

CHINA

Scientists estimate plateau’s water reserves

By **PALDEN NYIMA** in Lhasa
palden_nyima@chinadaily.com.cn

The Qinghai-Tibet Plateau, known as Asia’s “water tower”, holds an estimated 10 trillion cubic meters of surface water storage, a resource scientists say is increasingly vital to water security for more than two billion people across the continent.

The new findings — released on Nov 19 in Lhasa, capital of the Xizang autonomous region — highlight both the plateau’s rising hydrological importance and the growing environmental risks it faces.

Researchers from China’s second Qinghai-Tibet scientific expedition said the plateau’s vast water reserves feed major river systems including the Yangtze, Yellow and Lancang-Mekong, sustaining communities across China and neighboring countries. The total volume is roughly equivalent to the Yellow River’s runoff over 200 years, according to the team.

“The Qinghai-Tibet Plateau is becoming warmer, wetter and greener, all of which enhance its water supply.”

Yao Tandong, academician with the Chinese Academy of Sciences

Their latest assessments show that the plateau has undergone three major environmental shifts that have boosted its water supply capacity. “The Qinghai-Tibet Plateau is becoming warmer, wetter and greener, all of which enhance its water supply,” said Yao Tandong, an academician with the Chinese Academy of Sciences and a lead scientist on the expedition.

“However, it is also becoming darker, causing significant shifts in Earth system processes, including changes to the Asian monsoon and more extreme climate events,” he said.

Researchers say these changes stem from complex ice-water-air interactions that are also increasing disaster risks.

While the plateau contributes more than 1 trillion cu m of water vapor each year, scientists warned that rising downstream demand, driven by population growth and resource consumption, is placing unprecedented strain on the system. “The increased water availability upstream does not entirely meet the rapidly growing needs downstream,” Yao said, calling for stronger regional cooperation to ensure sustainable water management.

Long-term data from the expedition shows steady growth in runoff from major rivers such as the Yangtze and Lancang over the past four decades. Projections suggest runoff could increase by as much as 49 percent by the end of the century. But the team also identified 85 glacial lakes at extreme risk of outburst flooding, underscoring the need for targeted disaster-prevention measures.

Scientists say the findings provide an important basis for policy planning, from water resource management to climate adaptation and infrastructure protection, including projects such as the Sichuan-Xizang transport corridor, Yao said.

The expedition plans to strengthen monitoring systems, improve early-warning mechanisms and refine strategies to safeguard the plateau, a region now central to Asia’s long-term water security, he said.



Workers use heavy machines to construct the 27th edition of the Harbin Ice and Snow World in Harbin, Heilongjiang province, on Tuesday. A total of 200,000 cubic meters of ice was preserved from last year to facilitate the construction. This year’s park spans 1.2 million square meters, making it the largest in history. ZHANG SHU / FOR CHINA DAILY

Harbin’s winter wonderland takes shape with record use of ice and snow

By **ZHOU HUIYING** in Harbin
zhouhuiying@chinadaily.com.cn

As winter temperatures continue to drop, people in Northeast China are already looking forward to the upcoming ice and snow season.

Construction of the 27th Harbin Ice and Snow World, one of the most popular attractions in Harbin, Heilongjiang province, officially began on Tuesday morning as ice blocks stored for more than 10 months were transported to the park.

A total of 200,000 cubic meters of ice harvested last winter has been preserved throughout the year for the 27th edition of the park, ensuring that the area opens to tourists earlier than usual.

Because man-made ice often contains air bubbles and lacks the strength needed for carving, the blocks used in the park are taken from the frozen Songhua River.

Using a mix of traditional ice-storage methods and modern multilayer insulation, Harbin Ice and Snow World Co created conditions — low temperature, light avoidance, insulation and sealing — that kept the ice from melting even when temperatures exceeded 30 C in the peak of summer.

The first batch of blocks will be used to build the super ice slide and the main tower.

“This winter, we have carefully incorporated suggestions from visitors and netizens, integrating elements of the Great Wall, such as its walls and watchtowers, into the design of the super ice slide,” said Cong Peiyu, director of the company’s design and research department. “The ice-built Great Wall, a key part of the super ice slide, is grand and visually striking, and will become a new landmark for visitors to photograph and interact with.”

In the coming days, about 10,000 construction workers will take on the park’s most artistic ice and snow challenge, combining ice, snow, sound and lights.



Workers cut ice cubes at the construction site of the Harbin Ice and Snow World in Harbin, Heilongjiang province, on Tuesday. ZHANG SHU / FOR CHINA DAILY

1,200,000 square meters

The total area of this winter’s ice and snow world in Harbin, Heilongjiang province

400,000 cubic meters

of ice and snow, a record high, will be used in the construction of this year’s ice and snow world.

This winter, the park will expand its area from 1 million square meters to 1.2 million sq m, using more than 400,000 cu m of ice and snow — both record highs.

“To enrich the visitor experience and enhance service quality, the park will introduce new facilities such as a ticketing hall, a snowfield hot spring camp, and new activities including winter fishing, cross-country skiing and snow soccer,” Cong said. “An ice and snow stage will be built to

complement the Dream Stage, enhancing park performances.”

The classic Dream Stage will continue to focus on interactive celebrations, creating an energetic disco-style atmosphere for thousands of visitors.

The newly planned stage will incorporate high-level international performance elements, offering a distinct audiovisual experience.

A grand ice- and snow-themed parade will take place between the two stages, creating a dynamic performance landscape throughout the park.

Meanwhile, park services will be upgraded to offer a more convenient and efficient smart-tourism experience.

More seating areas, restrooms and other public facilities will be added to improve visitor satisfaction.

Despite the upgrades in scale, activities and services, the standard adult ticket price will remain 328 yuan (\$46.28), ensuring visitors get to enjoy a richer and higher-quality ice and snow experience at the same price.

China decries prejudicial nature of some overseas-made games

By **LI SHANGYI**
lishangyi@chinadaily.com.cn

Some overseas-produced games embed discriminatory portrayals of Chinese people and distort China’s territorial integrity while covertly engaging in infiltration and subversion tactics that pose risks to national security, the Ministry of State Security said on Tuesday.

The ministry released an article on its official WeChat account summarizing typical threats embedded in online entertainment spaces. It called on the public to strengthen cybersecurity awareness and remain clearheaded in the face of temptation.

According to the ministry, some games produced by overseas companies feature discrimination and prejudice against Chinese communities in their character designs, storylines and art styles. Characters associated with Chinese elements in certain games are portrayed as sinister and deceitful, cast as perpetrators of violence and shown engaging in acts that violate local laws.

Describing some games as “trampling the red line” and presenting “false coordinates”, the ministry said some overseas games deliberately misrepresent China’s territory. For instance, in a World War II simulation game, the foreign developer listed the Xizang

autonomous region as a “core territory” of British India at that time.

“This distorts the fact that the Xizang autonomous region has been part of China since ancient times,” the ministry stated.

The article also noted that some in-game maps misdraw borders involving Aksai Chin and Zangnan, and depict Taiwan as separate from the Chinese mainland.

“When cultural products such as games involve China’s boundaries or map labels, we must remain vigilant and correctly discern them,” the ministry said, emphasizing that safeguarding the country’s territorial integrity is a red line that must never be crossed.

The ministry further revealed

AI tool can help enhance crop varieties

Researchers develop model that could address a bottleneck in plant breeding

By **ZHAO YIMENG**
zhaoyimeng@chinadaily.com.cn

A Chinese research team has developed a deep-learning framework that could accelerate the intelligent design of crop varieties, giving plant breeders a new tool to predict gene expression with high accuracy across tissues and cultivars.

The model, named DeepWheat, was created by the wheat gene resource innovation team at the Institute of Crop Sciences of the Chinese Academy of Agricultural Sciences. The findings were recently published in the journal *Genome Biology*.

Wheat, which carries three sets of genomes and is remarkably large — about 40 times the size of the rice genome and even five times the size of the human genome — has long challenged scientists trying to understand how genetic variations influence gene expression across tissues and developmental stages. Experts say accurate prediction is crucial for designing elite varieties and uncovering the mechanisms behind key agronomic traits.

To address the complexity, the research team built two complementary core models and combined them into a dual-model deep-learning framework. DeepWheat can identify how specific regulatory variations alter gene expression in different tissues and forecast tissue-specific patterns with high precision.

Lu Zefu, a chief scientist on the team, said the model is particularly valuable because many important crop genes are pleiotropic, meaning they influence multiple traits and can produce both positive and negative effects depending on where, when and how strongly they are expressed.

“For example, the IPA1 gene in rice promotes bigger panicles when

moderately expressed in young panicles, but higher expression in tillers, on the contrary, reduces tiller numbers,” Lu said. A panicle is a branching cluster of flowers on a plant, while a tiller is a shoot that arises from the base of a grass plant.

Lu added that current genome-editing approaches still rely heavily on trial and error, often requiring researchers to edit every possible regulatory site to see what works. “This is labor-intensive, blind and often unpredictable,” he said.

DeepWheat offers a more targeted and efficient alternative. By building tissue-specific models and running virtual saturation mutagenesis — computer simulations that test all possible genetic variants — researchers can identify which regulatory changes are most likely to produce the desired expression pattern. “Only then do they proceed with real-world editing, greatly improving precision and reducing wasted effort,” Lu said.

According to the team, the framework can also be applied beyond wheat, with successful tests in rice and maize. Its ability to pinpoint key regulatory elements, optimize genome-editing targets and predict tissue expression outcomes provides a scientific basis for gene redesign, Lu said.

This capability could help address a major bottleneck in plant breeding: trait antagonism, in which improving one trait inadvertently weakens another because of conflicting genetic controls. “By enabling fine-tuned reconstruction of regulatory networks, DeepWheat could lower such trade-offs and speed up the combination of desirable traits,” he said.

The tool represents a practical AI solution for crop improvement, giving plant scientists a powerful new way to accelerate the development of high-performance varieties, he said.

Farewell to a hero



The ashes of martyr Zhang Junqiao are laid to rest in his hometown of Weifang, Shandong province, on Tuesday, as mourners gather voluntarily to bid him a final farewell. Zhang was a doctor and team leader of the 27th Chinese medical aid team to Tanzania. He died at 38 while saving a drowning person during a mission in Dar es Salaam, Tanzania, on June 15. WANG BIN / FOR CHINA DAILY

that foreign espionage and intelligence agencies have extended their reach into the gaming sector with deceptive new tactics.

One overseas game reportedly bypassed regulatory review by using a reward mechanism that offered in-game items for watching advertisements to deliver “spy recruitment” messages to targeted players.

These messages were disguised as “collaboration” or “part-time work” offers and enticed players with promises of high pay and opportunities to monetize knowledge, according to the ministry.

The ministry warned the public to resist temptation and remain cautious of “targeted hunting.” It

cautioned people to download games through official app stores and other legitimate channels and to avoid using unknown download links or installation packages.

“When encountering ‘collaboration invitations’ from foreign espionage agencies hidden within games, recognize their true intent to recruit, subvert and threaten our national security,” the ministry said.

It urged citizens to stay vigilant online and report any situation that may endanger national security via the hotline 12339, the online reporting platform (www.12339.gov.cn), the ministry’s official WeChat account or directly to local national security authorities.