2023 Annual Report

Greater Yellowstone Coordinating Committee





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Tami Blackford and Celia Konowe

Greater Yellowstone Coordinating Committee 2024

For additional information visit the <u>GYCC website</u>

Introduction

The Greater Yellowstone Ecosystem (GYE) is a special place, recognized worldwide for its extraordinary geothermal, wildlife, scenic, research, recreational, and economic values. It is considered one of the largest functionally intact temperate-zone ecosystems on Earth, and the area's rich cultural history reaches back more than 11,000 years.

The 22-million-acre ecosystem includes more than 15 million acres of largely contiguous federal land. They are managed by four federal agencies, each with differing missions and organizational structures. Three states manage wildlife on most of those lands.

The Greater Yellowstone Coordinating Committee

In 1964, the managers of the GYE's national parks and forests signed a Memorandum of Understanding to form the Greater Yellowstone Coordinating Committee (GYCC). The GYCC now also includes managers from national wildlife refuges, the Bureau of Land Management, and the wildlife departments of Idaho, Montana, and Wyoming, who signed a new Charter in 2023. Together, they pursue opportunities for voluntary cooperation and coordination at the landscape scale.



Photos and maps are from GYCC files or as indicated.

The Greater Yellowstone Coordinating Committee, continued

The GYCC developed new strategic priorities in 2022:

Maintain Resilient Landscapes within the Greater Yellowstone Ecosystem

- Understand and Respond to Climate Change
- Combat Nonnative Species
- · Improve and Maintain Ecosystem and Wildlife Health

Respond to Increased Visitor Use

- Understand and Respond to Impacts of Increasing Visitation
- · Develop Cross-Boundary Solutions that Improve Recreational and Visitor Experiences
- Share Best Practices

Strengthen Coalitions, Partnerships, and Communications

- Strengthen Public Communication and Support
- Improve Communication and Support within the GYCC

Dani Knighton inventorying a campsite and entering data into a handheld Juno device. In 2022 and 2023, approximately 550 campsites were inventoried to ascertain human and grizzly bear use tends over a 30-year period in the Absaroka-Beartooth Wilderness, a GYCC project funded in FY23. Another 250 campsites will be inventoried in 2024. Photo by Katie Desler.

Jurisdictions and Managers

The GYCC includes managers from the following jurisdictions:

USDA US Forest Service (Regions 1, 2, and 4)

Beaverhead-Deerlodge National Forest Supervisor, Lisa Timchak Bridger-Teton National Forest Supervisor, Chad Hudson Caribou-Targhee National Forest Supervisor, Mel Bolling Custer Gallatin National Forest Supervisor, Mary Erickson (Chair) Shoshone National Forest Supervisor, Ken Coffin & Kathy Minor (Acting)

US DOI Bureau of Land Management (Idaho, Montana, Wyoming)

BLM ID, Idaho Falls District Manager, Mary D'Aversa & Todd Kuck (Acting) BLM MT, Western Montana District Manager, Katie Stevens BLM WY, Wind River/Bighorn Basin District Manager, Matt Marsh

US DOI US Fish and Wildlife Service (Mountain-Prairie Region)

National Elk Refuge Manager, Frank Durbian Red Rock Lakes National Wildlife Refuge Manager, Mike Bryant

US DOI National Park Service (Intermountain Region)

Grand Teton National Park Superintendent, Chip Jenkins (Vice-Chair) Yellowstone National Park Superintendent, Cam Sholly

States of Idaho, Montana, and Wyoming

Idaho Fish & Game Dept. Regional Supervisor - Upper Snake, Matt Pieron Montana Fish, Wildlife & Parks Acting Region Three Supv., Marina Yoshioka & Warren Hansen (Acting) Wyoming Game & Fish Dept. Director, Brian Nesvik

Executive Coordinator: Tami Blackford (yell_gycc_coordinator@nps.gov)

Subcommittees

Nine subcommittees made up of more than 300 resource specialists and partners work to advance ecosystem priorities.

- Aquatic Invasive Species (since 2006)
- Clean Air Partnership (since 1997)
- Climate Change Adaptation (since 2010)
- Hydrology (since 1990)
- Native Fish (since 2009)
- Terrestrial Invasive Species (since 1991)
- Whitebark Pine (since 2000)
- Wildland Fire Management (since 1990)
- Wildlife (since 2012)
- · Communications (ad hoc)



The Invasive Species Action Network (ISAN) was awarded GYCC funding in FY21 to hold a rapid response exercise in Yellowstone National Park. October 11–12, 2023, GYCC AIS subcommittee memebers, National Park Service staff, and regional partners met for two days in discussions facilitated by Leah Elwell of ISAN to advance emergency planning and preparedness for aquatic invasive species management if faced with a new introduction.

Accomplishments in 2023

Aquatic Invasive Species

Aquatic invasive species (AIS) threaten to fundamentally alter aquatic ecosystems and put native plants and animals at risk. AIS in the GYE include: nonnative fish, *Myxobolus cerebralis*, New Zealand mud snails, red-rimmed melania, American bullfrogs, big-ear radix, red-eared sliders, Eurasian watermilfoil, and curly-leaf pondweed. Quagga and zebra mussels are expanding their distribution toward the GYE, found most recently in SD, CO, and ID. Since its establishment in 2006, this subcommittee has coordinated efforts between agencies, states, and non-government partners to advance AIS science, communication, and management.

In FY22, the GYCC funded the project AIS Hot Water Decontamination Unit Development for Firefighting Drafting Equipment, a collaboration between the AIS and Wildland Fire Management subcommittees. In 2023, USFS Region 1 partnered with Missoula County AIS District and Clean Wake LLC to develop a fully engineered schematic suitable for final fabrication, a cost estimate to fabricate one complete system, and an instruction manual.

In October 2023, a rapid response exercise for Yellowstone National Park was held to complete the project on Bolstering Dreissenid Preparedness in the GYA funded in FY21. The Invasive Species Action Network (ISAN) organized a two-day meeting with NPS staff and regional partners to gain insights into all aspects of operations regarding response to a potential detection of dreissenid mussels. ISAN led facilitated discussions to examine the variables of response, including confirmation of detection, delineation, scenario-driven response decisions including the use of chemical applications for eradication, and internal and external communication. Recommendations were made to improve Yellowstone National Park's draft Dreissenid Rapid Response Plan.



An engineered schematic, suitable for fabrication, for a mobile, trailer-mounted system to decontaminate firefighting equipment.

Chair: Chad Whaley, Fisheries Biologist and AIS Program Coordinator, Grand Teton National Park

Clean Air Partnership

Clean air is essential to ecological, social, and economic sustainability. Pollutants deposited from the atmosphere can act as nutrients, acids, or toxins, and alter the health of various terrestrial and aquatic ecosystems. Areas of concern in the GYE include smoke, ammonium and nitrogen deposition, dust events, microplastics, and harmful algal/harmful cyanobacteria blooms. This subcommittee coordinates efforts between agencies, states, and non-government partners to advance the science, understanding, and communication around air quality issues.

In FY23, members participated in the Greater Yellowstone Fire Action Network (GYFAN) and Smoke Ready Community project in collaboration with the Wildland Fire Management and Whitebark Pine subcommittees. A smoke ready plan helps local and federal governments know what actions to take and how to disseminate and coordinate information smoothly during a smoke event to protect the public.

Co-Chair: Lisa Devore, Air Quality Specialist, National Park Service Co-Chair: Jill McMurray, Air Quality Specialist, Bridger-Teton National Forest



The 2023 GYFAN Smoke Ready Community project shares and implements best practices for living with wildfire and smoke. The project aims to cultivate community partnerships, strengthen public communication channels about smoke impacts to air quality, and help develop smoke ready communities for prescribed and wildfire events in the GYE.

Climate Change Adaptation

Since 1950, average temperatures in the GYE have increased, peak precipitation has shifted earlier in the season, and average snowfall has declined. These trends are predicted to continue, coupled with more frequent extreme climate events. This will ultimately lead to community and ecological disruption and increased economic loss. The Climate Change Adaptation Subcommittee meets regularly as a climate-smart community of practice in the GYE.

In FY22, the GYCC funded the project Developing a Framework for Prioritizing and Planning Low-tech Stream Restoration Projects to Improve Stream Resilience to Wildfire. In 2023, after drawing up subcontracts for ecological and GIS consultants, a series of interviews focused on low-tech, process-based restoration were conducted. Additionally, GIS tools and methodologies to prioritize sub-watersheds for informing stream restoration and improving wildfire resilience were developed. This project is taking place in coordination with the Hydrology and Native Fish subcommittees.

In FY23, in collaboration with the Terrestrial Invasive Species Subcommittee, funding was granted to the project Remote Sensing Tools to Detect Early Season Invasive Plants in the Greater Yellowstone. During the year, they developed protocols and explored methods to track and map invasive plant species and facilitated the exchange of ideas and strategies between key players.

Chair: Ann Rodman, GIS Manager/Acting Climate Change Coordinator, Yellowstone National Park

> USGS scientists Josh von Nonn, Jason Kreitler, and NPS intern Marnie Bryce identify training sites with *Bromus tectorum* infestations to capture with UAS-based imagery, near Gardiner, MT.



Hydrology

The GYE contains the headwaters of seven great rivers that flow from the Continental Divide to the much larger Mississippi, Columbia, and Colorado River basins, and on to the Pacific Ocean and the gulfs of California and Mexico. The subcommittee supports coordinated watershed dataset management, stream channel monitoring, restoration, and management, and water quality, quantity, and rehabilitation programs. Increases in water temperature, nutrients, and algal blooms, and changes in timing and quantity of water flow are metrics of concern that are monitored to better understand the current status and trends across ecological, geologic, and elevational gradients.



In 2023, work continued to develop a framework for prioritizing and planning low-tech stream restoration projects to improve stream resilience to wildfire. The Greater Yellowstone Coalition (GYC), Great West Engineering (GIS consultant), Amy Chadwick (ecological consultant), and the Custer Gallatin National Forest held planning meetings to inform the development of a GIS tool and methodologies to prioritize sub-watersheds for informing stream restoration and improving wildfire resilience. GYC photo.

Hydrology, continued

Current projects include Developing a Framework for Prioritizing and Planning Low-tech Stream Restoration Projects to Improve Stream Resilience to Wildfire in collaboration with the Climate Change Adaptation and Native Fish subcommittees.

Co-Chair: Gwen Gerber, Hydrologist, Shoshone National Forest Co-Chair: Simeon Caskey, Physical Science Branch Chief, Grand Teton National Park

Native Fish

Native aquatic species influence the ecological, social, and economic sustainability of the GYE. Each species fills an important ecological niche based on its geographic distribution, habitat requirements, aquatic community interactions, and its position in the food chain. Aquatic species are culturally important and contribute to various ecosystem services including recreation, tourism, water supply and quality, erosion prevention, and climate regulation. The Native Fish Subcommittee meets regularly to maintain, enhance, and restore native fish populations and other native aquatic species and their habitats in the GYE.

The Native Fish Subcommittee is collaborating on the project Developing a Framework for Prioritizing and Planning Low-tech Stream Restoration Projects to Improve Stream Resilience to Wildfire with the Climate Change Adaptation and Hydrology subcommittees.

In FY22, the Yellowstone Cutthroat Trout Rangewide Genetics Assessment was funded to understand the genetic diversity, hybridization status, endemic status, and population connectivity of Yellowstone cutthroat trout populations. After collecting and processing a significant portion of the samples, preliminary results suggest that historic stocking of fish has not erased natural population structure. Work will continue to identify populations for conservation and management across the subspecies range.

Incoming Chair: Clint Sestrich, Absaroka-Beartooth Zone Fisheries Biologist, Custer Gallatin National Forest Outgoing Chair: Patrick Barry, Aquatics Program Manager, Bridger-Teton National Forest Vice-Chair: Justin Peterson, Fisheries Biologist, Bridger-Teton National Forest



Sampling locations for Yellowstone cutthroat trout populations, map courtesy UWYO.

Terrestrial Invasive Species

Terrestrial nonnative species (plants, vertebrates, and invertebrates) are a concern because they can outcompete native plants and animals, including endemic species, affecting biodiversity and ecological processes. They can affect water systems, wildlife habitat, and recreation areas; and the distribution, foraging activity, and abundance of wildlife. They have also altered the viewsheds of cultural landscapes and historic districts. Once land becomes infested with nonnative species, restoring the native community is difficult and eradication can be expensive. Treatment priorities focus on detecting new invaders early, responding rapidly to eradicate them, and preventing further establishment. This subcommittee works cooperatively to protect, preserve, and rehabilitate natural resources throughout the GYE from the impact of weeds and other terrestrial invasive species (e.g., eastern heath snails).

In FY22, the subcommittee received GYCC funding for the project Biocontrol Monitoring and Training: Using Standardized Protocol Across the GYA. During the project, 29 sites were monitored for biocontrol agent establishment and impact. Thorough reports were compiled for all sites, and two workshops were held on the proper use and monitoring of biocontrol for GYE land managers.

Terrestrial Invasive Species, continued

The subcommittee is also working on the project Remote Sensing Tools to Detect Early Season Invasive Plants in the Greater Yellowstone with the Climate Change Adaptation Subcommittee.

Co-Chair: Lesley Beckworth, Landowner Program Coordinator, Teton County Weed & Pest District (WY) Co-Chair: Sherri Renck, Rangeland Management Specialist, Custer Gallatin National Forest

USGS scientist Jason Kreitler helped with a training day in Yellowstone National Park to teach volunteers from the NPS, USFS, and several county organizations to sample invasive species according to the project's field protocol.



Whitebark Pine

Whitebark pine is an important component of the GYE, providing a wide range of ecosystem services. It defines ecosystem structure, function, and processes by providing soil stabilization and carbon storage, increasing biodiversity, and serving as a food source for wildlife. Throughout its range, whitebark pine is currently at risk from the combined effects of mountain pine beetles, the introduced disease white pine blister rust, climate change, altered fire regimes, and successional replacement. This subcommittee sustains a collaboration of land managers, scientists, and other whitebark pine experts that leads to the long-term viability and function of whitebark pine ecosystems in the GYE.

This subcommittee focuses annually on projects that include collecting whitebark pine cones for operational use throughout the Greater Yellowstone/Grand Teton seed zone, supporting the Whitebark Pine Genetic Tree Improvement & Restoration Program, and propagating white pine blister rust resistant whitebark pine seed at the Little Bear Seed Orchard for future planting in the GYE. Additionally, the NPS Greater Yellowstone Network monitors whitebark pine as part of a multiagency program.

Chair: Avery Beyer, Forster, Caribou-Targhee National Forest Vice-Chair: Laura Jones, Branch Chief, Vegetation Ecology and Management, Grand Teton National Park

> Some national forest and BLM units have certified tree climbers who can collect whitebark pine cones. Historically, much of the work has been performed by a crew funded primarily through the GYCC.



Wildland Fire Management

The GYE is a fire-dependent landscape which has been shaped by fire for thousands of years. While most fires are frequent and small, occasional large fires help to maintain a mosaic of plant communities in different stages, recycle nutrients, and proliferate fire-dependent vegetation species, supporting biodiversity. This subcommittee serves as professional wildland fire consultants to the GYCC and provides advice on management strategies for wildland and prescribed fire as requested. Subcommittee members coordinate cross-boundary wildland fire management according to the GYA Interagency Fire Management Planning and Coordination Guide.

In FY23, the Greater Yellowstone Fire Action Network (GYFAN) and Smoke Ready Community project was funded, following initial workshops held in FY22. In 2023, The Nature Conservancy (TNC) fuels mitigation crew completed prescribed burn work on the Caribou-Targhee National Forest. Existing Neighborhood Ambassador programs provided smoke messaging to communities during a Canadian wildfire event, and work commenced on a Fire on the Land Multimedia Series. TNC Idaho used the workforce model developed in 2022 to expand that model with two Fire Departments in Idaho. Additionally, two countywide Smoke Ready plans were developed. Five additional GYFAN virtual and in-person workshops were held, facilitating the exchange of information between GYFAN members, and five action groups were developed to focus on GYFAN priorities.

Wildland Fire Management, continued

Additionally, the subcommittee is collaborating with the Aquatic Invasive Species Subcommittee on the project Hot Water Decontamination Unit Development for Firefighting Drafting Equipment, funded in FY22.

Incoming Co-Chair: Jon Dentinger, Deputy Fire Management Officer, Yellowstone National Park Outgoing Co-Chair: Mike Johnston, Forest Fire Management Officer, Caribou-Targhee National Forest Co-Chair: Joe Sampson, Staff Officer-Fire, Fuels, & Fleet, Beaverhead-Deerlodge National Forest

What's in wildfire smoke?

- Dangerous gases and fine particles, including PM2.5
- PM2.5 particles can enter the lungs and bloodstream when inhaled



Wildlife

The GYE is considered to be the largest nearly intact ecosystem in the lower 48 United States. The ecosystem supports populations of wolves, grizzly bears, and wolverines, all strong indicators of a healthy ecosystem. Wildlife stressors and threats include climate change, increasing human use of the GYE, invasive species, and wildlife disease. This subcommittee formed in 2012 and works to sustain the health, diversity, and productivity of wildlife and ecosystems within the GYE.

Three projects were funded in FY23, including Using Smartphone GPS Locations to Map Visitation and Minimize Impacts on Wildlife in the GYA. This project tracked visitor movement throughout the GYE to understand routes and recreation types and their relation to management concerns. A project on 30-year Human Use Trends in the Absaroka-Beartooth Wilderness in Relationship to Grizzly Bear Range Expansion and Habitat Use Patterns began. During the year, most of the backcountry campsites were inventoried and preliminary work began on a grizzly bear distribution model. The third project is Multi-model Inference to Support RAD-based Decision Making for Aspen Management on the Greys River Ranger District.

The Wildlife-Human Communication Plan on Federal Public Lands in the GYE was funded in FY22. In FY23, they continued previous work conducted on bear safety messaging and are currently identifying partners. Another ongoing project, a matching grant between the Forest Service and the Greater Yellowstone Coalition funded FY15-FY17, continued to focus on bear attractant storage infrastructure. This effort has resulted in the installation of 1,200 bear resistant campsite boxes and dumpsters. In future phases, solutions will be implemented in national forest recreation sites on the edge of the GYE and in potential grizzly bear expansion areas and movement corridors.

> Campsite inventory status in the Absaroka-Beartooth Wilderness as of February 2024. Created by Danielle Knighton.



Changes in the raw counts of users within and around Grand Teton National Park. While 2020 showed more use within the park, 2022 showed increased use in the visitor center areas after the restrictions from the Covid-19 pandemic were eased. USFS Rocky Mountain Research Station.



Wildlife, continued

A few older projects were finished or neared completion in FY23. A case study on Grizzly Bears and Humans at Alpine Moth Sites in Wyoming, USA, initially funded in FY17, FY18, and FY22, was published in Human–Wildlife Interactions. This project was a high priority for the GYE Forest Supervisors and is an important reference for use in the "Moth[~]Site Strategy" the Shoshone National Forest is developing as part of their Forest Plan. The Grizzly Bear Use of Forest Successional Stages project funded in FY14 continued, with a final report pending in 2024. This is a collaborative project with Idaho Fish and Game and the Caribou-Targhee National Forest to identify the stages of forest succession selected by grizzly bears and compare diets of Island Park grizzlies with other bears in the ecosystem.

The Wildlife Subcommittee is collaborating with the Climate Change Adaptation, Hydrology, and Native Fish subcommittees on Developing a Framework for Prioritizing and Planning Low-tech Stream Restoration Projects to Improve Stream Resilience to Wildfire.

Chair: Jim Wilder, Wildlife Biologist, Bridger-Teton National Forest Vice-Chair: Joshua Hemenway, Wildlife Program Manager, Custer Gallatin National Forest

Meetings and Communication

In 2023, the GYCC executives met in person in Cody, WY, in the spring and Jackson, WY, in the fall. They changed their virtual meetings from short monthly calls to 2½-hour quarterly calls. The first hour of those calls typically included the GYCC subcommittee chairs, who shared subcommittee and project updates and discussed proposed projects with the executives. Subcommittee chairs met virtually every other month, with a longer meeting in December to discuss potential integrated project proposals for the FY25 project call. GYCC units continue to make \$250,000 available annually for projects proposed by the units and subcommittees, which are approved by the executives. In FY23, two project calls came out one after the other, one for FY23 and one for FY24.

A new GYCC <u>Charter</u> was signed by the executive committee in November 2023, replacing the previous Memorandum of Understanding, which expired in 2022. The GYCC website was brought back online and significantly updated. In addition, planning began for GYCC involvement in the 16th Biennial Scientific Conference on the Greater Yellowstone Ecosystem to take place in fall 2024. The GYCC's history of paper and digital files were moved from the Forest Service office in the federal building in Bozeman, MT, to Yellowstone National Park to be considered for storage in the park's archives.

Subcommittee chairs began working with the GYCC Executive Coordinator to produce subcommittee briefs. These briefs will describe the importance of the resource/topic to the ecosystem and how it relates to GYCC strategic priorities, its status and trends in the GYE, and a discussion of management issues. They will share the subcommittee's mission, goals, and responsibilities, past GYCC-funded projects, research and funding gaps, and a list of subcommittee members.

In 2023, the GYCC partnered with the National Park Service's Greater Yellowstone Network to develop a condition assessment of the GYE to inform future priorities. By the end of the year, a postdoc had been hired to lead the GYE Assessment.



The November 2023 workshop on Wildlife Movement and Migration in the GYE included more than 100 participants.

Meetings and Communication, continued

GYCC 2023 Meeting Calendar

Date	Meeting	Location	Attendance
Every other Thurs., 3:00-4:00	Climate Change Adaptation Virtual/Teams Community of Practice (COP)		GYE Climate COP
07/13-10/03/23, 8:00-8:30	Wildland Fire Management Subcommittee GYA Coordination Call – every two weeks, Tues a.m.	Virtual/Teams	Wildland Fire Mgmt Subcommittee
01/04/23, 1:00-4:00	AIS Subcommittee Meeting	Virtual/Teams	AIS Subcommittee
01/11/23 1:00-3:00	Fire Subcommittee Meeting	Virtual/Teams	Wildland Fire Mgmt Subcommittee
01/31/23 9:00-12:00	Wildlife Subcommittee Meeting	Virtual/Teams	Wildlife Subcommittee
02/15/23 1:00-2:30	Clean Air Partnership Meeting	Virtual/Teams	Clean Air Partnership
02/16/23, 8:30-11:00	Executives' Quarterly Call FY23 Project Funding Approval Subcommittee Updates: Whitebark Pine & Clean Air Partnership	Virtual/Teams	Execs & Sub Chairs 8:30-9:30 Executives Only 9:30-11:00
02/21/23, 10:30-11:30	Subcommittee Chairs' Meeting	Virtual/Teams	Subcommittee Chairs
02/21/23, 1:00-3:00	Wildland Fire Mgmt Subcommittee Meeting	Virtual/Teams	Wildland Fire Mgmt Subcommittee
03/02/23, 3:30-4:30	GYCC Reports & Assessments Call	Virtual/Teams	Executives
04/13/23, 1:00-3:00	Whitebark Pine Subcommittee Meeting	Virtual/Teams	Whitebark Pine Subcommittee
04/18/23, 1:00-4:30 04/19/23, 8:00-12:00	TIS Subcommittee Meeting	In-person & Virtual/Teams	TIS Subcommittee
04/19/23, 1:00-2:30	Hydrology Subcommittee Meeting	Virtual/Teams	Hydrology Subcommittee
04/20/23, 8:30-11:00	Executives' Quarterly Call FY24 Project Criteria & Timeline Subcommittee Updates: AIS & TIS	Virtual/Teams	Execs & Sub Chairs 8:30-9:30 Executives Only 9:30-11:00
04/26/23, 10:00-11:00	Subcommittee Chairs' Meeting	Virtual/Teams	Subcommittee Chairs
05/03/23, 12:30-4:30	AIS Subcommittee Meeting	In-person: Idaho Falls, ID	AIS Subcommittee
05/09-10/23, 8:30-4:30 & 8:30-11:00	Spring GYCC Meeting (YES 5/10-11)	In-person: Cody, WY	Executive Session, Subcommittee Updates & Public Session
06/01/23, 9:30-11:00	Clean Air Partnership Meeting	Virtual/Teams	Clean Air Partnership
06/15/23, 9:00-2:00	Native Fish Subcommittee Meeting	Virtual/Teams	Native Fish Subcommittee
06/22/23, 2:00-3:00	Subcommittee Chairs' Meeting	Virtual/Teams	Subcommittee Chairs
06/28-29/23, 1:00-5:00 & 9:00-1:00	Wildlife Subcommittee Meeting	In-person/campout GTNP Gros Ventre Campground	Wildlife Subcommittee
07/20/23, 8:30-11:00	Executives' Quarterly Call Initial Review of FY24 Projects Subcommittees: ALL	Virtual/Teams	Execs & Sub Chairs 8:30-9:30 Executives Only 9:30-11:00
08/21/23, 11:00-12:00	Clean Air Partnership Meeting	Virtual/Teams	Clean Air Partnership
09/12/23, 2:00-3:00	Subcommittee Chairs' Meeting	Virtual/Teams	Subcommittee Chairs
10/02/23, 10:00-11:30	Wildlife Subcommittee Meeting	Virtual/Teams	Wildlife Subcommittee
10/05/23, 8:30-11:00	Executives' Quarterly Call	Virtual/Teams	Executives Only 8:30-11:00
10/24/23, 1:00-5:00	TIS Subcommittee Meeting	Virtual/Teams	TIS Subcommittee
11/02/23, 12:30-2:00	Wildlife Subcommittee Meeting	Virtual/Teams	Wildlife Subcommittee

Meetings and Communication, continued

Date	Meeting	Location	Attendance
11/06-08/23, 8:30-4:30 & 8:00-11:00	Fall GYCC Meeting & Workshop (YES 11/08-09)	In-person: Jackson, WY	Executive Session Migration Workshop
11/14/23, 1:00-3:30	Hydrology Meeting	Virtual/Teams	Hydrology Subcommittee
11/15/23, 12:30-4:00	AIS Subcommittee Meeting	Virtual/Teams	AIS Subcommittee
12/04/23, 1:00-2:30	Wildlife Subcommittee: GYC presentation on GYCC riparian project	Virtual/Teams	Wildlife Subcommittee
12/06/23, 9:30-11:00	Clean Air Partnership Meeting	Virtual/Teams	Clean Air Partnership
12/08/23, 10:00-3:00	Subcommittee Chairs' Meeting	Virtual/Teams	Subcommittee Chairs
12/13/23, 10:00-12:30	Whitebark Pine Subcommittee Meeting	Virtual/Teams	Whitebark Pine Subcommittee

Quarterly Call Agendas

February 16, 2023

The Clean Air Partnership and Whitebark Pine subcommittees gave presentations on their efforts. In executive session, the managers shared updates from each of their units. Chip Jenkins, Superintendent of Grand Teton National Park, was elected to serve as GYCC Vice-Chair in 2023 and to rotate into the Chair position in 2024–2025. FY23 GYCC projects were approved for \$250,000 in funding.

April 20, 2023

The Aquatic Invasive Species and Terrestrial Invasive Species subcommittees gave presentations on their efforts. In executive session, the managers shared updates from each of their units, and they reviewed the project criteria and timeline for the FY24 project call.

July 20, 2023

Executives, subcommittee chairs, and project leads met to discuss the FY24 project proposals. In executive session, the managers shared updates from each of their units, and FY24 GYCC projects were approved for \$250,000 in funding.

October 5, 2023

In executive session, the managers shared updates from each of their units. Final edits to the Charter and Whitebark Pine agreement were discussed. The agenda for the November in-person meeting was refined. Subcommittee briefs and cumulative GYCC efforts and funding were discussed leading into the GYCC's 60th Anniversary in 2024.

As part of the Biocontrol Monitoring and Training project funded in FY22, two workshops were held in the GYA that focused on providing in-person, hands-on education regarding properly utilizing and monitoring for establishment and impact of biocontrol. The first occurred in Ennis, MT, (photo right) in collaboration with the Madison Valley Ranchlands Group and provided information to area land managers on properly utilizing and monitoring biocontrol. The second workshop occurred in Livingston, MT, in collaboration with Park County Environmental Council, Park County Extension, and Park County Weed District. Staff provided information on a variety of weed management tools, mapping, and monitoring, followed by assisting land managers in writing an integrated pest management plan.



Meetings and Communication, continued

Spring Meeting Agenda, 5/9-10/23, in Cody, WY

The spring meeting included a public session with presentations from each of the GYCC subcommittees. On Tuesday night, Dr. Kevin Monteith, Professor and Wyoming Excellence Chair in the Haub School of Environment and Natural Resources at the University of Wyoming, gave a public talk titled "Intimate Connections to a Sometimesformidable Landscape:" A Deer Story." In executive session, the managers shared updates from each of their units and received transportation updates from Roxanne Bash of the Federal Highway Administration. They discussed updating the GYCC's Memorandum of Understanding (MOU) and the Narrative Interagency Agreement/MOU for Greater Yellowstone Area Whitebark Pine Management, which both expired in 2022. They also discussed GYCC involvement in the fall 2024 16th Biennial Scientific Conference on the GYE and direction for the Greater Yellowstone Network to develop the GYE Assessment.

You are invited to attend the Greater Yellowstone Coordinating Committee Spring Meeting • May 9, 2023 • Cody, WY





Executive summary

EXECUTIVE Summary: In the Davies Watersens toopsens (10%) before tarms of the next diverse and diversed we're storing to be next to in hard America. These wildle nove backs bread fundaces that you and when many too one and among man invested in patiently to destinate and wildle connection. I sower, many of the advet leads with special wildle will a how say the language many of the advet of the advet of the advet leads with special will be at a how say the language connection advetorial and the advetorial states and their advetorial to advetorial and and interest on advetorial advetorial states and their advetorial to advetorial advetorial states are advetorial advetorial advetorial advetorial advetorial advetorial advetorial to advetorial advetorial advetorial advetorial advetorial advetorial advetorial advetorial states and a workings to report and advetorial ad

- · Communicate and elevate the value of wildlife movements and migrations and their dependence on working and tribal ands across the ecceptorers
- Share approaches and tools the conservation community is using to advance conservation of wild life migrations on working and mbo lands;
- Rolie averywers of opportunities via state oriograms, US DOT 1 Secretarial Oncer 3362, and US 341, new Migratory Sig Game initiative; and,
- · Discus opportutilies, barriers, and reeded porrentrips

Fall Meeting Agenda, 11/7-8/23, in Jackson, WY

This meeting coincided with the Western Governors' Association (WGA) meeting in Jackson, WY. The GYCC used this opportunity to invite regional agency leadership from the NPS, FS, BLM, and USFWS and others who were attending the WGA meeting to the GYCC meeting. In executive session, the managers shared updates from each of their units, and the GYCC Charter was signed. The committee discussed the GYE Assessment, the 16th Biennial Scientific Conference, and the draft subcommittee briefs. Mary D'Aversa was elected as the Vice-Chair for 2024–2025. Tuesday afternoon, the GYCC hosted a public workshop titled Wildlife Movement and Migration in the GYE. More than 100 people attended the workshop, and a report was later published, Wildlife Movement and Migration in the GYE.

GYCC FY23 and Ongoing Project Status

Project/Initiative &	GYCC Funding/	Unit & Description/	Partners/
Subcommittee(s)	Status	FY23 Accomplishments	Contributions
Greater Yellowstone	FY23: \$89,000	GYE-wide. This project aims to increase	Fire Learning Network:
Fire Action Network	FY22: \$30,000	the pace and scale of fuels reduction work	2023-24: \$35,164
(GYFAN) and Smoke	Ongoing	within and around communities at risk to	2022-23: \$40,161
Ready Community		wildfire; promote positive impacts from	2021-22: \$48,210
		wildfire and prescribed fire on the	
Wildland Fire		landscape as an ecosystem restoration	In-kind: NPS and FS
Management, Clean Air		tool; and develop Smoke Ready	staff; The Nature
Partnership,		Communities. In FY23, GYFAN convened	Conservancy ID, WY,
Whitebark Pine		workshops, developed smoke ready plans,	and Snake River Burn
		communicated smoke messaging to	Crew; County Fire
		communities, tested out a collaborative	Depts.; County Health
		workforce for fuels reduction, and started	Depts.; and
Detecting Farby	EV22, #2E 000	ON the Fire on the Land Multimedia Series.	Emergency Managers
	F123: \$25,000	Gre-wide. This project aims to develop	DSGS Invasives
Plante Using Pomoto	Chaoing	successful remote sensing techniques that	ever 2 verrs
Sensing to Inform	Unguing	throughout the CVE to identify the extent	over 2 years
Monitoring and		of invasive vegetation. In FY23, the	
Incorporating		project team developed protocols and	
Climate		explored methods to track and map	
Understanding to		invasive plant species and facilitated the	
Improve Control and		exchange of ideas and strategies between	
Restoration; Year 2		key stakeholders.	
Climate Change			
Adaptation, Terrestrial			
Invasive Species			
30-year Human Use	FY23: \$10,000	Custer Gallatin and Shoshone National	Forest Service:
Trends in the	Ongoing	Forests. This project will summarize 30	\$12,000;
Absaroka-Beartooth		years of human use trends in the 1-	Montana State
Wilderness in		million-acre Absaroka-Beartooth	University grants:
Relationship to		wilderness in concert with an index of	2022 field crew salary,
Grizzly Bear Range		grizzly bear range expansion and use. In	\$15,000; 2022 field grow colory
Expansion and		FY23, most of the backcountry campsites	2023 field crew salary,
Habitat Use Patterns		arizzly been distribution model was	\$5,000; Craduata student
Wildlife		started	stipond \$30,000
Multi-model	FY23: \$6,000	Bridger-Teton National Forest This project	In-kind: Bridger-Teton
Inference to Support	Ongoing	is investigating the effects of climate	National Forest
RAD-based Decision	Chigoing	change on aspen and various conifer	\$1.800:
Making for Aspen		species to inform future habitat	Wyoming Natural
Management on the		improvement projects in light of projected	Diversity Database:
Greys River Ranger		climate change impacts. Project results	\$3,700.
District		will be presented in a report to facilitate	Contributing work:
		their application to aspen management	Bowhunters of
Wildlife		through the resist-accept-direct (RAD)	Wyoming: \$1,800;
		framework.	Wyo. Wildlife & Nat.
			Res. Trust: \$1,500

Whitebark Pine	FY23: \$30,000	GYE-wide. This project provides for the	National Park Service
Subcommittee	(Arbor Day	collection of whitebark pine cones for	Greater Yellowstone
Annual Work	Foundation grant	operational use throughout the Greater	Network; Northern
	through CTNF)	Yellowstone/Grand Teton (GYGT) seed	Rockies Conservation
Whitebark Pine	Ongoing	zone (GYE) as identified by the planting	Cooperative
		and seed needs of the individual units. It	
		continues to support the Whitebark Pine	
		Genetic Tree Improvement and	
		Restoration Program initiated in 2001 in	
		the Intermountain West which is	
		fundamental to the conservation of	
		whitebark nine. In addition, since 2004	
		the Greater Vellowstone Network has been	
		monitoring whitebark nine as part of a	
		multiagency program. The Interagency	
		Creater Vellowstone Econystom Whitebark	
		Greater renowstone Ecosystem whitebark	
		Pine Monitoring Program tracks whitebark	
		pine condition and trends on National Park	
		Service, U.S. Forest Service, and Bureau	
		or Land Management lands in the GYE.	
GYE Assessment	FY23: \$80,000	GYE-wide. This is an effort to develop an	National Park Service
	Ongoing	assessment of ecosystem condition for the	Greater Yellowstone
GYCC		GYE. By year's end, funds had been	Network: \$100,000;
		obligated to a Cooperative Ecosystem	Montana State
		Studies Unit Agreement with Montana	University
		State University and a postdoc had been	
	EX(2)2 + 40,000	hired to lead the assessment.	
Using Smartphone	FY23: \$40,000	GYE-wide, Grand Teton National Park, and	USFS Rocky Mountain
GPS Locations to Map	Completed 2023	Bridger Teton National Forest. This project	Research Station:
Visitation and		leveraged commercially available,	Data purchase
Minimize Impacts on		anonymized, privacy-law compliant,	\$120,000;
Wildlife in the GYA		numan smartphone GPS data to map and	Postdoctoral research
		analyze human movements throughout	salary \$175,000
Wildlife		the GYE from May 2019 through October	
		2023. Areas of concern within the GYE are	
		being investigated to analyze	
		spatial/temporal trends in human use of	
		the landscape and to assess the need for	
		management solutions. Visitor movements	
		throughout the GYE were tracked to	
		understand routes and recreation types	
		and their relation to management	
	EX (0.0. ± 0.0. 770	concerns.	
Developing a	FY22: \$28,779	GYE-wide, Custer Gallatin National Forest.	Greater Yellowstone
Framework for	Ungoing	inis project is developing a framework to	
Prioritizing and		use low-tech process-based restoration to	
Planning Low-tech		restore important fish and wildlife habitat,	
Stream Restoration		improve resilience of streams to climate	Equipment: \$3,000
Projects to Improve		change, toster new partnerships with	
Stream Resilience to		organizations that work closely with the	
wilatire		public, and promote environmental	
Climate Cha	1	awareness. In FY23, work consisted of	
		and the base of the state of th	
		collaboration between resource managers,	
Adaptation, Hydrology,		collaboration between resource managers, GIS specialists, and outreach networks.	

AIS Hot Water Decontamination Unit Development for Firefighting Drafting Equipment Aquatic Invasive Species, Wildland Fire Management	FY22: \$20,000 Ongoing	GYE-wide. This project is an effort to design a mobile fire equipment decontamination unit to minimize a potential pathway for spreading AIS via wildfire suppression operations. In FY23, a schematic was engineered for a mobile, trailer-mounted decontamination system for use on firefighting equipment. A cost estimate was received to fabricate and complete one system. In addition in FY23, Northern Rockies Coordinating Group <u>protocols</u> were implemented and enforced to prevent wildland firefighting equipment from spreading AIS.	Missoula County: \$5,600; USFS: \$8,500
Wildlife-Human Communication Plan on Federal Public Lands in the GYE	FY22: \$15,000 Ongoing	GYE-wide. This project is assessing the effectiveness of wildlife-human messaging across the ecosystem that reduces habituation and disturbance of iconic wildlife species. Work continued on bear	
Range-wide Genetic Assessment of Yellowstone Cutthroat Trout Native Fish	FY22: \$20,105 Ongoing	safety messaging and identifying partners. GYE-wide. Univ. of WY is conducting a range-wide genetic assessment of Yellowstone cutthroat trout (YCT). This is a multi-agency collaborative effort to understand the genetic diversity, hybridization status, endemic status, and population connectivity of YCT populations. Preliminary results suggest that historic stocking of fish has not erased the natural population structure. Work will continue to identify populations for conservation and management across the subspecies' range.	Cost-share: \$4,021
Biocontrol Monitoring and Training: Using Standardized Protocol Across the GYA Terrestrial Invasive Species	FY22: \$27,225 Completed 2023	GYE-wide. This is an effort to establish a weed biocontrol efficacy monitoring program across the GYE. In FY23, the team monitored 29 sites for biocontrol agent establishment and impact. Two workshops were held on proper use and monitoring of biocontrol for land managers in the GYE.	Montana Biocontrol Coordination Project in-kind: \$12,600; USFS Northern Region: \$5,400 (funding and salary)
Determining Migration Patterns and Relative Abundance of Migratory Army Cutworm Moths in the GYE Wildlife	FY22: \$18,000 FY18: \$20,000 FY17: \$20,000 Completed 2023	FS Region 2, Shoshone National Forest. Conducted stable isotope and pesticide contaminant analyses on migrating moths and built an index of moth abundance. GYCC previously provided support leading to the preparation of a GYA moth site management plan prescribed in the Shoshone National Forest Plan. An MS thesis and associated publication are completed. In FY23, a case study, Grizzly Bears and Humans at Alpine Moth Sites in Wyoming, USA, was published in Human- Wildlife Interactions.	Northern Rocky Mountain Science Center; WGFD. Over 4 years: Forest Service Washington Office, Region 2, and Shoshone NF: \$30,000 and \$5,000 in-kind. Montana State Univ: \$30,000 and \$5,000 in-kind. USGS: \$5,000 in-kind. USFWS: \$5,000. ~50 moth collection collaborators across 13 states: \$30,000 in- kind (universities; county, state, and federal agencies; and citizen scientists)

Bolstering Dreissenid Preparedness in the GYA Aquatic Invasive Species	FY21: \$10,500 Completed 2023	Yellowstone National Park. In October 2023, a rapid response exercise was conducted in Yellowstone. This tool brings multiple stakeholders together to practice a response to a hypothetical quagga and zebra mussel infestation scenario, i.e., switching from prevention to containment management. Facilitated discussions examined the variables of response for Yellowstone's draft plan.	Invasive Species Action Network (ISAN): Staff: \$500 Mileage: \$99 Supplies: \$150 Cooperator in-kind: \$15,840
GYE-wide Bear Management - USFS Campground Infrastructure Wildlife	FY17: \$25,000 FY16: \$40,000 FY15: \$25,000 Ongoing	GYE National Forests. Phase 1 partnership, 2012–2022, to improve infrastructure and reduce human-bear conflicts at all Forest Service developed campgrounds in the GYE. Work is largely complete at 162 campgrounds on 5 forests, except for final installations on the Custer Gallatin National Forest in 2024.	GYE National Forests; Greater Yellowstone Coalition 1:1 match, \$650,000
Grizzly Bear Use of Forest Successional Stages Wildlife	FY14: \$21,500 Ongoing	GYE-wide, Caribou-Targhee National Forest. Collaborative project to identify the stages of forest succession selected by grizzly bears and compare diets of Island Park grizzlies with other bears in the ecosystem. Field work and analysis completed, final report pending completion in 2024.	Idaho Department of Fish and Game; Idaho Master Naturalists; Idaho Transportation Department; Interagency Grizzly Bear Study Team; Montana State University; US Fish and Wildlife Service; US Forest Service - Caribou Targhee National Forest; Wildlife Conservation Society