

## YELLOWSTONE PARK WINNING AGAINST NON-NATIVE FISH

**CODY, Wyoming:** Researchers trying to preserve native cutthroat trout in Yellowstone National Park say they are on track to eliminate non-native fish from Yellowstone Lake in about a decade. The National Park Service is trying to get rid of lake trout, which were discovered in Yellowstone Lake in 1994, the Cody Enterprise reported. Lake trout is a voracious species that

feeds on cutthroats. "They're a wonderful fish, but they just don't belong here," said Phil Doepke, a fisheries biologist who has been part of the cutthroat-trout conservation effort for 14 seasons.

Computer modeling indicates the lake trout population will collapse within 10 years, said Todd Koel, the park's senior fisheries biologist. "Lake

trout are in decline, but it doesn't happen overnight," he said. Researchers use nets to remove lake trout. They have removed 2.6 million pounds since 1996, including more than 366,000 pounds last year. They also locate and destroy lake trout eggs at spawn sites. Biologists are finding more efficient ways to remove lake trout every season, Koel said. They now implant trans-

mitters in individual lake trout, called Judas fish, and release them to study their patterns.

"The Judas fish lead us to their friends, and then we kill them," Koel said. Small aircraft search for the transmitter-equipped fish, covering the entire 22-mile lake in about two hours, far faster than boats. "I'm hopeful we can shift completely to flights to find fish soon,"

Koel said. Recreational anglers also help. The fishing season opened in late May, and anglers can catch as many lake trout as they like - and they're not allowed to throw any back. "Catch them, kill them and eat them," Yellowstone National Park Superintendent Dan Wenk said. More than 50,000 visitors buy the required Yellowstone fishing permit each year.—AP

## EARLY REPORTING OF CANCER SYMPTOMS BOOST SURVIVAL

**CHICAGO:** If you're being treated for cancer, speak up about any side effects. A study that had patients use home computers to report symptoms like nausea and fatigue surprisingly improved survival - by almost half a year, longer than many new cancer drugs do. The online tool was intended as a quick and easy way for people to regularly report complications rather than trying to call their doctors or waiting until the next appointment. Researchers had hoped to improve quality of life but got a bonus in longer survival.

"I was floored by the results," said the study leader, Dr. Ethan Basch. "We are proactively catching things early" with online reporting. Patients were able to stick with treatment longer because their side effects were quickly addressed, he said. People shouldn't assume that symptoms are an unavoidable part of cancer care, said Dr. Richard Schilsky, chief medical officer of the American Society of Clinical Oncology. "You want to be able to reach your provider as early and as easily as possible," because a sign like shortness of breath may mean treatment isn't working and needs to be changed, he said.

The study was featured at the cancer group's annual meeting in Chicago on Sunday and published in the Journal of the American Medical Association. Earlier studies suggest that doctors miss about half of patients' symptoms. "Much of this happens between visits when patients are out of sight and out of mind," said Basch, a researcher at the University of North Carolina-Chapel Hill and Memorial Sloan Kettering Cancer Center in New York.

Sometimes patients just put up with a problem until their next exam. "The spouse will say, 'My husband was laid up in bed, exhausted or in pain,' and I'll say 'Why didn't you call me?'" Basch said. The study tested whether the online tool could catch problems sooner. It involved 766 people being treated

for various types of advanced cancers at Sloan Kettering. Some were given usual care and the rest, the online symptom tool.

Patients were as old as 91, and 22 percent has less than a high school education, but using a computer proved easy. "The older patients really grabbed onto it very quickly," Basch said. The online group was asked to report symptoms at least once a week - sooner if they had a problem - and given a list of common ones such as appetite loss, constipation, cough, diarrhea, shortness of breath, fatigue, hot flashes, nausea or pain.

Doctors saw these reports at office visits, and nurses got email alerts when patients reported severe or worsening problems. "Almost 80 percent of the time, the nurses responded immediately," calling in medicines for nausea, pain or other problems, Basch said. Six months later, health-related quality of life had improved for more of those in the online group and they made fewer trips to an emergency room. They also were able to stay on chemotherapy longer - eight months versus six, on average.

Median survival in the online group was 31 months versus 26 months for the others. A larger study will now test the online reporting system nationwide. A colon cancer patient, 53-year-old James Sylvester of New York, is using a version of the one tested in the study to report any problems to his doctors at Sloan Kettering. He hasn't had many side effects, but a rash led to referral to a dermatologist to see if it was related to his cancer medicine.

"The main benefit is they go holistically all over your body" with the list, asking about things that folks may not realize could be due to cancer, such as a rash or trouble with balance, he said. "Some of the things you might not tell your doctor, or you might forget," Sylvester said. The tool ensures the doctor has that information ahead of time, "so when you have that face time, it's more focused."—AP



**SRIHARIKOTA:** The Indian Space Research Organization (ISRO) communication satellite GSAT-19, carried onboard the Geosynchronous Satellite Launch Vehicle (GSLV-mark III), launches at Sriharikota yesterday.—AFP

## INDIA SHOWS OFF SPACE PROWESS WITH LAUNCH OF MEGA-ROCKET

MISSION TAKES INDIA CLOSER TO NEXT GENERATION LAUNCH VEHICLE

**NEW DELHI:** India yesterday successfully launched its most powerful home-produced rocket, another milestone for its indigenous space program which one day hopes to put a human into orbit. The 43-metre rocket hurtled into a clear sky at 5.28 pm (1158 GMT) from the southern island of Sriharikota, one of two sites used by the Indian Space Research Organization (ISRO) to launch satellites. Scientists hugged each other and cheered as the 640-tonne rocket lifted off.

"The GSLV - MKIII D1/GSAT-19 mission takes India closer to the next generation launch vehicle and satellite capability," Prime Minister Narendra Modi posted on his Twitter account. "The nation is proud!" The rocket boasts a powerful engine that has been developed in India over many years. Program managers hope to reduce reliance on European engines that have propelled some of India's spacecraft in the past.

The GSLV Mk III rocket carried a satellite weighing more than three tons into a high orbit above Earth, a landmark achievement as India had struggled to match the heavier payloads of other space giants. "This is an important

moment in India's space technology, to launch an indigenous heavy rocket," Ajay Lele from the Delhi-based Institute for Defense Studies and Analyses said. "Communication satellites are quite heavy and we were (only) able to send up to two tons previously. This is a double quantum jump for India." The launch is another feather in the cap for scientists at ISRO, who won Asia's race to Mars in 2014 when an Indian spacecraft reached the Red Planet on a shoestring budget. That feat burnished India's reputation as a reliable low-cost option for space exploration, with its \$73 million price tag drastically undercutting NASA's Maven Mars \$671-million mission. ISRO is also mulling the idea of missions to Jupiter and Venus.

### Reaching for the stars

India is vying for a larger slice of the booming commercial satellite business as phone, internet and other companies seek expanded and more high-end communications. In February India put a record 104 satellites in orbit from a single rocket, surpassing Russia which launched 39 satellites in one mission in

June 2014. The rocket's main cargo on that occasion was a 714-kilogram satellite for Earth observation but it was also loaded with 103 smaller "nano satellites", nearly all from other countries.

Although India has successfully launched lighter satellites in recent years, this latest rocket is capable of carrying a massive four-ton payload into high orbit-twice the capacity of its predecessor, ISRO says. The space agency tested a less-developed version of the rocket in December 2014 while the cryogenic engine was still in the testing phase. It carried an unmanned crew capsule which separated from the rocket and splashed down in the Bay of Bengal off India's east coast 20 minutes after liftoff.

The Indian-made capsule was designed to carry up to three astronauts but ISRO said it would take at least another seven years to reach the point where a crew could be put into space. India wants to become the fourth nation after Russia, the United States and China to put astronauts into orbit but its manned spaceflight program has experienced multiple stops and starts.—AFP

## ENVIRONMENTAL STUDIES DON'T SUPPORT TRUMP'S CLEANEST CLAIM

**WASHINGTON:** President Donald Trump said the United States "will continue to be the cleanest and most environmentally friendly country on Earth" as he announced a US pullout from an international accord designed to curb climate change. But facts muddy that claim. Data show that the US is among the dirtiest countries when it comes to heat-trapping carbon pollution. One nation that has cleaner air in nearly every way is Sweden. "The US is well behind other countries in having the cleanest and most sustainable environment," University of Michigan environmental scientist Rosina Bierbaum said in an email.

The US emits more carbon dioxide than any other nation except China. In 2014, the US spewed 237 times more carbon dioxide into the air than Sweden, according to figures by the US Department of Energy's Oak Ridge National Laboratory. "On pretty much any climate-related indicator, the US will not look good," said Glen Peters, a Norwegian climate scientist who is part of the Global Carbon Project that ranks worldwide emissions. The US is No. 2 in per person carbon dioxide pollution, behind Luxembourg, among 35 developed nations plus China, India and Brazil, Energy Department data show.

That's 19.1 tons of carbon dioxide per year for the average American, compared with 4.9 tons for the average Swede. Taking into account economics, the US ranks 10th highest in carbon pollution per gross domestic product behind China, India, Russia, Estonia, Poland, South Korea, the Czech Republic, Mexico and Turkey, according to the International Energy Agency. The US spews almost five times more carbon dioxide per dollar in the economy than Sweden. Because carbon dioxide stays in the atmosphere for more than a century, scientists and regulators say it's more

important to look at historical emissions.

Since 1870, the US has produced about one-quarter of the world's carbon dioxide - twice as much as China - and that makes it the biggest polluter in the world by far, Peters said. In some traditional air pollution measurements, the United States is cleaner than most nations, said William K. Reilly, who headed the US Environmental Protection Agency under Republican President George H W Bush. But "when the problem he is dealing with is carbon dioxide, we are notably not better than the rest of the world," said Reilly, adding that Trump is "just wrong."

The US is better than most of the world when it comes to dangerous soot or fine particles. Among industrialized countries, the US tied for sixth cleanest, according to the Health Effects Institute. It's also tied for sixth smoggiest in the world with Turkey, according to the institute. "There are a number of countries that have cleaner air in terms of major industrial nations. We are certainly in the top core," said Dan Greenbaum, the group's president. "Clearly, countries like China and India are much, much worse than we are."

The US leads in helping people fight for a clean environment by having laws and procedures that allow citizens to sue to enforce pollution protections and get information, said Princeton University climate scientist and international affairs professor Michael Oppenheimer. Other countries are far ahead of the US in cleaner energy, especially Germany, which on occasion is fueled fully by renewables, Oppenheimer said. Reilly, the former EPA head, recalled how the US took environmental leadership 25 years ago this month as it became the first industrial country to ratify the first climate treaty. "Now we turn the page," Reilly said. "We'll see where it goes."—AP

## 2 LIONS FREED FROM CIRCUSES, ARE POACHED IN SOUTH AFRICA

**JOHANNESBURG:** In 2016, 33 lions freed from circuses in Peru and Colombia were transported to South Africa to live out their days in a wildlife refuge. Last week, poachers broke into the sanctuary, killing two of the big cats. The killing of the male lions named Josy and Liso occurred at the Emoya Big Cat Sanctuary, which had portrayed the lion airlift as a compassionate gesture that alleviated the suffering of animals held in cages and subjected to beatings and other mistreatment.

The incursion highlighted how brazen poachers can infiltrate places like Emoya, which said it has 24-hour security and armed patrols and has taken additional measures to protect its property in Vaalwater, in northern South Africa. Forensic experts have visited the sanctuary, which is currently closed to visitors and volunteers. South African police and anti-poaching units are investigating, said Animal Defenders International, a group that worked on the lion transfer from South America.

The group said it is considering the offer of a reward for information leading to conviction, and that the other lions might even be evacuated pending security upgrades. No details about the possible motive for the lion killings were provided. In January, poachers cut through fences at another animal park in South Africa and decapitated and chopped the paws off three male lions, possibly for use in traditional healing rituals. While lion parts have long been used in some African cultures, conservationists have raised concerns that poachers are increasingly targeting lions because of demand in some Asian countries.

African lion bones are a relatively recent substitute in tonics for the bones of Asian tigers, whose numbers were depleted by poachers. Lion teeth and claws are known to have value as trinkets. The transfer of the lions to Emoya had no conservationist value because the animals, which were in poor condition, had been held in captivity and could not live in the wild. The former circus lions are provided with game meat and water in large enclosures.

Rapunzel, one of the 33 lions, died of a botulism toxin at Emoya in June 2016, a little over a month after the airlift from South America, according to the sanctuary's website. "Animals are normally resistant to this kind of bacterial toxin but rescue lions that have suffered a lifetime of malnutrition and abuse can sadly remain vulnerable to diseases despite rehabilitation efforts," the sanctuary said. Animal Defenders International said one of the two elderly lions killed last week had suffered brain damage from head blows in the circus.—AP



**PAJU:** In this file photo, a girl uses binoculars to watch the North side at the Imjingak Pavilion near the border village of Panmunjom, which has separated the two Koreas since the Korean War, in Paju, South Korea.—AP

## NORTH KOREA REJECTS SOUTH KOREA GROUP'S OFFER FOR MALARIA HELP

**SEOUL:** A South Korean civic group said yesterday that North Korea has rejected its offer to provide anti-malaria supplies to protest Seoul's support of fresh UN sanctions on the country. The rejection could complicate efforts by South Korea's new liberal President Moon Jae-in to try to expand civilian exchanges with North Korea as a way to improve strained bilateral ties. All major cooperation programs between the rivals remain stalled amid an international standoff over North Korea's nuclear and missile programs.

In late May, Moon's government allowed the Seoul-based Korean Sharing Movement to contact North Korea. It was South Korea's first approval of cross-border civilian exchanges since January 2016. The civic group subsequently exchanged emails with North Korea and was supposed to deliver anti-malaria items such as insecticides, diagnostic reagent kits and mosquito repellent to North Korea this week, according to group official Hong Sang-young.

But North Korea told his organization yesterday that it won't allow the visit because of UN sanctions adopted last week that Seoul has vowed to implement, Hong

said. Despite the lack of South Korean assistance, North Korea has in recent years reported declining cases of malaria thanks largely to anti-malaria aid programs by international organizations. According to World Health Organization records, North Korea had 21,850 malaria cases in 2012, but 7,010 cases in 2015.

The UN Security Council voted unanimously Friday to add 15 individuals and four entities linked to North Korea's nuclear and missile programs to a UN sanctions blacklist. Its unclear if and how much the new UN sanctions would sting North Korea, which is already under multiple rounds of UN and other international sanctions. Since Moon's May 10 inauguration, North Korea has test-fired three ballistic missiles in an apparent show of its resolve to expand its weapons arsenals to cope with what it calls US hostility.

Moon's government has said it will evaluate expanding civilian exchanges with North Korea, while sternly dealing with its missile and other weapons tests. North Korea is pushing hard to build a nuclear-tipped missile that can reach the continental United States.—AP



**NEW HAMPSHIRE:** In this file photo, a plume of steam billows from the coal-fired Merrimack Station in Bow, New Hampshire.—AP