Tuesday, July 21, 2026

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GENTLE.NEWS

In Today's Edition

"She read books as one would breathe air, to fill up and live."

— Annie Dillard

NASA Sets Briefings for SpaceX Crew-13 Mission to Space Station

NASA’s SpaceX Crew-13 members are pictured in their pressure suits seated inside a mockup Dragon spacecraft during a preflight training session at the company’s headquarters in Hawthorne, California. From left are Roscosmos Sergey Teteryatnikov, NASA astronauts Luke Delaney and Jessica Watkins, and CSA (Canadian Space Agency) astronaut Joshua Kutryk. Credit: SpaceX NASA and its partners will discuss the upcoming crew rotation mission to the International Space Station during a pair of news conferences on Monday, Aug. 3, from the agency’s Johnson Space Center in Houston. Mission leadership will provide an overview of NASA’s SpaceX Crew-13 mission at 12 p.m. EDT. Next, crew members will discuss their training and mission preparations at 2 p.m. This is Crew-13’s final media availability prior to traveling to the agency’s Kennedy Space Center in Florida for launch. NASA will stream these events live. Learn where to watch online: https://www.nasa.gov/live The Crew-13 mission will carry NASA astronauts Jessica Watkins and Luke Delaney , CSA (Canadian Space Agency) astronaut Joshua Kutryk, and Roscosmos cosmonaut Sergey Teteryatnikov to the orbiting laboratory. The crew will launch aboard a SpaceX Dragon spacecraft on the company’s Falcon 9 rocket from Space Launch Complex 40 at Cape Canaveral Space Force Station in Florida no earlier than mid-September. International media attending in person must email the NASA Johnson newsroom at

Source: NASA

jsccommu@mail.nasa.gov by 5 p.m., Tuesday, July 21. United States-based media attending in person must respond by 5 p.m., Thursday, July 30. Media joining virtually must respond by 10 a.m. the day of the event. NASA's media accreditation policy is available online. Briefing participants are as follows (all times Eastern and subject to change based on real-time operations): 12 p.m.: Mission Overview News Conference Joel Montalbano, deputy associate administrator, Human Spaceflight Mission Directorate, NASA Headquarters Dana Weigel, manager, Low Earth Orbit Program, NASA Johnson Mathieu Caron, director, Astronauts, Life Sciences, and Space Medicine, CSA Julianna Scheiman, director, NASA Science and Dragon Programs, SpaceX 2 p.m.: Crew-13 News Conference Jessica Watkins, commander, NASA Luke Delaney, pilot, NASA Joshua Kutryk, mission specialist, CSA Sergey Teteryatnikov, mission specialist, Roscosmos Following the news conference, crew members will be available for limited media interviews. All interview requests must be submitted by 5 p.m. on July 30, to the NASA Johnson newsroom at: jsccommu@mail.nasa.gov . This will be the second flight to the space station for Watkins, who was selected as a NASA astronaut in 2017. Watkins grew up in Lafayette, Colorado, and earned an undergraduate degree in geological and environmental sciences from Stanford University, as well as a doctorate in geology from the University of California, Los Angeles. As a geologist, she studied the Martian surface and was a member of the Curiosity rover science team at NASA's Jet Propulsion Laboratory in Southern California. Watkins first launched to the space

Source: NASA

station as a crew member aboard NASA's SpaceX Crew-4 mission, spending a total of 170 days in space across space station Expeditions 67/68 in 2022. She will be the first NASA astronaut to launch aboard a SpaceX Dragon spacecraft twice. Selected as a NASA astronaut in 2021, Delaney earned a bachelor's degree in mechanical engineering at the University of North Florida and a master's degree in aerospace engineering at the Naval Postgraduate School. The Florida native is a distinguished naval aviator who participated in exercises throughout the Asia Pacific region and conducted missions in support of Operation Enduring Freedom. As a test pilot, Delaney evaluated developmental aircraft systems and served as a test pilot instructor. He also worked as a research pilot at NASA's Langley Research Center in Hampton, Virginia, where he supported airborne science missions. This is the first spaceflight for Delaney. The Crew-13 mission also is the first spaceflight for Kutryk. Prior to his selection as a CSA astronaut in 2017, he served as a CF-18 fighter pilot, flying missions in support of Canada's NATO, U.N., and North American Aerospace Defense Command commitments. A native of Fort Saskatchewan, Alberta, Kutryk also worked as an experimental and operational test pilot at the Aerospace Engineering Test Establishment in Cold Lake, Alberta. Kutryk received a bachelor's degree in mechanical engineering from the Royal Military College of Canada in Kingston, Ontario, and he is a distinguished graduate of the United States Air Force Test Pilot school in Edwards, California. He has master's degrees in space studies, flight test engineering, and defense studies. This mission will be Teteryatnikov's first

Source: NASA

trip to the orbiting laboratory. He graduated from the Naval Academy, St. Petersburg, Russia, in 2011 as an engineer specializing in ship power plant operations. Before his selection as a test cosmonaut, Teteryatnikov served in various naval engineering roles, including undersea vessels and specialized engine room operations. He was selected for the Gagarin Research and Test Cosmonaut Training Center Cosmonaut Corps in 2021 and has served as a test cosmonaut since 2023. For more information about the mission, visit: https://www.nasa.gov/mission/nasas-spacex-crew-13 -end- Joshua Finch / Jimi Russell Headquarters, Washington 202-358-1100 joshua.a.finch@nasa.gov / james.j.russell@nasa.gov Leah Cheshier / Anna Schneider Johnson Space Center, Houston 281-483-5111 leah.d.cheshier@nasa.gov / anna.c.schneider@nasa.gov Share Details Last Updated Jul 20, 2026 Editor Jessica Taveau Location NASA Headquarters Related Terms Humans in Space Commercial Crew International Space Station (ISS) ISS Research Johnson Space Center

Source: NASA

Shedding New Light on Yukon River Chinook Salmon Declines

Yukon River Chinook salmon have been declining for decades. These declines have limited salmon harvest and posed hardships for local communities that depend on these fish for their food sovereignty, culture, and livelihoods. Adult run sizes recently reached their lowest point ever following a downturn from 2019 to 2023. The causes were unclear. But a new study identified a heatwave-associated increase in natural mortality as an important driver of this most recent and particularly severe decline. Addressing the Challenge Like most salmon, Yukon River Chinook are anadromous. They hatch in freshwater, migrate to the ocean to grow and mature, and return to freshwater to reproduce. Adult salmon spawn in the same river in which they hatched, and each of these reproductive units is called a “run.” One of the main challenges for understanding Yukon River Chinook salmon runs is their vast range. Their life cycle spans the interior of Alaska and Canada to the Bering Sea and beyond. This makes monitoring and studying them—and identifying the causes of their declines—extremely difficult. New research led by NOAA’s Alaska Fisheries Science Center and its partners aimed to overcome these challenges. Using cutting-edge analyses, they pulled together multiple data sources from across the life cycle into a unified model framework. Integrative Research Leads to Comprehensive Model To reconstruct the full life cycle, this new modeling approach combined data from multiple sources: Juvenile marine

Source: NOAA Fisheries

survey data and bycatch information collected by the Alaska Fisheries Science Center Adult monitoring data collected by Alaska Department of Fish and Game and Fisheries and Oceans Canada One of the first questions that the research team set out to answer with this new tool was: Where in the life cycle are Chinook salmon experiencing significant impacts that could be driving declines? The team examined four factors across different stages of their life cycle: Juvenile recruitment to the ocean: the number of juveniles produced per spawner that survive in freshwater and outmigrate to the ocean Mortality due to natural causes in the marine environment during the juvenile to the adult life stages (natural mortality) Harvest on adult fish in directed fisheries Bycatch of non-targeted marine fisheries NOAA researcher and the study's lead author, Dr. Lukas DeFilippo, noted, "Not surprisingly, we found evidence to suggest that impacts operating in the early life stages have likely contributed to declines in run sizes over the past two decades, which is consistent with previous research." However, the research team found something else that stood out. Beginning in 2016, natural mortality in the post-juvenile life stages began increasing substantially. Shortly after this period, adult Yukon River Chinook salmon runs suffered their steepest drop in abundance to date. Interestingly, this collapse could not be explained by weak juvenile recruitment to the ocean alone. Rather, it reflected the effects of increased mortality occurring after the juvenile stage, such as later in the marine life cycle or during adult spawning migrations. This suggests that the bottleneck limiting adult production has shifted to later

Source: NOAA Fisheries

life stages. The increase in natural mortality aligns with a period of acute and prolonged marine heatwaves in the Bering Sea. Some of the dramatic changes to the marine ecosystem during this time may have contributed to the increased mortality. For instance, steep declines in prey species— such as capelin —during and following marine heatwaves limit energy available to predators like Chinook salmon. The study also indicated that—despite fewer severe heatwave events in the Bering Sea since 2020—natural mortality rates had not yet returned to their lower, pre-heatwave levels as of 2023. They continued to limit population productivity. Finally, the study found no evidence that harvest of adult salmon or bycatch removals prior to spawning have been significant factors in population level declines of Yukon River Chinook salmon. The integrative approach developed in this study has a number of broad applications for future research as well. “A model like this is a big step towards promoting research on the factors affecting salmon productivity across their life cycles, which was recommended by the recently convened Alaska Salmon Research Task Force ,” added Dr. Kathrine Howard, co-author of the study and Task Force member. The research team has plans to leverage this new tool for future work aimed at supporting Yukon River Chinook salmon research and recovery.

Source: NOAA Fisheries

Watch: Team creates better way to teach robots to walk on tricky terrain

Researchers have created a faster, cheaper way to teach a humanoid robot to walk over real-world terrain. Across sand, soggy grass, and gravel. Up slopes and stairs and across level ground. Whatever uneven terrain Georgia Tech researchers could find on campus or easily simulate presented no problem for their two-legged humanoid robot. Machine learning PhD student Feiyang Wu led development of a new kind of whole-body controller that allowed the humanoid robot to traverse all those varied surfaces. His method is computationally faster and cheaper than the leading approaches for training robotic controllers. And he was surprised how well it worked, even on surfaces that weren't included in the training. "For this bulky, very tall humanoid robot, it really hasn't been proven that you can do agile locomotion on such austere terrain. Somehow our very efficient training recipe here can actually work for all kinds of terrain and environments," says Wu, a machine learning PhD student. "We thought, OK, it seems reasonable to do locomotion on flat ground. But can the same [control] policy do rough terrain, especially in the real world? We were kind of skeptical, even though in simulation it looked not terrible, but not great." Wu presented the team's training framework at the IEEE International Conference on Robotics and Automation, the world's largest gathering of robotics researchers. What makes the Georgia Tech

Source: Futurity.org

controller work is a new take on training the robot's control algorithms. Working with a team of researchers in the George W. Woodruff School of Mechanical Engineering and the School of Computational Science and Engineering (CSE), Wu reimagined a reinforcement learning technique that's known as teacher and student learning. This kind of machine learning method teaches a robotic controller how to behave through a simulated environment where a "teacher" agent is developed first. The teacher gets as much information as researchers can provide about the simulated environment, even complex data that couldn't be realistically estimated or known in the real world. The teacher explores the simulation and learns how to move. Then it distills what's it learned and teaches a new agent, a "student" robot, how to operate. Wu says the method is analogous to a professor becoming an expert in a field. Then they teach students about that field—not necessarily a bunch of specific answers, but principles and concepts so the student can solve real-world problems. Similarly, the simulated teacher robot guides the student how to problem-solve navigating the real world using real robotic hardware. "There are two problems with this approach," Wu says. "It takes too much time to train them sequentially. Then, you're wasting a lot of information that's been gathered by the teacher." Training time is money when it comes to these simulations, because they require many hours of computation using expensive-to-use GPU chips. The researchers' solution? Train the teacher and the student at the same time. "You don't have to wait for the teacher to be an expert for it to begin teaching the student," Wu says. "The teacher

Source: Futurity.org

can gradually teach the student what they've learned along the way." To extend the professor-student metaphor, Wu says it's like having a graduate student teach undergrads. The master's or PhD student is still learning themselves, but they have valuable knowledge that meets the needs of the undergrads. Wu also adjusted the training so that the teacher robot learns from what the student robot experiences in the simulation. That helps close what robotics researchers call the teacher-student imitation gap—essentially that even with good instruction from the teacher, the student is still making decisions based on partial information. The student might encounter an obstacle or terrain and not have some important piece of data to properly navigate it. "This gap can be very sinister and difficult to solve. We tried to mitigate it by letting the teacher learn from the data that's been collected by the student as well," Wu says. "The teacher experiences what's possible for the student, and the hope is that helps the teacher offer better instruction." After applying their new approach and training a controller in simulations, they deployed it on a two-legged humanoid robot in Ye Zhao's lab. It worked, allowing the robot to walk smoothly across a variety of surfaces. The team also tried to forcefully push and pull the robot to see if they could disrupt its gait, but the robot adapted and adjusted to compensate. Though Wu and his colleagues used a two-legged humanoid robot in their experiments, his "Learn to Teach" training framework is designed to be generic. It can be used for other robots with other configurations. It also can apply to other kinds of tasks besides walking. Zhao, who co-advises Wu with CSE Assistant Professor

Source: Futurity.org

Anqi Wu, says the control system performed better even than the controller provided by the robot's manufacturer. He says Wu brings a unique perspective to robotics work because of his background in machine learning. "Most of the PhD students in my lab come from a robotics and control background. Feiyang is starting to explore robotics problems from a more theoretical, algorithm-focused background, which is not easy," says Zhao, associate professor and Woodruff Faculty Fellow in ME. "There's a big barrier. If students get used to doing the programming and writing mathematics, they might not have the desire to explore working with the real hardware. Feiyang has a strong motivation to explore things on both sides, which is very unique." This research was supported by the Office of Naval Research, the US Department of Agriculture, and the National Science Foundation. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of any funding agency. Source: Georgia Tech The post Watch: Team creates better way to teach robots to walk on tricky terrain appeared first on Futurity .

Source: Futurity.org

USDA delivers more than $52 million to support rural communities across America

The U.S. Forest Service today announced it is distributing over $52 million to support local emergency services, schools and roads. In total, 65 counties will benefit from these funds under the Bankhead-Jones Farm Tenant Act. “These funds represent 25 percent of the revenue generated from management of federally administered grasslands in these communities. The payments help ensure local communities share in the economic benefits from the land,” said Forest Service Chief Tom Schultz. “The funds are used to support local schools and infrastructure like roads, while reinforcing the value these lands provide to the American people.” Funding breakdown: State Counties receiving payments Total payment North Dakota 9 $41,386,724 Colorado 4 $6,747,437 Wyoming 5 $2,488,079 Texas 5 $521,249 Kansas 2 $434,304 Oklahoma 1 $342,172 All other states 39 $104,283 Total 65 $52,024,248 A complete list of recipients is available at https://www.fs.usda.gov/working-with-us/secure-rural-schools/bankhead-jones-payments . Revenue was generated from receipts primarily consisting of mineral development collected by the Department of the Interior’s Office of Natural Resources Revenue and grazing revenues collected by the Forest Service during the 2025 calendar year. The Forest Service manages 20 national grasslands for multiple uses, including grazing, energy development and natural resource conservation.

Source: U.S. Forest Service

To learn more about these payments to counties, visit: https://www.fs.usda.gov/working-with-us/secure-rural-schools/bankhead-jones-payments . About the Forest Service: The Forest Service has brought people and communities together to answer the call of conservation for more than 100 years. Grounded in world-class science and technology—and rooted in communities—the Forest Service connects people to nature and recreation opportunities. The agency manages 193 million acres of public land, supports the nation’s forest industry and energy needs, and operates the largest and most respected wildland fire and forestry research organizations in the world. By providing assistance to state and private landowners and working with Tribes and other partners, the Forest Service also helps steward an additional 900 million forested acres within the U.S..

Source: U.S. Forest Service

“By the Dawn’s Early Light…”

—This is a guest post by Loras Schissel, a senior music specialist in the Music Division . It also appears in the May/June issue of the Library of Congress Magazine. It was September 1814, and British warships were unleashing a fierce bombardment on Fort McHenry, the American fortress guarding Baltimore Harbor. Rockets streaked across the night sky, shells burst in flashes of light, the city’s fate hung in the balance. A few miles away, Francis Scott Key watched anxiously from a British ship, where he had gone to secure the release of a captured friend. Key feared the fort had fallen — until, by dawn’s light, he saw a large American flag still waving over McHenry’s ramparts. Inspired, Key composed a poem, “Defence of Fort M‘Henry,” about what he’d witnessed — with the tune of an 18th-century British song, “ Anacreon in Heaven, ” in mind for it. Key’s creation, when set to that music, forever after would be known by another name: “ The Star-Spangled Banner. ” Though popular from its inception, it was not officially recognized as the national anthem for another 117 years, when President Herbert Hoover signed it into law on March 3, 1931. The Library’s Music Division today stands as the principal center for research about the national anthem, thanks in large part to the visionary work of Oscar G. Sonneck. In 1902, Librarian of Congress Herbert Putnam hired the young, New Jersey-born musicologist to establish a music department and transform it into a world-class research center. By Sonneck’s

Source: Library of Congress

resignation in 1917, he had elevated a collection of modest parlor songs into one of the finest, most comprehensive music libraries in the world. In 1909, Sonneck published an influential report on patriotic songs like “The Star-Spangled Banner,” “Hail Columbia,” “America” and “Yankee Doodle.” In the following years, the Library amassed a rich archive of those airs, including hundreds of items related to the national anthem. Igor Stravinsky, the famed composer, sent this 1941 letter to President Franklin D. Roosevelt, alongside his orchestral arrangement of The Star-Spangled Banner. Music Division. The Music Division holds, among many other things, the first printed lyrics and the first printed sheet music of “Anacreon”; Key’s own copy of that song ; the first printed sheet music setting Key’s lyrics to “Anacreon” and bearing the title “The Star-Spangled Banner” ; and a presentation copy of the lyrics handwritten by Key years later. A standout treasure: the first printing of Key’s poem, one of only two copies known to survive. Typeset in Baltimore by Samuel Sands and issued as a broadside just days after Key composed his poem, this printing of “Defence of Fort M‘Henry” vividly explains the circumstances of Key’s composition and, just below, notes the intended tune: “Anacreon in Heaven.” And then: one of the most memorable opening lines in music, followed by the four full verses of “The Star-Spangled Banner.” More than a century later, a copy was found pasted in a scrapbook, then acquired by the Library. Another treasure: An arrangement by renowned Russian composer Igor Stravinsky. At the start of World War II, Stravinsky fled Europe for America, and he created his own

Source: Library of Congress

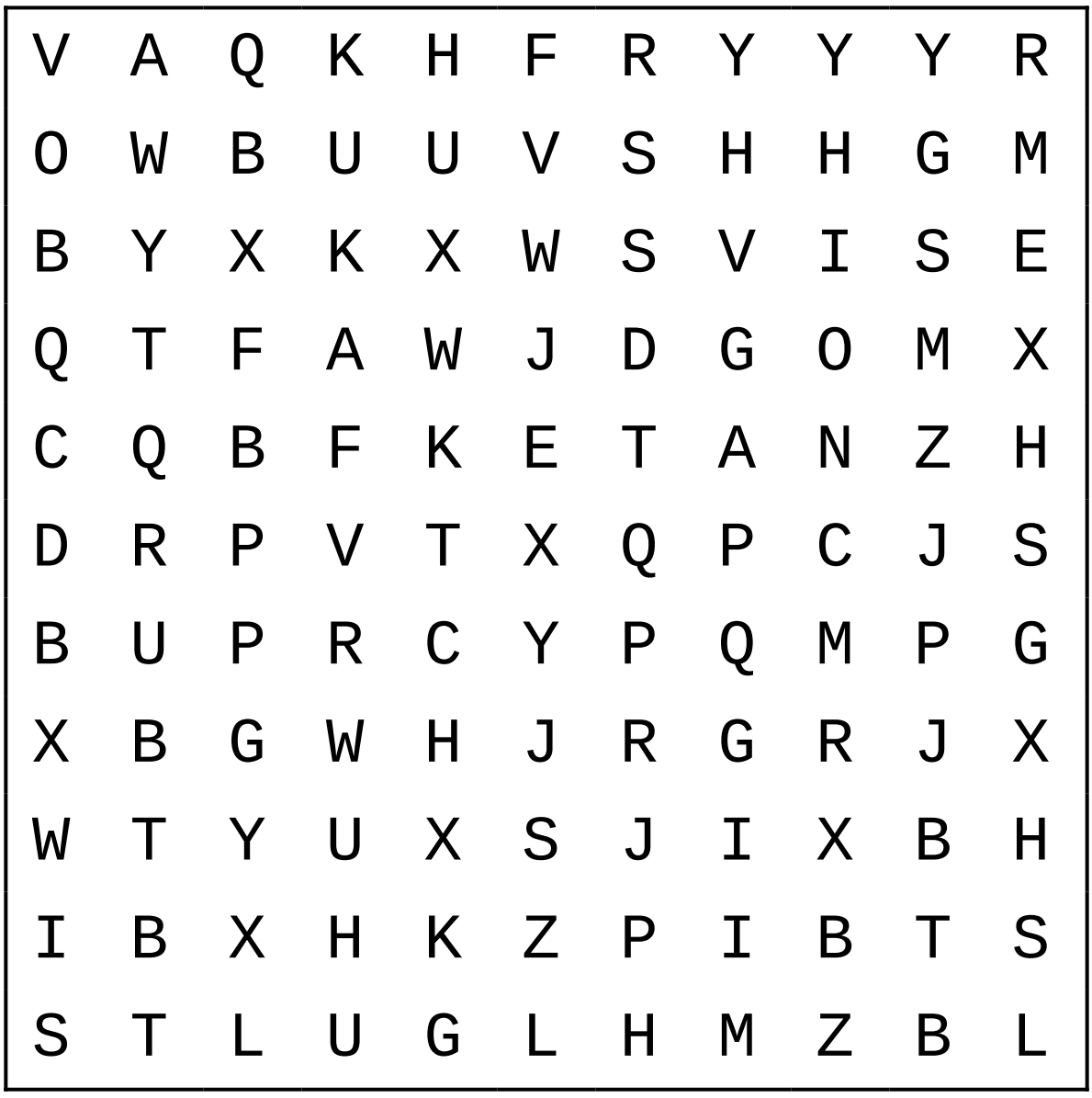
heartfelt arrangement of the anthem as a gesture of thanks to his new homeland. In a letter to President Franklin D. Roosevelt in 1941, he explained: “It is a desire to do my bit in the grievous times toward fostering and preserving the spirit of patriotism in this country that inspires me to tender this my humble work to you as President of this Great Republic and to the American People.” Stravinsky’s stately arrangement sparked controversy before it was ever heard. A leading officer of two major music organizations contacted Roosevelt, warning against Stravinsky’s “mutilated version” of the anthem. Roosevelt ignored the plea, and the first performance was presented by the Los Angeles WPA (Works Progress Administration) Symphony and a chorus. Stravinsky and the audience joined in singing the final two verses. In 1942, Stravinsky and the WPA gifted his draft letter and manuscript to the Library, further enriching its collection of patriotic music. It’s a charming detail that “The Star-Spangled Banner,” in its traditional form, is the only national anthem that ends in a question mark — inviting us all to keep participating in this great American experiment of democracy. Subscribe to the blog— it’s free!

Source: Library of Congress

Activity Time - Word Search

Find the words below in the puzzle. Words go across or down only.

Words to Find:



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