

PART III

Professional Support Programs

This section summarizes the 2006 accomplishments of YCR staff who provide services for other YCR branches and park divisions:

- Spatial Analysis Center
- Resource Information Team
- Research Permit Office
- Servicewide Benefits-Sharing EIS
- Funding and Personnel Support



Pelican Cone bear survey.

Spatial Analysis Center

The Spatial Analysis Center (SAC) provides a variety of GPS (global positioning system) and GIS (geographic information system) services to park staff and cooperators by “repackaging” technology and technical data to suit a variety of information needs.

Highlights for 2006

Improving GIS Data for Buildings, Roads, and Trails. The Maintenance Division has entered a large amount of information about park assets into a database called FMSS (Facilities Management Software System). To link that information to the spatial representation of those assets, the correct FMSS number must be added to nearly every one of the 1,975 building features, 1,490 road segments, and 1,657 trail segments in the GIS. During 2006 we assigned FMSS numbers to more than two-thirds of these assets, and the task will be completed during summer 2007. We have also linked 732 buildings with FMSS numbers to records within the LCS (List of Classified Structures) database.

Support for Planning Efforts. We created three-dimensional computer models of the Lake, Tower, and Old Faithful developed areas, complete with realistic buildings, trees, and terrain. Allowing users to view the consequences of different planning scenarios on the landscape increases the likelihood that everyone will understand the proposals and not be surprised by the results. We also support the environmental analysis process by participating on ID

Teams and supplying planners with numerous map and analysis products.

Wildland Fire and Wildland-Urban Interface (WUI) Support. Every year the SAC staff dedicates a significant portion of the summer to mapping Yellowstone’s wildland fires and creating information products for fire crews, the Public Affairs Office, and the public (via the park’s website). We also participate throughout the year in the WUI planning efforts through analysis of data and creation of information products.

Thermal Inventory. Summer 2006 was the SAC’s ninth field season of digitally mapping Yellowstone’s thermal features. With temperature, pH, photos, and GPS locations collected from more than 500 additional thermal features, the database now contains information about approximately 10,400 thermal features throughout the park. This data enables park staff and outside researchers to identify individual



Three-dimensional computer model of Roosevelt Lodge and cabins.

thermal features with particular combinations of temperature, pH, and location.

Archeological Sites. Using the 155 reports provided by the park archeologist, every known archeological site was digitized and linked to an electronic site form, the source archeological report, and the Archeological Sites Management Information System (ASMIS) number. Approximately 2,000 polygons were created to represent every iteration of every site.

Computer and Software Support. One of the SAC's main functions is to help users solve computer, network, printer, and GIS questions, which range from 10 to 50 per week, depending on the season. Many of the problems are solved quickly, but more complicated issues can take half the day to resolve. In 2006 we responded to more than 1,100 of these requests for help. Dedicating SAC staff time to these problems in Mammoth allows the staff from Computer Support Services to provide more assistance to staff outside of the Mammoth area and to spend time on higher priority, more technical problems.

Mapping Support. Throughout the year, we respond to hundreds of requests for maps and data. About 60% of these requests are typically from park staff. The other 40% come from NPS staff from other locations; other federal, state, and local agencies; university faculty and students; and the general public.

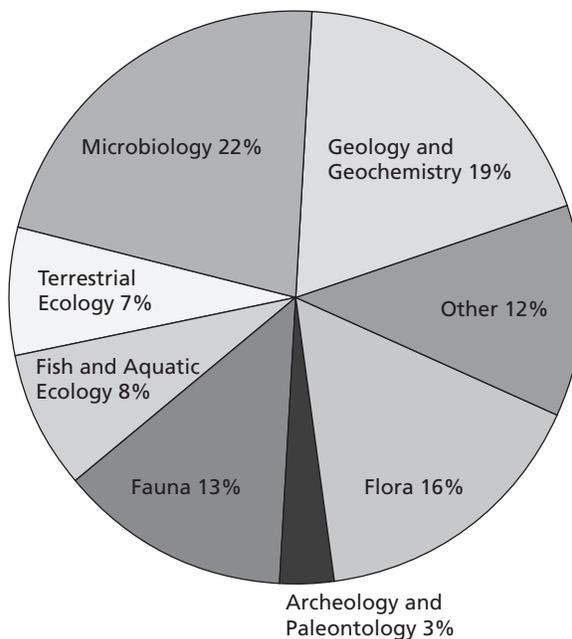
Research Permit Office

Yellowstone National Park is the proud host of more than 200 research studies each year. The Research Permit Office is tasked with issuing permits to researchers who conduct scientific studies in a variety of disciplines and monitoring their fieldwork to ensure that it does not negatively affect park resources or conflict with other park goals or missions. National Park Service policy also requires that we promote research in the park, and collect and appropriately disseminate the results of park-related scientific inquiry to the widest possible audience. Our stakeholders include research scientists, park staff, land managers, and the public. We do this through various means including scheduling research talks and disseminating journal articles, theses, and research reports to interested parties.

During 2006, Yellowstone's Research Permit Office issued 208 research permits to scientists from 35 U.S. states and 9 foreign countries. These permits included 25 new projects that had been approved by Yellowstone's Research Review Team as well as renewal permits for ongoing studies. The number of requests for new permits was down 40% from 2005. An additional 24 scientists inquired about conducting research in Yellowstone, but did not pursue obtaining a research permit. Twenty-seven investigators reported the conclusion of their studies and submitted their research findings and publications to the park.

We accompanied approximately 15% of the researchers in the field, enabling us to better understand their project's needs as well as ensure that no park resources were harmed. During these field outings our staff and the researchers usually discover better ways to record data or collect samples as well as minimize any potential negative affects on resources. These ideas for "best practices" are documented and transferred to our staff and other researchers when applicable.

Though Yellowstone is widely known for its abundant wildlife and unique geothermal features, scientific research is conducted in a variety of disciplines. A breakdown of research studies, by topic, is as follows:



In addition to the above-mentioned tasks, the Research Permit Office staff continues to provide general park information and logistical support to researchers throughout the year.

Benefits-Sharing EIS

A draft of the environmental impact statement (DEIS) was completed and released for public review September 22, 2006, through January 29, 2007. The key issue examined in the DEIS is whether the NPS should share in potential scientific and economic benefits when researchers studying park resources discover or invent something commercially valuable from their research involving NPS specimens. The DEIS proposed to clarify the rights and responsibilities of researchers and the NPS in these instances. Three alternatives for managing benefits-sharing with the scientific community were considered:

- The Preferred Alternative would require researchers who study park specimens to enter into benefits-sharing agreements with the NPS before using their research results for any commercial purpose. Engaging park researchers in benefits-sharing agreements could return scientific benefits, in-kind services, and sometimes royalties and other monetary benefits to parks for conservation-related purposes.
- Another alternative would prohibit scientific research involving NPS specimens if associated with the development of commercial products.
- The No-Action alternative would allow research that may lead to commercial products to continue in parks without any obligation to share any resulting benefits with the NPS.

Prior to public release, briefings on the EIS were presented to the Department of the Interior (DOI) Secretary's Office, the NPS Directorate, the Montana and Wyoming Governor's Office staff, and various NPS regional and central office staff groups, non-governmental organizations, and other external groups. Over 10,000 notifications were distributed in a variety of formats, including the Benefits-Sharing EIS website. The DEIS was available for download and comment via the NPS's web-based public involvement system, Planning, Environment and Public Comment (PEPC). Following analysis of public comments, the final EIS and decision document are expected to be released in 2007.

With assistance from the Assistant U.S. Attorney's Office and the DOI Office of the Solicitor, the NPS continued a successful response to ongoing litigation in Washington, D.C., federal court over documents withheld as part of an October 2002 Freedom of Information Act (FOIA) response. To date, nearly a dozen court filings and personal declarations have been prepared in response to the litigation. Late in the litigation, the plaintiff amended their filing to contest a fee-waiver denial for their August 2005 FOIA, which requested more than three years' worth of project records. In November 2006, the judge issued a ruling in favor of NPS on all counts except for the fee waiver denial, which was granted to the plaintiff. Efforts have begun to address filling the massive August 2005 FOIA request.

Resource Information Team

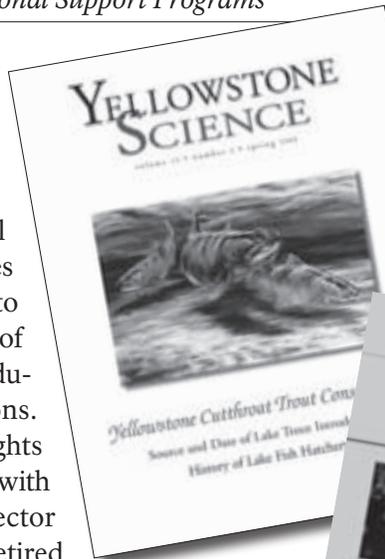
The mission of the Resource Information Team is to translate, produce, and synthesize scientific and technical information into language and formats that are accessible to researchers, other agency scientists, self-selected members of the public, and park managers who need access to research results in order to make informed decisions. Through presentations, events, printed and electronic publications, and outreach efforts, staff strive to promote discussion of park issues and policies by a variety of interested participants; contribute to the scientific body of knowledge about the park; and promote resource conservation and visitor enjoyment through accessible dissemination of scientific knowledge about the park.

Personnel worked toward those goals in 2006 by producing four issues of *Yellowstone Science* magazine; planning and producing content for the Greater Yellowstone Science Learning Center website with support from the Yellowstone Park Foundation and Canon U.S.A., Inc.; beginning plans for the 9th Biennial Scientific Conference on the Greater Yellowstone Ecosystem, which will recognize the 20th anniversary of the 1988 Yellowstone area fires; and producing a variety of other materials in support of YCR and other divisions.

Yellowstone Science magazine

In 2006, the quarterly journal *Yellowstone Science* entered its fourteenth year with issues and articles

on a wide range of topics highlighting many aspects of Yellowstone's natural and cultural resources. Four issues were distributed to a subscription list of nearly 2,600 individuals and institutions. Among the highlights were an interview with former YCR Director John Varley, who retired in February 2006; an entire issue devoted to Yellowstone cutthroat trout conservation; two articles on Norris Geyser Basin's fractures and fluids; and articles on grizzly bear nutrition and ecology, microbial ecology and energetics, Charles Doolittle Walcott, Panther Creek volcano, and Moran and Artist Points.



Other scientific publications

Other annual publications included the *2005 YCR Annual Report*, *2005 Wolf Project Annual Report*, *2005 Yellowstone Bird Report*, *2005 Yellowstone Fisheries and Aquatic Sciences Annual Report*, *Pronghorn Distribution in Winter 2006*, and an issue of the *Buffalo Chip* newsletter, all of which were edited and designed by resource information staff. Special publications included the editing, design, layout, and printing of the proceedings of the 8th Biennial Scientific Conference on the Greater Yellowstone Ecosystem, *Greater Yellowstone Public Lands: A Century of Discovery, Hard Lessons, and Bright Prospects*.

The Resource Information Team was also involved in the editing, layout, and printing of the *Servicewide Benefits-Sharing Draft Environmental Impact Statement*, released for public comment in September. The Historic Resource Study, Volume III, *Managing the "Matchless Wonders": A History of Administrative Development in Yellowstone National Park, 1872–1965*, which was edited, designed, and laid out by resource information staff, was also printed and distributed in 2006. Resource information staff edited *Cretaceous Complexities: The Stratigraphic Intricacies of Mt. Everts* for the cultural branch

and compiled the YCR's submission for the 2005 Superintendent's Annual Report. For the Aquatics Section, staff also laid out the *Effects of Snowmobile Emissions on the Chemistry of Snowmobile Runoff in Yellowstone National Park—Final Report; Bioassessment and Water Quality Sampling of Middle Creek and Mammoth Crystal Spring, Yellowstone National Park, WY 2002–2005*; and produced a version of the aquatic nuisance species handout for use in Grand Teton National Park. Staff also continued research and writing on *An Interdisciplinary Analysis of the Ecological History of Greater Yellowstone Wildlife, 1790–1882*.

Talks and Presentations

Resource information staff gave talks at a winter guide training, a Yellowstone Association Institute grizzly bear class, an inter-agency forest carnivore class, and a keynote talk on the "narratives of Yellowstone" at the biennial resource management workshop in Grand Teton National Park, as well as talks on wildlife management history.

Greater Yellowstone Science Learning Center

The Greater Yellowstone Science Learning Center (GYSLC) is a partnership between the Yellowstone Center for Resources, the Yellowstone Park Foundation, and Canon U.S.A., Inc., and part of the *Eyes on Yellowstone* is made possible by Canon program. Its primary purposes are to promote mission-oriented research in the Greater Yellowstone Inventory and Monitoring Network (Yellowstone and Grand Teton national parks and Bighorn Canyon National Recreation Area); explain the need for and results of research in the network to park managers, researchers, students, and interested public; and to help develop the network's Vital Signs monitoring plan.

In 2005, a proposal was developed and funded secured for this extensive web-based project. During 2006, resource information staff developed

content for 11 resource topics for the website prototype in the form of resource almanacs, overviews, and atlas pages, and lists of references, links, laws, and other management documents. In May, the GYSLC became the newest member of the NPS Research Learning Center program. In August, the GYSLC was adopted as the servicewide model for a website strategy for NPS Research Learning Centers and Inventory and Monitoring Networks. The site can be visited at www.greateryellowstonescience.org.



Assistance and Support

During 2006, resource information staff produced miscellaneous flyers, maps, and graphics for park staff; provided technical assistance and Government Printing Office guidance to park staff; reviewed publications for the Division of Interpretation; drafted updates on the park's status as a World Heritage site; and pulled together graphics and information as requested for the *Atlas of Yellowstone* project. Resource information staff also converted files from an outside contractor for the Division of Planning, Compliance, and Landscape Architecture (PCLA)'s booklet: *Access to Nature: The Evolution of Context-Sensitive Roadway Design in Yellowstone National Park*. The booklet was redesigned and rewritten into final draft form by the end of the year, and staff hope to get it printed in 2007. Also for PCLA, staff helped with the creation of a scoping map handout for Yellowstone's *Wireless Communication Services Plan Environmental Assessment*, and edited the *Restoration of Westslope Cutthroat Trout in the East Fork Specimen Creek Watershed Environmental Assessment*.

Staff edited, laid out, and printed the *Greater Yellowstone Coordinating Committee 2005 Annual Report* for the GYCC. Resource Information staff also laid out for print a booklet for a U.S. Animal Health Association (USAHA) convened Special Committee on Brucellosis in the Greater Yellowstone Area, *The USAHA Laramie Agenda: A Roadmap for Improved Vaccine Delivery, and Testing for Brucellosis in Elk and Bison in the Greater Yellowstone Area*.

Funding and Personnel

Base Operating Budget

The final base operating budget was \$4,211,300 for the Yellowstone Center for Resources in FY06. The decrease of \$152,800 over FY05 funding levels was due primarily to the newly instituted park policy of withdrawing salary for permanent and term positions that became vacant in the division and shifting the allocation to a parkwide lapse fund. The base operating budget accounted for 63% of YCR's total for FY06. This compares to an average of 60% for the period FY95–FY05.

Additional Funding

Recreation Fee Demonstration Funds. In FY06, the fee demo program provided \$54,500 in funding for two new resource management projects: improving visitor access lighting at the Heritage and Research Center, and beginning the renovation of and improvements to interpretive exhibits along the Nez Perce trail. Visitor fees also provided \$170,000 to continue some ongoing projects: northern range riparian studies, a geothermal features inventory, a whirling disease survey, and two fisheries conservation projects. Since the YCR began receiving fee demo money in 1997, this program has allocated about \$1.925 million for 20 different projects.

Fishing Fee Program. The YCR received authorization to use \$368,400 from fishing permit fee revenue to cover part of the estimated \$925,000 cost of the aquatic resources program in FY06.

Federal Lands Highway Program. Federal Highways funded \$427,700 for natural resource inventories, archeological surveys, and resource compliance along the road corridors in the park scheduled for major repair or reconstruction in the near future.

Special Emphasis Program Allocation System. The Branch of Cultural Resources successfully competed for a total of \$466,900 in special emphasis program funding that was used to stabilize historic buildings (Fort Yellowstone and Lake); continue ethnographic resource inventory, traditional use, and research studies; and undertake three cataloging projects. The special emphasis program also provided \$193,800 for the Branch of Natural Resources for year two of a three-year study of the declining

pronghorn antelope population, year two of three for a trumpeter swan statistical analysis, and to begin a study of the Norris Geyser Basin groundwater system.

Other Park Service Funds. YCR continued work on the Benefits-Sharing Environmental Impact Statement in FY06 with funds provided by the servicewide planning office of the National Park Service (\$249,000).

Other Federal Funds. Some of these funds were provided by the Greater Yellowstone Coordinating Committee (\$11,800) to fund Yellowstone participation in four Greater Yellowstone Area projects in FY06: development of a fire history and fuel model mapping project for wildland fire applications, production of a summary report of GYCC projects, production and printing of the proceedings of the 8th Biennial Scientific Conference on the GYE, and an American Indian ethnographic resources survey. The bulk of the funding in this category, however, was provided by the U.S. Fish and Wildlife Service for increased monitoring of grizzly bears in preparation for their removal from the Endangered Species List (\$120,000), and the Bureau of Land Management for a Joint Fire Sciences Program fire behavior study (\$90,500).

Private Funds. A total of \$340,400 was donated to the park by private organizations or individuals in support of various YCR projects, including whirling disease surveys, restoration of westslope cutthroat trout, Yellowstone cutthroat trout conservation efforts, wolf recovery program operations, an experimental electronic data collection project (Eyes on Hayden), the Tauck World Discovery volunteer program for historic structures conservation, cultural resource preservation projects, an ethnographic survey, the *Atlas of Yellowstone* project, a wolverine survey, and to launch the Greater Yellowstone Science Learning Center project. Most of this funding (\$265,500) came through the Yellowstone Park Foundation. The Montana Whirling Disease Initiative provided \$44,100.

Personnel

Many staffing changes took place in YCR during FY06, driven in part by the retirement, reassignment, and resignation decisions of some key employees, but also by the implementation of recommendations based on the servicewide Core Operations

Analysis process. YCR's management team began to incorporate position management strategies that would allow for long-term financial solvency, while refocusing human resources on the highest park priorities. This process helped ensure that work was organized and assigned among positions in a manner serving the park's core mission most effectively and economically.

Of the 254 personnel actions processed by YCR in FY06, these were of special note:

- In November of 2005, Supervisory Interpretive Ranger (Lake) Carol Shively accepted a temporary reassignment to YCR's new Heritage and Research Center in Gardiner, Montana, to coordinate facility management and establish a public outreach and volunteer program.
- GIS Specialist Shannon Savage resigned from the National Park Service as of January 6, 2006, to pursue her doctorate degree in the field of spatial analysis at Montana State University–Bozeman. Her workload was later backfilled on a trial basis with two Cartographic Technicians on term appointments.
- On February 3, 2006, John D. Varley, Director of the Yellowstone Center for Resources, retired from the National Park Service. John's career in Yellowstone spanned more than 30 years, the last 13 of which he spent guiding the park division combining natural and cultural resource staff that he worked to create in 1993. A proven innovator and servicewide leader of resource stewardship within the National Park Service, John firmly established science and research as a foundation for resource management in Yellowstone. Upon retirement, John and his wife Anita moved to Bozeman, Montana, where John indulges his passion for gardening and continues his work with natural resources as the Director of Montana State University's Big Sky Institute.
- On February 5, 2006, Natural Resources Branch Chief Tom Olliff was appointed as the Acting Division Chief for YCR, then successfully competed for and accepted the position permanently as of May 14, 2006, vice-John Varley.
- Maurine Hinckley-Cole, Administrative Support Assistant for the Branch of Cultural Resources, accepted a promotion within Yellowstone and moved to the position of Secretary for the Division of Interpretation on February 19, 2006. Her posi-

tion with the YCR was discontinued as part of an internal downsizing exercise. The seasonal Administrative Support Assistant position for the Aquatic Resources group at Lake was also discontinued with the resignation of Mary McKinney in March, who accepted a full-time position in Cody, Wyoming, shortly after Maurine's departure.

- Glenn Plumb was offered a temporary promotion at the end of February 2006 to assume the duties of the vacant Natural Resources Branch Chief position, vice-Tom Olliff. He was the candidate selected and appointed to the position permanently on September 3, 2006. His former position as Supervisory Wildlife Biologist in charge of the Wildlife Resources Team was backfilled by senior staff biologists through a series of temporary promotions during the subsequent lapse and deferred recruiting process.
- The lead position for the Vegetation Management group was re-classified and established at a supervisory level on par with the other natural resources workgroups, and Resource Management Specialist Mary Hektner was selected for the promotion as of May 28, 2006, and her former position discontinued.
- Likewise, the lead position for YCR's Resource Information and Publications group, which had been vacant since October 2004, was restructured, reestablished, and filled by Technical Writer-Editor Tami Blackford on a temporary promotion from July 2 through the end of the fiscal year.
- Budget Analyst Joy Perius, who had been with YCR since 1993 in various capacities, accepted a promotion to the position of park Budget Officer and moved to the Division of Administration as of July 2006. Joy's position was backfilled for the remainder of the fiscal year by Montana Lindstrom, on detail from the Finance Office.
- Technical Writer-Editor Alice Wondrak-Biel, who had been working remotely from her husband's duty station at Bryce Canyon National Park,

resigned her Yellowstone position on September 30, 2006, in conjunction with their relocation to Padre Island National Seashore in Texas and Alice's acceptance of a position with the NPS Intermountain Regional Office. The Technical Writer-Editor position was then discontinued beginning in FY07.

As of the end of FY06, the following YCR positions had been discontinued as result of Core Operations recommendations: a permanent full-time GIS Specialist, a permanent part-time Administrative Support Assistant, a seasonal administrative assistant position, and a permanent full-time Technical Writer-Editor. Also, YCR ended the year with the following positions either vacant or occupied through temporary detail assignments: Supervisory Wildlife Biologist, Senior Editor, and Budget Analyst.

Total employment on YCR activities was equivalent to 75 full-time employees for FY06 (Appendix 1). This was slightly less than the FTE count for FY05, but still above the average FTE for the period FY01–FY05 (71 FTE), mainly due to the number of hours contributed by employees from other divisions working on YCR projects.

Other Administrative Activities

Assistance Agreements. Staff processed 64 assistance agreements and task orders in FY06, totaling obligations of \$1,337,300, of which 37% was used for administration of the Montana Water Compact and geothermal monitoring plan. Other significant investments were made in ethnographic use studies, aquatic resources studies, research in support of winter use studies, wildlife research, and research related to fire ecology and vegetation on Yellowstone's northern range.

Procurement Actions. Staff processed 702 procurement actions in FY06, totaling approximately \$514,900.

Clerical Support. Staff processed 1,147 pieces of correspondence and 331 travel authorizations in FY06.

APPENDIX I**Personnel Roster, 2006****Professional Support Branch****Management and Administration**

		YCR FTE	Non-YCR FTE
1.	Cline, Barbara	1.00	
2.	Deutch, Ann	0.55	
3.	Hendrix, Christie	1.00	
4.	Housley, Sara	0.04	
5.	Lindstrom, Montana	0.13	
6.	McAdam, Melissa	1.00	
7.	Mills, Sue	1.00	
8.	Olliff, Tom	0.38	
9.	Perius, Joy	0.65	
10.	Shively, Carol	0.85	
11.	Smith, Christine	0.70	
12.	Varley, John	0.35	
	Maintenance & custodial assistance (Lake Research Dorm)	-	0.02
	subtotal Management & Admin:	7.65	0.02

Resource Information Team

13.	Blackford, Tami	1.00	
14.	Franke, Mary Ann	0.43	
15.	Lawson, Cecilia	0.21	
16.	Schullery, Paul	0.40	
17.	Stevenson, Sarah	0.11	
18.	Warner, Virginia	0.94	
19.	Wondrak Biel, Alice	0.95	
	subtotal Resource Information:	4.04	-

Spatial Analysis Center

20.	Bone, Sarah	0.02	
21.	Cater, Steve	0.30	
22.	Dale, Jeffrey	0.32	
23.	Friedel, Rob	0.23	
24.	Guiles, Carrie	1.01	
25.	Miller, Steve	0.31	
26.	Rodman, Ann	1.00	
27.	Savage, Shannon	0.27	
28.	Zawistoski, Mark	0.29	
	subtotal Spatial Analysis:	3.75	-

Professional Support Branch FTE:**15.44****0.02**

Natural Resources Branch

Administration		YCR FTE	Non-YCR FTE
1. Cole, Stephanie	Administrative Support Assistant	0.28	
2. Olliff, Tom	Chief of Natural Resources	0.62	
3. Plumb, Glenn	Chief of Natural Resources	0.08	
4. Wyman, Becky	Administrative Support Assistant	0.98	
	Horse handler & packer support (bison, fish, geology projects)	-	0.51
	Winter Use Monitoring Assistance (wildlife, air quality, acoustic)	-	1.26
	subtotal NR Admin FTE:	1.96	1.77
Wildlife Resources Team			
5. Blanton, Doug	Biological Science Technician	1.02	
6. Coleman, Louise	Biological Science Technician	0.52	
7. Coleman, Tyler	Biological Science Technician	0.35	
8. Davis, Troy	Biological Science Technician	1.02	
9. Geremia, Chris	Biological Science Technician	1.01	
10. Guernsey, Deb	Biological Science Technician	0.97	
11. Gunther, Kerry	Wildlife Biologist	1.02	
12. Holcomb, Sarah	Clerk-Typist	0.20	
13. Jones, Jennifer	Biological Science Technician	1.01	
14. Jones, Tildon	Biological Science Technician	0.50	
15. McEneaney, Terry	Wildlife Biologist	1.00	
16. McIntyre, Rick	Biological Science Technician	0.46	
17. Miller, Steve	Cartographic Technician	0.58	
18. Murphy, Kerry	Wildlife Biologist	0.98	
19. Playter, Amanda	Biological Science Technician	0.27	
20. Plumb, Glenn	Sprv. Wildlife Biologist	0.95	
21. Roberts, Lori	Biological Science Technician	0.19	
22. Robison, Hillary	Biological Science Technician	0.14	
23. Smith, Doug	Wildlife Biologist	1.00	
24. Smith, Jeremiah	Biological Science Technician	0.35	
25. Stahler, Dan	Biological Science Technician	0.76	
26. Stroud, Janice	Biological Science Technician	0.15	
27. Tallian, Aimee	Biological Science Technician	0.42	
28. Thompson, Derek	Biological Science Technician	0.31	
29. Treanor, John	Biological Science Technician	0.89	
30. Tubbs, Noelle	Clerk-Typist	0.07	
31. Wallen, Rick	Wildlife Biologist	1.00	
32. Wells, Kimberly	Biological Science Technician	0.27	
33. White, PJ	Wildlife Biologist	1.00	
34. Wyman, Travis	Biological Science Technician	1.00	
	Wildlife Project Assistance (wolverine, bison, wolf, & grizzly bear monitoring)	-	2.36
	subtotal Wildlife FTE:	19.41	2.36

Fisheries and Aquatic Resources

		YCR FTE	Non-YCR FTE
35.	Arnold, Jeff	Ecologist	0.98
36.	Bigelow, Pat	Fishery Biologist	0.94
37.	Billman, Hilary	Biological Science Technician	0.17
38.	Bywater, Tim	Administrative Support Assistant	0.15
39.	Doepke, Phil	Biological Science Technician	1.00
40.	Erickson, Jeremy	Biological Science Technician	0.55
41.	Ertel, Brian	Biological Science Technician	0.89
42.	Facendola, Joe	Biological Science Technician	0.08
43.	Hutchinson, Hunter	Biological Science Technician	0.18
44.	Keep, Shane	Biological Science Technician	0.16
45.	Koel, Todd	Sprv. Fishery Biologist	1.00
46.	Kreiner, Ryan J.	Biological Science Technician	0.42
47.	Legere, Nicole	Biological Science Technician	0.90
48.	Mahony, Dan	Fishery Biologist	1.00
49.	McKinney, Mary	Administrative Support Assistant	0.17
50.	Olson, Kevin	Biological Science Technician	0.01
51.	Olszewski, Brad	Biological Science Technician	0.08
52.	Romankiewicz, Chris	Biological Science Technician	0.38
53.	Schamberry, Nicole	Biological Science Technician	0.08
54.	Sigler, Stacey	Biological Science Technician	0.54
55.	Varian, Anna	Biological Science Technician	0.08
56.	Wachter, Rebecca	Biological Science Technician	0.42
57.	Wethington, Don	Small Craft Operator	0.44
58.	Wiggins, Justin	Biological Science Technician	0.42
	Fisheries Projects Assistance (stream restoration)	-	0.07
	subtotal Aquatic Resources FTE:	11.04	0.07

Vegetation Management

59.	Anderson, Heidi	Botanist	0.88
60.	D'Imperio, Elizabeth	Biological Science Technician	0.26
61.	Hektner, Mary	Sprv. Vegetation Specialist	1.00
62.	Klaptosky, John	Biological Science Technician	0.46
63.	Pecha, Vicki	Biological Science Technician	0.23
64.	Renkin, Roy	Vegetation Management Specialist	1.00
65.	Whipple, Jennifer	Botanist	0.81
	subtotal Vegetation FTE:	4.64	

Geology and Physical Sciences

66.	Eagan, Sean	Hydrologist	0.50
67.	Gardiner, William	Physical Science Technician	0.29
68.	Heasler, Hank	Geologist	1.00
69.	Jaworowski, Cheryl	Geologist	0.96
70.	Miller, Steve	Physical Science Technician	0.12
	Geothermal monitoring assistance	-	0.04
	subtotal Geology FTE:	2.87	0.04

Natural Resources Branch FTE:**39.92****4.24**

Cultural Resources Branch

		YCR FTE	Non-YCR FTE	
1.	Anderson, Roger	Chief of Cultural Resources	1.00	
2.	Case, Bridgette	Museum Technician	0.99	
3.	Curry, Colleen	Museum Curator	1.00	
4.	Dawson, Herb	Historic Architect	1.00	
5.	Felton, Tasha	Cultural Resources Technician	0.96	
6.	Hale, Elaine	Archeologist	0.96	
7.	Hinckley-Cole, Maurine	Administrative Support Assistant	0.35	0.03
8.	Housley, Harold	Archivist	0.96	
9.	Housley, Sara	Center Clerk	0.12	
10.	Johnson, Ann	Archeologist	1.00	
11.	Perkins, Jodine	Library Technician	0.23	
12.	Reid, Charissa	Cultural Anthropologist	0.10	
13.	Saba, Meredith	Archives Technician	0.21	
14.	Sucec, Rosemary	Cultural Anthropologist	0.92	
15.	White, Katie	Cultural Resources Technician	1.00	
16.	Whittlesey, Lee	Historian	1.00	
17.	Zirngibl, Wendy	Museum Technician	0.39	
	Historic Structures Preservation Projects Assistance	-	2.91	
Cultural Resources Branch:		12.19	2.94	
115 YCR Employees	TOTAL YCR FY06 FTE:	67.55	7.20	



Wolf Project staff and November–December winter study volunteers. Standing, from left: Andy Shepard, Tim Hudson, Abby Nelson, Libby Williamson, Nicole Legere, Bill Bridgeland, Robin Rauch, Deb Guernsey, Douglas Smith (with Hawken and Sawyer Smith). Kneeling, from left: Erin Albers, Sarah Malick, Matt Metz.

APPENDIX II

Publications, Reports, and Papers

Professional Publications

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APPENDIX III

Partnerships

Standing Partnerships

YCR staff contribute to regional, national, and international stewardship efforts by participating in the following ongoing partnerships:

Absaroka Divide Cooperative Wildlife Working Group

Partners: Shoshone National Forest, Wyoming Game and Fish Commission

Mission: to increase knowledge of species and habitats in the Absaroka Mountains along the east boundary of Yellowstone National Park, promote resource management activities, and encourage an interagency approach to problem solving and data collection and sharing

Commitment: Member agencies collaborate on wildlife monitoring and other projects inside and outside the park.

YCR representatives: P.J. White

2006 highlights: The group collaborated on bighorn sheep, elk, moose, and wolverine surveys and projects.

Atmospheric Mercury Deposition Monitoring

Partners: Wyoming Department of Environmental Quality

Mission: to monitor and quantify mercury levels in wet deposition at YNP at the National Atmospheric Mercury Deposition Network site at Tower Ranger Station

Commitment: YCR provides staff to retrieve and ship the weekly wet deposition sample and precipitation records and deploy new glassware and rain gauge chart for the collection of the next week's sample. YCR staff also troubleshoots problems to ensure that the precipitation collector and rain gauge are working properly.

YCR representatives: Mary Hektner



Sow and cub acquiring human foods at Sylvan Pass.

2006 highlights: YCR took over the operation of the site from the Ranger staff. The NPS and Wyoming Department of Environmental Quality (WYDEQ) entered into a memorandum of understanding wherein WYDEQ agreed to pay for analytical, site support, data validation and network coordinating costs which had previously been paid for by the Environmental Protection Agency.

Consultation with American Indian Tribes

Partners: 26 park-affiliated American Indian tribes and an additional 54 tribes that are specifically interested in bison management issues.

Mission: interagency consultation with the goal of enabling the park to manage its cultural and natural resources in a culturally informed manner

Commitment: Each spring, tribes are invited for a full day's meeting to hear about the most pressing management issues in natural and cultural resources. A welcoming potluck is held, and field trips are usually offered

YCR representative: Rosemary Sucec

2006 highlights: YNP hosted a consultation meeting in partnership with Grand Teton on May 19.

Ethnographic Resources Inventory (ERI) National Data Standards and Implementation Committee

Partners: NPS members include the Chief Ethnographer; Archeology and Ethnography Program Manager; representatives from the Alaska, Midwest, Northeast, and Southeast regions; the Olympic National Park ethnographer

Mission: to assess use of the ERI system, identify any needed changes, consider interface with other servicewide data systems, and address operational and conceptual needs as they arise

Commitment: telephone conference calls every quarter and on an as-needed basis, attendance at NPS ethnographers' annual meeting

YCR representative: Rosemary Sucec

2006 highlights: We continued to try new beta versions of the software and worked with the contractor who developed it to make the necessary changes.

Federal Highways Road Team

Partner: Federal Highway Administration

Mission: to ensure context-sensitive design in the reconstruction of the park's historic roads and compliance with the National Environmental Policy Act and Endangered Species Act

Commitment: weekly conference calls, two 4-day sessions walking the road corridor along each segment to be reconstructed, winter meetings

YCR representatives: Mary Hektner, Elaine Hale

2006 highlights: The first phase of the reconstruction of the Canyon Junction to Tower Junction segment of the Grand Loop Road was chosen as the winner of the prestigious "Excellence in Highway Design" by the Federal Highway Administration.

Greater Yellowstone Area Clean Air Partnership

Partners: Grand Teton National Park; Gallatin, Custer, Beaverhead, Shoshone, Bridger-Teton, and Targhee national forests; Red Rock Lakes National Wildlife Refuge; Idaho National Environmental and Energy Laboratory; Montana, Idaho, and Wyoming Departments of Environmental Quality

Mission: to advise the Greater Yellowstone Coordinating Committee on air quality issues and to facilitate air quality program coordination and the implementation of consistent air quality management strategies

Commitment: annual meeting

YCR representative: Mary Hektner

Greater Yellowstone Bald Eagle Working Group

Partners: GYA state and federal government agencies, and non-governmental organizations

Mission: Established in 1982, this group monitors bald eagle productivity and other information.

Commitment: communications via e-mail

YCR representative: Terry McEneaney

Greater Yellowstone Peregrine Falcon Working Group

Partners: two peregrine falcon groups, the states of Montana and Wyoming, and the Peregrine Fund

Mission: to continue to facilitate the recovery of the peregrine falcon in the GYA

Commitment: Wyoming has an informal working group, with coordination done over the telephone. Montana has a more formalized working group with an annual meeting.

YCR representative: Terry McEneaney

Greater Yellowstone Interagency Brucellosis Committee (GYIBC)

Partners: USDA Animal and Plant Health Inspection Service; states of Montana, Wyoming, and Idaho; InterTribal Bison Cooperative

Mission: to facilitate the development and implementation of brucellosis management plans that will sustain the free-ranging elk and bison populations in the GYA and protect the public interests and economic viability of the livestock industry in Idaho, Wyoming, and Montana

Commitment: The NPS is represented on the executive committee by the Associate Regional Director for Natural Resources and Science. YCR provides a representative for the technical subcommittee. Meetings are typically held three times a year.

YCR representative: Rick Wallen

2006 highlights: The InterTribal Bison Cooperative was confirmed as a non-voting member of the Executive Committee. Discussions continued to update the MOU for another five-year period.

Greater Yellowstone Trumpeter Swan Working Group

Partner: Greater Yellowstone Area agencies

Mission: to collect annual population and production data on trumpeter swans in the Greater Yellowstone Area

Commitment: Management activities are communicated between agencies at meetings.

YCR representative: Terry McEneaney

Harlequin Duck Working Group

Partner: U.S. and Canadian state, federal, and provincial agencies

Mission: to share harlequin duck information

YCR representative: Terry McEneaney

Integrated Science in Central Yellowstone

Partners: Montana State University, California State University–Monterey Bay

Mission: to build an integrated and multidisciplinary research program with the goal of advancing our knowledge of the central Yellowstone ecosystem, supporting sound natural resource management, and communicating our knowledge and discoveries to the visiting public to enhance their experience and enjoyment of the park

Commitment: YCR is a full partner and has committed resources and staff for the project duration.

YCR representative: P.J. White

2006 highlights: The group assembled an integrated knowledge of large scale landscape dynamics, wild-life responses, and interactions in the central portion of YNP and delivered products to the NPS at their direction, including imagery, maps, field data, and simulation model runs. The group also provided this knowledge through novel visualization tools combining computer animation and digital video production in the form of an interactive DVD media for use by park management in general planning, management activities, and Visitor Education Center kiosks.

Interagency Bison Management Plan (IBMP)

Partners: USDA Animal and Plant Health Inspection Service; state of Montana Fish, Wildlife and Parks and Department of Livestock

Mission: to carry out the provisions of the IBMP, signed in 2000, that is designed to maintaining a wild, free-ranging bison population while minimizing the risk of transmitting the disease Brucellosis from bison to domestic cattle on public and private lands in Montana adjacent to YNP

YCR representative: Rick Wallen, Glenn Plumb

Interagency Grizzly Bear Study Team

Partners: USGS Biological Resources Discipline; USFS; states of Idaho, Montana, and Wyoming

Mission: to conduct research needed to provide information for immediate and long-term management of grizzly bears inhabiting the GYE

Commitment: two to six meetings annually, which typically range from one to two days each

YCR representative: Kerry Gunther

2006 highlights: IGBST members provided managers with pertinent information on grizzly bear survival, mortality, cub production, population estimates, key foods, habitat, and conflicts with humans.

McLaren Mill Mine Tailings

Partner: Montana Department of Environmental Quality

Mission: to address the potential reclamation of the McLaren Mill and Mine tailings sites in the Cooke City, Montana, area

Commitment: meeting participation

YCR representative: Mary Hektner

2006 highlights: The State is continuing to monitor groundwater levels in the proposed repository site.

Mid-sized Carnivore Inventory and Research

Partner: U.S. Forest Service, Rocky Mountain Research Station–Missoula

Mission: to improve basic and management-related information on mid-sized carnivores in the Greater Yellowstone Ecosystem

Commitment: 20 workdays

YCR representative: Kerry Murphy

2006 highlights: Two wolverines were captured and monitored as part of a 5-year study. The park is contributing DNA samples (hair) from red fox captured incidentally in wolverine live traps.

Montana Bird Records Committee

Partners: various government agencies

Mission: to review new and rare bird records, and to keep current on advances in ornithology

YCR representative: Terry McEneaney

Montana Compact Technical Oversight Committee

Partners: Montana Water Rights Compact Commission, NPS Water Resources Division

Mission: to oversee administration of the Montana Water Rights Compact, which was established in

1994 to protect geothermal features by limiting groundwater withdrawal in a designated area north of the park

YCR representative: Hank Heasler

2006 Highlights: In 2005, the committee successfully lobbied Congress for funding to implement a comprehensive geothermal monitoring plan for Yellowstone and in 2006, the committee reviewed progress of the plan.

Montana Cutthroat Trout Steering Committee

Partners: Montana Fish, Wildlife and Parks and several federal agencies, tribes, and private advocacy organizations concerned with cutthroat trout in Montana

Mission: to ensure the long term self-sustaining persistence of cutthroat trout across their respective historical ranges

Commitment: a two-day meeting each year and several days reviewing documents and/or updating databases

YCR representative: Todd Koel

2006 highlights: Completed draft Memorandum of Understanding and Conservation agreement.

Montana Fluvial Arctic Grayling Workgroup

Partners: Montana Fish, Wildlife and Parks

Mission: This group develops short- and long-term goals and works toward the restoration of populations in the upper Missouri basin.

Commitment: a one-day meeting each year plus any required field activities

YCR representative: Todd Koel

2006 highlights: Yellowstone National Park continues research to determine the status of fluvial arctic grayling within the Gibbon River system.

National Partnership for the Management of Wild and Native Coldwater Fisheries

Partners: federal and state agencies, professional associations, and private advocacy organizations concerned with the status of wild and native fisheries in the United States

Mission: to provide leadership and recommendations for the Whirling Disease Initiative and the Montana Water Center

Commitment: one 3-day meeting each year

YCR representative: Todd Koel

2006 highlights: The Whirling Disease Initiative will continue to fund research projects with a focus on the development of tools to mitigate the effects of the disease.

Natural Resources Advisory Group

Partners: The group includes representatives from each NPS region, the central office, and field resources, and a superintendent.

Mission: to advise the Associate Director for Natural Resources, Mike Soukup, on servicewide issues

Commitment: annual meeting and between-meeting assignments

YCR representative: Tom Olliff

Neotropical Migrant Working Groups

Partners: Partners in Flight of Montana, Partners in Flight of Wyoming, Western Working Group Partners in Flight

Mission: They are currently focused on prioritizing species and developing conservation plans.

YCR representative: Terry McEneaney

New World Mining District Response and Restoration Project

Partners: USFS, EPA

Mission: to develop and implement certain response and natural resource restoration activities in the New World Mining District in conjunction with the states of Montana and Wyoming and public participation

Commitment: public and agency meetings related to the ongoing restoration work and review of USFS quarterly progress reports to Congress

YCR representative: Mary Hektner

2006 highlights: Environmental cleanup of the mining impacts is proceeding

Northern Yellowstone Cooperative Wildlife Working Group

Partners: Montana Fish, Wildlife and Parks; Gallatin National Forest; USGS-Northern Rocky Mountain Science Center

Mission: to protect the long-term integrity of the northern Yellowstone winter range by increasing knowledge of its species and habitats, promoting prudent land management activities, and encourag-

ing an interagency approach to solving problems

Commitment: bi-annual meetings and work assignments on wildlife surveys and reports. Members share costs and duties for monitoring ungulates on the northern range inside and outside YNP.

YCR representatives: Glenn Plumb, P.J. White

2006 highlights: The group completed cooperative counts and classifications of bighorn sheep, elk, and pronghorn, the results of which were summarized in an annual report.

Northwest Level 1 Streamlining Group

Partners: federal land management agencies in Northwest Wyoming; U.S. Fish and Wildlife Service

Mission: to provide an expedited technical review of the effects of proposed agency projects on listed, proposed, and candidate species that are protected under the 1973 Endangered Species Act

Commitment: two to four meetings per year

YCR Representative: Kerry Murphy

2006 Highlights: Murphy attended four meetings in northwest Wyoming.

Rocky Mountain Cluster Natural Resource Managers Group

Partners: Rocky Mountain Cluster NPS units

Mission: to discuss cluster resource issues and funding initiatives and receive updates on servicewide issues

Commitment: a two-day annual meeting

YCR representative: Tom Olliff

Snow Survey

Partner: Natural Resources Conservation Service

Mission: to collect snowpack and related climate information in order to monitor and help manage surface water supply derived from snowmelt in the higher mountainous areas of the West

YCR representative: Mary Hektner

Commitment: Ranger staff collect monthly snow depth and water content data January–May at five manual snow courses and 7 of 10 automated SNOTEL sites. YCR conducts resource inventories when site modifications are needed to install additional equipment.

Tauck Volunteer Program

Partners: Tauck World Discovery/Tauck Bridges

Mission: to give Tauck guests an opportunity to provide volunteer help on infrastructure preservation and maintenance projects, and to enable the park to complete projects that otherwise would not be done

Commitment: approximately one week per month during spring through fall, plus several days each month during winter

YCR representative: Herb Dawson

2006 highlights: Volunteers prepared and stained five vehicle bridges including Fishing Bridge; and hauled over 3,000 lbs. of broken asphalt paving for recycling. The Tauck Volunteer program received the Preserve America Presidential Award in May, 2006, “for exemplary accomplishment in the preservation and sustainable use of America’s heritage assets, which has enhanced community life while honoring the Nation’s history.”

Virginia City National Historic Landmark District Stabilization Partnership

Partner: Montana Heritage Commission (MHC)

Mission: to administer the expenditure of a \$1.7 million NPS grant to the MHC and provide technical assistance and coordination with the MHC, the National Park Service, private consultants, contractors, and the Montana State Historic Preservation Commission

Commitment: three days per month

YCR representative: Herb Dawson

2006 highlights: The YCR representative reviewed plans for structural stabilization and fire and electrical improvements for historic buildings in Virginia City.

Wyoming Important Bird Area Technical Review Committee (WIBATRC)

Partner: Wyoming Audubon

Mission: The WIBATRC is responsible for reviewing, designating, and implementing important land tracts in Wyoming for bird conservation.

Commitment: meetings via conference call

YCR representative: Terry McEneaney

Wyoming Rare Plant Technical Committee

Mission: to coordinate activities between government agencies with rare plant responsibilities, and promote awareness of rare plants statewide

Commitment: three days per year

YCR representative: Jennifer Whipple (chair)

Highlights: A threatened and endangered plants of Wyoming poster for the four listed vascular plant species was produced by the BLM and the Wyoming National Diversity Database in cooperation with other organizations and agencies.

Yellowstone Cutthroat Trout Interstate Workgroup

Partners: Montana, Idaho, Wyoming, and several federal agencies and tribes

Mission: provide a framework for cooperation and collaboration between those concerned with the conservation of Yellowstone cutthroat trout

Commitment: a two-day meeting each year plus several days reviewing documents and/or updating databases

YCR representative: Todd Koel

2006 highlights: Completed 2006 Yellowstone cutthroat trout range-wide status assessment.

Yellowstone Wildlife Health Program

Partners: Yellowstone Park Foundation, Montana State University, University of California–Davis

Mission: The YWHP has been established to understand and address priority wildlife disease and ecosystem health problems at Yellowstone National Park by designing and implementing a

long-term wildlife health assessment program to monitor and evaluate wildlife diseases and health indicators as a subcomponent of the Greater Yellowstone Network Vital Signs Monitoring Program.

Commitment: The YWHP will develop information and mechanisms to understand and address present or future diseases, including brucellosis in bison and elk, West Nile virus in birds, whirling disease in trout, and hantavirus in small mammals, because they have the potential to alter the outcome of YNP's mission.

YCR representative: Glenn Plumb

2006 Highlights: An exploratory meeting amongst the principal partners was held in July 2006, and a Memorandum of Understanding was signed in October 2006.

Yellowstone Volcanic Observatory

Partners: U.S. Geological Survey, University of Utah

Mission: to monitor Yellowstone for volcanic hazards and earthquakes using a network of seismic and GPS stations and provide real-time data to scientists and other interested persons at <http://volcanoes.usgs.gov/yvo>

YCR representative: Hank Heasler

2006 Highlights: YVO published a ten year volcano and earthquake monitoring plan for the Yellowstone volcano (available online at <http://pubs.usgs.gov/sir/2006/5276/>). YVO scientists gathered data at Hot Springs Basin to document changes associated with rapid ground uplift (about 16 cm from 2004 to 2006).

Project-based Partnerships

YCR staff enlist a variety of external partners from universities, federal and state agencies, non-governmental organizations, and private groups on a short-term basis to meet some of the park's specific resource stewardship objectives. These partnerships normally last one-to-three years, are formed to achieve specific objectives, and disband when the objectives are achieved. The following partnerships were active in 2005.

Note: A list of acronyms used in this table appears on page 79.

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Air, Land, and Water Resources	State of Montana (Department of Environmental Quality)	John Koerth (YCR: Mary Hektner)	Groundwater investigation for mine waste repository at McLaren tailings site	NPS-Water Resources Division
Aquatic Resources and Fisheries	Greater Yellowstone I&M Network, Colorado State University	Dr. William Clements (YCR: Dr. Todd Koel and Jeff Arnold)	Water quality monitoring	NPS I&M
Aquatic Resources and Fisheries	Greater Yellowstone I&M Network	Cathie Jean, Dr. Todd Koel (YCR)	Upper Snake River cutthroat trout inventory	NPS I&M
Aquatic Resources and Fisheries	Montana State University (Big Sky Institute)	Dr. Lisa Graumlich (YCR: Dr. Todd Koel)	Yellowstone cutthroat trout watershed priorities	Yellowstone Park Foundation
Aquatic Resources and Fisheries	Montana State University (Ecology)	Dr. Thomas McMahan (YCR: Dr. Todd Koel and Brian Ertel)	Assessment of cutthroat trout of the upper Yellowstone River	Fish Fee
Aquatic Resources and Fisheries	Montana State University (Ecology)	Amber Steed, Dr. Alexander Zale (YCR: Dr. Todd Koel)	Spatial dynamics of Arctic grayling in the Gibbon River	Fish Fee
Aquatic Resources and Fisheries	Montana State University (Ecology)	Lynn Kaeding (YCR: Dr. Todd Koel)	Yellowstone cutthroat trout recruitment related to stream temperature and flow	In-kind
Aquatic Resources and Fisheries	Montana State University (Ecology)	Dr. Billie Kerans, Dr. Todd Koel (YCR), Silvia Murcia	Development and testing of risk assessment tools for whirling disease infection	MT/USFWS Whirling Disease Initiative
Aquatic Resources and Fisheries	Montana State University	Julie Alexander, Dr. Billie Kerans, Dr. Todd Koel (YCR)	Use of high-resolution thermal imagery to locate <i>Tubifex tubifex</i> in Pelican Creek	MT/USFWS Whirling Disease Initiative
Aquatic Resources and Fisheries	Montana State University	Dr. Billie Kerans, Dr. Todd Koel (YCR)	Role of birds as a dispersal vector for whirling disease	MT/USFWS Whirling Disease Initiative
Aquatic Resources and Fisheries	Montana State University	Crystal Hudson (YCR: Dr. Todd Koel)	Laboratory assessment of Yellowstone cutthroat trout whirling disease infection	MT/USFWS Whirling Disease Initiative
Aquatic Resources and Fisheries	Sun Ranch (Madison Valley, Montana)	Roger Lang, Buddy Drake (YCR: Dr. Todd Koel)	Westslope cutthroat trout broodstock development	Fish Fee

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Aquatic Resources and Fisheries	University of Wyoming (Wyoming Cooperative Fish and Wildlife Unit)	Dr. Wayne Hubert (YCR: Dr. Todd Koel and Pat Bigelow)	Predicting lake trout spawning areas in Yellowstone Lake	ONPS-Lake Trout
Aquatic Resources and Fisheries	University of Wyoming (Zoology and Physiology)	Dr. Bob Hall, Dr. Todd Koel (YCR), Lusha Tronstad	Trophic consequences of lake trout and whirling disease invasion of Yellowstone Lake	In-kind
Aquatic Resources and Fisheries	USFS, GYCC	Mary Maj (YCR: Dr. Todd Koel)	Fine-spotted cutthroat assessment	GYCC
Archeology	University of Wyoming (OWSA)	David Eckles, Elaine Hale (YCR)	Data recovery at Frying Pan Spring	FHWA
Archeology	Gallatin National Forest Service	Walt Allen (GNF), Elaine Hale (YCR)	Document historic Slough Creek wagon road	FHWA
Archives	University of Colorado at Boulder (Library Administration)	Colleen Curry and Harold Housley (YCR)	Save America's Treasures: consolidation, inventory, and re-housing of Yellowstone NP's architectural drawings	NPS, National Endowment for the Arts, National Endowment for the Humanities
Bear Management Office	USGS-BRD (IGBST)	Dr. Charles Schwartz, Mark Haroldson, (YCR: Kerry Gunther)	Grizzly Bear Demographics	USGS, ONPS Base, USFWS
Bear Management Office	USGS-BRD (IGBST)	Dr. Charles Schwartz, Mark Haroldson (YCR: Kerry Gunther)	Grizzly Bear/Black Bear Species Niche Separation	USGS, ONPS Base
Bear Management Office	USGS-BRD (IGBST)	Dr. Charles Schwartz, Mark Haroldson, (YCR: Kerry Gunther)	Whitebark Pine Cone Production	USGS, ONPS Base
Bear Management Office	USGS-BRD (IGBST)	Mark Haroldson, (YCR: Kerry Gunther)	Grizzly Bear Use of Roadside Habitats	USGS, ONPS Base
Bear Management Office	USGS-BRD (IGBST)	Shannon Podruzny, (YCR: Kerry Gunther)	Spring Ungulate Carcass Availability	USGS, ONPS Base, USFWS
Bear Management Office	Wyoming Game & Fish, Montana Fish Wildlife & Parks, Idaho Fish & Game, Grand Teton National Park, USGS-BRD	Kerry Gunther, Mark Brusino, Kevin Frey, Lauri Hanauska-Brown, Steve Cain, Mark Haroldson, and Dr. Charles Schwartz	Grizzly Bear-Human Conflicts in the Greater Yellowstone Ecosystem	YONPS Base, USFWS, WYGF, MTFWP, IDFG, GTNP, USGS-BRD
Bear Management Office	Washington State University, USGS-BRD (IGBST)	Dr. Charles Robbins, Dr. Charles Schwartz, Mark Haroldson, Jennifer Fortin, (YCR: Kerry Gunther)	Assessing habitat and diet selection for grizzly bears and American Black Bears in YNP	NRPP, USGS, ONPS Base
Bear Management Office	Washington State University, USGS-BRD (IGBST)	Dr. Charles Robbins, Dr. Charles Schwartz, Mark Haroldson, Justin Teisberg, (YCR: Kerry Gunther)	Estimating number of grizzly bears and American black bears preying on cutthroat trout in tributaries around Yellowstone Lake	NRPP, USGS, ONPS Base

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Bear Management Office	Montana State University, USGS-BRD	Dr. Scott Creel, Dr. Charles Schwartz, Tyler Coleman, (YCR: Kerry Gunther)	Development of techniques to evaluate the effectiveness of grizzly bear management areas in YNP	NRPP, GYCC, Robert D. Kent, Jr. Trust, YPF, USGS, ONPS Base
Bear Management Office	USGS-BRD (IGBST), Montana State University	Dr. Kim Keating, Dr. Steve Cherry, Dr. Charles Schwartz, (YCR: Kerry Gunther)	Modeling habitat-specific probability of occurrence for grizzly bears in the GYE	POBS, USGS, ONPS Base
Bear Management Office/ Wolf Project Office	Beringia South, USGS-BRD (IGBST)	Dr. Howard Quigley, Dr. Charles Schwartz, Mark Haroldson, (YCR: Dr. Doug Smith, Kerry Gunther)	Mountain Lion, Wolf, Grizzly Bear, & Black Bear Interactions	Beringia South, YPF, USGS, ONPS Base
Bison Ecology and Management	Russian Federation Ministry of Health, USDA-ARS, Texas A&M University	Drs. Alexander Denisov, Glenn Plumb (YCR), Steven Olsen, and Gary Adams	Comparative studies of immunobiological characteristics of live brucellosis vaccines	U.S. State Department, Turner Foundation-Nuclear Threat Initiative
Bison Ecology and Management	University of Calgary, University of Montana	Drs. Cormack Gates, Len Broberg, Glenn Plumb (YCR)	Bison movement and dispersal	NPS
Bison Ecology and Management	Montana State University (Ecology)	Dr. Robert Garrott, Dr. P.J. White (YCR), Rick Wallen (YCR), Jason Bruggeman	Spatial dynamics of the central Yellowstone bison herd	Montana State University ONPS-Bison (paid in FY02)
Bison Ecology and Management	Montana State University (Ecology)	Jason Bruggeman, Drs. Robert Garrott and P.J. White (YCR), Rick Wallen (YCR)	Bison demography in relation to groomed roads during winter	ONPS-Winter Use Monitoring (paid out in FY04)
Bison Ecology and Management	USDA-APHIS	Rick Wallen (YCR), Dr. Ryan Clarke	Rate of brucellosis exposure in Yellowstone bison	USDA-APHIS, ONPS-Bison Management
Bison Ecology and Management	University of Kentucky	Philip Crowley (YCR: John Treanor, Rick Wallen)	Affects of vaccination on brucellosis prevalence	University of Kentucky (paid out in FY04) ONPS-Bison
Bison Ecology and Management	University of Montana	Fred Allendorf, Flo Gardipee (YCR: Rick Wallen)	Conservation genetics of bison	University of Montana (paid out in FY04) ONPS-Bison
Ethnography	Bear Creek Council	Rosemary Sucec (YCR)	Support for the potluck welcoming American Indian tribes to Yellowstone	Bear Creek Council, Yellowstone NP
Ethnography	Nez Perce National Historic Trail, Confederated Tribes of the Colville Indian Reservation, Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe	Sandi McFarland (NPNHT), Linda Young (Division of Interpretation) (YCR: Rosemary Sucec)	Planning for 2006 meeting with tribal representatives and scholars to identify interpretive themes for Yellowstone segment of the trail	National Endowment for the Humanities via the Yellowstone Park Foundation

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Ethnography	University of Montana	Greg Campbell, (YCR: Rosemary Sucec)	Document the Buffalo Walk and its meaning for the Nez Perce and Lakota	RM-CESU
Geographic Information Systems	Montana State University (Thermal Biology Institute), Western Oregon University, USGS, Portland State University, Idaho National Engineering & Environmental Laboratory, University of New Mexico	Drs. William Inskoop, Sarah Boomer, Darrell Nordstrom, Anna-Louise Reyenschach, Frank Roberto, Cristina Takacs-Vesbach, Ann Rodman (YCR)	Create a research coordination network for geothermal biology and geochemistry in Yellowstone	National Science Foundation
Geographic Information Systems	University of New Mexico, Portland State University, USGS	Drs. Cristina Takacs-Vesbach, Anna-Louise Reyenschach, & Kirk Nordstrom, Ann Rodman (YCR)	A microbial inventory of Greater Yellowstone Ecosystem features	National Science Foundation
Geology	University of Utah (Geology and Geophysics)	Dr. Robert Smith (YCR: Dr. Henry Heasler)	Seismic and GPS monitoring of Yellowstone	ONPS-Geology
Geothermal	Montana State University	Dr. Rick Lawrence (YCR: Dr. Cheryl Jaworowski)	Detection of radiative thermal flux change	Montana State University
Geothermal	University of Montana	Carl Seielstad (YCR: Dr. Cheryl Jaworowski)	Thermal remote monitoring of Norris Geyser Basin	ONPS-Geology
Geothermal	USGS-Menlo Park, Yellowstone Volcano Observatory	Jake Lowenstern (YCR: Dr. Henry Heasler)	Geothermal gas monitoring	ONPS-Geology
Geothermal	Utah State University	Christopher Neale (YCR: Cheryl Jaworowski)	Mapping thermal springs in geyser basins	ONPS-Geology
Geothermal/Montana Water Compact	State of Montana (Bureau of Mines and Geology)	Edmond Deal (YCR: Dr. Henry Heasler)	Controlled groundwater area <ul style="list-style-type: none"> • Monitoring • Database administration 	ONPS-Geology ONPS-Geology
Geothermal/Montana Water Compact	State of Montana (Natural Resources and Conservation)	Bud Clinch (YCR: Dr. Henry Heasler)	Yellowstone controlled groundwater area water rights administration	ONPS-Geology
Geothermal/Montana Water Compact	USGS-WRD (Montana District)	Dr. Robert Davis (YCR: Dr. Henry Heasler)	Assess water discharge and selected chemical and physical parameters of waters in Yellowstone NP	USGS-WRD, ONPS-Geology
Geothermal/Montana Water Compact	USGS-WRD (Utah District)	David Susong (YCR: Dr. Henry Heasler)	Hydrologic assistance in administering the compact and with other issues	USGS-WRD, ONPS-Geology

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Historic Buildings	Montana Preservation Alliance	Chere Jiusto (YCR: Herb Dawson)	Stabilization of historic buildings in Yellowstone NP	Historic Structures Stabilization Funds, CRPP, Cultural Cyclic Maintenance
Mid-sized Carnivores	A Naturalist's World	Dr. Kerry Murphy (YCR), Dr. James Halfpenny, Kerry Gunther (YCR)	Distribution of Canada lynx in Yellowstone	YPF
Mid-sized Carnivores	Rocky Mountain Research Station, Gallatin and Shoshone National Forests, Montana Fish, Wildlife and Parks, Wyoming Game and Fish, Rocky Mountain Cooperative Ecosystems Studies Unit	Dr. Jeff Copeland, Dr. Kerry Murphy (YCR)	Conservation of Wolverine at YNP: answering mission-critical questions	YPF, Gallatin and Shoshone National Forests, Rocky Mountain Cooperative Ecosystems Studies Unit, Wyoming Game and Fish
Mid-sized Carnivores	University of British Columbia, University of Montana	Dr. Karen Hodges, Dr. Scott Mills, Dr. Kerry Murphy (YCR)	Abundance and distribution of snowshoe hares in Yellowstone NP	Rocky Mountain Cooperative Ecosystems Studies Unit, University of Montana
Museum	Montana State University Stanford University	Michael Cary (YCR: Colleen Curry)	Internship program for museum techs	Yellowstone Park Foundation
Research	University of Wyoming-NPS Research Center	Dr. Henry Harlow, Dr. Glenn Plumb (YCR)	Cooperative research program support	ONPS-Research
Spatial Analysis Center	Greater Yellowstone I&M Network	Ann Rodman (YCR)	NPSPECIES database: Invertebrates	NPS I&M
Vegetation	Greater Yellowstone Coordinating Committee, Interagency Grizzly Bear Study Team	Cathie Jean (GRYN), Dan Reinhart (YNP)	Interagency Whitebark Pine Monitoring	NPS I&M
Vegetation	Greater Yellowstone I&M Network	Jennifer Whipple (YCR)	Alpine plant inventory	NPS I&M
Vegetation	Montana State University (Biology)	Dr. Tad Weaver, Ken Aho (YCR: Mary Hektner)	Characterization of alpine vegetation on the northeast corner of YNP	ONPS-Vegetation
Vegetation	Oregon State University, University of Wisconsin at Stevens Point	Drs. William Ripple, Eric Larsen (YCR: Dr. Doug Smith, Roy Renkin)	Aspen regeneration on Yellowstone's northern range	ONPS

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Vegetation	RM-CESU, Colorado State University	Drs. David Cooper, Tom Hobbs (YCR: Roy Renkin)	Persistence of willows on Yellowstone's northern range	ONPS-Vegetation, ONPS-Wildlife, Fee Demonstration
Vegetation	RM-CESU, Colorado State University	Dr. David Cooper, Josh Rose (YCR: Roy Renkin)	Herbivory and hydrology in cottonwood establishment and persistence	Fee Demonstration
Vegetation	RM-CESU, Montana State University	Dr. Andrew Hansen, Lisa Baril (YCR: Roy Renkin, Terry McEneaney, Dr. Doug Smith)	Bird reponse to willow release on Yellowstone's northern range	Fee Demonstration
Vegetation	University of WY, Colorado State University, University of WI - Madison	Drs. Dan Tinker, William Romme, Monica Turner	Reciprocal interactions between bark beetles and wildfire in subalpine forests	Joint fire sciences
Vegetation	USGS-BRD, Brigham Young University	Dr. Don Despain, Dr. Rex Cates (YCR: Roy Renkin)	Temperature influence on willow growth and phenolic production	ONPS-Vegetation, USGS Park-Oriented Biological Support, Fee Demonstration
Vegetation	USGS-BRD	Robert Stottlemeyer, Linda Zeigenfuss (YCR: Dr. P.J. White, Dr. Doug Smith, Roy Renkin)	Willow persistence and distribution following wolf reintroduction	USGS-BRD, NRPP
Vegetation	Yellowstone Park Foundation, Canon USA	Dr. Judy Harpell (YCR: Jennifer Whipple)	Bryophyte Inventory	Yellowstone Park Foundation, Canon USA, Inc.
Wildlife	Idaho State University; USGS Amphibian Research and Monitoring Initiative	Dr. Chuck Peterson; Steve Corn	Amphibian Monitoring	NPS I&M
Wildlife	Montana State University (Ecology)	Dr. Robert Garrott (YCR: Dr. P.J. White)	Collaborative ungulate habitat and population monitoring	ONPS-Ungulates, Winter Use, Bison
Wildlife	University of Idaho YERC	Drs. P.J. White (YCR), John Byers, Kerey Barnowe-Meyer, Robert Crabtree, Jenny Sheldon	Conservation of the declining Yellowstone pronghorn population	RM-CESU
Wildlife	University of Minnesota (Fisheries and Wildlife), USGS-BRD	Dr. P.J. White (YCR), Dr. David Mech, Shannon Barber	Monitoring elk calf mortality	NRPP Natural Resources Management, USGS Park-Oriented Biological Support
Wildlife	University of Minnesota (Ecology)	Dr. Glenn Plumb (YCR), Dr. Craig Packer, Dan McNulty	Conduct wildlife research in conjunction with remote Canon cameras (Canon Eyes on Hayden Project)	Yellowstone Park Foundation/Canon, U.S.A., Inc.

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Wildlife	University of Montana (Economics)	Dr. John Duffield (YCR: Dr. Glenn Plumb)	What price Yellowstone? The role of wolves in the regional economy	Yellowstone Park Foundation
Wildlife	University of Wyoming-Wyoming Natural Diversity Database	Gary Beauvais and Douglas Keinath	Ana Bat data analysis	NPS I&M
Wildlife	University of Wyoming-Wyoming Natural Diversity Database	Gary Beauvais and Douglas Keinath	NPSPECIES database: certification	NPS I&M
Wildlife	USGS-NPWRG	Jay Hestbeck (YCR: Dr. Glenn Plumb)	Trumpeter swan data analysis	NPS-NRPP, GYCC
Winter Use	Montana State University (Ecology)	Dr. P.J. White (YCR), Dr. John Borkowski, Dr. Scott Creel, Dr. Robert Garrott, Amanda Hardy	Motorized winter recreation and glucocorticoid stress responses in elk	ONPS-Winter Use Monitoring
Winter Use	Montana State University (Ecology)	Dr. Robert Garrott (YCR: Dr. P.J. White)	Evaluating the abundance, distribution, and stress hormones of ungulates in relation to winter human use in west-central Yellowstone NP	ONPS-Winter Use Monitoring
Winter Use	Montana State University (Mathematical Sciences)	Drs. John Borkowski, P.J. White (YCR), and Robert Garrott	Evaluating wildlife responses to motorized winter use in Yellowstone NP, 1998–2004	ONPS-Winter Use Monitoring
Winter Use	State of Montana (Department of Environmental Quality)	Elton Erp (YCR: Mary Hektner)	Air quality monitoring at West Entrance	ONPS-Winter Use Monitoring
Winter Use	USGS-WRD (Central Region, Denver)	George Ingersoll, Jeff Arnold (YCR)	Correlation of heavy metals deposition in snowpack and snowmachine use	ONPS-Winter Use Monitoring
Wolf Project	Beringia South	Howard Quigley, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf–carnivore interactions	NPS, YPF, Beringia South
Wolf Project	Colorado State University, Oregon State University, University of Alberta, USGS	David Cooper, Don Despain, Tom Hobbs, Evelyn Merrill, Roy Renkin (YCR), William Ripple, Doug Smith (YCR)	Wolf effects on willow regeneration	NPS, YPF
Wolf Project	Michigan Technological University, University of Alberta, University of Minnesota, USGS	Mark Boyce, L. David Mech, Rolf Peterson, Dan MacNulty, Doug Smith (YCR), Daniel Stahler (YCR), Nathan Varley	Wolf effects on trophic cascades	NPS, YPF
Wolf Project	Michigan Technological University, University of Minnesota	Tom Drummer, Dan MacNulty, Rolf Peterson, Doug Smith (YCR), Daniel Stahler (YCR), John Vucetich	Wolf predation	NPS, YPF, Michigan Technological University, University of Minnesota

Benefitting Program	Cooperator/ Partner	Contact/ Principal Investigator	Project	Fund Source
Wolf Project	Montana State University	Matt Becker, Bob Garrott, Claire Gower, Doug Smith (YCR), Daniel Stahler (YCR), Dr. P.J. White (YCR)	Wolf-elk relationships, Madison-Firehole watershed	NPS, YPF, Montana State University
Wolf Project	Montana State University	Lisa Baril, Andy Hansen, Doug Smith (YCR)	Wolves, willows, and songbirds	NPS, YPF, Montana State University
Wolf Project	Oregon State University, University of Montana, University of Wisconsin at Stevens Point	Matt Kauffman, Eric Larsen, Roy Renkin (YCR), William Ripple, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf effects on aspen	NPS, YPF, Oregon State University, University of Montana, University of Wisconsin at Stevens Point
Wolf Project	Trent University	Dennis Murray, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf survival	NPS, YPF, Trent University
Wolf Project	University of California, Davis	Daniel Stahler (YCR), Chris Wilmers	Wolf-scavenger interactions	NPS, YPF, University of California, Davis
Wolf Project	University of California, Los Angeles	John Pollinger, Daniel Stahler (YCR), Bridgett vonHoldt, Robert Wayne	Wolf population genetics	NPS, YPF, University of California, Los Angeles
Wolf Project	University of Idaho	Kerey Barnowe-Meyer, John Byers, Doug Smith (YCR), Dr. P.J. White (YCR)	Wolf effects on coyote-pronghorn predation	NPS, YPF, University of Idaho
Wolf Project	University of Minnesota, USGS	Emily Almberg, L. David Mech, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf diseases and parasites	NPS, YPF, University of Minnesota, USGS
Wolf Project	USFWS, USGS, Wyoming Game and Fish	Mike Jimenez, Douglas McWhirter, L. David Mech, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf movements/dispersal	NPS, YPF, USFWS, USGS, Wyoming Game and Fish
Wolf Project	Wildlife Conservation Society	Toni Ruth, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf-cougar interactions	NPS, YPF, Wildlife Conservation Society
Wolf Project	Yellowstone Ecological Research Center	Robert Crabtree, Jennifer Sheldon, Doug Smith (YCR), Daniel Stahler (YCR)	Wolf-coyote interactions	NPS, YPF, Yellowstone Ecological Research Center
Yellowstone Center for Resources	California State University-Monterey Bay, Montana State University (Ecology)	Drs. Fred Watson, Robert Garrott, Susan Alexander (YCR: Dr. P.J. White and Rick Wallen)	Integrated natural science research program for the central Yellowstone ecosystem	NASA
Yellowstone Center for Resources	University of Oregon	Dr. Andrew Marcus, Jim Meacham, Ann Rodman (YCR)	Atlas of Yellowstone project	Yellowstone NP, University of Oregon

Acronyms

CRPP:	Cultural Resource Preservation Program
FHWA:	Federal Highway Administration
GRYN:	Greater Yellowstone Inventory and Monitoring Network
GYCC:	Greater Yellowstone Coordinating Committee
IMR:	Intermountain Region
NASA:	National Aeronautics and Space Administration
NPS:	National Park Service
NPWRC:	North Prairie Wildlife Research Center
NRPP:	National Resource Preservation Program
ONPS:	Operation of the National Park Service
ONPS-CRPP:	Operation of the National Park Service-Cultural Resources Preservation Program
OWSA:	Office of the Wyoming State Archaeologist
RM-CESU:	Rocky Mountains Cooperative Ecosystem Studies Unit
USDA-APHIS:	U.S. Department of Agriculture-Animal and Plant Health Inspection Service
USDA-ARS:	U.S. Department of Agriculture-Agricultural Research Service
USFS:	U.S. Forest Service
USFS-RMRS:	U.S. Forest Service Rocky Mountain Research Station
USFWS:	U.S. Fish and Wildlife Service
USGS:	U.S. Geological Survey
USGS-BRD:	U.S. Geological Survey Biological Resources Discipline
USGS-BRD (IGBST):	U.S. Geological Survey Biological Resources Discipline, Interagency Grizzly Bear Study Team
USGS-FCRU:	U.S. Geological Survey Fish Cooperative Research Unit
USGS-WRD:	U.S. Geological Survey Water Resources Discipline
YERC:	Yellowstone Ecological Research Center
YCR:	Yellowstone Center for Resources
YPF:	Yellowstone Park Foundation