

Journal #6027 from sdc 7.16.25

Young indigenous kayakers about to complete historic river journey

Most recent microplastic removal technologies and why they're important

In sweltering Southwest, planting solar panels in farmland can help both photovoltaics and crops

Water storage in dams has caused minute shifts in Earth's poles

U.S. water-related expenditures for data centers to exceed US\$4.1 billion through 2030

Innovations & Partnerships for School Transportation Success from School Transportation Nation

Indigenous groups are starting to earn carbon credits – but they need monitoring technology

Klamath: monitoring tips from largest US river restoration

How hyperspectral imaging could transform remote sensing

For those reacting to the “fake news” about California Indians

How could a prehistoric society that lacked draft animals or wheels move enormous stone heads

Scientists installed textured tiles to see what material best attracts marine life and boosts biodiversity.

Rock art in Kimberley region of Australia is among the oldest examples of human-made art on Earth

History Bits

When reconciliation overshadows rights: The Métis' continued fight for health data and recognition



by Bucky Harjo

Young indigenous kayakers about to complete historic river journey, after ‘largest dam removal in US history’

In June, a group of indigenous people aged between 13 and 20 set off on an epic expedition, paddling 300 miles from the headwaters of the Klamath River in southern Oregon to its mouth in the Pacific Ocean, just south of Crescent City, California.

Matt Baker



Young indigenous kayakers complete 300-mile journey down Klamath River

Editor’s Note: Call to Earth is a CNN editorial series committed to reporting on the environmental challenges facing our planet, together with the solutions. [Rolex’s Perpetual Planet Initiative](#) has partnered with CNN to drive awareness and education around key sustainability issues and to inspire positive action.

CNN —

Ruby Williams’ birthday was not your average 18th. She celebrated it on the Klamath River, with a group of young people making a historic journey paddling from the river’s headwaters in southern Oregon to its mouth in the Pacific Ocean, just south of Crescent City, California. It marked the first time in a century that the descent has been possible, after the recent removal of four dams allowed the river to flow freely.

Williams, together with fellow paddler Keeya Wiki, 17, spoke to CNN on day 15 of their month-long journey, which they are due to complete on Friday. At this point, they had just 141 miles (227 kilometers) of the 310-mile (499 kilometer) journey left to go and had already passed through some of the most challenging rapids, such as those at the “Big Bend” and “Hell’s Corner” sections of the river.

Both were exhausted and hadn't showered in days — although they promised they “aren't completely feral.” However, despite tired minds, they were steadfast in their commitment.

“We are reclaiming our river, reclaiming our sport,” said Williams.

“We are getting justice,” Wiki, who is from the Yurok Tribe, added. “And making sure that my people and all the people on the Klamath River can live how we're supposed to.”

The Klamath River runs deep in the cultures of the native peoples living in its basin, who historically used dugout canoes to travel along it. They view it as a living person, a relative, who they can depend on — and in turn protect.

“It's our greatest teacher, our family member,” said Williams, who is from the Karuk Tribe, which occupies lands along the middle course of the Klamath. “We revolve ceremonies around it, like when the salmon start running (the annual migration from the sea back to freshwater rivers to spawn), we know it's time to start a family.”

Historically, it was also a lifeline, providing them with an abundance of fish. The Klamath was once the [third-largest salmon-producing river](#) on the West Coast of the US. But between 1918 and 1966, electric utility company California Oregon Power Company (which later became PacifiCorp), built a series of hydroelectric dams along the river's course, which cut off the upstream pathway for migrating salmon, and the tribes lost this cultural and commercial resource.

For decades, native people — such as the Karuk and Yurok tribes — demanded the removal of the dams and restoration of the river. But it was only in 2002, after low water levels caused a [disease outbreak](#) that killed [more than 30,000 fish](#), that momentum really started to build for their cause.

Twenty years later, the Federal Energy Regulatory Commission finally [approved a plan](#) to remove four dams on the lower Klamath River. This was when [Paddle Tribal Waters](#) was set up by the global organization Ríos to Rivers to reconnect native children to the ancient river. Believing that native peoples ought to be the first to descend the newly restored river, the program started by teaching local kids from the basin how to paddle in whitewater. Wiki and Williams were among them — neither had kayaked before then.

In the fall of 2024, the last of the four dams was removed — completing what has been called “the world's largest dam removal effort” by the [National Oceanic and Atmospheric Administration](#) (NOAA). Upriver (beyond where the Klamath River technically begins), two smaller non-hydroelectric dams remain, where the paddlers had to disembark and carry the kayaks overland; there are currently no plans to remove them despite an ongoing campaign.

River Roots/Rush Sturges

Wiki recalled feeling giddy when she heard that the last dam had fallen. “So many of our elders and our aunties and uncles... fought so hard to get these dams down,” she said. “It was a really long, hard fight, and a lot of people thought — even my grandma thought — they would never see the dams come down in their lifetime.

“So, for us to paddle down the river... it’s very surreal. I think we’re all just so grateful, knowing that the salmon can finally go from the mouth to the headwaters, and that we can go from the headwaters to the mouth too.”

Weston Boyles, founder and director of Ríos to Rivers, who is also on the journey, said that it was critical that native people lead the first descent.

“Historically, ‘first descents’ have been a colonial idea: outsiders staking claims on waterways that indigenous communities have navigated for millennia,” he said. “We’re reclaiming a stolen narrative. It matters because those waters flow through ancestral homelands, and these young paddlers are reasserting sovereignty, healing cultural trauma, and honoring their tribes’ deep connections to the river.”

“Remarkable resilience”

The ecological impact is also something to celebrate. Within a few days of the final dam being removed, chinook salmon (the largest of the Pacific salmon species) were seen swimming past the former location of Iron Gate Dam in northern California — a spot where no fish had passed in 60 years, said Dave Coffman, director of northern California and southern Oregon for Resource Environmental Solutions (RES), the company working on the Klamath’s restoration.

“We were hopeful that within a couple of years we would see salmon return to Southern Oregon. It took the salmon two weeks,” he told CNN. “No one saw that coming — the response has exceeded our wildest hopes. It demonstrates the remarkable resilience of these fish: if we give them a chance, they will make their way back home.”

But there is no denying the landscape has changed dramatically since before the dams and it will take years to recover, according to Coffman. RES is working to accelerate the natural process by reshaping channels, excavating sediment, planting billions of native seeds along the riverbanks, and even using helicopters to place downed trees in tributaries to provide crucial cover for fish and wildlife.

“Sometimes we give nature a gentle nudge, but sometimes we give it a great big shove in the right direction,” says Coffman.

Wiki and Williams have already witnessed the results. “It’s been so cool to paddle through where the old reservoirs were and see all the new growth,” said Williams. “I got to see it earlier this year and it was kind of looking sad, and then I paddled through a couple days ago and it looks like a completely different river.”

After completing the epic journey, the girls will go their separate ways. Williams will head off to college in fall and Wiki is starting her final year of high school. But despite living on different sections of the river and being from different tribes, they are confident their paths will cross again. Both strongly believe their futures are grounded in the Klamath.

Williams dreams of coming back in her college breaks and becoming a paddle instructor, while Wiki sees herself doing advocacy work for her community.

“We are celebrating (now), but there’s still so much work to be done in the United States and also globally around dams and dam removal,” said Wiki. “(I want to) create a larger global community.”

For more pics and video: <https://www.cnn.com/travel/klamath-river-indigenous-paddle-c2e-spc>

Related article This 1,000-mile river suffered decades of oil spills. Now it’s a legal person, things could change

The most recent microplastic removal technologies and why they’re important



“Microplastic pollution has grown from an environmental concern to a widespread global issue. These small synthetic particles, measuring less than 5 mm, contaminate rainwater, oceans, soil, and even human blood and organs. Research suggests links between microplastic exposure and various health risks, including inflammation, cardiovascular problems, and developmental issues. Conventional wastewater treatment plants often struggle to fully remove these pollutants, allowing them to re-enter the environment and water supply. This situation has led to increased research focused on developing effective and sustainable removal technologies. These advancements address an important challenge to ecosystem health and human well-being. A promising trend in microplastic remediation uses natural materials for effective water treatment. Researchers are exploring the potential of abundant and non-toxic plant extracts as alternatives to synthetic chemicals. ... ” [Read more from AZO CleanTech.](#)

In the sweltering Southwest, planting solar panels in farmland can help both photovoltaics and crops

““We were getting basil leaves the size of your palm,” University of Arizona researcher Greg Barron-Gafford said, describing some of the benefits he and his team have seen farming under solar panels in the Tucson desert. For 12 years, Barron-Gafford has been investigating agrivoltaics, the integration of solar arrays into working farmland. This practice involves growing crops or other vegetation, such as pollinator-friendly plants, under solar panels, and sometimes grazing livestock in this greenery. Though a relatively new concept, at least 604 agrivoltaic sites have popped up across the United States, according to OpenEI. Researchers like Barron-Gafford think that, in addition to generating carbon-free electricity, agrivoltaics could offer a ray of hope for agriculture in an increasingly hotter and drier Southwest, as the shade created by these systems has been found to decrease irrigation needs and eliminate heat stress on crops. Plus, the cooling effects of growing plants under solar arrays can actually make the panels work better. But challenges remain, including some farmers’ attitudes about the practice and funding difficulties. ... ” [Read more from Inside Climate News.](#)

Water storage in dams has caused minute shifts in Earth's poles



“Over the past two centuries, humans have locked up enough water in dams to shift Earth’s poles slightly awits atop goopy molten rock, so it can move relative to the magma below it. Anytime mass is redistributed around the planet’s surface, like when ice sheets grow or shrink, this outermost rock layer wobbles and moves around. Imagine slapping a lump of clay onto one side of a spinning basketball: to maintain momentum, the part of the ball with the clay on it will shift slightly toward its equator and away from its axis of rotation. When this happens on Earth and the outermost rock layer wobbles around, different areas of the surface end up sitting directly over the axis of rotation. The geographic poles then pass through different spots on the surface than before, a process called true polar wander. A [new study](#) in Geophysical Research Letters finds the construction of nearly 7,000 dams from 1835 to 2011 shifted the poles about a meter (3 feet) in total and caused a 21-millimeter (0.83-inch) drop in global sea levels. Together, these dams hold enough water to fill the Grand Canyon twice. ... ” [Read more from the AGU.](#)ay from the planet’s axis of rotation, according to new research. Earth’s outermost solid layers.

U.S. water-related expenditures for data centers to exceed US\$4.1 billion through 2030

“The role of water in the high-growth data center market is fast becoming a critical factor in site selection, design, and operations. By 2030, annual water-related capital and operational expenditures are forecasted to reach US\$797.1 million, representing a 31.4% increase from today. According to a new report from Bluefield Research, *U.S. Water for Data Centers: Market Trends, Opportunities, and Forecasts, 2025–2030*, this surge in activity is accelerating—driven by artificial intelligence (AI)-fueled growth, mounting local concerns over water availability, and the tech sector’s urgent push to safeguard operational resilience amid growing environmental scrutiny. ... ” [Read more from Smart Water Magazine.](#)

(STN Podcast E265) Onsite at STN EXPO West: Innovations & Partnerships for School Transportation Success - School Transportation Nation – Episode 265

stnonline.com/multimedia/stn-podcast-e265-onsite-at-stn-expo-west-innovations-partnerships-for-school-transportation-success/

user_email=e073fe83cf6e594f0fa68c85167471226da0e93d55247b60e6f1153aa19d8ac8&user_email_md5=7549cf1d39576a38840bf5c6d0e50aa6&lctg=62413d809ad7660edf70913a



[Indigenous groups are starting to earn carbon credits – but they need monitoring technology](#)



[Klamath: monitoring tips from largest US river restoration](#)



[How hyperspectral imaging could transform remote sensing](#)

~~~~~  
**For those reacting to the “fake news” about California Indians:**

<https://calmatters.org/politics/2019/06/native-american-genocide/>

[https://en.wikipedia.org/wiki/Act\\_for\\_the\\_Government\\_and\\_Protection\\_of\\_Indians](https://en.wikipedia.org/wiki/Act_for_the_Government_and_Protection_of_Indians)

<https://web.archive.org/web/20141012063249/https://www.library.ca.gov/crb/02/14/02-014.pdf>

And refutstionz;

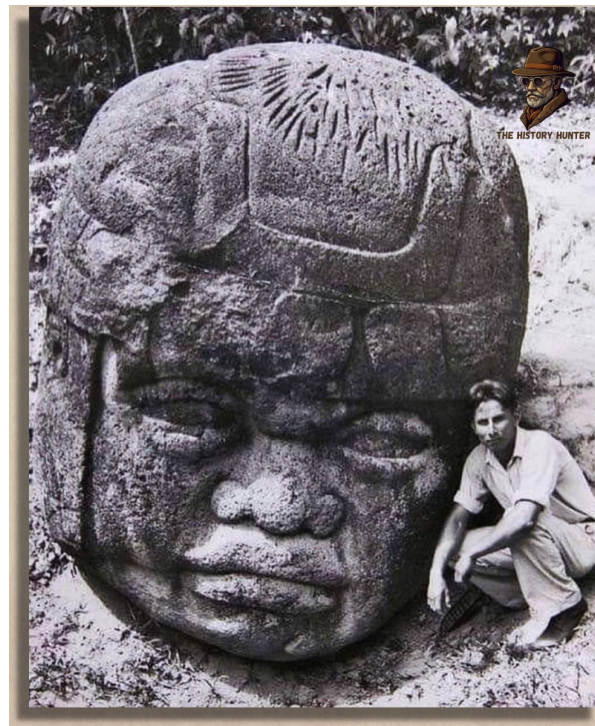
<https://online.ucpress.edu/ch/article/100/2/4/196102/The-California-Indian-Scalp-Bounty-MythEvidence-of>

**How could a prehistoric society that lacked draft animals or wheels move enormous stone heads across 80 kilometres (50 miles) of marshy lowlands and dense rainforest?**

Known to have existed in what is now modern-day Mexico from approximately 1200 BC to 400 BC, the Olmec civilisation is one of the first known societies in Mesoamerica. Known for their prowess in trade, agriculture, and artistic creation, the Olmecs left a lasting legacy that impacted later societies such as the Maya and Aztecs.

One of the enormous heads of the Olmec civilisation, La Venta Monument 1, is a breathtaking example of prehistoric engineering. This enormous skull, which is several tonnes in weight and stands nine feet four inches tall, is carved from basalt. Not only is this artefact enormous, but it also travelled a great distance: the basalt that was used to build Monument 1 was mined more than 80 kilometres (50 miles) distant in the untamed Tuxtla Mountains.

It is still unknown how such a massive stone could be transported without the use of wheels or draft animals through lowlands covered in swamps and deep jungles. The monumental logistical difficulty of transporting this enormous head over such a distance underlines the Olmec people's incredible resourcefulness and tenacity. With its distinctive headdresses, each head probably symbolises a renowned king, a monument to their power and the complex social structure of this ancient society.



~~~~~  
To prepare for sea level rise, scientists installed textured tiles on San Francisco's seawall to see what material best attracts marine life and boosts biodiversity.
[Here's what they found.](#)

Some rock art in the Kimberley region of north-west Australia is among the oldest examples of human-made art on Earth, with ages ranging from an astounding 41,000 to maybe 50,000 years. This prehistoric artwork, which was produced by Indigenous Australians, can be seen on boulders, flat rock surfaces, and rock shelters. Tens of thousands of sites are thought to exist; many are still unidentified.

The diversity of styles is exemplified by the Gwion Gwion paintings, which have dynamic poses and meticulous details, and the Wandjina spirits, which have huge eyes and halo-like heads. To make symbolic motifs, artists applied beeswax and resin, cut into rocks, employed ochre paints, and even placed stones. Some removed burned dirt to expose different hues.

Because of the ochre's strong affinity with sandstone and their isolated locations, which have shielded them from damage, these artworks have exhibited exceptional endurance. In order to maintain the preservation of these places, archaeologists and Indigenous Rangers collaborate.



History Bits (oops, missed Monday!)

- 1495 Jul 17** Columbus' second expedition to the new world sent 550 Native Americans to Spain as slaves; only 350 survived the trip.
- 1787 Jul 13** Congress passed the Northwest Territory Ordinance, pointing territories toward statehood.
- 1798 Jul 16** The Public Health Service was created as part of the Marine Corps.
- 1861 Jul 18** Under pressure from federal officials, Cheyenne and Arapaho tribal leaders agreed to surrender much of Colorado that was guaranteed to them by an 1851 treaty, only to ace the fierce opposition of their tribes to cession.

- 1863 Jul 16** Congress enactd law providing treaties with the “Sisseton, Wahpaton, Medawakanton and Wahpakoota Bankds of Sioux of Dakota are abrogated and annulled.”
- 1883 Jul 13** “Nevada Indians are said to be starving and Congressman Cassidy has applied for relief. Where are the reservations? Why are not the Indians on them? What tribes are starving?”.....*Resse River Reveille*
- 1891 Jul 14** Jefferson’s administration affirmed its policy of teaching agriculture and trades to Native Americans.
- 1933 Jul 19** “We think no uncivilized Indians may now be found within the State of Nevada”. In 1923 this office so held stated NV Att-Gen. Mashburn on the subect of Indians paying poll tax,
- 1935 Jul 15** Nevada Fish and Game Commission adopted a resolution allowing Native Americans to sell fish taken from state lakes in open season.
- 1935 Jul 17** Nevada Indian Superintendent Alida Bowler present plans for a fish hatchery for Pyramid Lake to “sportsmen.”
- 1941 Jul 18** 1240 acres were purchased for McDermitt under IRA.
- 1970 Jul 15** A bill returning land in Woodfords to the Washoe Tribe received final congressional approval.
- 1970 Jul 15** Senator Alan Bible (NV) urges Senate Indian Affairs subcommittee chaird by George McGovern, to support legislation giving tribes more legal control of the federal land on which Native American colonies are built.
- 1979 Jul 16** At 6 a.m, 93 million gallons of radioactive water breached the south side of United Nuclear Corps’ earthen tailings dam (Church Rock, NM), entered the Puerco River carrying 1100 tons of uranium tailings and other heavy metals across the Navajo Nation.
- 1986 Jul 17** The Timbisha Shoshone Constitution was certified.
- 1986 Jul 19** The US Senate finally ratified the 1847 Geneocide Convention, 39 years after its Dec 9. 1947 adoption by the General Assembly of the UN and 37 years after the 6.16.49 submission by President Truman, one of eight presidents who asked for its ratification.

~~~~~

## **When reconciliation overshadows rights: The Métis’ continued fight for health data and recognition**

Author links open overlay panelAlexandra Nychuk (Métis - Manitoba Métis Federation) <sup>a</sup>, Kiera Kowalski (Métis - Manitoba Métis Federation) <sup>a</sup>, Chelsea Gabel (Métis - Manitoba Métis Federation) <sup>a b</sup>, Robert Henry (Métis - Métis Nation Saskatchewan) <sup>c</sup>

## Highlights

- •The Métis are the only Indigenous peoples in Canada who are yet to have their right to health recognised.
- •There is a significant lack of Métis-specific health research that is conducted by and with Métis governmental bodies.
- •Indigenous rights recognition requires distinctions-based approaches.

## Abstract

In 2021, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) Act received royal assent in Canada, further affirming inherent rights for Indigenous peoples (First Nations, Inuit and Métis). Despite this and a constitutional recognition of Aboriginal rights in 1982, the Métis have yet to have their right to health recognised. The prioritisation of pan-Indigenous approaches to addressing inequities in Canada neglects to recognise the collective rights (exercised through a governing body, nation, tribal community, etc.) that diversifies Indigenous rights from other human rights. Métis critically need accurate health data that are conducted using distinctions-based approaches, as they remain stuck in data dependency. However, a considerable barrier to Métis data collection is that Indigenous health research funding in Canada predominantly favours pan-Indigenous approaches, rendering the Métis insignificant in their fight for health recognition.

## Author biographies

Alexandra Nychuk is Michif and citizen of the Manitoba Métis Federation (from Domain, Manitoba). She is a PhD candidate in the Health, Aging and Society Department at McMaster University.

Kiera Kowalski is a citizen of the Manitoba Métis Federation from Fort Frances, Ontario. She is a PhD student in the Department of Health, Aging and Society at McMaster University.

Dr. Chelsea Gabel is from Rivers, Manitoba, and a citizen of the Manitoba Métis Federation. She is the current Scientific Director of the Institute of Indigenous Peoples' Health with the Canadian Institutes of Health Research and holds a Tier 1 Canada Research Chair in Indigenous wellbeing, community engagement and innovation. She is a Professor at McMaster University in the Department of Health, Aging and Society and the Indigenous Studies Department.

Dr. Robert Henry is a citizen of the Métis Nation-Saskatchewan from Prince Albert Saskatchewan. Dr. Henry is an Associate Professor in the Department of Indigenous Studies at the University of Saskatchewan and holds a Canada Research Chair in Indigenous justice and wellbeing. He is the Nominated Principal Applicant of the Saskatchewan Network Environment of Indigenous Health Research (SK-NEIHR) and Lead of the National Coordinating Centre for the Network Environments Indigenous Health Research (NCC-NEIHR).

*Article also carries a great bibliography.*

<https://www.sciencedirect.com/science/article/pii/S2949840625000269>