nearest neighbour has increased since scientists announced last year that they had discovered evidence of an Earth-sized planet circling Proxima Centauri, a star in the Alpha Centauri system.

Larger telescopes

planned for the 2020s, such as the ESO's own Extremely Large Telescope, current under construction in Chile, should provide researchers with more information on the number and nature of exoplanets.

The ESO is an intergovernmental astronomy organisation backed by 16 countries in Europe and South America and hosted in Chile. — Reuters

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# Life hit as cold conditions prevail in Himachal Pradesh

## Water supply crippled as pipes frozen in Shimla

STAFF CORRESPONDENT

**SHIMLA:** Extreme cold conditions again prevailed in the entire hill State of Himachal Pradesh with the minimum temperatures plunging below the freezing point in a number of places. The capital town of Shimla recorded an all time low of minus 3.2 degrees on Tuesday night and the tourist town of Manali froze at minus 6.6 degrees.

On Wednesday morning, water supply in Shimla was affected due to repeated power failure and as a majority of water pipes were frozen. The residents were seen pouring warm water and heating up pipes to get water for immediate use.

Some of the localities in Shimla remained without water for the fifth consecutive day on Wednesday.

The road conditions also worsened in the morning as they became extremely slippery and the commuters had a tough time in reaching their destinations.



Icicles hang from a roof following heavy snowfall in Shimla on Wednesday. PHOTO: PTI

Parts of Kinnaur, Lahaul-Spiti, Chamba and Shimla districts remained cut off for the fifth day today as no road connectivity, power and telecommunication lines could be restored.

The opposition parties including the BJP and CPI-M staged protests in the capital against the lackadaisical approach of the State govern-

ment and local administrations in restoring normality after the snowfall last weekend. They have blamed the officials for ignoring even the directions of the Chief Minister for an early restoration of at least electricity and water. The Chief Minister went to Delhi earlier has now reached Kangra for his winter sojourn.

Hamirpur Lok Sabha mem-

ber Anurag Thakur slammed the administration for diverting its time and energy for clearing the road for the Chief Minister to reach his helicopter, for visiting Delhi regarding the disproportionate assets case along with his family, instead of restoring road connectivity in the suburbs of Shimla for essential services like ambulances.

A number of Shimla residents and local MLA Suresh Bhardwaj have even demanded to hand over the water, electricity and road restoration works to the army as the local administration has failed in doing so. The district administration here has just deployed some unskilled workers and a few machines to clear the heavy snow from the roads, which is not sufficient, rued Mr. Bhardwaj, a local resident.

Meanwhile, the minimum temperature has touched minus 11.4 degrees in Keylong and it was between minus 15 to minus 17 degrees in Kaza and Kalpa in Kinnaur.

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## DRY WEATHER South Side Story

It's been a good monsoon — but not for TN, Karnataka and Kerala



### ALL-INDIA AREA-WEIGHTED AVERAGE RAINFALL (in mm)

	2016	2015	2014	2013
WINTER (JAN-FEB)	17.9 (-56.76)	38.1 (-7.97)	46.7 (14.18)	51.4 (25.67)
PRE-MONSOON (MAR-MAY)	131 (-0.38)	183.6 (39.62)	131.1 (-0.15)	103.8 (-20.94)
MONSOON (JUN-SEP)	862 (-2.87)	764.8 (-13.83)	781.7 (-11.86)	937.4 (5.69)
POST-MONSOON (OCT-DEC)	69.7 (-45.20)	97.8 (-22.96)	85.2 (-33.02)	150.0 (17.92)
ANNUAL (JAN-DEC)	1,080.6 (-9.01)	1,084.3 (-8.70)	1,044.7 (-11.94)	1,242.6 (4.75)

Note: Figures in brackets are normal long-period average rainfall

**HARISH DAMODARAN**  
NEW DELHI, JANUARY 11

FOR ALL the good news with regard to the southwest monsoon — normal this time, after back-to-back failures — there's one bit of bad news that hasn't received adequate attention. The northeast monsoon — critical to the southern peninsula, particularly Tamil Nadu — has been a disaster, with overall rainfall for the season (October-December) turning out 45.2 per cent below normal. This is the worst since the 48.3 per cent deficit recorded in 2011.

For Tamil Nadu, Kerala and southern Karnataka, the poor northeast monsoon rains come as a double whammy. Tamil Nadu, Kerala, south interior Karnataka and coastal Karnataka had already reported respective rainfall shortfalls of 19 per cent, 34 per cent, 21 per cent and 21 per cent even during the southwest monsoon (June-

September). The corresponding deficits of 62 per cent, 61 per cent, 70 per cent and 63 per cent reported for the northeast season only make matters worse. Tamil Nadu, not surprisingly, has declared drought.

Extended dry weather in Tamil Nadu and southern Karnataka could have a production impact, especially in milk and sugar where supply conditions are already tightening.

There is no such problem of moisture deficiency in the main rabi belt of northern and central India. The current cold wave, triggered by widespread rain/snowfall activity over the western Himalayan region, should help the standing wheat, mustard and chana crops. While the northeast monsoon rains were bad in these regions as well — causing concerns till early this month — the fact is that the situation is far better than in 2015 and 2014. Those two years saw both the southwest and the northeast monsoon rains fail.

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# Akalis fooling people on SYL canal: Hooda

VIKAS VASUDEVA

CHANDIGARH: Former Haryana Chief Minister and Congress leader Bhupinder Singh Hooda on Wednesday said that with an eye on the coming Punjab Assembly polls, the Shiromani Akali Dal (SAD) and the Indian National Lok Dal (INLD) were playing with the sentiments of people and fooling them on the water-sharing issue of the Sutlej Yamuna Link (SYL) canal.

Talking to *The Hindu*, Mr. Hooda said: "They [the SAD and the INLD] are hand in glove. 'Chautalas' have always been protecting in-

terests of 'Badals' rather than protecting Haryana's interests on the SYL issue." The INLD's announcement to start the digging of SYL canal on February 23 was just another 'political stunt'. "If the INLD was interested in resolving the SYL issue, they should cooperate with the Congress in the best interests of Haryana," he said.

## Court verdict

Mr. Hooda said the Supreme Court's verdict of invalidating the 2004 law passed by Punjab to terminate the SYL canal water-sharing agreement with neighbouring States was a



Bhupinder Singh Hooda

decision in Haryana's favour. It was now the responsibility of the Central government to ensure that Haryana got its share of water.

Mr. Hooda said he was willing to campaign for his

party in the Punjab Assembly polls, but not until an assurance was given by Capt. Amarinder Singh on giving its share of water to Haryana through the Sutlej Yamuna Link canal.

## Demands assurance

"It is clear that once the Congress wins the Punjab Assembly elections, Amarinder would be the Chief Minister. But I will campaign in Punjab only when I get the assurance from him on the SYL water issue," he said. "I am a true soldier of my party but it is my moral duty to stand for the people of my State on SYL," he said.

With the pro-Jat reservation outfit all set to renew the next round of agitation from January 29 under the All India Jat Arakshan Smiti, Mr. Hooda said: "Everyone has a right to peaceful protest."

Mr. Hooda hit out at the BJP government in Haryana, saying, "It was the BJP-led government's slackness that was responsible for last year's Jat stir. They [the BJP] tried to divide the society but people have understood their game and are united against the BJP now," he said.

The Congress leader said the BJP government had failed to keep its promises made during the polls.

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## Wetlands to help treat drains

TIMES NEWS NETWORK

**New Delhi:** As Delhi government starts work to implement the ambitious Yamuna turnaround plan, attempts are simultaneously being made to address the pollution in the city's three major drains. To start with, Delhi Jal Board (DJB) has recently appointed a consultant to prepare a detailed plan for an 8-km stretch of the supplementary drain which will be treated through a network of constructed wetlands.

Senior officials said that a similar network of wetlands was also being planned for Yamuna upstream of Wazirabad. "We are looking at an 8-km stretch of the supplementary drain from Bhalswa lake to Sur Ghat where it joins the Najafgarh drain. This will be a pilot project which, if successful, will set the trend for cleaning all other water bodies. It will also show the correct way of treating sewage and handling a drain," said an official.

DJB will be using constructed or floating wetlands for treating sewage in the drain, as opposed to a sewage treatment plant (STP). This, said an official, is an inexpensive and natural system for waste water tre-

atment. "Delhi is short of land and it is not possible to install highly expensive STPs at every step. We need to look at inexpensive mechanisms and wetlands will be beneficial in multiple ways," said the official.

The four-pronged approach to cleaning the drain will be through addressing the problem of contaminated water, solid waste, sludge and septage. The supplementary drain, along with Najafgarh and Shahdara drains, contributes the maximum pollution to Yamuna within city boundary. Construction of this drain started in 1982 after the Najafgarh drain failed to handle the flood waters of late 1970s.

At present, a mammoth task of supplementing all three drains with interceptors is taking place. These interceptor drains are expected to ensure no untreated water reaches Yamuna by trapping all small drains and taking the sewage to STPs before discharging.

In 2014, NGO FORCE experimented with the constructed wetland system for treating sewage in a mining pit in Rangpuri Pahari, where it installed a series of natural filters such as reed, coir, bamboo and jute meshes.

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## Delhi hits season's lowest of 4°C, temp to dip further

TIMES NEWS NETWORK

**New Delhi:** The cold wave lashing north India is expected to continue for another two days during which maximum and minimum temperatures in the capital will fall by 2-3 degrees celsius. On Wednesday, Delhi recorded its lowest minimum temperature for the season — at 4 degrees celsius, three degrees below normal. However, it was Gurgaon that bore the brunt: its minimum temperature dipped to 1.7 degrees.

"The region is experiencing dry north north-westerly winds from the snow-clad Himalayas. This has resulted



Shimla, under 2cm of snow, shivered at -3 degrees on Wednesday | P 13

in a drop in temperatures while keeping fog at bay," said an official. Delhi's regional forecasting centre said ground frost was likely to conti-

nue for two days. Thursday would see a clear sky with shallow fog in the morning.

► **Related report, P 7**

## Expect weather to change from Saturday

► **Continued from P1**

**M**aximum and minimum temperatures would be around 17 degrees and 4 degrees respectively. "In fact, due to unusually clear sky, there is also local cooling. On Wednesday, the wind was blowing at a speed of 15-25 kmph. Similar conditions prevailed on Tuesday and will persist on Thursday as well."

The Met department has forecast a further fall of 2-3 degrees in minimum temperatures over the plains of northwest India in the next two days. Maximum temperatures are likely to fall by 2 to 3 degrees by Thursday.

Any change in the weather can be expected from around January 14 with a western disturbance expect-

ed to impact the western Himalayan region from then and the plains by January 16. "At the advent of the WD, winds will become calmer and change direction. Under

### WEATHER



Max 17.2°C (-3)/

Min 4°C (-3)

Moonrise: Thursday -

05:49 pm Moonset:

Friday - 07:40 am Sunset: Thursday - 05:44 pm Sunrise: Friday - 07:15 am Clear sky. Maximum & min temperature on Thursday will be around 17°C & 04°C. Max Humidity Wednesday was 100% and min 54%

its impact, the sky will start becoming partly cloudy from Saturday onwards and shallow to moderate fog can be expected in the morning on Friday and Saturday. Delhi may expect light rain or thundershowers on Monday," said an official.



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# Stop before the tipping point

The accelerated warming of the Arctic and Antarctica could trigger catastrophic climate changes, writes SHYAM SARAN

US President-elect Donald Trump has spoken about scrapping the United States' international commitments to tackle global warming. This is worrying not least because the US is one of the world's biggest polluters. Trump's disdain for global warming is way off the mark. The world has recently received dire warnings about the deteriorating health of our planet from two of its most fragile and critical ecosystems, the Arctic in the north and the Antarctica in the South. For India, with its extensive coastline, the implications are enormous.

The Arctic Ocean has experienced the warmest winter this year since temperature records began to be compiled. There has been an extraordinary 200 degrees deviation above what temperature levels should have been at this time of the year. Satellite images have also revealed that sea ice in the Arctic Ocean is at the lowest extent ever recorded. This may be dismissed as a "freak" phenomenon by climate change sceptics, but it comes as a culmination of a steady warming of the Arctic over the past half a century, resulting in a 75% loss of its ice cover.

In the Antarctica, there had been complacency because the loss of the thick ice cover over the southern continent had been minimal in recent years. The loss of some ice-shelves located at the coast, had been made up by increased accumulation in other parts of the continent. However, just in the past few days, it has been reported that a massive ice-shelf in the western part of the continent, known as Larsen C, may be about to detach itself from the thick mass of ice covering the continent, and float way into the ocean as a gigantic iceberg.

Larsen C is part of what was originally a very extensive ice-shelf, parts of which, Larsen A and Larsen B, have

already disintegrated and floated away. Larsen A disappeared in 1995 and Larsen B in 2002. But Larsen C is by far the largest shelf in this part of the Antarctica, covering an area of over 50,000 sq. kms.

David Vaughan, Director of Science at the British Antarctic Survey, has said in a recent report: "Ice-loss from this part of West Antarctica is already making a significant contribution to global sea-level rise and is actually one of the largest uncertainties in global sea-level prediction."

The Arctic and the Antarctic are different ecosystems but both are very fragile. The Arctic is an ocean, enclosed by land, constituted by territories belonging to the US, Canada, Russia, Greenland, Norway and Denmark. The Antarctica is an ice-covered land-mass of continental proportions, which is surrounded by deep ocean. The melting of ice, floating in the Arctic Ocean, will not add to net sea-level rise, but the mass of ice covering the Antarctica and Greenland (in the Arctic region), would add to the volume of water in the world's oceans and lead to significant sea-level rise. If all the ice over the Antarctica and Greenland were to melt, there could be an increase in sea-level of several tens of feet, by 2100, inundating most of the major towns and cities located on the sea-coast around the world.

The Arctic Resilience Report recently warned that the accelerated warming of the Arctic could trigger "tipping points", which in turn lead to "catastrophic and uncontrollable climate changes." It goes on to add the once these tipping points are reached, "the effects would become their own drivers of global warming, regardless of human attempt to reduce carbon emissions."

This means that these anticipated changes may lead to much more severe global warming and climate change than what is already happening as a result of anthropogenic fac-

tors such as burning of fossil fuels, cutting down of forests and environmental degradation. We are near the point where it would cease to matter whether we, as humanity, are successful in reducing and eventually eliminating greenhouse gas emissions. Much more powerful drivers of climate change are likely to take centre-stage instead.

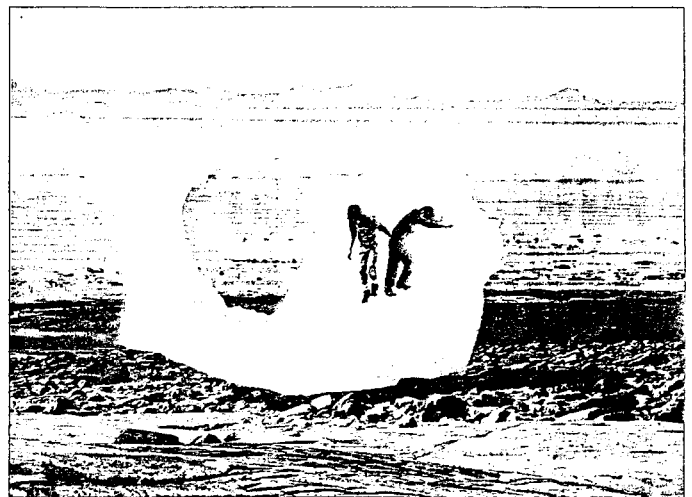
But sea-level rise is not the only consequence to worry about due to the loss of the polar ice-caps. For example, the thick ice-cover over the Antarctica and over Greenland will release a huge amount of methane which lies trapped in the frozen bio-mass below the ice. The same is true of the permafrost that covers the northern zones of Arctic littoral. Methane is a much more powerful climate change-forcing agent than carbon dioxide (CO<sub>2</sub>) is, though it stays in the atmosphere for a shorter time than CO<sub>2</sub>. The release of methane will lead to a significant spike in global warming.

Another change relates to what is known as the albedo effect. The mass of white ice, both in the Arctic and the Antarctica, reflects back the rays of sun reducing the warming of temperatures. With its melting, much more of the heat from the sun will be absorbed by the oceans and the land-mass, which will exacerbate global warming.

And finally, climatic conditions and oceanic wave movements in the polar regions have a significant effect on weather patterns around the world, including the monsoons in our subcontinent.

The threat to human survival is a clear and present danger. If we do not heed the warning signals which are coming to us from the very ends of the Earth, the time for any effective human intervention will soon be past.

Shyam Saran is former foreign secretary and a former special envoy for climate change  
The views expressed are personal



Children play amid icebergs in Greenland. Satellite images reveal that sea ice in the Arctic Ocean is at the lowest extent ever recorded

REUTERS

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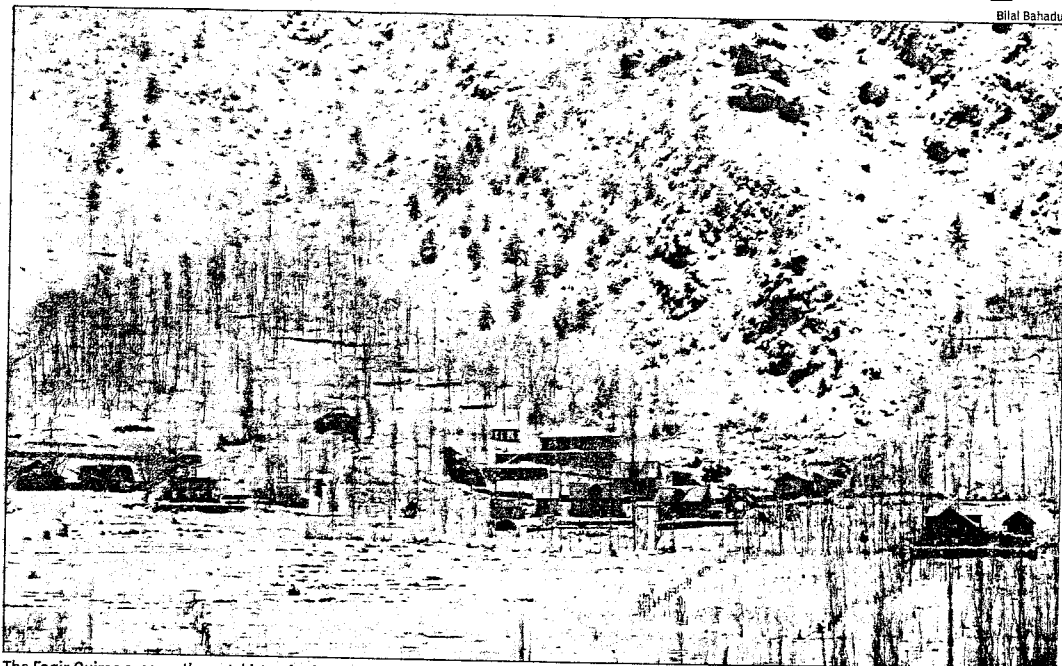
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## 7 die in Shimla as much of north India sees season's lowest temp



The Faqir Gujree area on the outskirts of Srinagar after fresh snowfall on Wednesday; icicles outline a view of Shimla's Mall Road (below)

### TIMES NEWS NETWORK

With fresh spells of snow and rain in hill states, the cold wave over north India intensified on Wednesday, pushing the minimum temperature several degrees below the normal.

Seven people died in Shimla, two of them of hypothermia. The five others, all carpenters from Bihar and West Bengal, are said to have died of asphyxiation while sleeping in a room heated with a coal brazier in Chail area. "They apparently died in sleep due to the carbon monoxide," a senior police officer said. The bodies were found in the morning by their employer.

People continued to battle biting cold in Jammu and Kashmir, Punjab, Haryana, Rajasthan and Uttar Pradesh. Shimla recorded a minimum temperature of minus 3.2°C, 6 degrees below normal and the Himachal capital's coldest in six years. The weatherman said the cold conditions were set to intensify further in hill states,

with a fresh spell of snow from January 14 onwards.

"A fresh western disturbance is likely to affect the western Himalayan region from January 14 and adjoining plains from January 15 onwards," said Manmohan Singh, director, Shimla Meteorological Centre.

In Uttarakhand, the snow brought a wave of tourists, including Bharat Ratna cricketer Sachin Tendulkar, to Mussoorie. Tendulkar, a frequent visitor to Mussoorie for several years now, headed straight to friend Sanjay Narang's home at Dahlia Bank.

Doon residents woke up to a temperature of 2.9°C, the season's lowest minimum for the Uttarakhand capital so far. Met officials said no immediate relief was expected, and temperatures would continue to remain low in the hills and plains of Uttarakhand for the next few days. Ground frost is likely to occur at a few places on Thursday and Friday, a Met official said.

In Jammu & Kashmir, summer capital Srinagar re-



corded a minimum temperature of minus 4.1°C and maximum temperature of 6.2°C. The Met office predicted that the city's dry weather was likely to continue for the next 48 hours (from Wednesday), causing a further drop in the night temperature. Tourist favourites Gulmarg and Pahalgam recorded minimum temperatures of minus 13°C and minus 12.4°C, respectively.

In the national capital, Wednesday saw the minimum temperature drop to 4°C, three notches below the season's average and the lowest this season. Met officials

forecast no rain, and said the cold wave could mellow from Friday. Fog engulfed several parts of Delhi, NCR and western Uttar Pradesh resulting in delay and cancellation of several trains.

Chandigarh residents too experienced a cold Tuesday night with the minimum temperature falling to 2.4°C, two degrees below normal.

Cold wave conditions intensified in Rajasthan, with most places recording their lowest temperatures for the season. Fatehpur (Churu) and Mount Abu were the state's coldest.

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Hindustan Times  
Statesman  
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Nav Bharat Times (Hindi)  
Punjab Keshari (Hindi)  
The Hindu  
Rajasthan Patrika (Hindi)  
Deccan Chronicle  
Deccan Herald

M.P. Chronicle  
Aaj (Hindi)  
Indian Nation  
Nai Duniya (Hindi)  
The Times of India (A)  
Blitz

and documented at Bhagirath(English)& Publicity Section, CWC.

# India lost 250 sq km coast in 15 yrs due to Antarctic storms

**COLD THREAT** IIT-Kharagpur scientists analysed data from 8 satellites collected over 21 yrs

Joydeep Thakur

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**KOLKATA:** Over the past 15 years, India has lost more than 250 sq km of its coastline due to rising sea levels and increased erosion. Now a team of scientists from IIT Kharagpur has found that the culprit could be sitting somewhere near the Antarctic region — nearly 7000 km away.

Analysing data collected by eight satellites over a period of 21 years, a team of scientists led by PK Bhaskaran, head of the ocean engineering and naval architecture department of IIT Kharagpur, has found that strong waves and stormy winds originating from the icy continent are triggering the erosion of the Indian coastline.

“Sea storms triggered by climate change and global warming have increased near the Antarctic region over the past 20 years. These have been generating high waves and stormy winds, which travel thousands of kilometres to reach the Indian coast. These have been changing the erosion and sedimentation patterns in both the Bay of Bengal and the Arabian Sea,” Bhaskaran said.

It takes just around four to five days for these waves to reach the Indian coast, which play havoc with wind speed, wave

heights and ocean currents, which in turn aggravate the erosion. The pattern of sedimentation is also changing as scientists are witnessing in the Sunderbans area.

“In the Bay of Bengal region, the height of waves has increased by nearly 1.4 m and speed of winds has increased by 3.1 metres per second over the past two decades. The trend is almost the same for the Arabian Sea,” he added.

The cumulative result is increased erosion along the Indian coastline.

Earlier a team of 10 scientists

from the Space Application Centre in Ahmedabad — a key unit of ISRO — and the Central Water Commission under the water resources ministry studied changes along the country's 8,414 km shoreline, including those of island groups such as Andaman and Nicobar and Lakshadweep.

They pointed out that around 3,829 km (45.5%) of the coast is under erosion, 3,004 km (35.7%) is getting accreted, while only 1,581 km (18.8%) of the coast is more or less stable.

The Nicobar Islands lost the maximum area — around 94 sq

## HOW THE STORMS AFFECT INDIA

- Sea storms near the Antarctic region generate high waves and stormy winds, which take only 4–5 days to reach the Indian coast
- These waves and high-speed winds aggravate erosion of India's coastline
- India has lost over 250 sq km of its coastline in 15 years
- States affected include Maharashtra, Andhra Pradesh, Odisha and West Bengal
- The Nicobar Islands are the worst affected, losing around 94 sq km



■ Scientists say that 3,829 km (45.5%) of the country's coastline is under erosion.

BETTY IMAGES/ISTOCKPHOTO

km. States such as Maharashtra, Andhra Pradesh, Odisha and West Bengal too lost land to sea erosion.

“Climate change has influenced weather patterns across global oceans. It is matter of serious concern which can have long-term repercussions. To improve climate projections, the Intergovernmental Panel on Climate Change report has also highlighted the need and importance for wind-wave climate study,” said Indian Meteorological Department, Kolkata deputy director general Sanjeeb Bandyopadhyay.

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Punjab Keshari (Hindi)  
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Blitz

and documented at Bhagirath(English)& Publicity Section, CWC.

## नहरों में राजस्थान के हिस्से में नहीं होगी पानी की कटौती

प्रतिका न्यूज़ नेटवर्क

rajasthanpatrika.com

बीकानेर पौंग बांध में पिछले वर्ष के 142 फुट की तुलना में इस बार पानी का लेवल सात फीट कम है। इस पानी की कमी के चलते राजस्थान के हिस्से में निर्धारित से 10 प्रतिशत की कटौती का प्रावधान किया गया, लेकिन राजस्थान में काश्तकारों और कांग्रेस के आन्दोलन के दबाव में इस कटौती को स्थगित कर दिया गया है। अब नहरों में पानी कटौती नहीं होगी। इससे किसानों को तीन में से एक समूह में सिंचाई का पानी मिल रहा है। आरडी 620 पर नहर के द्वितीय चरण बीकानेर-जैसलमेर को 3191 क्यूसेक पानी दिया जा रहा है। हरिके पर 8600 क्यूसेक पानी दिया जा रहा है। नहर विभाग की रिपोर्ट के अनुसार इस वर्ष पौंग बांध के कैचमेंट एरिया में बारिश कम होने से बांध में कम पानी

आया। भाखड़ा-व्यास प्रबंधन मंडल की बैठक में बांध में कम पानी के चलते राजस्थान के हिस्से में कटौती का निर्णय किया गया। नहरों में पानी की कमी को लेकर काश्तकारों और कांग्रेस की ओर से आन्दोलन किए गए। इस आन्दोलन के चलते जल संसाधन मंत्री डॉ. राम प्रताप और संसदीय सचिव डॉ. विश्वनाथ मेघवाल ने भाखड़ा-व्यास प्रबंधन मण्डल से बात कर कटौती निरस्त कर दी। इससे हरिके पर राजस्थान को 8195 क्यूसेक पानी मिल रहा था। इस कटौती को निरस्त करवाने पर अभी हरिके पर 8600 क्यूसेक पानी मिल रहा है। नहरों के तीन समूहों में से 5 से 14 जनवरी तक एक ग्रुप-स चल रहा है। 14 जनवरी से समूह-अ ग्रुप चलाया जाएगा। इधर नहरों में पानी के हिस्से को लेकर 20 जनवरी को भाखड़ा-व्यास प्रबंधन मण्डल की बैठक में आगे की करियता तय की जाएगी।

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# दिल्ली में बुधवार पांच साल का सबसे सर्द दिन

दि-12-1-17

नई दिल्ली | प्रमुख संवाददाता

राजधानी में पिछले पांच वर्षों की तुलना में इस साल बुधवार सबसे सर्द दिन रहा। पहाड़ों से आने वाली सर्द हवाओं के कारण बुधवार सुबह दिल्ली (जाफरपुर) का न्यूनतम तापमान 2.1 डिग्री सेल्सियस तक पहुँचा गया, जबकि सफ़दरजंग में पारा 4 डिग्री रहा। जाफरपुर सबसे ठंडा : दिल्ली में अधिकतम तापमान 17.2 डिग्री सेल्सियस रहा। यह भी सामान्य से तीन

कहां कितना पारा	दिल्ली	आगरा	फरह (नया)
(तापमान न्यूनतम में)	2.1° जाफरपुर	0.8°	0°
	नैनीताल	नारनौल	शिमला
	-1.5°	-0.5°	-3.2°
		हरियाणा	

डिग्री सेल्सियस कम है। दिल्ली में जाफरपुर सबसे ठंडा रहा। मौसम वैज्ञानिक समरजीत चौधरी के अनुसार पहाड़ों में अच्छी बर्फबारी हुई है। ऐसे में

वहां से आ रही सर्द हवाओं के चलते उत्तर भारत के ज्यादातर मैदानी इलाकों में न्यूनतम तापमान में काफी गिरावट दर्ज की गई है। गुरुवार को सुबह हल्के

कोहरे की संभावना है। न्यूनतम पारा 4 डिग्री के करीब रहेगा। अधिकतम 17 डिग्री के आसपास रहेगा।

➤ संबंधित खबरें पेज 03, 06, 12

रिकॉर्ड बर्फबारी

पहाड़ पर भारी बर्फबारी जारी है। हिमाचल के रामपुर बुशहर में रिकॉर्ड 10 सेमी बर्फबारी हुई। वहीं, शिमला में 2 सेंटीमीटर बर्फबारी हुई।

पांच वर्षों में 11 जनवरी को दिल्ली का तापमान

वर्ष	अधिकतम	न्यूनतम
2017	17.2	04
2016	24	09
2015	18	07
2014	20	06
2013	21	08
2012	18	04

(आंकड़े सफ़दरजंग के, तापमान डिग्री सेल्सियस में)

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# इस वीकेंड बारिश होने की भी संभावना है पारा पहुंचा 2.3 डिग्री

नव-12-1-17

■ नगर संवाददाता, नई दिल्ली

दिल्ली में अब ठंड बढ़ने लगी है। बुधवार को सफदरजंग में न्यूनतम तापमान नॉर्मल से तीन डिग्री कम के साथ 4 डिग्री सेल्सियस दर्ज हुआ। लोदी रोड में न्यूनतम तापमान 2.3 डिग्री सेल्सियस दर्ज हुआ। मौसम वैज्ञानिकों ने बताया कि 11 जनवरी को बीते पांच सालों में न्यूनतम तापमान सबसे कम दर्ज हुआ है। मौसम वैज्ञानिकों के मुताबिक दिल्ली में अगले दो दिनों तक शीत लहर चलने की संभावना है। इस दौरान तापमान कम रह सकता है। मौसम वैज्ञानिकों ने बताया कि दिल्ली में इससे पहले सफदरजंग में न्यूनतम तापमान साल 2013 में 6 और 7 जनवरी के दिन 2 डिग्री सेल्सियस गया था।

मौसम विभाग ने अपने बुलेटिन में कहा कि अगले दो दिनों तक दिल्ली और आसपास के इलाकों में शीत लहर चलने की संभावना है। इस दौरान अधिकतम तापमान 18 डिग्री और न्यूनतम तापमान 3 से 4 डिग्री सेल्सियस रहने की संभावना है। वहीं 15 और 16 जनवरी को बादल छाए रह सकते हैं। 15 जनवरी की रात को और 16 जनवरी की सुबह बारिश भी होने की उम्मीद है।

मौसम वैज्ञानिकों ने बताया कि पहाड़ी इलाकों में हाल ही में अच्छी बर्फबारी हुई है। इस सीजन में पहली बार अच्छी



बर्फबारी होने के कारण दिल्ली और आसपास के मैदानी इलाकों के मौसम पर फर्क पड़ा है। जिससे तेज रफ्तार से ठंडी हवाएं दिल्ली की तरफ दस्तक दे रही हैं। इससे मौसम पर असर पड़ रहा है। बीते दिनों से काफी मात्रा में ठंडी हवाएं पहाड़ी इलाकों से आ रही हैं। जिससे बीते तीन दिनों से मौसम का मिजाज बदला है।

बुधवार को अधिकतम तापमान नॉर्मल से तीन डिग्री सेल्सियस कम के साथ 17.2 डिग्री दर्ज हुआ। मौसम विभाग के मुताबिक गुरुवार को बादल छाए रह सकते

हैं। अधिकतम तापमान 17 डिग्री और न्यूनतम तापमान 4 डिग्री रह सकता है। सामान्य कोहरा छा सकता है। साथ ही अच्छी धूप भी निकलने की संभावना है। मौसम वैज्ञानिकों ने कहा कि अब अगले तीन से चार दिनों के दौरान दिल्ली और पास के इलाकों में सुबह और रात के समय ज्यादा ठंड महसूस होगी। अगले चार दिनों तक बेहद ज्यादा घना कोहरा छाने की संभावना कम है। 16 जनवरी के बाद न्यूनतम तापमान में एक बार फिर बढ़ोतरी हो सकती है।

## एक हफ्ता साफ रहेगी हवा

■ स. नई दिल्ली : दिल्ली की आबोहवा इन दिनों काफी साफ दर्ज हो रही है। तेज रफ्तार से हवाएं चलने, धूप निकलने के कारण एनवायरनमेंट में मौजूद प्रदूषित कणों का स्तर बेहद ज्यादा खतरनाक कैटेगरी तक नहीं पहुंच रहा है। मौसम वैज्ञानिकों ने कहा कि फिलहाल प्रदूषित कणों की मात्रा ज्यादा नहीं बढ़ेगी।

मिनिस्ट्री ऑफ अर्थ साइंसेज के प्रोजेक्ट सफर में पीएम 2.5 और पीएम 10 जैसे प्रदूषित कणों का स्तर बुधवार को नॉर्मल से कम दर्ज हुआ। पीएम 2.5 का एवरेज लेवल बुधवार को 109 माइक्रो ग्राम क्यूबिक मीटर (एमजीसीएम) दर्ज हुआ। पीएम 2.5 का एवरेज लेवल 60 एमजीसीएम होता है। अभी दिल्ली में यह नॉर्मल के आसपास ही दर्ज हो रहा है। दिल्ली में बुधवार को मुंबई से कम प्रदूषित कण दर्ज हुए। मुंबई में पीएम 2.5 का लेवल 123 एमजीसीएम रहा।