Hydro Politics Newsletter
by Hydropolitics Association
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Between Extreme Droughts and Floods

What is happening ?

Flood is an overflow of water, while a drought is a prolonged shortage of water. In the world ,witnesses both and sometimes, at the same time. Unusual rainfall patterns are becoming commonplace now and trigger disasters such as floods and droughts
The climate is changing and with it available water resources. The phases of the water cycle (evaporation, condensation, precipitation, collection) are speeding up due to rising temperatures.

The hotter it is, the faster water evaporates, according to research published in the review Scientific Reports. As a result, **the amount of vapor circulating in the atmosphere increases**. The study concludes that this does not bode well and the intensification of the water cycle will provoked extreme climate events. There will be longer droughts and increasingly intense and frequent torrential rains and flooding.

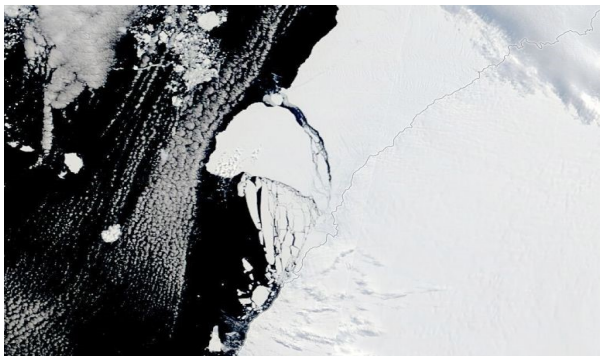
Recent climate modelling predicts that, **for every degree of warming, the Earth's water cycle could intensify up to 7%**. In practice, this means that humid regions could become 7% more humid and dry regions 7% drier on average.The world is already experiencing important changes, many of them irreversible and with serious consequences for the future of our planet.

The most recent report from the Intergovernmental Panel on Climate Change estimates that, even if we can keep global warming down to 2°C, extreme weather phenomena will be 14% more intense than at the beginning of the Industrial Revolution.
The only way to guarantee that heatwaves, droughts and storms do not intensify in future is to limit global warming. There is a long road ahead if we're to achieve this. Climate has changed .We must shift our paradigm in soon.

https://www.activesustainability.com/water/climate-change-water-cycle/?

Giant iceberg breaks off near Antarctica research station

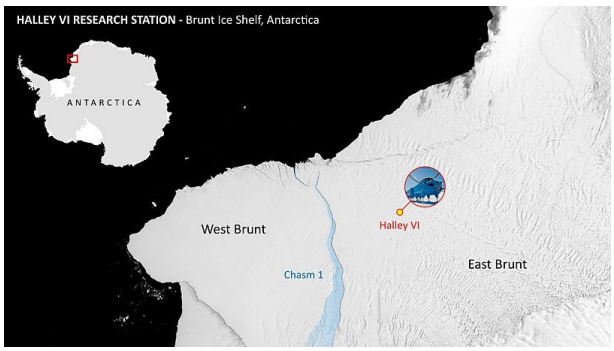
An iceberg nearly the size of Greater London is breaking off due to a natural process called 'calving'.



The British Antarctic Survey said the formation of the new iceberg was not due to climate change [Courtesy: NASA Earth Observatory]

25 Jan 2023

A huge iceberg nearly the size of Greater London has broken off the Antarctic ice shelf near a research station, the second such split in two



years, researchers said. The iceberg, measuring 1,550sq km (598 square miles), detached from the 150-metre (492-foot)-thick Brunt Ice Shelf a decade after scientists first spotted massive cracks in the shelf.

The British Antarctic Survey (BAS) said the formation of the new iceberg was not due to climate change – which is accelerating the loss of sea ice in the Arctic and parts of Antarctica – but to a natural process called "calving".

"This calving event has been expected and is part of the natural behaviour of the Brunt Ice Shelf," said BAS glaciologist Dominic Hodgson. "It is not linked to climate change."

Scientists refer to "calving" when chunks of ice break off at the terminus, or end, of a glacier.

The fissure in the ice sheet, which researchers named Chasm-1, was discovered years ago. In the years since, the gap widened until the chunk of ice broke away.

A similar spectacular separation, involving a 1,270sq km (490 square miles) iceberg, occurred about a year ago.

The iceberg, which has yet to be named by the US National Ice Center, is now expected to drift off with the current along the Antarctic coast like previous massive icebergs.

Britain's Halley VI Research Station monitors the state of the vast floating ice shelf daily but is unaffected by the latest rupture. The mobile research base was relocated to the station about 20km (12.4 miles) further inland in 2016 as cracks in the ice threatened to cut it off.

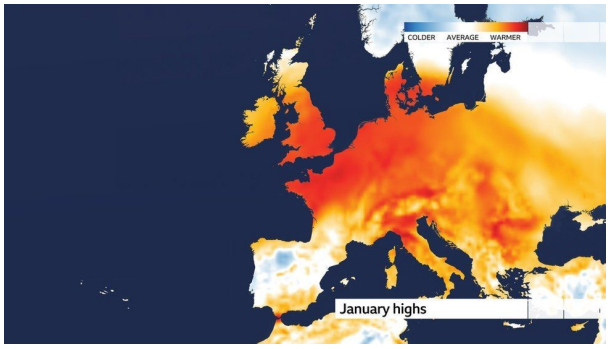
Since then, staff have been deployed only during the Antarctic summer between November and March, with 21 researchers currently on-site. They maintain the power supplies and facilities that keep scientific experiments operating remotely through the winter, when it is dark for 24 hours and the temperature falls below minus 50 degrees Celsius (minus 58 degrees Fahrenheit).

"Our science and operational teams continue to monitor the ice shelf in real-time to ensure it is safe, and to maintain the delivery of the science we undertake at Halley," added Hodgson. They are set to be collected by aircraft around February 6, according to the BAS, a world leader in environmental research in the region.

Source :https://www.aljazeera.com/news/2023/1/25/giant-iceberg-breaks-off-near-antarctica-research-

European weather: Winter heat records smashed all over continent

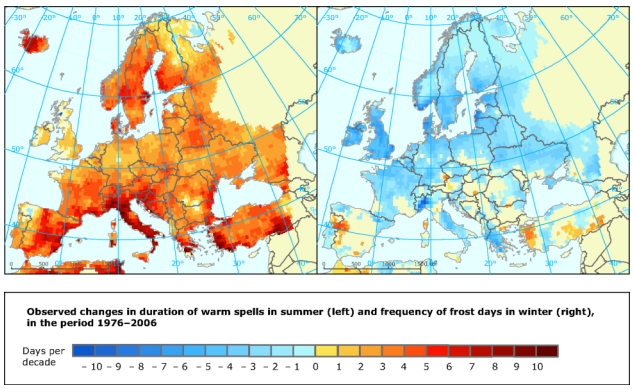
Temperatures for January have reached an all-time high in a number of nations across Europe.
National records have fallen in eight countries - and regional records in another three.
Warsaw, Poland, saw 18.9C (66F) on Sunday while Bilbao, Spain, was 25.1C - more than 10C above average.
The mild European weather comes as North America **faces more severe storms**, days after a deadly winter cold snap left more than 60 dead.
Heavy snow and freezing rain have been forecast for parts of the northern Midwest while severe thunderstorms and tornadoes are expected in Texas, Oklahoma, Arkansas and Louisiana. But on the European side of the Atlantic, the weather has been balmy for many places at the start of the year.



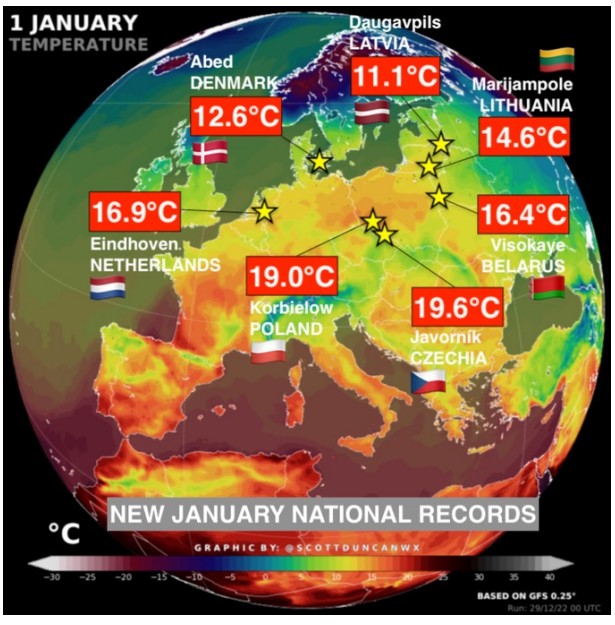
Temperatures in the Netherlands, Liechtenstein, Lithuania, Latvia, Czech Republic, Poland, Denmark and Belarus broke national records.
Station records were broken in Germany, France and Ukraine.
The temperature recorded in Warsaw on 1 January was 4C higher than the previous record for the month, and Belarus' record high was 16.4C, some 4.5C above the previous record.
In Spain, New Year's Day temperatures in Bilbao were equivalent to the average in July, and parts of Catalonia including Barcelona are subject to restrictions on water use.
Records are broken all the time, but it is unusual for the difference to be more than a few 10ths of a degree.
In Switzerland, temperatures hit 20C, and the warm weather has affected ski resorts across the Alps **which have seen a snow shortage.**
It's not all warm in Europe, though - colder temperatures and snow are forecast in parts of Scandinavia and Moscow is expected to drop to -20C by the weekend.
Warm temperatures mean cherry blossom has come early to the Polish city of Szczecin

Just days earlier, the UK, Ireland, France and Spain declared 2022 their hottest year on record.

In the UK, every month but December was hotter than average. December itself saw snow fall across large parts of the country, although conditions are milder and wetter now.
Heatwaves have become more frequent, more intense, and last longer because of human-induced climate change.



However, warm winter events such as these do not have the same human impact as summer heatwaves, which can result in large numbers of excess deaths.
The world has already warmed by about 1.1C since the industrial era began and temperatures will keep rising unless governments around the world make steep cuts to emissions.
Source : https://www.bbc.com/news/world-europe-64158283



California has gone from extreme drought to extreme flooding

10 Jan.2023

California has gone from extreme drought to extreme flooding in a matter of days. On Monday, 90% of the state's population was under a flood watch as another round of storms rolled through. Yet it was just last week when several counties in the state were experiencing the exact opposite – exceptional drought, which the US Drought Monitor considers the most severe category.

California's parade of ultra-wet storms has not completely reversed the deeply rooted drought. And scientists warn that it has a long way to go to erase years unfavorable precipitation trends and water supply overuse.

But the abrupt shift from drought warnings to flood warnings highlights the dilemma California faces: How do you manage an overwhelming amount of rain in a water-scarce state? And is it possible to harness that water so it's available in the dry summer months?

Part of the solution, climate scientists told CNN, is drawing levees back to allow rivers more room to flood safely into surrounding land.

"**We have to let our rivers flow differently, and let the rivers flood a little more and recharge our groundwater in wet seasons,"** Peter Gleick, a climate scientist and co-founder of the Pacific Institute in Oakland, told CNN. "Instead of thinking we can control all floods, we have to learn to live with them."

Levees have effectively protected communities in the past, Gleick said, but they're not designed for the climate-change challenges of today.

"**We need new thinking, we need to operate that infrastructure differently, we need to change some of the characteristics of that infrastructure,"** Gleick said. "That will allow us to capture more of these flood flows, store it underground in these aquifers, and then use those ground water resources when we need them in dry years."

Many climate experts agree – using levees to prevent floods during the wet season means less water is available to seep into underground aquifers. Those aquifers are a vital source of water for drinking, bathing and agriculture across California's Central Valley, and they are running dry.

But giving rivers more space to flood has a catch. It means entire communities would need to relocate; the process is known as managed retreat.

Nicholas Pinter, a researcher and professor of applied geosciences at the University of California at Davis, acknowledged managed retreat is a tall task but noted other countries are doing it.

"We are behind the curve on this," Pinter told CNN. "The Europeans in the 1990s started doing this. They made a multi-billion-euro investment to draw levees back."

Pinter said the US has always leaned toward building infrastructure to provide protection.

"We have always had an engineering mentality with strong property rights," Pinter said. "There's also an intense resistance by property owners when it comes to giving up their property rights."

There's also the threat of pushback from political leaders worried about property tax revenue loss and the loss of land for building and development, Pinter said.

A concept like managed retreat requires a mentality shift that will be extremely difficult to achieve, Gleick said. "These changes are absolutely easier said than done but they have to be done."

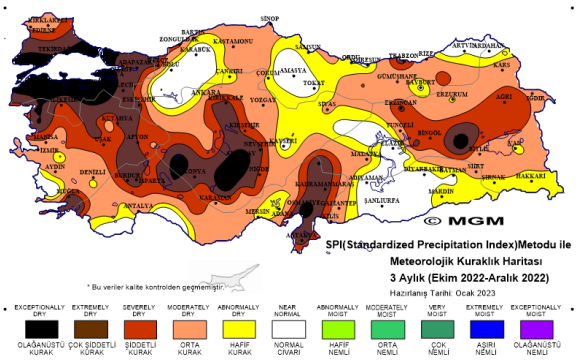
Both Pinter and Gleick said managed retreat is just one tool in the box when it comes to adapting to more extreme weather. Gleick noted there are a litany of other policies states should consider.

"We have to redesign insurance policies so that we are not rebuilding houses once they've been damaged in the same places where they are going to flood again, Gleick said. "We have to design flood insurance policies to encourage people to move away from flood plains, so we can open up those floodplains, so when we get those floods they will be less damaging."

Source : https://edition.cnn.com/2023/01/10/us/california-flooding-drought-dilemma-climate/index.html

Drought to expand in Türkiye amid low precipitation

Türkiye is experiencing severe drought, as numerous reservoirs around Istanbul, the country's most populous city, have reached their lowest water storage levels. The whole city's survival



can be threatened if conditions persist.

Drought related to wide and persistent lack of precipitation combined with a sequence of heat waves propels Türkiye to take preventive measures, as the country may witness severe drought in the next few months

Climate change is one of the most important pressing issues affecting the entire world. This is especially true for Türkiye due to its location. The Mediterranean Basin, where Türkiye is located, is becoming drier due to the effects of anthropogenic climate change. As a result, average temperatures are slowly creeping up and rainfall is becoming

scarcer, exacerbating the situation.

The precipitation will be below average in the next three months, the experts recommended that citizens be warned about the proper and careful use of water.

Dursun Yildiz, the head of the Hydropolitics Association, highlighted that the precipitation that has been below normal due to the climate crisis in recent years has led us to a hydrological drought.“Autumn precipitation for the last three years has been below the normal rainfall for many years. Most recently, precipitation was 41% lower than normal in the months of October, November and December. January is also a dry month right now.

Therefore, the prolonged meteorological drought has turned into a hydrological drought. The occupancy rates of dams have decreased in Türkiye and especially in Istanbul. Istanbul is a city where approximately 3 million cubic meters of water are supplied daily. The drinking water storage capacity in Istanbul is less than other metropolitan cities,” Yildiz noted.

The precipitation decreased by 51.8% in Istanbul. The decrease in the water in the dams and the lack of water savings are pushing the city toward a crisis, according to the statements of the General Directorate of Meteorology.

“If Istanbul goes dry in the upcoming period, water scarcity will begin toward the summer on the European side. In addition, this dry period placed a great economic burden on Istanbul's water supply security. For these reasons, ISKI is sounding the alarm to save water. Climatologists estimate that February, March and April, precipitation will be below normal with a 60% probability. In this case, agricultural drought begins and the summer months become very difficult.

“While the water management of the cities primarily reduces the loss and leakage rate in the networks, the water apparatus in residences should be replaced with a more efficient versions. Sectors that use excessive water should be controlled, and parks and gardens should be irrigated with treated wastewater possible.”Saying that he foresees the drought continuing for the long term, Yildiz called on consumers and managers to create awareness about the conservation of water.“It seems that our country will experience these dry periods more frequently. We have to create an awareness of water usage and manage water well. The authorities should review their management and consumers should be heedful of their water usage habits.”

Regional cooperation is needed on climate change

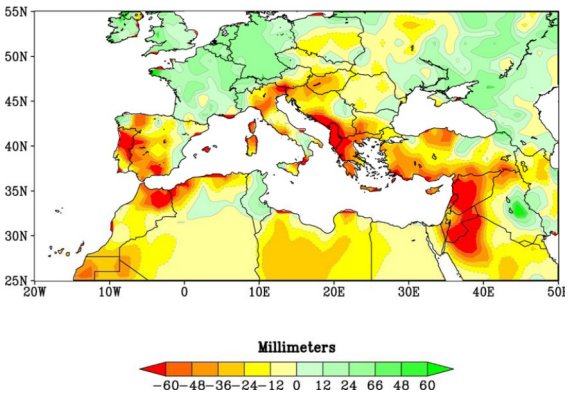
Hydropolitics Association (HPA) Chairman Yıldız spoke to **Sky Arabia TV and Al Cairo TV**;
"Regional cooperation is needed on climate change"

20 January 2023

Hydropolitics Association Chairman Dursun Yıldız answered the questions of Sky Arabia TV and Al Cairo TV on the Drought in Türkiye and its regional effects on 16 January and 18 January 2023

Explaining the effects of the meteorological drought that started in Turkiye in his speech, Yıldız also talked about the projections made by the climate change experts about whether the drought will be extended to the next period.

Dursun Yıldız stated that Türkiye is located in a semi-arid climate zone. Pointing out that Turkey has been experiencing regional meteorological dry periods, especially in autumn precipitation, for the last three years, Yıldız stated that this period also includes January this year, adding that this raises concerns.



Dursun Yıldız stated that in the last 3 months since the water year, which started in October, Turkey has received 41% less precipitation than normal and the air temperatures are well above normal and said that the precipitation in the coming Spring is very important for us.

Speaking about Turkey's preparations for Drought Action Plans, Yıldız pointed out that Istanbul is a Megacity that is rapidly affected by every dry period. Istanbul is a city with a daily water demand of 3 million m3 and water basins spread over very different areas. For these reasons, especially on the European side, the dam reservoirs are rapidly emptied. Yildiz also talked about the predictions of climatologists that climate change will be very effective, especially in the Mediterranean area and the Middle East,

He underlined that the countries of the region must cooperate on this issue. Climate change is a global problem, but its effects are experienced locally and regionally.

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We need to built a future,
Where people live in harmony with nature

HPA

Think Forward , Lead Forward