



# YELLOWSTONE

## NATIONAL PARK

STATE OF THE PARK 2023





Boundary marker near Lamar Mountain

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Message from the Yellowstone Senior Leadership Team



We are pleased to present this 2023 “State of the Park” report to the team and partners of Yellowstone National Park. The past two years have been filled with many successes and challenges. From the historic 2022 flood event to the commemoration of the 150th anniversary of Yellowstone, the park has continued to make substantial progress in a wide range of high priority areas.

In 2019, we set five major strategic priorities each supporting the overarching National Park Service (NPS) mission and each critical to the success of the Yellowstone. These priorities are: 1) Focusing on the Core, 2) Strengthening the Yellowstone Ecosystem and Heritage Resources, 3) Delivering a World-Class Visitor Experience, 4) Investing in Infrastructure, and 5) Building Coalitions and Partnerships. Within each of these strategic priority areas, we have established a wide range of actions designed to help us achieve success.

We will continue to make Yellowstone one of the best places to work by improving our workforce recruitment and retention efforts, focusing on the mental health and wellness of our team members, and completing our ongoing employee housing improvement efforts.

We will continue to strengthen the Yellowstone ecosystem and heritage resources by using the best available science and data to inform our decisions. Our ability to respond to climate

change, improve our sustainability efforts, and ensure wildlife and ecosystem health is paramount, as is our ability to effectively manage the park’s vast natural, cultural, and geologic resources.

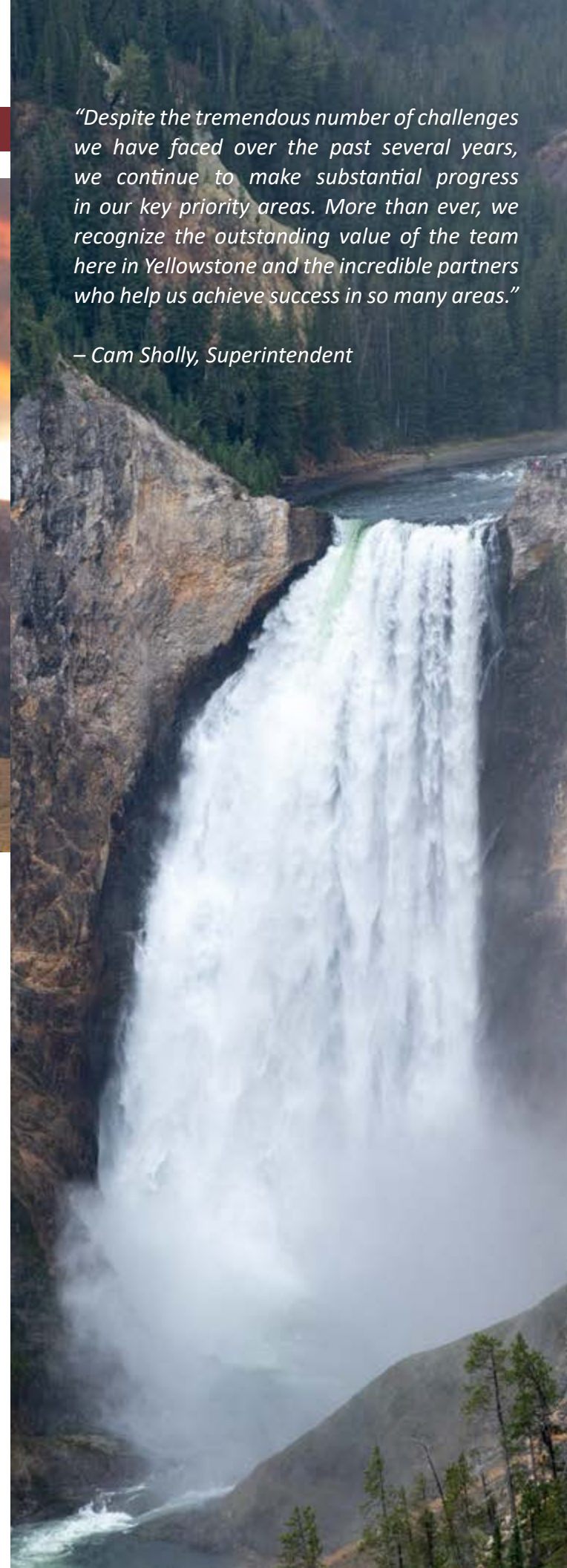
We will continue to provide a safe and enjoyable experience for our visitors through the best available public safety (law enforcement, fire, emergency medical services), education and interpretation, facility operations, and the highest service levels.

We will continue to reduce the park’s deferred maintenance backlog by investing in our park’s \$4 billion asset portfolio.

We will continue to build lasting and collaborative relationships with our many partners who are interested in protecting Yellowstone for the future. Our efforts over the past years to build and improve relationships, including with our associated Tribal governments, have set a firm foundation for the future, and one we look forward to building upon.

Whether you are reading this report as a Yellowstone employee, one of our many partners, or a member of the public, you can be proud of the enormous amount of work occurring in America’s first national park, none of which can be done without your support. We hope you enjoy this sampling of work occurring across the park and we thank you for your commitment to the future of Yellowstone and the mission of the NPS.

Yellowstone Strategic Priorities



*“Despite the tremendous number of challenges we have faced over the past several years, we continue to make substantial progress in our key priority areas. More than ever, we recognize the outstanding value of the team here in Yellowstone and the incredible partners who help us achieve success in so many areas.”*

*– Cam Sholly, Superintendent*

Focusing on the **CORE**

Focus Areas

- Support the Yellowstone Team First
- Improve Strategic Management and Business Acumen Platforms
- Advance Operational/Organizational Alignment and Effectiveness

Strengthening the Yellowstone Ecosystem and Heritage **RESOURCES**

Focus Areas

- Advance and Sustain the Yellowstone Ecosystem
- Protect, Preserve, and Improve Cultural Resources
- Ensure Resource Compliance
- Advance Sustainability

Delivering a World-Class Visitor **EXPERIENCE**

Focus areas

- Understand and Respond to Increasing Visitor Use
- Protect People and Resources
- Connect People to Yellowstone
- Improve Visitor Services and Amenities

Investing in **INFRASTRUCTURE**

Focus areas

- Build Strategic Administrative Framework
- Improve Condition of Employee Housing and Workspace
- Improve Condition of Transportation-Related Infrastructure
- Improve Condition of Historic Structures and Other Cultural Resources
- Improve Condition of Visitor Service/Public-Health-Related Infrastructure

Building Coalitions and **PARTNERSHIPS**

Focus Areas

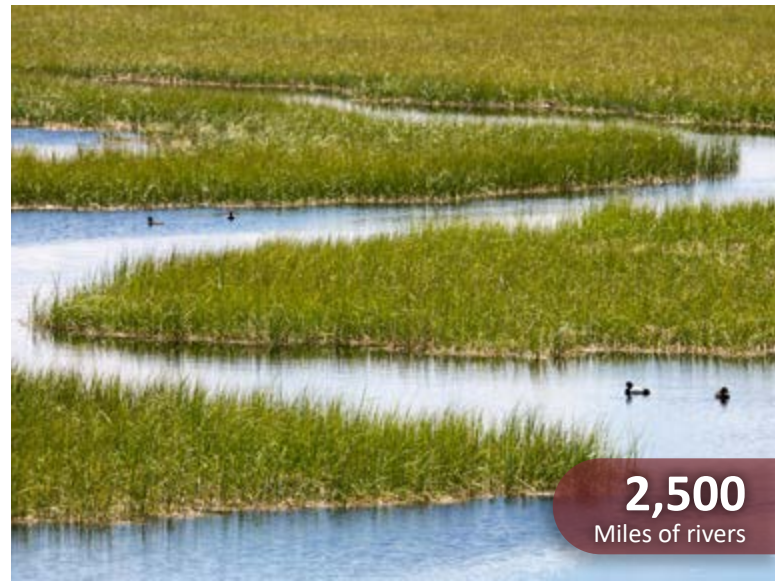
- Become a Higher Performing Yellowstone Team
- Strengthen Yellowstone Forever and Philanthropic Capacity
- Build Trust with Gateway Communities
- Honor Tribal Legacies and Heritage
- Cultivate Relationships with Elected Officials
- Strengthen Conservation, Environmental, Business and Recreation Coalitions



### Yellowstone at a Glance



**2.2 million**  
Acres across three states



**2,500**  
Miles of rivers



**10,000+**  
Hydrothermal features



**4 Million+**  
Annual visits



**540**  
Volunteers



**67**  
Mammal species



**11**  
Native fish species



**452**  
Miles of roads



**27**  
Associated Tribes



**1,100**  
Miles of trails



**845**  
Historic structures



**1,160**  
Native plant species



**150**  
Breeding bird species



**750**  
Employees





On March 1, 2022, Yellowstone turned 150. This significant milestone was commemorated throughout the year by highlighting many of the successes within the Yellowstone ecosystem, with a special emphasis on increasing our engagement with the park's 27 associated American Indian Tribes.



The World's First National Park

Commemorating 150 Years



Signed into law by President Ulysses S. Grant on March 1, 1872, America's first national park was set aside to preserve and protect the scenery, cultural heritage, wildlife, and geologic and ecological systems and processes in their natural condition for the benefit and enjoyment of present and future generations.

Yellowstone serves as the core of the Greater Yellowstone Ecosystem, one of the last and largest nearly intact natural ecosystems on the planet. Yellowstone has the highest concentration of hydrothermal features and half the world's active geysers. The park is also rich in cultural and historical resources with a combined 25 sites, landmarks, and districts on the National Register of Historic Places.

Based on the park's location at the convergence of the Great Plains, Great Basin, and Columbia Plateau, 27 American Indian Tribes have historic and modern connections to the land and its resources. For over 11,000 years before Yellowstone became a national park, it was a place where American Indians lived, hunted, fished, gathered plants, quarried obsidian, and used thermal waters for religious and medicinal purposes.



Yellowstone's team has learned many lessons during Yellowstone's 150 years. In the early 1900s, the government killed nearly all predators in the park, and the bison population was hunted to less than two dozen. Later that century, the fires of 1988 burned more than one-third of the park, and the introduction of nonnative lake trout decimated native Yellowstone cutthroat trout populations. Through modern resource management efforts involving bison, grizzly bears, native fish, gray wolves, wildland fire, and others, Yellowstone's ecosystem is the healthiest it has been in over a century.

The Yellowstone team goal for this milestone has been to reflect on 150 years of protecting Yellowstone National Park, to highlight successes within the ecosystem, and to open dialogue on the lessons learned from yesterday, the challenges of today, and vision for tomorrow. The team used this commemoration not just to celebrate, but to strengthen relationships with Tribes, partners, and the public to make a lasting positive impact on the next 150 years of Yellowstone.

**15th Biennial Scientific Conference on Yellowstone**

Hosted by Montana State University, the theme of the conference was, "Expanding the Scope of Science Together: The Next 150 Years." Over 300 participants including researchers and practitioners from academia, state and federal agencies, non-governmental organizations, and Tribal communities gathered to reflect on the science and conservation accomplishments that have brought us to the present day and to envision solutions for some of the grand challenges facing Greater Yellowstone's future.

**University of Wyoming's Symposium on Yellowstone's 150th**

The University of Wyoming College of Law and the Haub School of Environment and Natural Resources, in partnership with Yellowstone National Park, hosted a symposium marking Yellowstone National Park's 150th anniversary. The event featured keynote talks and panel discussions to examine the park's history and look to the future.

**Virtual Video Series**

Yellowstone's social media team moderated a series of conversations with subject matter experts who shared their knowledge about the past, present, and future on strategic priority issues. The 15-part video series was shared on Yellowstone's social media platforms and website: [go.nps.gov/YNP150videos](https://go.nps.gov/YNP150videos)

**Black People Who Hike**

Yellowstone hosted members of the group Black People Who Hike, who were awarded a National Park Foundation ParkVentures grant. The ParkVentures grant program is designed to help eliminate barriers and increase representation of Black people in National Parks—currently at less than 6%. This grant supports their mission to empower, educate, and reengage Black people to the outdoors through wellness campaigns, health advocacy, and community-based activities.

**Xanterra Parks and Resorts: 150 Years of Inspiration**

Yellowstone's lodging concessioner, Xanterra Parks and Resorts, hosted a public event on May 6, 2022, coinciding with the summer season opening of the Old Faithful Inn. The event included remarks from NPS and Xanterra representatives, free Historic Yellow Bus tours of the Old Faithful Historic District area, and a Native American art exhibition and marketplace.

**Additional 150 Anniversary Events**

The park hosted an employee wellness ski challenge to commemorate the 150th anniversary and promote mental wellness. The park also hosted ribbon cuttings to celebrate the completion of the park's new employee modular housing and the Tower-Roosevelt to Mount Washburn Road project. The Yellowstone Environmental Coordinating Committee hosted a community town cleanup in Gardiner, Montana.



University of Wyoming's Symposium on Yellowstone's 150th Anniversary



150 Years of Inspiration Event: artist Robert Martinez



Black People Who Hike at Cleopatra Spring ©D'Andre Lyons





## Working With Yellowstone's Associated Tribes

### Wind River Inter-Tribal Virtual Gathering

The Eastern Shoshone and Northern Arapaho Tribes of the Wind River Reservation hosted a virtual gathering to commemorate the park's 150th anniversary while elevating the Tribal community's voice in conserving and managing Yellowstone. Panel discussions addressed Tribal consultation and coordination in the stewardship of federal lands, waters, and wildlife, and Indigenous cultural connections to Yellowstone National Park and the Greater Yellowstone Ecosystem.

### Wind River Inter-Tribal Gathering

The Wind River Inter-Tribal Gathering at the Wind River Indian Reservation brought together Tribal nations, federal managers, non-governmental organizations, and others to discuss conservation, current issues of importance to Tribal Nations, and the future of consultation and collaboration. Yellowstone's 27 associated Tribes, nonprofits, and NPS employees gathered to honor, nourish, dance, heal, and celebrate Indigenous people.

### Yellowstone Tribal Heritage Center

In partnership with Yellowstone Forever, Yellowstone piloted the Yellowstone Tribal Heritage Center. The center brought together Indigenous artists, scholars, and presenters from Yellowstone's associated Tribal Nations to directly engage visitors through formal and informal education, demonstrations, and storytelling. The project was informed by and staffed by Indigenous partners. Presenters from 13 Tribes interacted with the public and conducted over 140 programs, activities, and presentations. Plans are underway to continue the Yellowstone Tribal Heritage Center in future years.

### Yellowstone Revealed

In partnership with Mountain Time Arts, Yellowstone hosted a series of place-based projects by an intertribal group of Indigenous artists and scholars. Visitors had the opportunity to interact with members from 12 Tribes to learn about their heritage and culture; participate in interpretive hikes, demonstrations, and storytelling led by Tribal members and elders; and view a series of performances.

Although Yellowstone National Park is the oldest in the country, its history as a national park is only a small fraction of its larger human story, which dates back over 11,000 years. There are 27 Tribes with historic and modern connections to the lands and resources now found within Yellowstone National Park. To commemorate these connections, the Yellowstone team worked with Tribes and Tribal consultants in 2022 to increase Tribal presence in the park and create opportunities for Tribes to tell their stories directly to visitors during the 150th anniversary and into the future.

In addition to a teepee village at Madison, the Pretty Shield Foundation and Rocky Mountain Tribal Leaders Council installed seven illuminated teepees by Roosevelt Arch in Gardiner, Montana. Additional event partners include Yellowstone Forever, Yellowstone National Park Lodges, the National Parks Conservation Association, the Greater Yellowstone Coalition, and Park County Environmental Council.

### Nez Perce Appaloosa Horse Club Ride and Parade

Members of the Nez Perce Appaloosa Horse Club rode a section of the Nez Perce Trail, rode through Canyon Village in traditional regalia, conducted horse trail rides accompanied by Yellowstone staff, and presented fireside chats on the history and culture of the NiMiiPuu (Nez Perce). These events connected Nez Perce youth and adults to the trail, their history, and ancestors, and created an opportunity to share their experiences and stories with Yellowstone employees and visitors.

### Shoshone-Bannock Tribal Gathering

More than 50 Shoshone-Bannock Tribal members, including most of the Tribal council, held a cultural gathering at the Old Faithful Lodge. The public event brought together visitors, park personnel, and Tribal members as they gave presentations on their cultural heritage and connections to the Yellowstone ecosystem. The event culminated with a drum circle and traditional dancing.

### Tribal Fellowship Program

In partnership with Salish Kootenai College (SKC), the Tribal Preservation Historic Office, and the National Parks Conservation Association, Yellowstone is implementing a Tribal Fellowship Program for recent graduates of SKC. The candidate(s) will gain experience through work with each partner during the year-long program. Funded by the National Parks Conservation Association, the 2022 candidate is working on a geodatabase of Indigenous place names in Yellowstone. The park anticipates expanding the program in future years.

### First Peoples Mountain Renaming

Based on recommendations from the Rocky Mountain Tribal Council, subsequent votes within the Wyoming Board of Geographic names, and with support of the National Park Service, Mount Doane was renamed First Peoples Mountain by the U.S. Board on Geographic Names in a 15-0 vote.



Left: "Rematriate" performance at Old Faithful  
 Right: Nez Perce Appaloosa Horse Club parade  
 Bottom: Yellowstone Tribal Heritage Center performance



Yellowstone Revealed illuminated teepee installation



DOI Secretary Haaland at Yellowstone Tribal Heritage Center



On the morning of June 13, 2022, Yellowstone experienced a 500-year flood event. Northern parts of the park received a combined 7.5-9.5 inches of rain and snowmelt in a 24-hour period. The previous record high flow of the Yellowstone River measured at Corwin Springs was approximately 32,000 cubic feet per second. At more than 50,000 cubic feet per second, the river flow during this flood shattered that record.



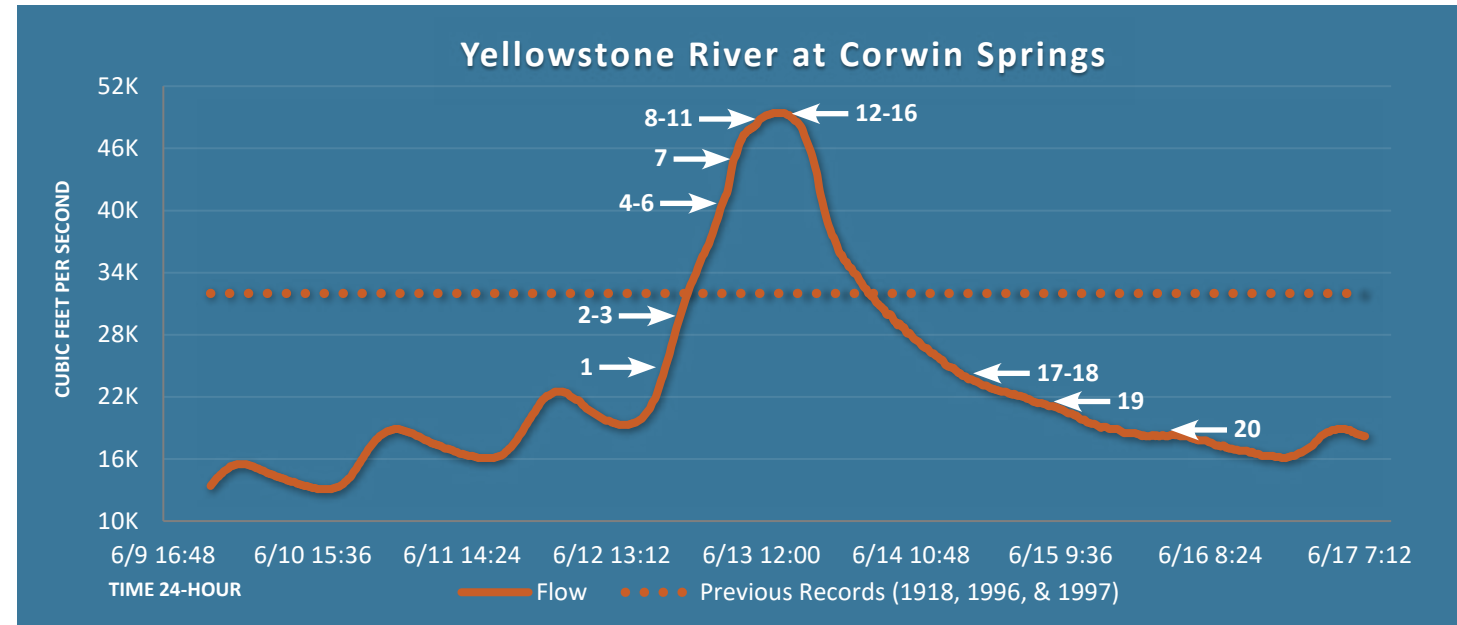
## Emergency Response

While damage occurred in various locations around the park, the largest flooding impacts occurred in the northern parts of the park. Multiple sections of roads were destroyed along with loss of wastewater infrastructure, loss of power to most of the park, and numerous mudslides and rockslides within the road corridors.

After the event occurred, the park immediately set a range of life safety objectives, including ensuring employee and visitor safety, evacuating the park, restoring power, diverting damaged wastewater systems, and helping local communities and counties with emergency response. Park managers reached out to the gateway communities of Cody, Wyoming, and West Yellowstone, Montana, and Grand Teton National Park to prepare for a visitor evacuation via the East, West, and South entrances. Other partners informed on the evacuation and closure included the Wyoming and Montana governors, congressional delegations,

internal park partners and concessioners, and national NPS and DOI leadership. The park fully evacuated frontcountry visitors within the first 36 hours of the flood. Within 48 hours, Northwestern Energy restored power and park managers diverted severed wastewater lines.

The park initiated daily calls with gateway communities and communicated with over 1,000 business owners and residents during week one. Yellowstone provided public updates regularly on the status of recovery and operations through email communications to news media, park website, and social media. Park, regional, and national NPS press teams actively responded to large numbers of media requests. The park conducted interviews with over 150 reporters about the flood event and will continue efforts to engage the media and share information with the public about the recovery process moving forward.



### Emergency Actions

- 6/12, 21:26, Closed Dunraven Pass.
- 6/12, 23:30, Closed North Entrance Road.
- 6/12, 23:47, Closed Northeast Entrance Road.
- 6/13, 06:08, Closed Mammoth to Tower-Roosevelt.
- 6/13, 06:10, Started efforts to account for employees.
- 6/13, 06:10, Highway 89 closed north of park.
- 6/13, 08:00, Planned to locate backcountry visitors, perform welfare checks, and evacuate if needed.
- 6/13, 09:24, Lost power at Mammoth, Norris, Canyon, Grant, and Lake.
- 6/13, 10:14, Closed East, South, and West entrances, began visitor evacuation of north loop.
- 6/13, 10:30, Identified Mammoth wastewater line as severed with wastewater flowing into the Gardner River.
- 6/13, 11:10, Started visitor evacuation of south loop including concession facilities.
- 6/13, 12:00, Initiated Gardiner, Montana, call to communicate with the community about their needs.
- 6/13, 13:00, Planned to evacuate visitors and provide food and water to Gardiner and Cooke City, Montana.
- 6/13, 14:00, Started to move Mammoth concessions employees south to lessen wastewater flows.
- 6/13, 14:30, Conducted initial damage assessments by resident Federal Highway Administration engineers.
- 6/13, 15:30, Conducted initial backcountry assessments.
- 6/14, 12:15, Evacuated stranded visitors from Gardiner, Montana, via Highway 89.
- 6/14, 16:30, Restored power across the park.
- 6/15, 07:00, Started to improve Old Gardiner Road with NPS roads crew.
- 6/15, 14:00, Diverted Mammoth wastewater from flowing into Gardner River.



Top left: Employee housing destroyed by flood  
 Top right: Damage to North Entrance Road in Gardner River Canyon  
 Center: Damage to North Entrance Road in Gardner River Canyon  
 Bottom left: Northeast Entrance Road damage near Soda Butte Picnic Area  
 Bottom right: Northeast Entrance Road damage near Trout Lake Trailhead



Flood Recovery Timeline

6/13, Flood event and initial response (see page 14 for emergency actions).



6/14, Started assessments to identify and repair damaged sections of the North and Northeast Entrance Roads.

6/14, Received \$10 million in emergency funding from the Federal Highway Administration (FHWA).



6/15, Started to improve Old Gardiner Road with NPS roads crew.

6/15, Started to engage gateway communities to discuss a limited reopening of the south loop.

6/17, Started planning and design for long-term reconstruction strategy.

6/17, Received additional \$50 million in emergency funding from FHWA.



6/19, Hosted NPS Director Sams.



6/21, Completed repairs to Sliding Meadow south of Canyon Village.



6/22, Reopened south loop to vehicles and backcountry day use using the Alternating License Plate System (ALPS).

6/28, Finalized temporary access designs for Old Gardiner Road two-lane improvements and Northeast Entrance Road.

6/29, Reopened majority of overnight accommodations in the south loop.



6/29, Hosted senior officials from NPS, congressional committees, and FHWA to develop strategies around short- and long-term recovery efforts.



7/1, Finished NPS improvements to Old Gardiner Road allowing for one-way employee traffic.

7/1, Developed interim access plan for limited commercial use operators to enter with clients from Gardiner, Montana.

7/2, Suspended ALPS. Reopened north loop to vehicles and backcountry overnight use in south loop. (93% of park roads open)



7/5, Hosted U.S. Senators Barrasso and Lummis and Wyoming Governor Gordon.



7/5, Started two-lane improvements on Old Gardiner Road by HK Contractors.



7/7-7/8, Hosted Department of the Interior Secretary Haaland, Assistant Secretary Esteno, U.S. Senators Tester and Daines, and Montana Governor Gianforte.

7/11, Finalized temporary Old Gardiner Road designs and awarded contract to HK Contractors.

7/16, Reopened overnight backcountry in Slough Creek to stock outfitters, overnight visitors, and commercial operators. (94% of trails open)

7/26, Finalized temporary Northeast Entrance Road designs and awarded contract to Oftedal Construction.

8/1, Implemented day use reservation system for access to Slough Creek.



8/2, Hosted U.S. Congressman Rosendale.



8/8, Started work on Northeast Entrance Road repairs by Oftedal Construction.



8/19, Hosted Western Caucus congressional delegation.

9/8, Suspended day use reservation system for Slough Creek.



10/15, Opened Northeast Entrance Road.



10/29, Hosted media and VIP briefing for DOI Deputy Secretary Beaudreau, FHWA Associate Administrator for Federal Lands Hess, Montana Governor Gianforte, U.S. Congressman Rosendale, and WYDOT Director Reiner.



10/30, Opened Temporary North Entrance Road (Old Gardiner Road).



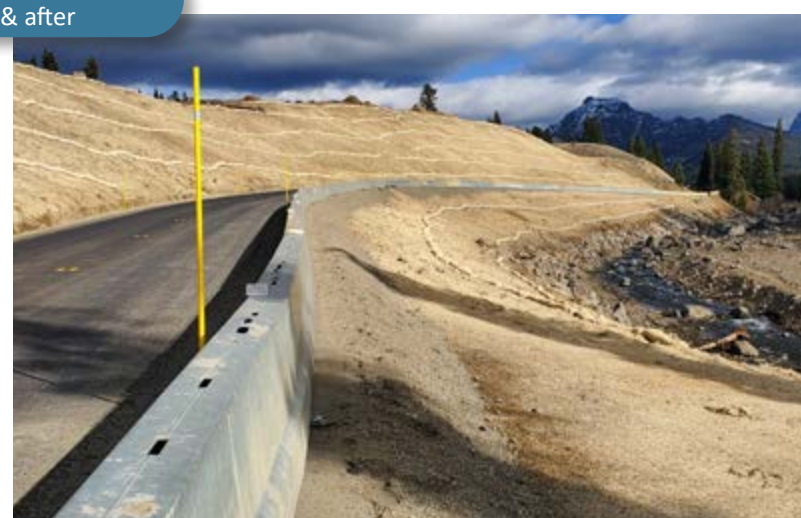
Flood Recovery Efforts



Temporary North Entrance Road (Old Gardiner Road): before & after



Northeast Entrance Road: before & after



**Temporary North Entrance Road (Old Gardiner Road)**

High water during the flood event destroyed the North Entrance Road in several places, which cut off access to Yellowstone via the North Entrance in Gardiner, Montana. This road and the North Entrance are open year-round and serve as the only winter vehicle access in and out of the park. Two days after the flood, NPS crews began hauling and applying 20,000+ tons of gravel to establish a passable, single lane of travel along an historic dirt road. Constructed in 1879, the Old Gardiner Road was the original entrance road to Yellowstone until it was replaced with an alternative alignment through the Gardner River Canyon in 1884.

On June 24, 2022, the park completed the required natural and cultural resource compliance for the emergency improvements to the Old Gardiner Road. FHWA awarded an emergency contract to HK Contractors and work began on July 5, 2022, with a project cost of \$20.5 million. The effort to design and construct this road on an accelerated timeline was a direct result of the partnerships between NPS, FHWA Western Federal Lands Highway Division, RockSol Consulting Group, and HK Contractors. The Temporary North Entrance Road opened to public travel on Oct. 30, 2022. The NPS is working closely with FHWA to evaluate a range of permanent road alignment alternatives and identify the most cost effective, resilient, and least environmentally impacting option.

**Northeast Entrance Road**

High water during the flood event destroyed the Northeast Entrance Road in three places and threatened lane collapse in two additional places. The Northeast Entrance Road is open to visitor vehicle traffic year-round and provides winter access to the communities of Cooke City/Silver Gate in Montana and to Lamar Valley, a popular destination in the park.

On July 13, 2022, the park completed the required natural and cultural resource compliance for the Northeast Entrance Road emergency repairs. FHWA awarded an emergency contract to Oftedal Construction on July 26, 2022. Work began on Aug. 8, 2022, with a project cost of \$25.5 million. Jacobs Engineering Group worked on design while Oftedal teams completed repairs. The team of FHWA, Jacobs Engineering Group, Oftedal Construction, and the NPS achieved an accelerated reopening date, and the road opened to public travel on Oct. 15, 2022. The NPS will work closely with the team members as additional efforts continue in the spring of 2023 to finalize road sections in Lamar River Canyon and near the Trout Lake Trailhead.

**Temporary Mammoth Wastewater System**

The sewer line adjacent to the road that carried wastewater from Mammoth Hot Springs to a sewage treatment plant in Gardiner, Montana, was destroyed in the flood. Staff quickly rerouted the wastewater into percolator ponds used between the 1930s and 1960s, allowing for summer day-use visitors and some residents to stay in the area. A new, temporary wastewater treatment system is being built to serve the Mammoth area with an anticipated 2023 completion.

**Disaster Relief Supplemental Appropriations**

The Disaster Relief Supplemental Appropriations Act, 2023 (Division N, Title VII) makes available \$1.5 billion to support recovery from natural disasters at several national park units. A substantial portion of that amount is authorized for the long-term flood recovery efforts in Yellowstone for the following:

- Reconstruct damaged Mammoth to Gardiner North Entrance Road with permanent repairs.
- Reconstruct damaged Northeast Entrance Road with permanent repairs.
- Replace damaged Canyon wastewater treatment facility.
- Replace destroyed Mammoth to Gardiner wastewater pipeline.
- Replace employee housing lost in the flood.
- Construct new employee housing to support flood recovery work.
- Rehabilitate Pebble Creek and Slough Creek Campgrounds to repair flood damage.
- Replace trash cans, bear boxes, tables, backup power generators, and other equipment that was lost or failed during the flood event.
- Assess natural and cultural resources damaged or exposed by the flood and implement mitigations.





Success in this priority is central to Yellowstone's future and revolves around improving the working and living conditions of the Yellowstone team, how the park manages its financial resources, and how we work toward the most effective administrative and operating framework.



Supporting the Yellowstone Team



Resource management team clearing downed trees



Craft shop employee painting employee housing unit



Top left: Carpenters with newly-built staircase  
 Top right: Helitack crew at the helibase  
 Center: Ribbon cutting new employee housing  
 Bottom left: Harlan Kredit receives award for 50 seasons of service  
 Bottom right: Ranger at North Entrance sign

Yellowstone’s workforce is one of the most capable, talented, and resilient in the country. Despite facing unprecedented challenges over the past three years, our team has continuously worked to successfully protect the park’s resources and keep the park open to millions of visitors annually. It is critical we continue efforts to make Yellowstone one of the best places to work in the country with a heavy focus on improving recruitment and retention efforts, improving work-life balance, and ensuring our staffing levels are adequate to handle the demands of increasing visitation.

**The Yellowstone Resiliency Project**

After the death of employee Ralph Anderson in the fall of 2021, the park worked with multiple NPS resources and a local licensed therapist to provide wellness checks for all park staff. Following these sessions, the providers made the recommendation to continue in-person counseling and provide additional mental health support for staff. As a result, the park developed the Yellowstone Resiliency Project in September 2022. With support from Yellowstone Forever’s Resiliency Fund, this one-year pilot counseling program brought in several local, trauma-informed counselors who are familiar with NPS values and mission and trained to engage with employees after significant medical or law enforcement incidents.

From September through November of 2022, counselors supported employees in person through 50 one-on-one confidential counseling sessions, several group meetings, debriefs, and informal connections with staff. Therapists will continue to be available inside the park through August of 2023. Yellowstone is a leader within the NPS on the formulation, innovation, and overall reach of this type of employee-focused program and is advising the regional leadership council subcommittee that is also working to address employee health and wellness.

**Safety and Wellness Program**

The Yellowstone Safety Services Office conducted safety briefings with divisional work groups, developed an Operational Leadership key points summary for distribution across the agency, and hosted several after action reviews to create lessons learned products for distribution.

The park Employee Safety and Wellness Team coordinated several projects including Safety Days, health fairs, and the purchase of exercise fitness equipment for employees; served on Critical Incident Stress Management peer support groups; served on the park’s COVID-19 Incident Management Team; assisted with COVID-19 and implementation of protective equipment; and expanded the park Respiratory Protection Program. The Safety Office also prepared a draft safety action plan to improve safety performance across the park.





## Supporting the Yellowstone Team

### Garage and Fleet Operations

Yellowstone has one of the largest vehicle fleets in the NPS. From snowmobiles, to snowplows, dump trucks, ambulances, and firetrucks, the garage provides vital support and maintenance to ensure Yellowstone's team can operate effectively. The garage provides a wide spectrum of services ranging from basic oil changes to comprehensive engine rebuilds. The garage team completed 2,555 maintenance work orders in 2021-22 and provided critical support to the park's flood recovery response.

Immediately following the flood, garage and fleet team members worked alongside the Special Projects crew to complete phase 1 of the Old Gardiner Road upgrade, which provided access between park headquarters and Gardiner, Montana. They drove dump trucks, operated heavy equipment, ordered parts, and repaired broken equipment to keep this project moving at a rapid pace.

### Mail Courier Operations

During the winter, hundreds of employees, volunteers, and family members work and live in isolated conditions throughout the interior of the park with no postal service delivery. Yellowstone's mail courier becomes the postal delivery mechanism for park employees. The courier travels 150 miles by oversnow vehicle two times per week delivering an estimated 17,000 pieces of mail and another 3,500 parcels to employees, volunteers, and family members each year.

### Craft Shops

Yellowstone's expert teams of carpenters, plumbers, and electricians handled 2,608 calls for service in 2021-22. The craft shop teams work diligently to maintain facility operations, improve the condition of employee housing (pages 29-31), improve visitor experience, and prioritize the repair of facilities and equipment that pose health and safety risks.

### Mail and Copy Room

The mailroom and copy center operations processed 42,808 pieces of incoming and outgoing mail in 2022 and serves as a critical support unit for park operations and programs. The center also completes document reproduction for all divisions, averaging over 1,200 print requests and tens of thousands of pages annually.

### Central Warehouse Operations

The Supply Center stocks over 1,500 unique items of consumable and expendable stock, including office and janitorial supplies, hardware, tools, and safety products. The Yellowstone team also relies on the receiving warehouse for delivery of critical supplies, property, and materials needed to operate the park. Yellowstone's warehouse operations provide a central repository and distribution center for employees' personal packages as well as work-related shipments, processing well over 15,000 packages annually. In 2022, the warehouse team also managed over 12,400 property assets valued at \$61,799,161.

### Technology Services

The Information Technology and Telecommunications Services maintains a highly complex network to support all forms of data and voice communication. The network supports 800 computers, 1,265 phone lines, 60 servers, 200 network routers and switches, and 100 terabytes of storage.

The team inspects, tests, and maintains 292 fire and security systems with over 115,000 smoke, heat, and carbon monoxide detectors, 500 pull stations, 230 motion detectors and panic alarms, five clean agent suppression systems, 67 premise security systems, 63 combination fire and security systems, 12 building access control systems, and 11 video security systems with 176 cameras.

The team provides technical support to maintain the Yellowstone Interagency Communications Center. Systems supported include an enhanced 9-1-1 call taking system, a recorder for emergency phone and radio communications, an alarm central station monitoring system, a Computer Aided Dispatch, and switch operated administrative phone lines.

The team maintains 1,000 portable radios, 800 mobile radios, four radio systems, eight mountain top repeaters, 20 radio base stations, 14 dispatch consoles, and nine microwave radio network links.

Lastly, over 1,200 team members were onboarded in 2021-22. Technology services issued building access identification cards and access codes, activated email and network access, issued PIV cards, provided desk and mobile phones, and programmed and issued portable radios for all employees.

### Yellowstone Youth Conservation Corps

In 2021, YCC hosted two crews of teens for five weeks and, in 2022, hosted two month-long sessions of three crews each, totaling 31 teens. The focus of this work-based education program is to support other work groups' priority projects, including installation of more than 100 bear boxes annually, new trailhead signs at all 95 park trailheads, and trail portal signs on the Canyon Rims; collecting visitor use data at high-visitation locations; trail maintenance; and in 2022 assisted with park flood recovery efforts by clearing 3 miles of brush along the Old Gardiner Road and 300 yards of ditch and two wastewater retention ponds.

### Water and Wastewater Treatment Operations

The park maintains 18 water and wastewater treatment systems throughout the park. Water production decreased by 4% in 2022 to 260,265,431 gallons, down from 269,843,307 gallons in 2021. Wastewater increased 3% in 2022 to 148,216,448 gallons, up from 143,211,645 gallons in 2021. Park staff have identified and repaired water line leaks parkwide but continue to battle locating ongoing water system loss. A parkwide professional leak survey is planned for early summer 2023.



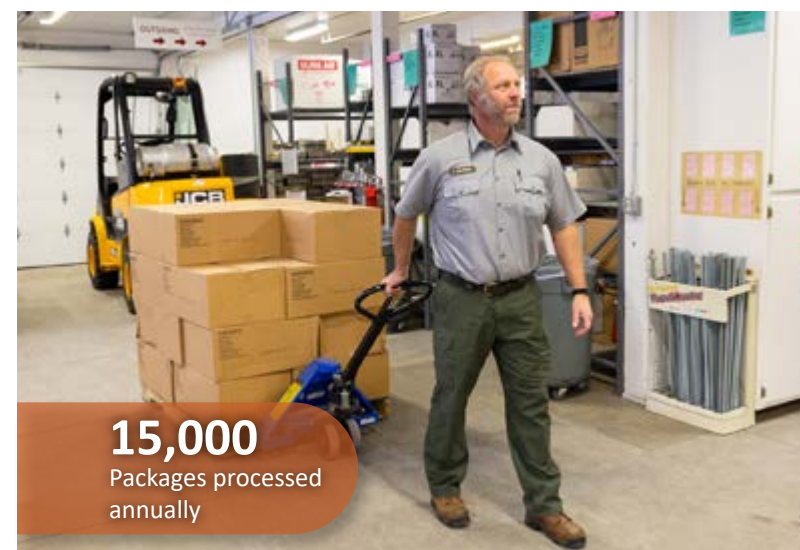
**2,555**  
Fleet work orders  
completed in 2021-22



**115,000**  
Smoke & heat detectors  
maintained annually



NPS Director Sams with Yellowstone Youth Conservation Corps



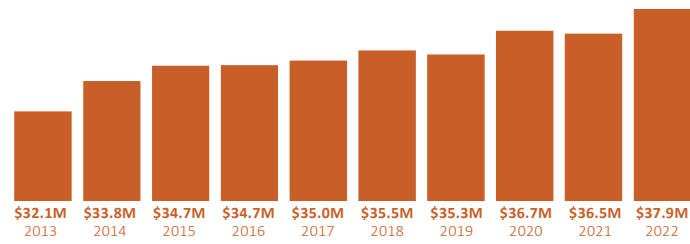
**15,000**  
Packages processed  
annually



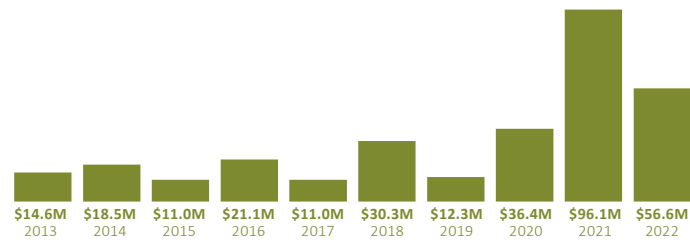
**291 million**  
Gallons of wastewater  
processed in 2021-22



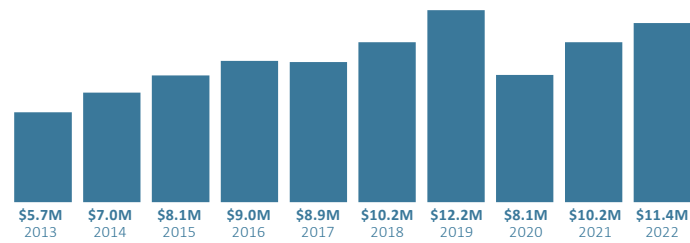
## Financial Income Sources, Expenditures, and Trends



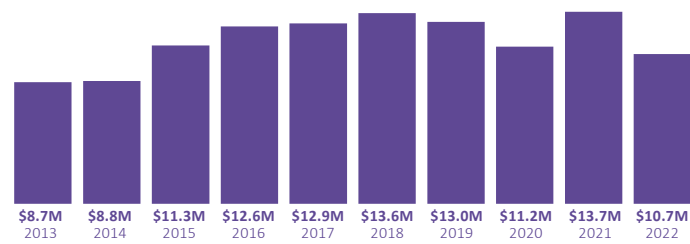
Base funding has increased 18% from 2013-22 while salary and benefits have increased by 23%. During that time, the park spent an average of 81.5% of base on salary and benefits.



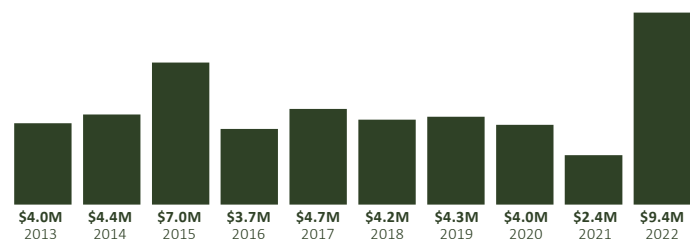
Non-base funding for repair rehab and cyclic maintenance projects increased by \$8.2M from 2018-22. Great American Outdoors Act projects accounted for \$73.7M and \$24.7M in 2021 and 2022 respectively.



Commercial fee revenue increased significantly from 2013-19. This growth has been impacted by COVID and the 2022 flood event. The park expects to return to the pre-COVID trendline in 2023 and beyond.



Visitor fee revenue increased from 2013-17 due to increased entrance fees in 2016 combined with increased visitation. COVID impacted revenues in 2020, followed by recovery in 2021 with a rebound in visitation. The 2022 flood event adversely impacted these revenues by approximately \$4M in 2022. The park expects to return to the pre-flood level of revenues in 2023 and beyond.



Philanthropic revenue declined from 2019-21 as Yellowstone Forever experienced fiscal challenges. Those issues have been addressed resulting in a rebound in 2022 that is expected to continue into future years.

### Financial Income Sources

In addition to yearly federal appropriations from Congress, Yellowstone uses other income sources each year to fund labor and benefits, supplies and equipment, capital investment projects, and service agreements. Listed below are the main income source categories.

#### Federal Appropriations for Base Operations

Operation of the National Park System (ONPS), commonly referred to as “base,” is the annual funding from Congress to support basic park operations. These funds are among the most flexible in terms of the kinds of expenditures permitted by policy.

#### Federal Appropriations for Non-Base

Includes additional funding from Congress to support projects for natural and cultural resources, interpretation and education, road construction managed by the Department of Transportation, major construction projects, and structural and wildland fire operations. Specific funding sources include the Great American Outdoors Act Legacy Restoration Fund, Cyclic Maintenance Program, Repair and Rehabilitation, Federal Lands Transportation Program, and the Nationally Significant Federal Lands & Tribal Projects. These funds generally have a greater level of restriction as to what they can be used for, including limitations on spending for permanent salaries or other ongoing operational expenses.

#### Commercial Fees

Includes Concessions Franchise Fees (CFF) and Commercial Use Authorization (CUA) fees paid to the park by concessioners and other commercial operators providing lodging, retail, food & beverage, fuel, transportation, campgrounds, tours, and other visitor services. Included are reimbursable payments from concessioners for water, wastewater, and solid waste management provided by the park. These funds have restrictions on how they can be spent, including limits on permanent salaries. Generally, commercial services related programs and projects are prioritized over other park projects and operations.

#### Visitor Fees

Includes entrance fees, NPS-operated campground fees, and fishing, boating, backcountry, and filming permits. These fees are used to directly support visitor services and reduce deferred maintenance on park infrastructure. The park retains 80% of collected entrance and campground fees through the Federal Lands Recreation Enhancement Act (FLREA).

#### Philanthropy

Includes donations and grants from our official nonprofit partner Yellowstone Forever. Funds can pass through park accounts or be used to pay vendors directly on behalf of the park.

#### Other Fund Sources

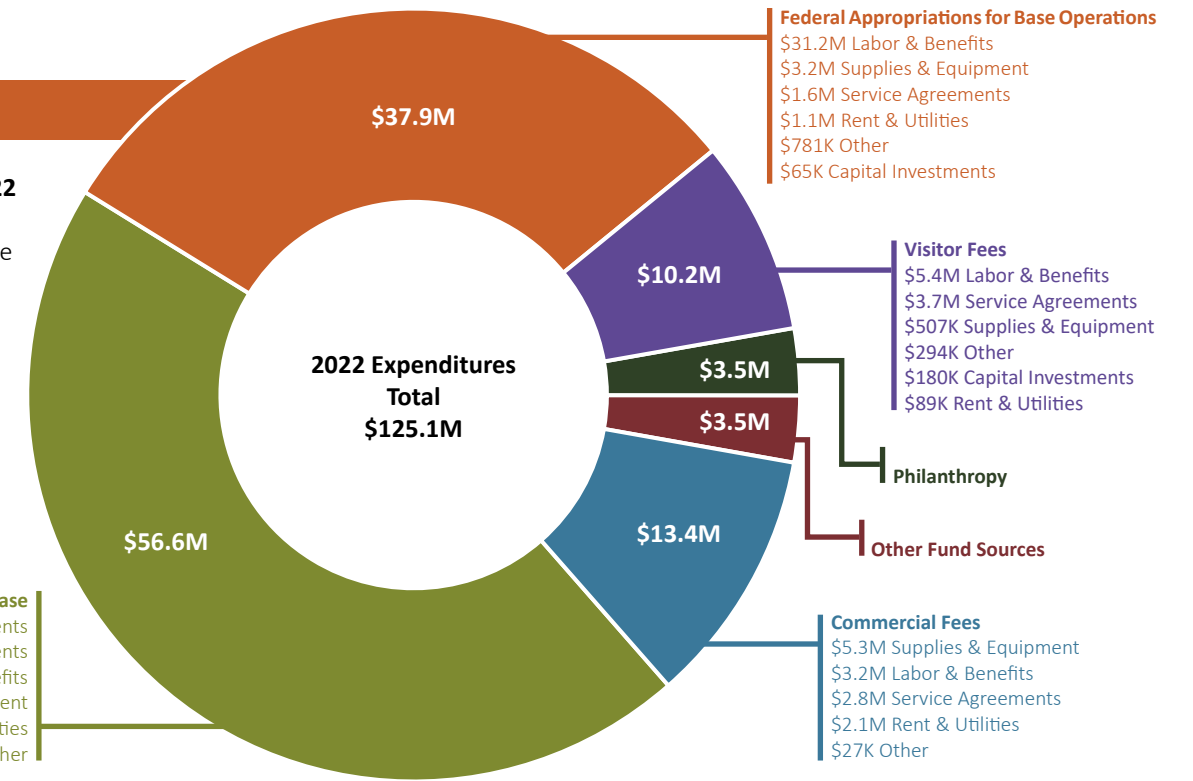
Includes employee housing rent and third-party agreements. The use of these funds tends to be restricted to supporting specific programs and projects. These fund sources have been relatively flat over time (no trend graph represented).

### Financial Expenditures 2022

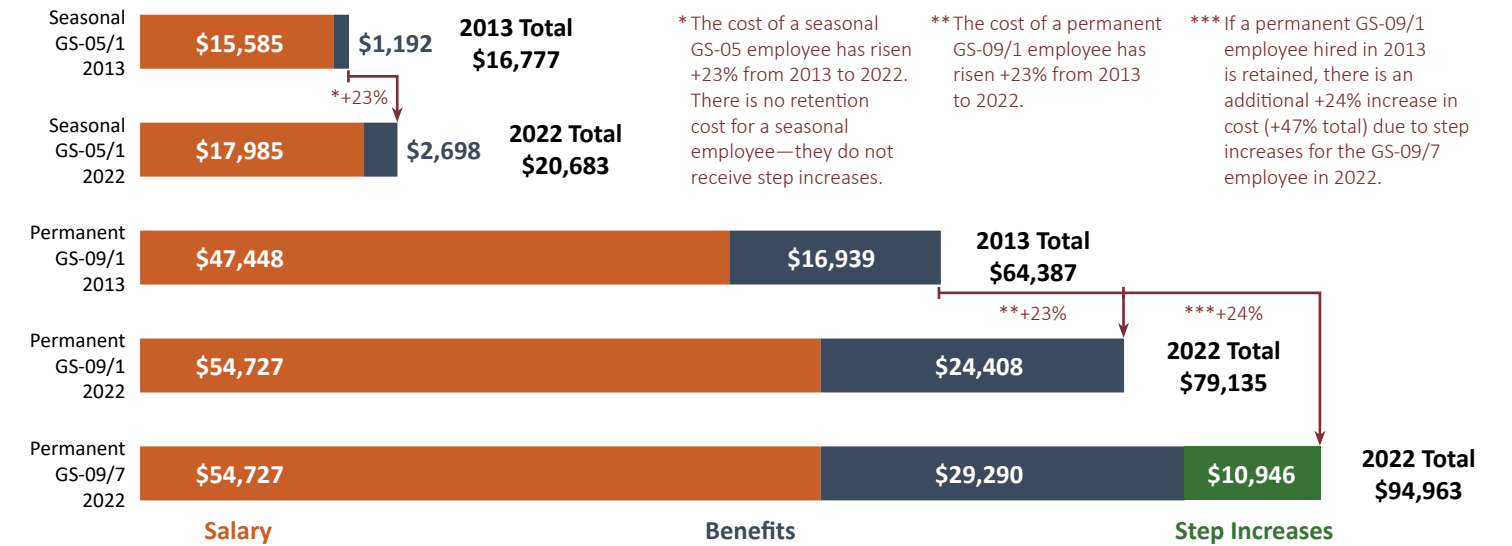
Income and expenditure categories may not total due to differences in the timing of receipt and expenditure.

#### Federal Appropriations for Non-Base

- \$33.8M Capital Investments
- \$13.3M Service Agreements
- \$5.9M Labor & Benefits
- \$3.3M Supplies & Equipment
- \$169K Rent & Utilities
- \$87K Other

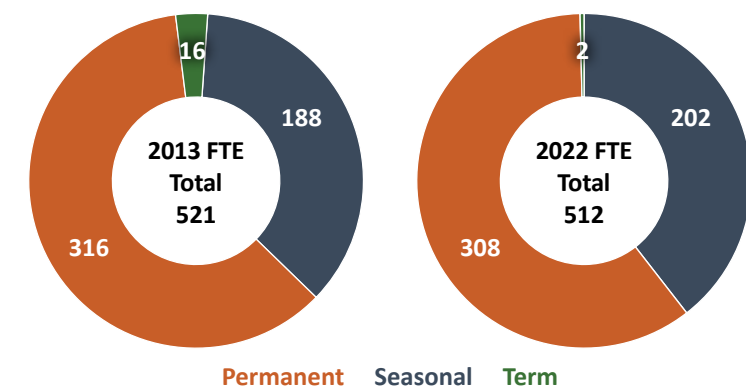


### Average Employee Cost



### Yellowstone Staffing Levels

In 2022, Yellowstone operated and managed 512 full-time equivalent employees (FTE). An FTE is equal to 2,080 hours of work per year. Since seasonal employees work 1,039 hours or less each year, one FTE can equate to several seasonal employees. Therefore, the total number of NPS employees working in the park during the summer is around 750.



It costs an additional **\$9.8 million** to employ the same number of FTE in 2022 as in 2013.

Park visits have increased by **1 million** from 2013 to 2022.



**Improving Telecommunications Infrastructure**



*Servicing telecommunications equipment*

**Fiber Optic Network Installation**

Diamond Communications (DC) continues to move forward with their application for a right-of-way and special use permit to build up to 190 miles of fiber along the South Entrance, Grand Loop, and North Entrance roads. Natural and cultural resource compliance is complete with a FONSI (Finding of No Significant Impact), interim drawings have been provided to the park, and an appraisal is being completed in coordination with the DOI Office of Land Valuation Services. If permitted, DC would recover their expenses over time by billing for services they provide to other service providers and in-park customers. If permits are issued, construction would take up to five years to complete.

**Satellite Internet**

Yellowstone procured 10 Starlink Low-Earth-Orbit (LEO) business class satellite kits and matching routers to connect the Starlink services to the DOI network. The kits replaced obsolete and weak connections at Bechler, Lamar, Grant, Canyon, East Entrance, Northeast Entrance, Madison, Norris, Mammoth, Gardiner, and Tower. These services provide broadband DOI connections, support Voice Over Internet Protocol (VOIP) phones, and open internet connections to enable new traffic counters and cellular calling and data over Wi-Fi for government-issued mobile phones.

**Broadband in Employee Residences**

LEO satellite internet services like Starlink are promising, but the costs per unit are prohibitive and there are limits to the number of services allowed in a geographic area. Verizon cellular improvements have enabled cellular-provided internet at many locations through hot spots and if the DC fiber project moves forward, cellular services will improve. Starting in 2021, fiber at South Entrance is now delivered directly to the nine residences as a utility.

**Verizon Wireless LTE Upgrades**

Verizon has improved their wireless services at Canyon, Old Faithful, Lake, Grant Village, and Mount Washburn. Many of these sites are delivering download speeds of 75 Mbps and more during peak visitation. Extended periods of service interruptions are still an issue due to a variety of environmental circumstances.

**Broadband**

West Yellowstone, South Entrance, Lake, and Old Faithful were upgraded to 100Mbps fiber connections provided by Anthem (West), Diamond Communications (South Entrance), and Lumen (Gardiner, Old Faithful, and West Yellowstone).

**Obsolete Infrastructure**

If the DC fiber optic network installation moves forward, antiquated communications infrastructure from mountaintops and backcountry sites can be removed. If the applicant wishes to withdraw, they can pay their cost recovery and withdraw without penalty.

**Improving Employee Housing**



*Goal 1: New employee modular homes*

Our ability to attract and retain talent in Yellowstone is strongly tied to the availability of affordable private and government housing options. The quality and quantity of available housing is directly tied to the success of every division, district, operation, and program. While Yellowstone has made many housing improvements over the past decades, our efforts have not kept pace with the rate of deterioration of our housing assets. We have not adequately responded to the changes in local real estate markets or the demands of increased visitation. Yellowstone National Park initiated a major, multimillion-dollar housing improvement effort to substantially upgrade NPS employee housing across the park that focuses on four goals:

**Goal 1: Replace Trailers with High-Quality Modular Homes**

Yellowstone has many employee housing trailers dating back to the 1960s that represent some of the worst employee housing in the national park system. Using modular versus on-site construction has allowed the park to build quality units in less time with lower costs. The park will save an estimated \$36 million from the original housing improvement plan proposal.

**Goal 2: Improve Condition of Non-Trailer, Non-Historic Homes**

Yellowstone's non-trailer housing units are spread over nine developed areas. These housing units are the primary residences for NPS employees, many of whom are snowed in completely between December and April. The condition of these houses varies dramatically, with many in extremely poor condition.

**Goal 3: Rehabilitate Deteriorating Historic Homes**

Designated as a National Historic Landmark in 2003, Fort Yellowstone consists of 34 structures constructed in the 1880s and early 1890s. Many of these structures continue to be used as housing and office space, but historic preservation is the primary reason for these rehabilitations. Many of these structures are severely deteriorating. This goal is also part of two other Yellowstone strategic priorities—Strengthening the Yellowstone Ecosystem and Heritage Resources and Investing in Infrastructure.

**Goal 4: Add New Housing Capacity**

Over the past decade, housing and rental prices in gateway communities have risen dramatically. Many communities have transitioned to short-term rental markets, making year-round rentals rare and very expensive. As increasing portions of the Yellowstone workforce retire, the lack of housing in surrounding communities like Gardiner and West Yellowstone, Montana, has made recruiting replacement positions difficult.



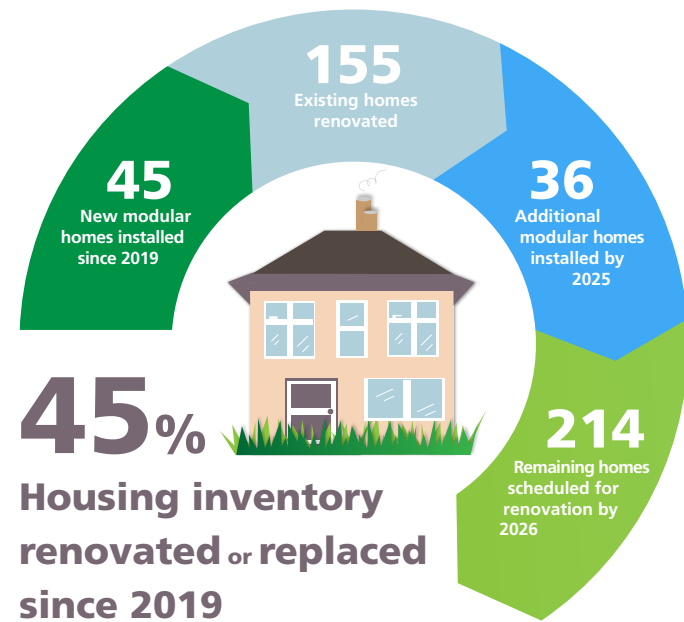
## Improving Employee Housing

### Goal 1: Replace Trailers with High-Quality Modular Homes

- Completed 45 modular housing unit installations in the park to date at Mammoth (32), Old Faithful (10), and Bechler (3).
- An additional 21 units are scheduled to be placed at Lake (15) and West Yellowstone (6) in 2023.
- The remaining 15 units are scheduled at South (2), Grant (4), Madison (2), Norris (2), Canyon (3), and Northeast Entrance (2) by 2025.
- Invested \$30.1 million on modular housing units and site development since 2019.

### Goal 2: Improve Condition of Non-Trailer, Non-Historic Homes

- Renovated 121 housing units in 2021-22, totaling 155 completed turnovers since 2019.
- Installed 89 wood stoves across seven developed areas across the park since 2019.
- Invested \$16.5 million to renovate existing non-modular housing units since 2019.



### Goal 3: Rehabilitate Deteriorating Historic Homes

- Received \$22 million to rehabilitate historic Fort Yellowstone through the Great American Outdoors Act Legacy Restoration Fund (LRF). This project will be one of the largest historic preservation projects in the NPS.
- Received \$21 million in funding to rehabilitate the historic Laurel Dorm near the Old Faithful Inn, which is part of the Old Faithful Historic District. This is another major historic preservation project funded through LRF.

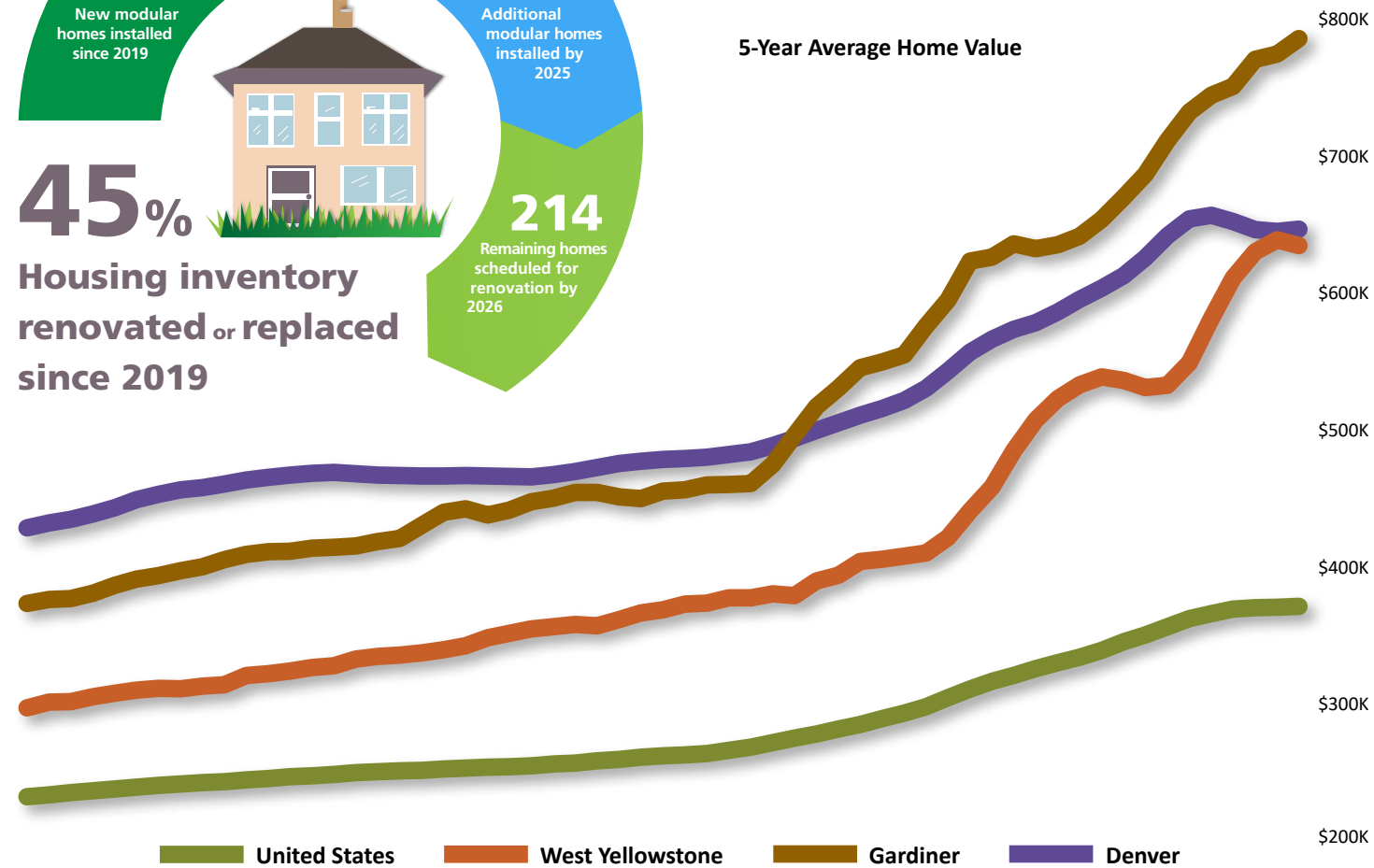
### Goal 4: Add New Housing Capacity

- Natural and cultural resource compliance is underway to locate potential areas and configurations for new housing (single occupancy dorms, modular cabins, etc.)
- Converted three 8-plex utility/storage areas into one-bedroom apartments.
- The park is pursuing housing lease options in the gateway communities of Gardiner and West Yellowstone, Montana.

### Key Statistics

- One quarter of Yellowstone employees earn less than \$51,000 annually and half earn less than \$64,000.
- Home values in West Yellowstone and Gardiner, Montana, are currently equal to or more expensive than in Denver, Colorado.
- Home values in West Yellowstone and Gardiner, Montana, are currently double the national average.

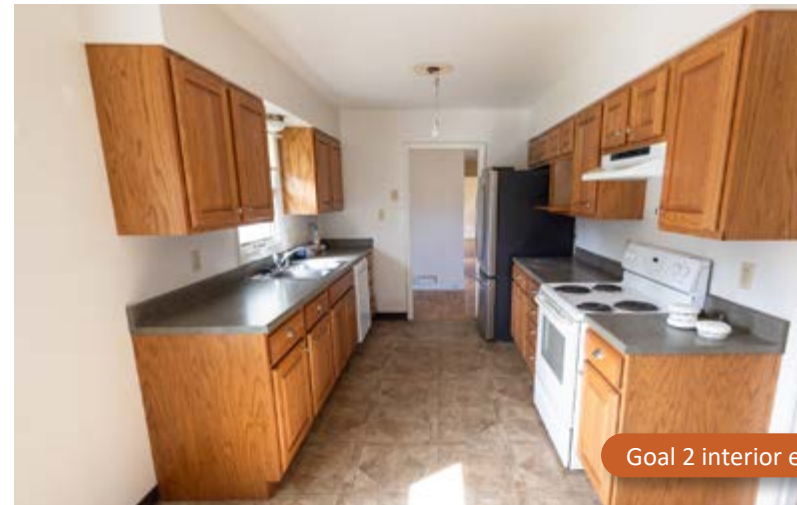
### 5-Year Average Home Value



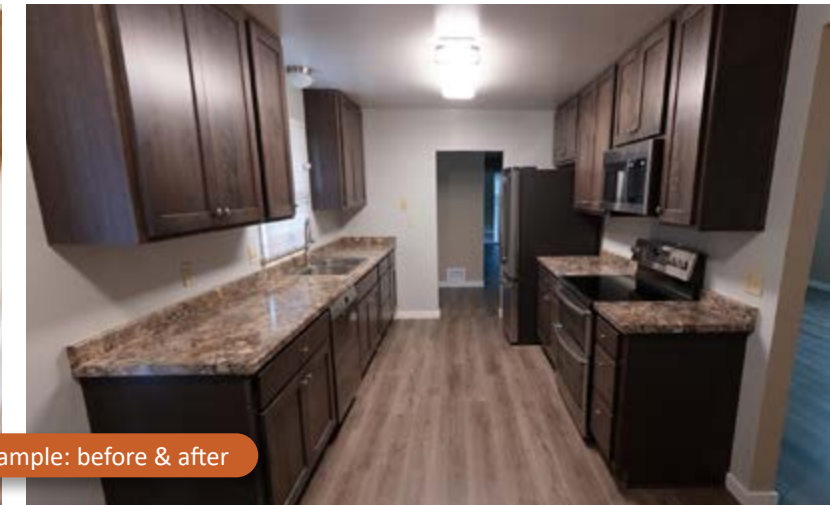
Goal 1 example: before & after



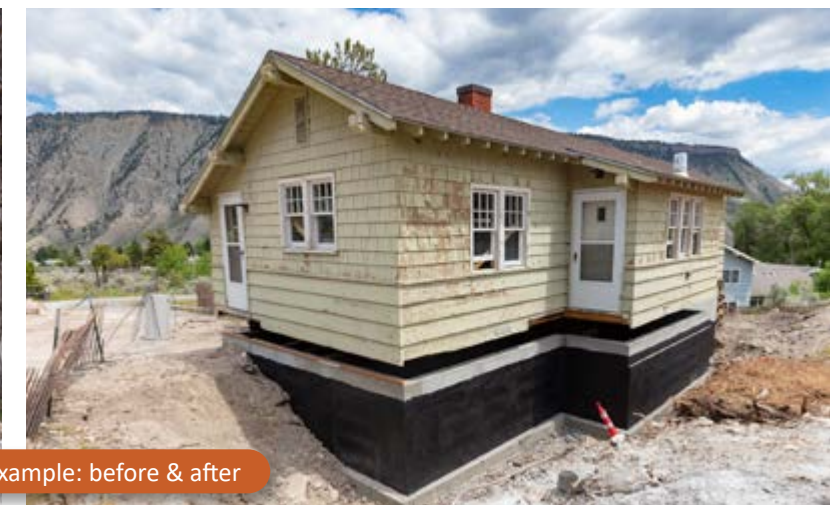
Goal 2 exterior example: before & after



Goal 2 interior example: before & after



Goal 3 foundation example: before & after





This priority centers on taking the actions necessary to strengthen, preserve, and protect Yellowstone's wide-ranging natural, cultural, and geologic resources. The park is committed to being a world leader in promoting large landscape conservation, understanding and responding to the impacts of climate change, protecting resources from increasing visitor use, and maintaining a robust scientific and research capacity to inform resource-related decisions.



## Resource Conservation Efforts

### Bison Conservation Transfer Program

Yellowstone established the Bison Conservation Transfer Program in 2017 to identify brucellosis-free bison and transfer them to American Indian Tribes for release as an alternative to shipping to slaughter. The success of the program depends on effective partnerships with the Fort Peck Tribes, InterTribal Buffalo Council, State of Montana, Department of Agriculture (Veterinary Services), and various nonprofits. The program was initially funded by federal and Tribal governments, but the park recently expanded the program with a combination of government and philanthropic dollars.

### Key Actions

- Since 2019, 294 bison have been transferred to the Fort Peck Indian Reservation.
- The park assisted the Fort Peck Tribes and InterTribal Buffalo Council to transfer 170 bison from the Fort Peck Indian Reservation to 23 other Tribes across 12 states.
- In 2021-22, the park partnered with Yellowstone Forever and the Greater Yellowstone Coalition to invest \$1 million, which doubled the capacity of the program.
- In coordination with the Animal Plant and Health Inspection Service, the program can now support transferring about 100 animals to Tribes each year.

### Yellowstone Bison Management Plan

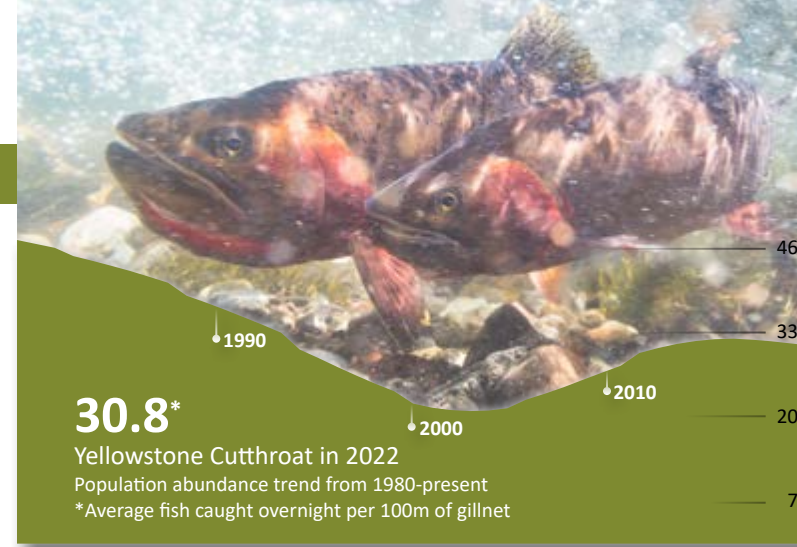
The park is in the process of developing a new Bison Management Plan. The park released a notice of intent in January 2022, evaluated scoping comments, and prepared a draft Environmental Impact Statement which is undergoing review. Under all alternatives, the NPS would sustain a viable population of migratory bison (currently 5,900) and continue engaging with partners to explore the best management options for the future.



Bison in the new Conservation Transfer Program facility

### Bison Research

Yellowstone continued scientific research and data collection on bison grazing and grassland health. Northern Yellowstone produces enough vegetation to support 5,000 to 10,000 bison based on satellite-derived estimates of forage production, bison use patterns, and population data. Bison grazing benefits grasslands in Yellowstone by diversifying the composition of plants, maintaining plant production, enhancing soil nutrient availability, and improving soil water holding capacity. These benefits will help maintain the functional integrity of grasslands under a warming climate.



### Wolves

There were 108 wolves in 10 packs in Yellowstone during December 2022, including seven breeding pairs. The 2021 Montana Legislature mandated a reduction in the number of wolves statewide, approved new harvest techniques, increased the harvest limit per individual, extended the harvest season, and eliminated the quotas from wolf management units adjacent to the park. The Montana Fish and Wildlife Commission adopted these regulations and 19 wolves from the park were harvested in Montana during the following winter of 2021-22, including most of the Phantom Lake pack and one-quarter of the Junction Butte pack. In response, the park worked with the commission to reestablish a quota of six wolves outside the northern boundary to prevent overharvest.

### Cougars

Cougars (mountain lions) are recovered in Yellowstone and numbers are fluctuating naturally in a manner that does not threaten their long-term viability. A remote camera survey grid established in 2020 enabled a population estimate of 29 to 45 cougars in northern Yellowstone. Sixteen adult cougars have been fitted with GPS telemetry collars to monitor predation, habitat selection, multi-species interactions, and energetics. The collars also have built-in accelerometers which continuously measure body movement and activity patterns. Accelerometer data displays discrete behaviors such as resting, traveling, killing prey, and feeding, and measures caloric expenditures.



Collaring a cougar



Banding a bird



### Grizzly Bears

In 2022, park staff coordinated with the U.S. Fish and Wildlife Service (USFWS), Interagency Grizzly Bear Study Team, and other federal and state agencies to develop the *Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem*. The foundation of Yellowstone's bear management program is to prevent bears from obtaining human food and garbage. The park has installed bear-proof food storage boxes in 72% of the park's 1,907 campsites. The park is on schedule to complete the installation of bear boxes in every campsite in 2026.

### Birds

The park led efforts to recover common loons and trumpeter swans, including the installation of a nesting platform at Grebe Lake and the release of cygnets in partnership with the Ricketts Conservation Foundation, Wyoming Wetlands Society, and USFWS. Four cygnets fledged from Swan Lake in 2022, which was the first successful cygnet production on the lake since 1967. The park also continued collaborative studies of the food habits, movements, reproduction, and survival of Clark's nutcrackers, golden eagles, and ravens in northern Yellowstone.

### Native Fish

Yellowstone is continuing a major effort to restore native fish and create resiliency in populations threatened by nonnative species and climate warming. Native arctic grayling and cutthroat trout (Yellowstone, westslope) have been released into 196 stream miles and 293 lake acres after non-native fish were removed.



## Resource Conservation Efforts



309

Wetlands delineated  
in 2021-22**Planning and Compliance**

In 2022, the Planning and Compliance team completed over 120 Natural and cultural resource compliance requests parkwide, which included the temporary Mammoth wastewater treatment plant, obsolete housing replacement, Fort Yellowstone rehabilitation, and numerous telecommunication projects. The team initiated and continued planning efforts for the Laurel Dormitory replacement, Canyon employee housing rehabilitation, parkwide water and wastewater treatment plant upgrades, the North and Northeast entrance road replacements, and bison management plan.

The team issued 139 research permits and continued frontcountry monitoring efforts at five focal locations and produced regular reports on visitor use patterns used to inform and support parkwide managed access systems and visitation-based decision making in response to the 2022 flood event.

The team also completed two emergency compliance Decision Memos for response to the 2022 flood event. The park received approval from the Department of the Interior and the Office of Environmental Policy and Compliance for the Decision Memorandum and Environmental Review to support emergency activities for improvements to the Old Gardiner Road and Northeast Entrance Road. Both documents approved and facilitated timely emergency repair of damaged sections of roadway to allow access to and from communities isolated by the 2022 flood event.

**Hydrology**

Yellowstone responded to the 2022 flood event in coordination with U.S. Geological Survey (USGS), NOAA-National Weather Service, and the U.S. Army Corps of Engineers to maintain streamgages, provide river forecast data to downstream communities, and initiate interagency agreements to secure critical infrastructure repairs and emergency response planning.

Hydrology staff provided assessments of wastewater discharge flow rates in coordination with park facilities staff to ensure appropriate sizing of Mammoth emergency treatment facilities. The park also initiated the first study of swimming area water quality to ensure public health.

**Wetlands**

During 2021-22, crews delineated 274 wetlands between Canyon Junction and Alum Creek along the road corridor; surveyed and delineated 35 wetlands for emergency repairs on the Temporary North Entrance Road; and reverified wetlands along the road corridor between Norris and Golden Gate, which included proposed parking lots for Bunsen Peak, Sheepeater Cliffs, and Norris Geyser Basin and an expansion of Swan Lake Pit. Additionally, crews surveyed rare plants and reverified wetlands for the temporary Mammoth wastewater treatment plant, surveyed two areas in Bechler in support of trail projects, and surveyed the Gardner River High Bridge area of impact for wetlands.



Right: Measuring a whitebark pine tree  
Top left: measuring stream flow with stream gauge  
Bottom left: 3D mapping hydrothermal features

**Geology**

In 2020, Yellowstone partnered with the USGS 3D Elevation Program to acquire LiDAR data of the entire park. The park again acquired LiDAR of terrain affected by the 2022 flood event through the USGS Geospatial Products and Services Contracts program. Comparative analyses of the 2020 and 2022 post-flood LiDAR data will inform park managers of landform changes in the park's flood affected areas.

The Geology Program worked with the NPS Geologic Resources Division to engage the Department of Earth Sciences at Montana State University to identify and begin remapping the geologic maps that cover the extent of the park. Yellowstone lacks an accurate and complete geologic map, and accurate and detailed geologic maps are integral to understanding the terrain on which infrastructure is placed in our national parks. The Geology Program plans to publish a 1:100,000 scale geologic map of the park and create a 1:62,500 scale geodatabase for online use.

The Geology Program installed and is testing a telemetered data logger system at thermal features in the Upper Geyser Basin (Old Faithful). Each logger station consists of a temperature sensor that is placed in a geyser runoff channel and an electronic logger that sends thermal data to a receiver that is connected to the internet. These data are used to monitor seasonal and other changes in geyser activity, analyze changes in geyser activity with other large datasets, and allow for better predictions on geyser activity.

**Whitebark Pine**

In December of 2022, white park pine was listed as threatened under the Endangered Species Act. Yellowstone started a project to assess whitebark pine health in six core areas in 2021. In 2022, the project went full-scale when staff measured the health across 525 acres of the park. Overall, 11% of whitebark pine trees had evidence of blister rust infection with two stands comprising the highest percentage of infected trees. Fifteen trees were observed with evidence of recent mountain pine beetle attack. The park will continue these health assessments of the core areas in 2023.

The park also developed, in partnership with the U.S. Fish and Wildlife Service (USFWS), an innovative approach for surveying whitebark pine. The USFWS shared this model with other federal agencies as the standard practice of monitoring whitebark pine into the future.

**Science Communications**

Yellowstone designed and published annual reports for the wolf, bear, bird, and native fisheries programs in 2021-22. The Grazing Issue of *Yellowstone Science* was a central focus and it includes crucial information about ongoing research to understand the effect that ungulates have on the northern range of the park. Reports and issues can be found at: [nps.gov/YellowstoneScience](https://nps.gov/YellowstoneScience)



Resource Conservation Efforts

Sustainability Efforts



Salish Kootenai College professor Dean Nikolai with students and park archeologists



YELL 7067: Decorated leather armband (Dakota, Sioux)



Trimming trees in historic Fort Yellowstone

Yellowstone is rich in historic and cultural resources. The park has 1,942 known archeological sites, 300 ethnographic resources, nearly 1.2 million objects in the museum collection, and over 3.7 million items in the archives and library collection. The park has 25 sites, landmarks, and districts on the National Register of Historic Places and 843 historic structures including, trails, roads, bridges, utility structures, and grave markers that are listed on or eligible for the National Register of Historic Places.

**Historic Structures and Cultural Landscapes**

Through the Great American Outdoors Act Legacy Restoration Fund, the park received funding to rehabilitate historic Fort Yellowstone, historic Laurel Dorm, and part of the Old Faithful Historic District. The Fort Yellowstone Rehabilitation is one of the largest historic preservation projects in the NPS.

The team completed emergency natural and cultural resource compliance actions in consultation with the Montana and Wyoming State Historic Preservation Offices and the Advisory Council on Historic Preservation to facilitate emergency actions in response to the 2022 flood event.

The team evaluated 128 undertakings, completed 14 determinations of eligibility, and completed 17 full consultation processes with Montana and Wyoming State Historic Preservation Offices, ensuring compliance with Section 106 of the National Historic Preservation Act.

**Heritage and Research Center**

In 2022, the team catalogued an additional 180,053 items, responded to 514 internal and 1,762 external research requests, and managed 58 total outgoing loans with 621 items on exhibit at the National Museum of Wildlife Art in Jackson, Wyoming, and to the DOI Museum in Washington, D.C.

Park concessioner, Xanterra Parks and Resorts, transferred nearly 6,000 historic maps and architectural drawings of concession-managed structures.

The team re-articulated wolf skeleton 302M with the help of Yellowstone Forever. The wolf skull collections were 3D scanned and available at: Morphosource.org.

**Archeology**

In 2022, the archeology program performed 61 site condition assessments throughout the park.



Stockpiled propane canisters from park campgrounds



Replacing fluorescent bulbs with LED bulbs



New photovoltaic system at Bechler Ranger Station

**Municipal Waste Program Analysis**

In 2022, consultants, concession partners, stakeholders, and NPS staff worked together to analyze the park's municipal waste program and provide recommendations for improvement focused on three main goals: 1) increase diversion from the landfill, 2) reduce greenhouse gas emissions, and 3) reduce costs. The report is due at the end of 2023.

**Propane Pickup**

In 2022, Worthington, a propane canister manufacturer, was awarded a contract at their expense to remove a stockpile of 16,508 propane canisters, saving Yellowstone over \$80,000.

**Recycling Bins**

In 2022, the National Park Foundation awarded the park grants from Tupperware and Coca-Cola to purchase new and replace 129 recycling bins throughout the park.

**Electric Vehicle Charging**

In 2022, the park assessed its fleet replacement opportunities over the next five years and completed a field assessment through a partnership with the National Renewable Energy Lab and the Federal Energy Management Program. The assessment identified 42 locations for potential electric vehicle charging stations and the need for service panels, trenching, and a new transformer.

**Light Bulb Upgrades**

With support from Yellowstone Forever, the park continues its effort to convert over 35,000 light bulbs to LEDs. The new lights require only half the amount of electricity compared to fluorescent and incandescent bulbs. They have also installed vacancy sensors in many office spaces to automatically turn these lights off when not in use.

**Building Upgrades**

To ensure better historic preservation energy conservation, the park is upgrading many aspects of historic structures including installing vapor barriers, wall and ceiling insulation, double pane storm windows, weatherstripping and air sealing, and rehabilitating exterior doors. This work is often accomplished with partners, through various agreements and contracting methods.

**Sustainability Reports**

Yellowstone staff coordinate the collection of data for energy, water and fuel use and waste operations from NPS and concession partners and compile it in an annual report.

**Solar Power**

In early 2022, the park installed a 45kW ground mounted photovoltaic system in partnership with Northwestern Energy to provide the remote, off-grid Bechler Ranger Station with renewable electricity. The backup propane generator was unused during the new system's first summer online.



Threats to the Yellowstone Ecosystem



*Bombus huntii, one of many insect species monitored*



*Downloading data from a monitoring site station*



**216**  
Acres treated  
in 2021-22



**6,853**  
Watercraft inspections  
in 2021-22

At 3,437.5 square miles, Yellowstone National Park forms the core of the Greater Yellowstone Ecosystem—one of the largest, nearly intact, temperate-zone ecosystems on Earth. To protect this ecosystem from an increasing number of threats, continuous planning and adaptations are needed into the foreseeable future.

**Climate Change**

Park staff and partners are working on tools to better predict near-term weather events and dangerous conditions. Near-term threats include an increased chance of rain on snow causing flood events that impact infrastructure; low summer flows combined with warmer stream temperatures impacting native, cold-water fish and recreational fishing opportunities; rapid increase in the spread of invasive grasses impacting native vegetation; shrinking wetland resources impacting amphibians and other vulnerable wildlife; a reduction in whitebark pine impacting alpine ecosystems; and extreme wildfire behavior impacting forest vegetation, park infrastructure, and visitor health and safety.

Yellowstone has formed active, strong partnerships within the NPS (Greater Yellowstone Inventory and Monitoring Network, WASO Climate Change Response Program, IMR Climate Change Program), with other federal agencies in the region (Greater Yellowstone Coordinating Committee), and with nongovernmental entities (Montana State University, National Parks Conservation Association, Greater Yellowstone Coalition, Wildlife Conservation Society). To increase our collective capacity to respond to climate change, the park has sponsored, planned, and participated in multiple climate smart workshops throughout the region.

The best chance of avoiding catastrophic damage to Yellowstone ecosystems is to anticipate the most likely future conditions, identify what is vulnerable under those conditions, and on a case-by-case basis, make intentional decisions about whether we should resist, accept, or direct the change. Using this structured decision-making process, the park has begun working on climate informed adaptation plans for aquatic resources, park infrastructure, vegetation management, and wildlife management.

To better understand species response to climate change, Yellowstone is studying insect species with different physiologies, behaviors, and seasonal timing. The research occurs along a 4,500-foot elevational gradient at seven long-term ecological monitoring sites in the northern section of the park. Equipment at each site continuously monitors weather, soil conditions, the soundscape, snowpack, and plant phenology. The data generated will provide critical information for focal species and inform larger trends that may be incorporated into climate adaptation response planning.

**Terrestrial Invasive Species**

Invasive nonnative plants can displace native plant species, including some endemic to the park’s geothermal habitats, change the integrity of vegetation communities, increase fire frequency, and affect the distribution, foraging activity, and abundance of wildlife.

In 2021-22, crews inventoried 18,440 acres of invasive plants, a 25% increase from the last reporting period. Crews treated 103 infested acres with herbicide and manually pulled 3 acres. Invasive annual grasses in the park interior, namely cheatgrass, received additional management attention during this reporting period. To date, crews have mapped 189 acres of cheatgrass in the park mostly around park construction projects, thermal areas often used by wildlife, and routinely disturbed visitor use areas and backcountry camp sites. In 2021-22, crews herbicide-treated 113 priority acres to prevent these patches from spreading into uninvaded and otherwise intact plant communities.

In 2021, the park started working with various researchers, the U.S. Forest Service, and USGS, to develop remote sensing tools aimed at predicting the occurrence of small, isolated patches of cheatgrass and other invasive annual grasses to target them for aggressive treatment and revegetation. This work is ongoing with a product anticipated in 2024.

**Wildlife Health**

In 2022, the program coordinated the collection of 190 samples from 53 waterbodies across the park for the early detection of high-priority aquatic invasive species. Field crews collected 43 swab and tissue samples from captured amphibians at six sites for the presence of disease agents (chytrid fungus, ranavirus). Bat monitoring continues to be important as white-nose syndrome has spread into western Wyoming near the park’s eastern boundary. The program deployed 32 acoustic point stations across the park. This monitoring effort has yielded hundreds of thousands of bat calls that will be used to identify white-nose syndrome impacts on bat populations. Additionally, eight winter acoustic monitoring stations were deployed across northern Yellowstone to monitor bat activity.

**Aquatic Invasive Species**

In 2022, Yellowstone staff conducted 2,975 watercraft inspections with 1,049 high-risk inspections and 210 decontaminations compared to 2021, which had 3,878 inspections with 134 high-risk inspections and one decontamination. For the entire State of Wyoming’s inspection data, Yellowstone AIS staff conducted 30.6% of the decontaminations for the state for September.

In 2021, the AIS Program started using the “Colorado” watercraft inspection database. This database is used by other organizations throughout the west to collect and share inspection data and is key to communicating with partners about risks.

In 2022, Yellowstone collected 190 samples as part of a new, eDNA-based AIS early detection monitoring to allow for rapid response in the event of a new AIS detection. None of the samples tested positive for AIS.

**Nonnative Lake Trout Suppression**

Since 1995, more than 4.5 million lake trout have been removed by suppression efforts on Yellowstone Lake. Over the past decade, reproductive lake trout (age 6 and older) have been reduced by more than 80%. The abundance of young cutthroat trout has increased steadily over the past decade. Quality angling for cutthroat trout remains high because adult cutthroat trout are now longer (>18 inches) and weigh twice what they did prior to the lake trout invasion due to reduced competition. Grizzly and black bears have responded to increases in spawning cutthroat trout by returning to some lake tributaries during spring to feed upon them.

**Increased Visitation**

Visitation has increased substantially over the past decades. Although most visitor impacts occur within the road corridor and developed areas, less than 7% of the park, Yellowstone is developing a new visitor use management strategy (pages 44-46) that focuses heavily on better understanding and responding to visitor impacts on resources across the park. The park’s strategy focuses on visitor impacts to 1) park resources, 2) park staffing, operations, and infrastructure, 3) visitor experience, and 4) gateway communities.





This priority focuses on providing a high-quality visitor experience for the millions who visit each year while simultaneously ensuring that park resources are protected. The park has spent the last six years monitoring impacts of increasing visitation on resources, staff and infrastructure, visitor experience, and gateway communities. The park has implemented a wide range of short-term actions designed to manage visitation, provide quality public safety services, and minimize impacts to resources more effectively. The park is now working on a variety of potential long-term actions that will help address future challenges associated with increasing visitation levels.



## Understanding Impacts from Increased Visitation



Human waste near Fairy Falls parking area



Wastewater systems near capacity



Parking congestion at Canyon overlooks



West Entrance Station line backed up into town

In 2019, Yellowstone developed a strategy to better understand and respond to impacts from increasing visitation. The strategy focuses on visitor impacts to these four areas:

### Park Resources

The park is improving its methodologies and data collection to better understand the impacts of increased visitation on resources. While data indicate minimal visitor impacts on most park resources, limited impacts (social trails, human waste, and litter) have been identified in the busiest areas of the park, including the Upper Geyser (Old Faithful) and Midway Geyser basins.

### Park Staffing, Operations, and Infrastructure

Increasing visitation translates to greater impacts on the Yellowstone team, our operations, and infrastructure like roads, bridges, and wastewater systems. Popular sites now require more frequent cleaning at peak times, garbage and wastewater pump trucks must adjust their schedules to accommodate for traffic congestion, and additional staff is required to manage traffic and safety in congested areas.

### Visitor Experience

Surveys reveal that visitors to Yellowstone are largely satisfied with their experience and that roadway traffic does not negatively impact their experience. However, surveys also identified issues around restrooms, congestion, and parking at specific sites during peak season.

### Gateway Communities

While increasing visitation can economically benefit surrounding communities, additional traffic and congestion has caused concern within communities during peak season. The 2022 flood event and recovery efforts had substantial impacts on gateway communities. Following the flood, the park held daily calls with gateway communities for the first few weeks and intermittently thereafter to ensure transparency on the park's efforts to reopen the park to the public as quickly and safely as possible and manage visitation with limited infrastructure.

### Social Science

In 2022, Yellowstone staff, with assistance from Youth Conservation Corps crews, conducted over 936 hours of visitor use data over 14 weeks, with a two-week disruption following the 2022 flood event. It marks the sixth year of consecutive visitor use monitoring in key frontcountry locations. The park has established baseline conditions, captured trends over time, and is expanding data collection to include more complex areas such as Canyon, Old Faithful, and Mammoth Hot Springs. Park managers use this data to make decisions about where new strategies and tactics are needed to respond to increased and changing visitor use patterns, such as different infrastructure design, different ways to manage visitor access or flow, new restrooms, or additional staffing, signage, or education.

2021 was the highest visitation year on record, followed by 2022, which marked the lowest visitation level since monitoring began. Between 2021 and 2022, parking conditions and impacts to resources improved at all monitoring locations, while visits to popular viewpoints stayed relatively constant and visitor interest in off-peak seasons has increased.

### Visitor Use Survey 2018

In 2018, the park conducted one of the most comprehensive visitor use surveys in the country, with over 7,000 participants providing valuable data and opinions. Beginning in 2019, the park began efforts to address visitor concerns in several notable areas.

### Visitor Use Survey Key Points

- The most important experiences for visitors are to view scenery, see wildlife, and to see geysers and thermal features.
- Respondents were more likely to experience a greater sense of crowding, traffic congestion, and limited parking availability at Midway Geyser Basin and Fairy Falls.
- Visitor experience and frustration ratings appeared to have little to no significant correlation with GPS-based average speeds across road segments in the park. Respondents were generally not frustrated, gave high experience ratings, and did not perceive major problems on roadways.

## 2018 Visitor Use Survey Highlights

Are you a first-time visitor to Yellowstone?

Yes - 66.5%

No - 33.5%

How much time did you spend waiting for parking?

Less than 5 minutes - 72.6%

5 to 10 minutes - 13.5%

11 to 20 minutes - 5.9%

21 to 30 minutes - 3.7%

More than 30 minutes - 4.3%

How crowded did you feel in Yellowstone?

Not at all - 22.8%

Slightly - 28.3%

Moderately - 29.3%

Very - 14%

Extremely - 5.6%

How would you rate your trip to Yellowstone?

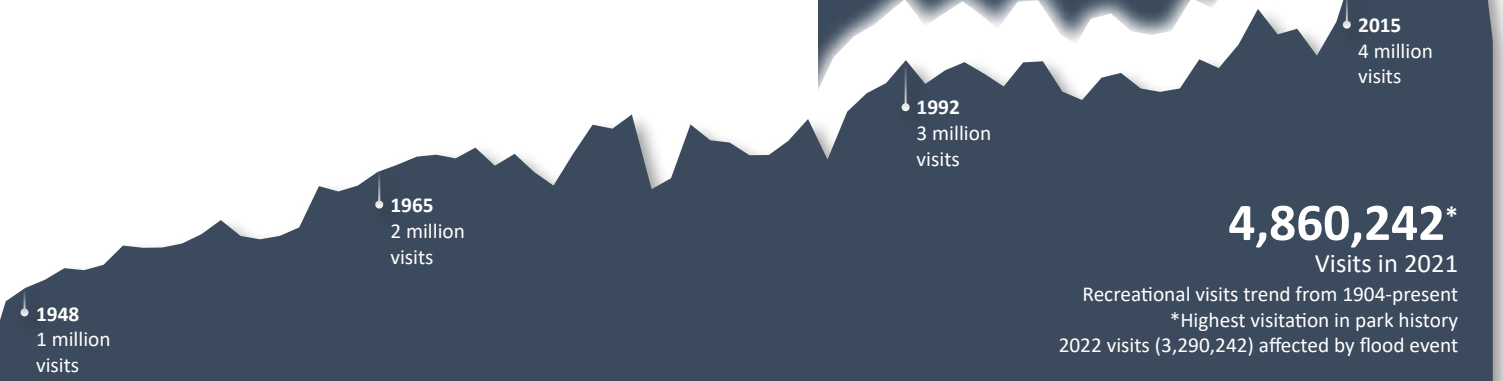
Excellent - 43.9%

Good - 41.3%

Fair - 10.6%

Poor - 2.7%

Very Poor - 1.5%





## Responding to Increased Visitation

## Connecting People to Yellowstone



Fairy Falls parking area congestion



Automated shuttles, NPS members, and Beep Inc. partners

Using data from the visitor use surveys and transportation studies, the park will focus on reducing impacts within the Midway Geyser Corridor, Old Faithful Geyser Basin, Norris Geyser Basin, and Canyon Village sites. These areas have consistently been identified as having the highest levels of congestion and the highest impacts on resources and visitor experience. In 2022, the park implemented a range of solutions to achieve visitor management objectives.

### Automated Shuttle Pilot

In the summer of 2021, in partnership with the NPS Alternative Transportation Program and the Department of Transportation (DOT) Volpe National Transportation Systems Center, Yellowstone piloted a low-speed automated (driverless) shuttle at Canyon Village to test emerging automated vehicle technology in the national park context. The Electric Driverless Demonstration in Yellowstone (TEDDY) had over 10,000 riders who overwhelmingly reported having a positive experience. Riders also indicated that they would like to see more automated shuttles in National Parks.

### The Alternating License Plate System

Nine days after the 2022 flood event, Yellowstone reopened to the public and implemented the Alternating License Plate System (ALPS) to prevent visitation from overwhelming the south loop of the park while the north loop was closed due to flood damage. An idea that came from gateway communities, ALPS was effective at managing visitation levels to the target range, between 50-60% of normal, while allowing visitors to keep their existing reservations. ALPS was suspended on July 2, 2022, when 93% of the park roads were open to the public.

### Tower Junction to Slough Creek Vehicle Day Use

From Aug. 3 to Sept. 7, 2022, Yellowstone piloted a timed-entry reservation system for those traveling between Tower Junction and Slough Creek. The reservation system effectively protected parking availability and resources within this area while most of the Northeast Entrance Road closed for flood damage repairs.

### Transit Feasibility Study

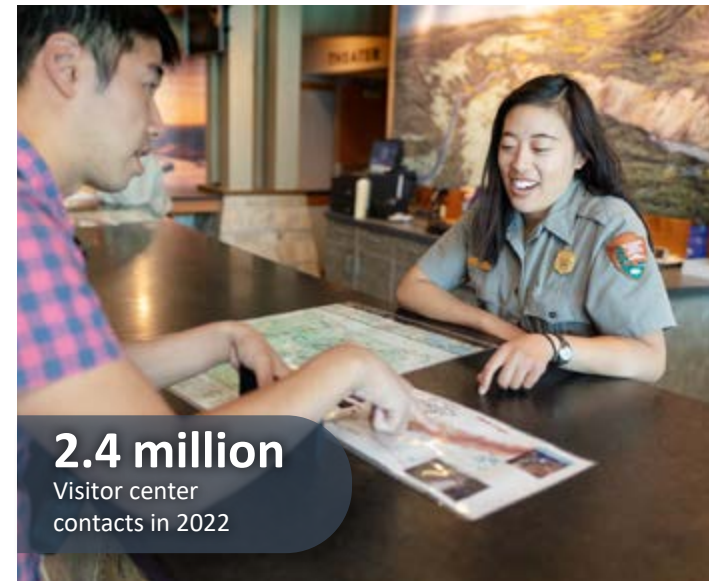
Yellowstone completed a Transit Feasibility Study with support from the Regional Alternative Transportation Program. The study evaluated the costs, benefits, infrastructure, staffing needs, and impacts to park resources and visitor experience of a potential localized shuttle system based at Canyon and Old Faithful. Completed in December 2022, the study will help managers evaluate whether such a system is practical or feasible.

### Midway Geyser Basin Site Improvement

The main parking lots in the Midway Geyser Basin area were constructed in the 1980s-1990s when visitation was under 2 million. The park installed a temporary parking lot at Fairy Falls in 2017 to increase parking capacity and alleviate roadside parking problems. After the temporary parking lot was installed, staff observed nearly 1,000 incidents of litter and human waste and increased social trails. In response, the park is starting the planning process to develop site alternatives including removal of the temporary lot, developing a new site, and providing entry through a timed-access system.

### Campground Reservations

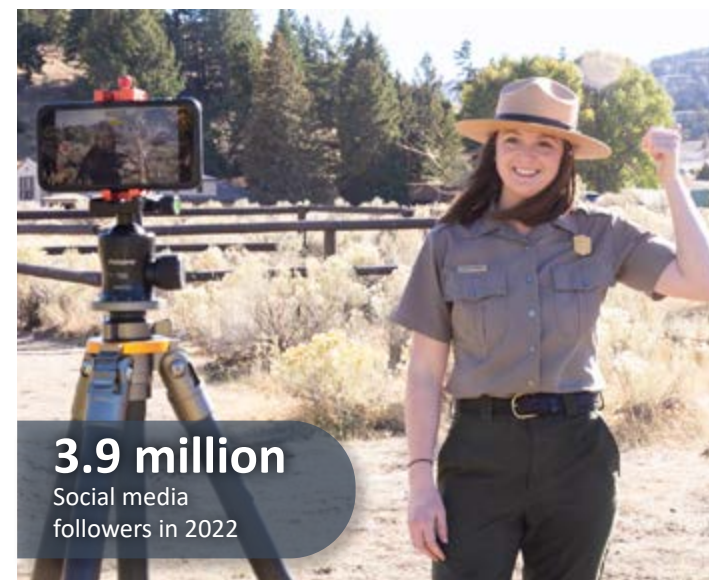
In 2022, all the park's NPS-managed campgrounds were moved to a reservation system for the summer season months. The reservation system proved popular among many visitors and nearly all sites were booked for the season. To accommodate more spontaneous planning, 20% of the NPS campsites are also held until two weeks in advance of the date of use.



**2.4 million**  
Visitor center contacts in 2022



**7.6 million**  
Unique web users in 2022



**3.9 million**  
Social media followers in 2022

### In the Park

Interpretive staff had 2,439,375 contacts at eight summer locations and three winter locations in 2022. Staff contacted 470,113 visitors during field-based informal activities, including 30,937 resource warnings. Formal programs totaled 30,772 Junior Ranger participants; 38,690 ranger program participants; 23 school groups participated in the multi-day Expedition Yellowstone program; 639 groups with more than 30,000 students participated in a distance learning program; and 57 ranger-led programs for school groups connecting 1,282 students to the wonders of the park.

The park also oversees 68 concessions contracts that include nine hotels with over 2,100 rooms, 36 food services establishments, 12 general stores and gift shops totaling over 12,000 square feet of retail space, camping with over 1,400 campsites and 358 RV sites, 80 marina slips, eight gas stations, 23 oversnow operators, 40 guided saddle and pack stock outfitters, and bear spray rental.

In addition, the park issued 411 commercial use authorizations to approximately 290 businesses providing a variety of approved guided visitor services, including avalanche safety courses, bicycle tours, environmental education tours, skiing and snowshoeing trips, overnight backcountry trips, painting and photography classes, road-based tours, motorized and non-motorized boating trips, stream and shoreline fishing, and portrait services.

### On the Web

Yellowstone engaged 7.6 million web users during 11.7 million sessions with 26.8 million page views recorded on its official website. It continues to be the most-visited park website of any single unit in the NPS. Trip planning pages topped all categories of interest, and a new flood recovery section provided ongoing updates on road repairs and park access.

### On Social Media

Yellowstone's (@YellowstoneNPS) social media following grew by 17% to nearly 4 million people during 2021-22. In 2022, the park produced a series of 15 videos to commemorate the park's 150th anniversary. Social media was also a main tool used to share flood updates with visitors and gateway communities. In 2021, The park's #YellowstonePledge and #WhatWeDoWednesdays campaigns continued to generate news stories. Both campaigns have been replicated by other national parks, partner organizations, and tourism agencies around the world.

### In the News

Yellowstone published 74 news releases, responded to 2,354 media inquiries, facilitated 277 interviews, hosted 10 media events, and was mentioned in more than 2,700 news stories in 2021-22.



Protecting People and Resources



**41,000**  
Calls for service  
in 2021-22

**Communications Center**

Yellowstone's Interagency Communications Center handled over 41,000 calls for service in 2021-22, including emergency medical, search and rescue, law enforcement, and structural fire response. Additionally, the operation dispatches for nine agencies outside the park.

**Emergency Medical Services**

Yellowstone's Emergency Medical Services (EMS) operation has 11 ambulances stationed across eight developed areas of the park. The park has mutual aid agreements with Gardiner, Cooke City, and Grand Teton National Park. In 2021-22, the team responded to 1,638 emergency medical calls within Yellowstone and local communities.

**Search and Rescue**

The park handled 108 search and rescue incidents in 2021-22, including complex technical rescues of visitors, searches for lost visitors, and water-based responses.



**522**  
Fire call outs  
in 2021-22



**4,000**  
Violation notices  
in 2021-22

**Law Enforcement and Public Safety**

Yellowstone rangers issued over 4,000 violation notices in 2021-22 with approximately 700 criminal cases filed in the U.S. Magistrate Court. Yellowstone is one of the only parks with its own U.S. Magistrate judge and full-time Assistant U.S. Attorney. Rangers handled more than 750 motor vehicle accidents in 2021-22 and a range of other criminal cases, including DUI, drug possession, sexual assault, and various resource crimes. The park is developing a range of crime prevention strategies moving forward to proactively reduce criminal activity within the park.

**Structural Fire**

Yellowstone's Structural Fire Company is the largest in the NPS with 11 engines stationed across six developed areas of the park. The park has mutual aid agreements with gateway communities in Montana and Wyoming surrounding the park and Grand Teton National Park. In 2021-22, the team responded to 522 structural fire calls within Yellowstone and local communities.



**1,746**  
EMS and rescue call  
outs in 2021-22

**Wildland Fire and Fuels Reduction**

The objectives of Yellowstone's defensible space fuels reduction projects are to change the fuel structure to reduce crown fire potential and to slow ground fire spread in developed areas of the park. Since 2019, NPS and contract crews have treated 245 acres in Grant Village, 95 acres in Old Faithful, 158 acres at Lake, and 60 acres in West Yellowstone.

In 2020, the Lone Star Fire burned within 3 miles of the Old Faithful Historic District, underscoring the importance of proactively protecting historic structures from wildland fire threats. The park had 20 wildland fires in 2021-22.

**Bear Management Areas**

The park seasonally restricts off-trail travel, camping, and hiking in 16 Bear Management Areas (BMA) totaling 464,637 acres (21% of the park) to decrease potential disturbances to bears during key times of the year. Recent analyses indicate grizzly bears differentially selected BMAs compared to other areas. Males avoided hiking trails during the day but preferred trails at night when people were not hiking, while females avoided areas with predictable recreation by humans such as backcountry campsites. This research indicates BMAs are effective at preventing most human-caused displacement of bears from food sources and limiting human encounters with bears that lead to conflicts and management removals of bears.

**Backcountry Management and Support**

Yellowstone has over 2 million acres of backcountry, including 1,100 miles of trails, 300 backcountry campsites, 36 backcountry cabins and lookouts and over 400 miles of boundary. A team of employees use a variety of tools to protect, manage, and maintain the backcountry resources that form the core of Yellowstone.

Backcountry rangers, trail crews, and corral operations protected resources, maintained trails and bridges, and packed supplies throughout the park in support of multiple park divisions and operations. Our backcountry permit offices issued over 9,900 backcountry permits in 2021-22. The park's backcountry monitoring program inventoried 59 backcountry campsites, tracking impacts, and making recommendations for future management actions. The park's corral operation cares for and works 108 head of stock. During the summer and fall, corral employees travel throughout the park to support backcountry logistical needs and special projects, mostly for trail crews and backcountry rangers. With some animals traveling over 1,000 miles in a season, the corrals typically go through 1,300 horseshoes and 10,400 shoeing nails each season.

The 2022 flood event focused efforts on the north end of the park as crews assessed damage and implemented solutions that quickly allowed access to the majority of the park's backcountry. Planning was completed for areas that did not open, and those solutions will be implemented beginning in 2023.



Before fuel reduction treatment



After fuel reduction treatment



Three years after fuel reduction treatment




**9,900**  
Backcountry permits  
issued in 2021-22




Actions within this priority include developing a cogent deferred maintenance reduction plan, improving the quality of data and prioritization processes, and taking better advantage of current and future funding to improve asset conditions and protect investments. Yellowstone has an asset inventory totaling \$4.1 billion with an estimated \$929 million in associated deferred maintenance and repairs. The park also has an estimated \$54 million in annual routine maintenance requirements. Asset condition will further deteriorate if the annual routine maintenance is not addressed.




Infrastructure Projects and Funding Sources




**Great American Outdoors Act Legacy Restoration Fund (LRF)**




**Emergency Relief for Federally Owned Roads (ERFO)**




**Federal Lands Transportation Program (FLTP)**




**Nationally Significant Federal Lands & Tribal Projects (NSFLTP)**




**Operations of the National Park Service (ONPS)**



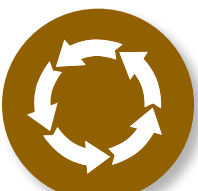
**Line Item Construction (LIC)**




**Philanthropic Donations (PD)**



**Repair/Rehabilitation (Re/Re)**

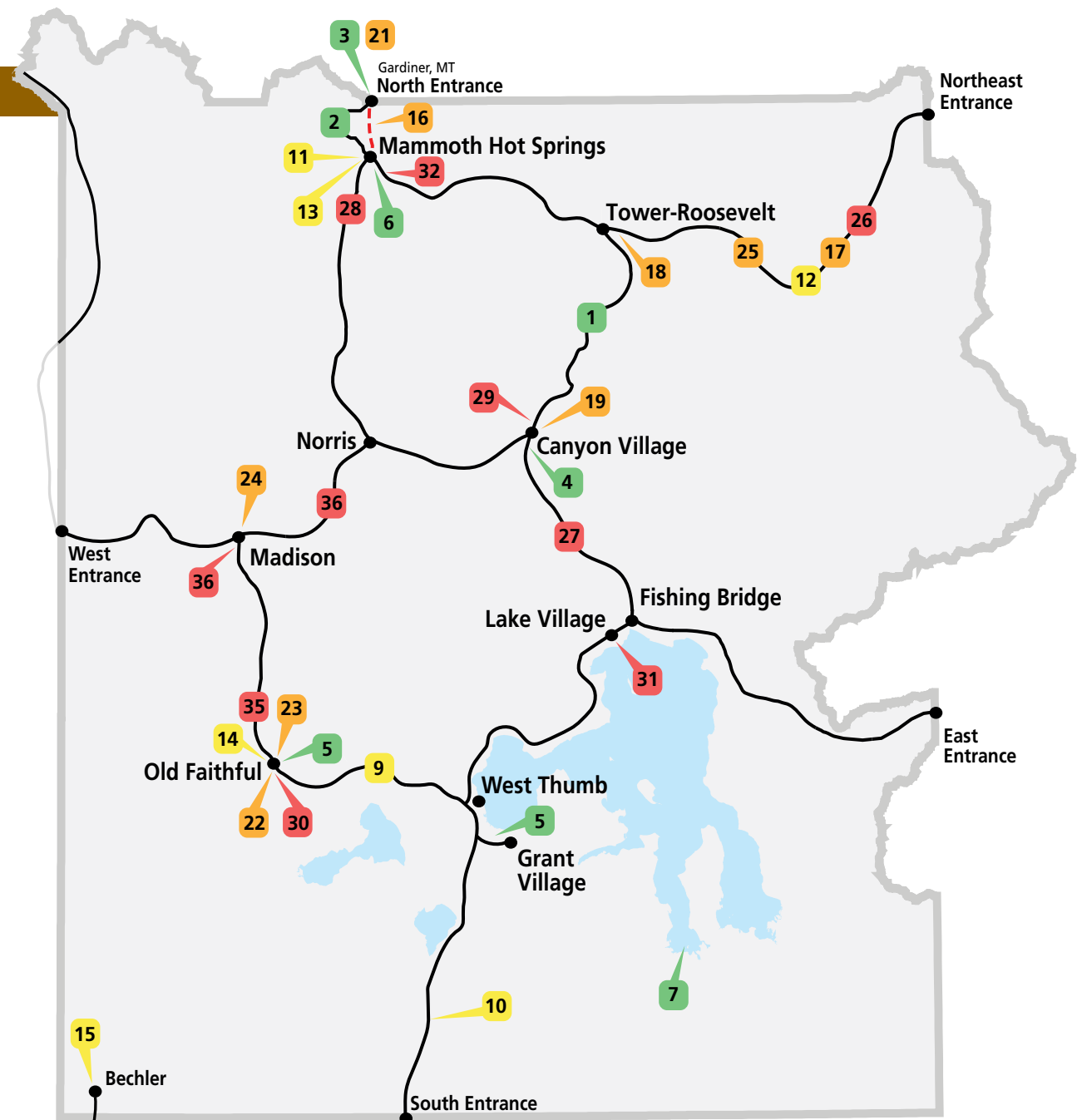


**Cyclic Maintenance Program (CMP)**



**Disaster Relief Supplemental (DRS)**

Projects and estimates are subject to change based on final scope and design efforts, emerging priorities, and available resources. This report shows formulated facility project investments from the following fund sources:



Projects include multiple locations throughout the park 8 20 33 34

**Recently Completed Projects: \$68 Million**

1. Tower-Roosevelt to Chittenden Road Improvement – \$28M (NSFLTP)
2. Temporary North Entrance Road – \$21M (ERFO)
3. North Entrance Station Improvement – \$12M (FLTP, PD)
4. Canyon Wastewater Treatment Plant Lagoon Relining – \$3M (Re/Re)
5. Grant and Old Faithful Bridge Preservation – \$3M (FLTP)
6. Historic Canteen Renovation – \$1M (CMP, Re/Re)
7. Historic Peale Island Cabin Protection – \$80K (CMP, Re/Re)

**Ongoing Projects: \$230 Million**

8. Employee Housing Improvements – \$53M (CMP, LIC, Re/Re, DRS)
9. Old Faithful to West Thumb Road Improvement – \$42M (FLTP)
10. Lewis River Bridge Replacement – \$31M (LRF)
11. Temporary Mammoth Wastewater Treatment Plant – \$30M (ERFO, DRS)
12. Northeast Entrance Road Flood Repairs – \$25M (ERFO)
13. Historic Ft. Yellowstone Rehabilitation – \$22M (LRF)
14. Historic Laurel Dorm Rehabilitation – \$21M (LRF)
15. Bechler Site Improvement – \$6M (CMP, LIC, Re/Re)

**Approved Projects: \$892 Million**

16. New North Entrance Road – *estimated* \$371M (DRS)\*
17. Northeast Entrance Road – *estimated* \$268M (DRS)\*
18. Yellowstone River Bridge Replacement – \$118M (LRF)
19. Canyon Wastewater Plant Replacement – \$50M (DRS)
20. Additional Flood Recovery Efforts – *estimated* \$32M (DRS)\*
21. Mammoth Wastewater Main Replacement – \$20M (DRS)
22. Old Faithful Water Plant Replacement – \$18M (LRF)
23. Abandoned Old Faithful Wastewater Facility Demolition – \$6M (LRF)
24. Madison Water Plant and Spring Collection Replacement – \$4M (Re/Re)
25. Lamar Buffalo Ranch Photovoltaic System Replacement – \$2M (Re/Re)

**Proposed Projects: \$466 Million**

26. Northeast Entrance Road Improvement Phase 1 – \$95M
27. Canyon to Fishing Bridge Road Improvement Phase 1 – \$88M
28. Norris to Golden Gate Road Improvement Phase 3 – \$80M
29. Canyon Employee Area Redevelopment – \$65M
30. Old Faithful Wastewater System Rehabilitation – \$40M
31. Historic Lake Hotel Rehabilitation Phase 3 – \$36M
32. Gardner River High Bridge Rehabilitation – \$28M
33. Park Bridges Rehabilitation – \$19M
34. Boneyard and Pit Sites Cleanup – \$10M
35. Midway Geyser Basin Site Improvement – \$5M
36. Madison River and Beryl Spring Bridge Replacement – \$TBD

\*Estimates subject to change once alternatives are selected.



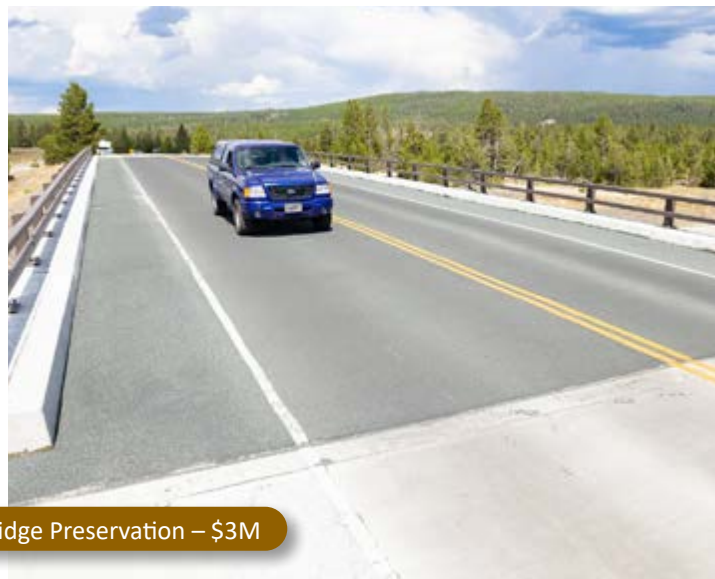
Recently Completed Projects



North Entrance Station Improvement – \$12M



Grant and Old Faithful Bridge Preservation – \$3M



Canyon Wastewater Treatment Plant Lagoon Relining – \$3M



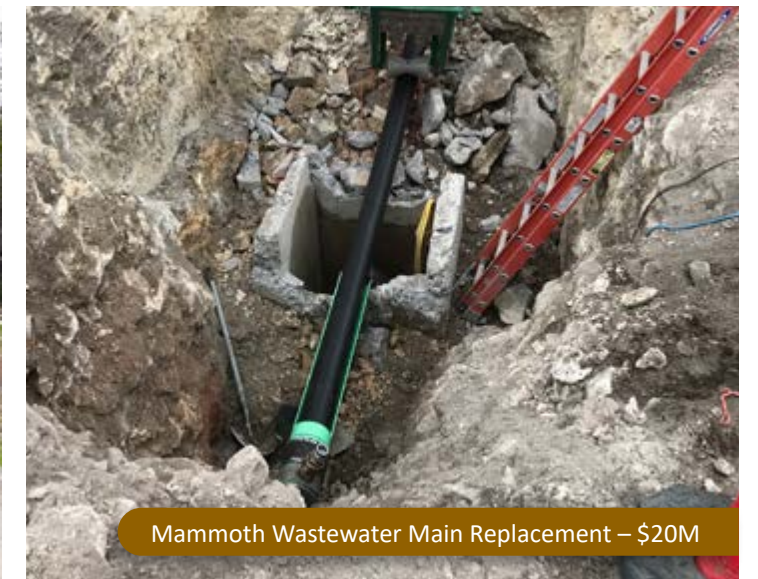
Tower-Roosevelt to Chittenden Road Improvement – \$28M





Ongoing Projects

Approved Projects







Yellowstone's success is predicated on strong partnerships and coalitions. The park will continue to build and align priorities with a wide range of partners, including Tribes, elected officials, nonprofit groups, concessioners, communities, states, other federal cooperators, and the philanthropic community. The following examples (not exhaustive) highlight some of the major partnerships key to Yellowstone's success.



## Working With Our Partners

### Yellowstone Forever

Yellowstone Forever (YF) is the park's official nonprofit partner and provides a wide range of support in helping achieve conservation, education, and visitor-experience priorities. Through its philanthropic efforts, education, and strategic partnerships, YF is committed to protect, preserve, and enhance the park for future generations. In 2022, YF raised more than \$9.4 million in support of 25 crucial park projects, including the bison conservation and Tribal internship program; wolf, bear, cougar, and other wildlife conservation projects; youth education; and many more.

YF worked closely with the park to build a range of high-impact projects to support the park's 150th anniversary. Most notably, YF funded and partnered with park staff to establish the Yellowstone Tribal Heritage Center as well as broader efforts to incorporate Indigenous stories into education programs. YF also supported Yellowstone Revealed and many other 150th initiatives over the course of the year.

After the 2022 flood event, YF immediately pivoted to support critical and time-sensitive needs in the aftermath. Through the Resiliency Fund, YF raised \$2 million to support a Yellowstone Adventure Camp for children who could no longer access their daycare, shuttle buses for park employees to get to and from work in Mammoth while minimizing disruption to road reconstruction, a wall tent for the cougar research team after the Lower Blacktail Cabin was washed away, in-park counseling for employees, and medical services in Gardiner. The Resiliency Fund also filled critical gaps in park program funding from lost visitor fee revenue.

### Tribes

American Indians have been living in and connected to the landscape now known as Yellowstone for at least 11,000 years. Today, there are 27 associated Tribes who have historic and modern connections to the lands and resources now found within the park. These partnerships are essential to ensuring the park is honoring its Trust responsibilities to the Native American heritage associated with Yellowstone.

In 2021-22, the park emphasized coordination and collaboration with Tribal Nations leading into and throughout Yellowstone's 150th anniversary. Recent dialogue has centered on how the park can improve partnerships and work with Tribes to expand Tribal presence and engagement within the park. Throughout 2021-22, NPS leadership met with Tribal members to discuss goals for this year and beyond. The park plans to grow the Yellowstone Tribal Heritage Center, work to integrate more Tribal stories into interpretive and education content in Yellowstone, and continue to strengthen relationships and dialogue.

### Commercial Service Partners

The park enjoys strong relationships with multiple major concession and commercial use operators. These partners were critical to Yellowstone's success during 2021-22. Particularly in working through and supporting the park as it worked to address impacts from the 2022 flood event, as well as continued impacts from the COVID-19 pandemic, park partners also continued to work closely with the park in many key areas beyond operations.

While not a comprehensive list, a few of our commercial service partners' accomplishments in 2022 include:

- Yellowstone Park Service Stations (YPSS) continued to work with the park to provide fuel, vehicle towing, roadside assistance, and repair to tens of thousands of vehicles per year. YPSS is also exploring ways of incorporating new electric vehicle charging stations to provide better electric vehicle access to the park.
- Medcor provided substantial support for employee and visitor COVID-19 testing, vaccinations, and medical aid. Due to flood impacts and difficulties in accessing the Mammoth Clinic, Medcor also set up a mobile clinic in the parking lot at the Yellowstone Forever facility in Gardiner to ensure continued medical service access for residents in areas north of the park and visitors.
- Xanterra Parks and Resorts (Yellowstone National Park Lodges) completed the renovation of Fishing Bridge RV Park in 2022 and reopened it after two years of construction. The RV park has twice the capacity, larger sites, larger parking lot, a new dump station and recycling area, four new accessible comfort stations, and an expanded registration building with more showers and laundry facilities. Xanterra also initiated a renovation project at Lake Lodge cabins and several other facility projects.
- Delaware North Companies (Yellowstone General Stores) installed a new fire detection and suppression system at Canyon Adventure Store, accomplished exterior restoration on Fishing Bridge Dorm, and continued to work closely with the park to make upgrades to employee housing and other infrastructure.

### Federal Highway Administration

The park partners with the Federal Highway Administration (FHWA) Western Federal Lands Division on a wide range of major transportation projects. This partnership has completed hundreds of millions of dollars in projects over the past decade. The strength of this partnership was on full display this year with the flood response required to plan, design, and execute the repairs on the Northeast Entrance Road and the Temporary North Entrance Road. Funds came from the FHWA Emergency Relief Federally Owned Road (ERFO) program. The park received \$60M in ERFO funding (pages 16-19).



YF President and CEO Lisa Diekmann, DOI Secretary Haaland, and Tribal Center Coordinator Alyssa McGeeley



Yellowstone Tribal Heritage Center



NPS employees and Tribal partners at North Entrance teepee installation



NPS and FHWA employees review design plans



Xanterra partner and Deputy Superintendent Mike Tranel cut a 150th anniversary cake



## Working With Our Partners

### National Park Foundation

As the official nonprofit partner of the NPS, the National Park Foundation (NPF) worked closely with Yellowstone in 2022 to provide critical funding for a range of conservation priorities. The foundation secured over \$1.7 million for native fish restoration, Indigenous Bison Program Interns, recycling stations, and key 150th initiatives, such as the Yellowstone Tribal Heritage Center, Yellowstone Revealed, and Black People Who Hike visit.

### National Parks Conservation Association

In 2022, the National Parks Conservation Association (NPCA) and the park strengthened and broadened their partnership. NPCA supports key conservation and infrastructure issues within the park, and this year, they played a critical role in Yellowstone's 150th anniversary. Most notably, NPCA supported Yellowstone Revealed and, in partnership with the park and Salish Kootenai College, launched a Tribal fellowship program that will continue beyond the anniversary.

Since 2008, park personnel have coordinated with NPCA and Montana Fish, Wildlife and Parks to improve migratory pathways for pronghorn and other wildlife between the park and historic winter ranges to the north in the southern Paradise Valley. More than 1,000 volunteers organized by the NPCA removed or modified about 20 miles of unnecessary fences and modified or rebuilt other fencing to eliminate obstacles to movements while still meeting landowner needs.

### Greater Yellowstone Coordinating Committee

The Greater Yellowstone Coordinating Committee (GYCC) was established in 1964 to help facilitate cooperation between the four federal agencies within the Greater Yellowstone Ecosystem (GYE). Through the GYCC, federal land managers pursue voluntary opportunities to cooperate at the landscape scale. In 2021-22, the GYCC incorporated state partners and focused on setting new strategic priorities around three goal areas: 1) Maintain resilient landscapes within the GYE, 2) Respond to increasing visitor use, and 3) Strengthen coalitions, partnerships, and communications.

The GYCC has 10 subcommittees collaborating on critical work and resource areas across the ecosystem. Each year, GYCC subcommittees execute up to \$250,000 in ecosystem-scale projects funded by the federal land units while also executing and coordinating critical work on their home units that contribute to the health of the broader ecosystem.

### United States Public Health Service

In 2021, the NPS and the U.S. Public Health Service (USPHS) commemorated their 100-year partnership anniversary. USPHS provides services that include surveying drinking water and wastewater systems, inspecting food vendors, and responding to and preventing illness outbreaks.

### Interagency Bison Management Plan

The park continued working closely with Tribal, state, local, and federal partners to manage bison exiting the park during the winter months. These partners work closely together to manage this highly complex wildlife management issue. This plan continues to adaptively evolve through increasing coordination and collaboration to meet bison management objectives. Nine Tribes have participated in bison hunts outside Yellowstone.

### Northwestern Energy

Northwestern Energy (NE) partnered with Yellowstone in a variety of critical areas in 2021-22. NE continued to assist the park in upgrading decades-old utilities within developed areas to support the park's housing improvement project and built a new solar array to provide power to Bechler Ranger Station. NE also provided critical support during the emergency flood recovery efforts and restored power back to the park within 48 hours.

### Greater Yellowstone Coalition

The park has partnered closely with the Greater Yellowstone Coalition (GYC) in recent years. In 2021, the GYC, Yellowstone Forever, and the park partnered to expand bison conservation capacity (see page 34) and are continuing to look for additional partnership opportunities moving forward.

In 2022, the park partnered with GYC to increase Tribal outreach and commemorate Yellowstone's 150th anniversary. GYC supported a gathering hosted by the Eastern Shoshone and the Northern Arapaho Tribes to commemorate the anniversary and discuss collaboration between federal managers and Tribal Nations.

### Elected Officials

Yellowstone has a large congressional delegation with 10 Members of Congress representing the park's four congressional districts across three states. The park's delegation for the 118th Congress (effective January 2023) includes:

- WY: Sen. John Barrasso, Sen. Cynthia Lummis, and Rep. Harriet Hageman (WY-AL)
- MT: Sen. Jon Tester, Sen. Steve Daines, Rep. Ryan Zinke (MT-1), and Rep. Matt Rosendale (MT-2),
- ID: Sen. Mike Crapo, Sen. Jim Risch, and Rep. Mike Simpson (ID-2)

Yellowstone also coordinates with state and local elected officials in Montana (Park and Gallatin counties), Wyoming (Park and Teton counties), and Idaho (Fremont County).

The park received tremendous support from the congressional delegations and committee staff, state, and local elected officials in Wyoming, Montana, and Idaho during the 2022 flood event and recovery. The park briefed 115 congressional members and staff on the flood recovery progress.

### Montana Conservation Corps and Groundwork USA

Through youth and young adult partnerships with Montana Conservation Corps (MCC) and Groundwork USA, the park hosted teens and young adults to complete priority work projects and data collection. MCC brought five crews for 10 weeks of work in 2021-22.

As an urban youth corps in cities across the country, Groundwork USA brought four crews of nine diverse youth each August to continue the work YCC had started. Crews installed bear boxes, replaced boardwalks at Norris Geyser Basin, and rebuilt the Firehole Canyon Swimming Area stairs. The park has partnered with MCC for at least 20 years and Groundwork for 12 years.

### Property and Environmental Research Center

The Property and Environmental Research Center supported the park in a variety of key areas including the park's deferred maintenance backlog, improving employee housing, managing increasing visitation, and 150th anniversary planning efforts.

### Veterans Supporting Yellowstone

Warfighter Outfitters, a nonprofit organization supporting U.S. combat veterans, established a partnership with the park starting in 2009. In 2021, The park hosted 35 volunteers to work on constructing horse corrals in the Canyon and South Entrance areas. Their rehabilitation and construction projects have contributed nearly 200,000 hours of volunteer labor totaling \$4.8 million and over \$1 million in materials funded by grants from their partner, Arch Venture.

### Research, Education, and Conservation Partnerships

The park relies on a variety of research, education, and nonprofit partnerships with Montana State University Bozeman, Brown University, Rice University, Oceanographic Institute, University of Utah, University of Victoria, University of Wyoming, University of Montana, University of Maryland, and University of California.

Wyoming Wetlands Society and the Ricketts Conservation Foundation (RCF) partnered with the park to release trumpeter swan cygnets and increase territorial pairs of swans, which have undergone a decades-long decline in the park. The park and RCF also initiated an effort to conserve common loons across the Greater Yellowstone Ecosystem.

Mountain Time Arts was a key partner in Yellowstone's 150th commemoration.

Defenders of Wildlife and Bear Creek Council helped support the park in several areas including bison management.

### State Historic Preservation Officers

The park partnered regularly with state historic preservation officers, primarily in Wyoming, to guide and inform important cultural and historic preservation decisions.



DOI Secretary Haaland with Groundwork USA crew



GYCC partner meeting in Red Lodge, Montana



Wounded Warrior veterans group at Canyon corrals



Superintendent Sholly briefing Senator Daines and Congressman Rosendale



Looking Ahead

The state of the park is strong, and the Yellowstone team is resilient. The team made significant progress on its strategic priorities over the past two years as outlined in this report, despite major disruptions and challenges caused by COVID-19 and the 2022 flood event. Park staff are well positioned to continue making progress toward strategic goals in 2023 and beyond. The park will continue investments in employee development, strengthening supervisory skills, and housing improvements to continue attracting and retaining world-class talent.

Yellowstone will focus on adapting and combatting threats to the ecosystem from climate change, improving sustainability, expanding Tribal engagement, and strengthening interdisciplinary participation with the compliance team. The park will complete and implement a new bison management plan and make progress on the northern range plan.

The park will continue to understand and address increasing visitation and changing visitor use patterns. The team will diversify its emergency response staff and utilize new staffing models to improve efficiency, and work toward enhancing real-time visitor information and communications. The park will conduct and implement a parkwide education strategy in collaboration with Yellowstone Forever.

The park has a once-in-a-lifetime funding opportunity through the Great American Outdoors Act, disaster relief supplemental funding, and other congressional appropriations to address much needed infrastructure improvements, deferred maintenance, and implement major flood recovery projects. There will be many significant transportation, infrastructure, and historic preservation projects happening over the next three to five years that will prepare Yellowstone for the future.

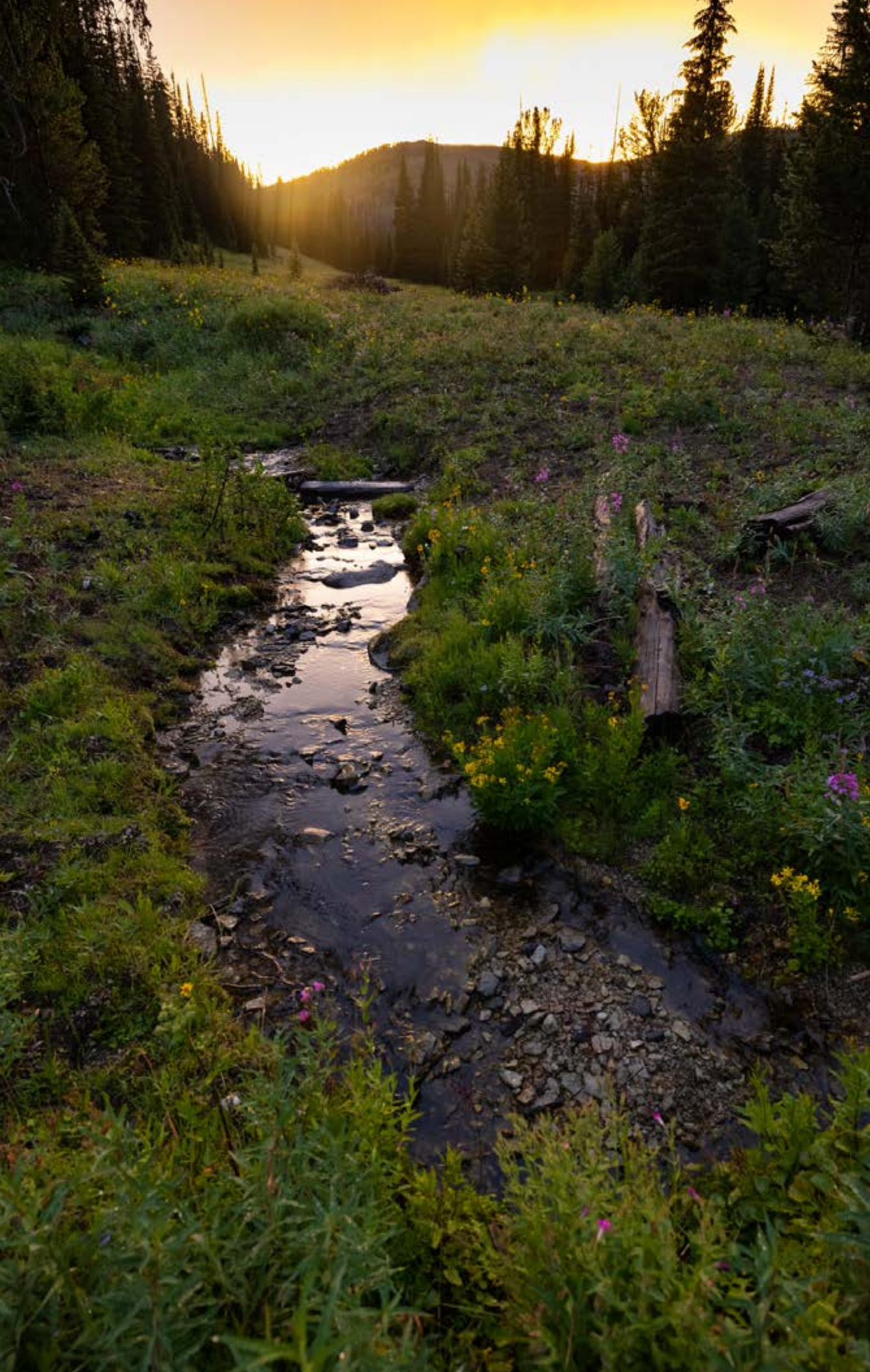
One silver lining of the 2022 flood event was the opportunity to strengthen partnerships with local gateway communities, commercial operators, and elected officials. The park will maintain and enhance existing partnerships and identify new partnership opportunities with national and global conservation organizations. We will also build on Tribal partnerships started through the 150th anniversary and identify opportunities and coordinated ways the park can partner and work with the Tribes on mutual goals.

Yellowstone’s future is bright.



Photos from this report are available at: [flickr.com/YellowstoneNPS](https://www.flickr.com/photos/YellowstoneNPS/)

Printed versions of this report made possible by a generous donation from our official nonprofit partner, Yellowstone Forever.



In Memoriam



**Ralph Anderson**  
Backcountry Law Enforcement Ranger  
1984–2021

Ralph moved to Yellowstone in 2015. He sought to improve the experience of his fellow employees and protect the physical resources that were so meaningful to him, particularly Wilderness. At his best, his passion and determination set the standard for what a park ranger should be.



**Scott Lechner**  
Maintenance Mechanic  
1972–2021

Scott started working in Yellowstone in 2015. He enjoyed anything outdoors including hiking, fishing, hunting, and photography. His self-proclaimed greatest achievement was taking care of the Old Faithful geyser in Yellowstone National Park. He loved working for the NPS and spent time working at Everglades National Park.



**Roger Whiteside**  
Supervisory Information Technology Specialist  
1963–2022

Roger worked in Yellowstone for nearly 40 years in Computer Support Services and was promoted to Supervisory IT Specialist in 2018. He truly loved working in Yellowstone and held a great sense of pride knowing that he was a part of a team who worked to make the park an amazing place. He never lost sight that he was privileged to work in such a beautiful area.

Yellowstone lost three valued team members in 2021-22. This report is dedicated to their commitment and service to the Yellowstone team and the mission of the National Park Service.



