



Glacier National Park Fire Ecology Program 2004 Annual Report



Summary

2004 provided a busy season of work for Glacier's Fire Effects Crew. During the 2003 fire season, approximately 136,000 acres burned within the park. This presented a valuable and interesting opportunity for us to get out in the burned areas this summer. We were able to install 43 Long Term Monitoring plots and collect data on 169 CBI plots. We also completed the 5 year read on 14 Ponderosa Pine FMH plots. The fuel reduction project around park headquarters in West Glacier gave us the opportunity to install 6 photo point plots prior to mechanical treatment. In addition, the crew also collected fuel moisture samples throughout the season.

We had FEAT up and running by the start on the field season and were able to utilize our two PDA's on the 14 Ponderosa pine forest plots. At this time, both the Ponderosa and Fescue monitoring types including all GIS layers are complete for Glacier. Big Hole will be completed this winter/spring.

Fire suppression activity was slow in Glacier this year, giving the crew a break from last season's hectic pace. A detailer program arranged with the nearby Lewis and Clark Fire Use Module provided an excellent opportunity for several crew members to contribute their skills as well as learn some new ones. Matt Kennedy went to Voyageurs National Park and Ed Hentzelt accompanied the module to the Wallowa-Whitman NF.

The entire fire effects crew was active in presenting and receiving training through the local NW Montana Zone. The crew taught and assisted with Basic Fire School S-130/190 and annual fireline safety refreshers which were held at GNP. Scott Lang and Mike McClellan assisted the Flathead NF in instructing S-290 and McClellan helped out the forest during their Basic Guard School. Lang and McClellan provided Composite Burn Index (CBI) training in October for three days.

The crew performed maintenance and repair of the Park's three NFDRS RAWS throughout the summer. A new FTS RAWS was installed at Fielding along the park's southern boundary. This new station will be valuable for both Glacier and the neighboring Flathead National Forest.

The diversity of this season's work was furthered by assisting on a water quality study conducted by the USGS' Water Resources Division out of Denver. The project will be ongoing for the next several years and is comparing an unburned watershed with an adjacent burned one within the Middle Fork Complex of 2003. The crew helped by retrieving water samples, downloading data, and taking discharge measurements every 2-3 weeks as well as assisting with the setup and maintenance of the monitoring stations.

Table 1. Fire Effects Plot Workload 2004

Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plots
Glacier	Ponderosa Pine	FMH Forest plot			14	18
Glacier	Robert Fire	CBI			99	155
Glacier	Trapper Creek Fire	CBI			23	31
Glacier	Wedge Canyon Fire	CBI			15	31
Glacier	Middle Fork Complex	CBI			22	36
Glacier	Rampage Complex	CBI			10	13
Glacier	Robert Fire	Long Term Monitoring			18	18
Glacier	Trapper Creek Fire	Long Term Monitoring			5	5
Glacier	Wedge Canyon Fire	Long Term Monitoring			4	4
Glacier	Middle Fork Complex	Long Term Monitoring			8	8
Glacier	Rampage Complex	Long Term Monitoring			8	8
Glacier	West Glacier Fuel Reduction	Photo Point	6			6
Total			6		226	333

Table 2. Fire Ecology Staffing 2004

Monitor	Starting Date	Ending Date	# of Pay Periods	Training and Development
Dennis Divoky	1/1/04	12/31/04	26	Ft. Collins Stats/FEAT Training, FTS RAWs Maintenance, HECM Refresher, Wilderness Stewardship, PCHA, FPA-PM, Mixed Severity Conference
Mike McClellan	3/21/04	12/31/04	20	Ft. Collins Stats/FEAT Training, Resource Advisor course
Scott Lang	5/2/04	10/30/04	13	RX-310, S-390, S-200, S-212, S-381, Ft. Collins Stats/FEAT Training, Resource Advisor course
Laurie Fisher	6/27/04	9/4/04	5	Resource Advisor course
Ed Hentzelt	5/30/04	10/8/04	9.5	Completed FEMO Taskbook, Resource Advisor course
Matt Kennedy	5/16/04	10/8/04	10.5	S-211, S-212, S-234, Resource Advisor course

Table 3. Management Objectives and Monitoring Results 2004

Complete the following Summary table for each monitoring units for which analysis is available. Monitoring results should include time frame, confidence interval, and sample size.

Monitoring Unit	Management Objective (Restoration)	Monitoring Results (90% confidence interval)	Objective Achieved?
Ponderosa pine	Limit overstory Ponderosa pine mortality to $\leq 20\%$ at year 5.	Mortality = ??% ($n=18$ plots, 4 fires*)	?
	Reduce ladder fuels (pole and seedling conifers other than P-pine) $\geq 40\%$ at year 5	Mortality = ??% ($n=18$ plots, 4 fires*)	?

Analysis will be performed on the Ponderosa pine Monitoring Type when FMH/FEAT data conversion is completed. *There will be a significant challenge in analyzing and presenting this five year data. Two plots were burned in a prescribed fire, 6 plots burned in a WFU, 2 plots burned in a prescribed fire and subsequently in the WFU, 2 were prescribed burned and were partially burned in the Anaconda WFU, and finally four were burned in the Moose Wildfire.

Ecologist Accomplishments

Aerial photographs – worked with Richard Menicke, GIS Coordinator, to procure a full park set of post 2003 fire season geo-referenced aerial photos to be used in the parks GIS.

Long Term Fire Monitoring Project – rewrote the Moose Fire Long Term Monitoring protocols to take advantage of the opportunities of the 2003 fire season. I coordinated with Resource Management (Tara Carolin, Jen Asebrook, and Menicke), Rocky Mountain Network I & M (Brent Frakes) and USGS (Carl Key) in this project.

Public Meetings/Information – provided fire ecology information on six Robert Fire bus tours provided to the public and local schools groups. Attended the North Fork Interlocal Meeting and presented fire history maps.

Fire Interpretation Work Group- worked with the Interpretation Division formulating a plan on fire messaging for the summer of 2004 and beyond.

Glacier Institute Bulletin Board – coordinated with institute, maintenance, and the sign shop in the design, construction, and installation of a fire ecology and history bulletin board located at the institute. I produced most of the documents and maps posted.

Fire Ecology/History Training – provided numerous fire ecology and fire history training sessions to general park staff, Glacier Interpretive staff (2), Glacier Institute staff, Glacier

Institute classes (2 multi day), GNP Native Plant Nursery staff, and concessions staff “jammer” (Red buses) drivers, raft guides, hotel employees). These ranged from a full day to one hour. I provided fire ecology and history information to five authors writing newspaper articles (LA Times and local papers) and books (Steve Arno and Bruce Stutz). This was accomplished by interviews, field trips, phone conversations, and email exchange. One HS science teacher also received a four hour field trip as part of an internship. Provided a group of western travel writers fire ecology and history information on a Lake McDonald boat tour.

Resource Advisor Training – Co-Lead Instructor with Resource Manager for park READ Training.

Fire Management Plan – reviewed and rewrote portions of the Glacier/Flathead Interagency Fire Management Plan. Helped update the plan for 2005.

FPA – assisted the FPA Data Development Project that facilitated the park getting the initial data required for FPA in the correct format. Attended PCHA and FPA-PM training and have taken the lead for Glacier and Big Hole NHP. Attended numerous planning meetings with FPU members. Finalized “cleaning” of three weather data sets and the park’s fire history data set for use in FPA.

Vital Signs / Ecological Modeling – attended a two multi day workshops and helped to write ecological models for Glacier NP to be used for Vital Signs.

Crown of the Continent Learning Center (CCLC) Demonstration Trail – worked with Ms Hejl in locating a suitable location for a new fire interpretation trail. This project is being done in conjunction with Dick Hutto of the University of Montana and the USFS. It is intended to demonstrate the differences found within avian communities in areas that have been salvaged logged vs. unlogged burned areas.

Center for Landscape Fire Analysis – worked with Lloyd Queen and his staff to have the center provide a searchable geodatabase for park weather and fire history.

Howe Creek Micro RAWS – coordinated (locating, compliance, budgeting, installation, obtained radio loan, radio frequency use, removal, and return shipping) of an early warning station for flash floods in the Fish Creek Compound. I worked with the NWS State Hydrologist in developing rainfall parameters. Two field trips were made to assess the flood potential.

USGS WRD Coal Creek Study – I and the fire monitors supported a water quality study that was being managed by the Denver Water Resource Division in the 2003 Rampage Fire. We supplied logistics, helped with installation, and data collection.

RAWS and WIMS Management – I attended a one week FTS Station Maintenance Training course and manage the four NFDRS stations within the park and the WIMS catalogs. Provided park compliance and worked with the Hungry Horse Ranger District in navigating their compliance system for a new NFDRS RAWS station located on USFS lands.

Park Safety Committee – I was chairman for the committee in 2004 and held monthly meetings.

Fire Brigade – I am a member of the Headquarters Structural Fire Brigade, which trains once a month for two hours. This May, I will be attending a two week recertification for FF I.

Helicopter Manager - recertified as a HECM to ease a critical park need for project managers. Scheduled to attend managers course in February.

CBI Training – coordinated and taught a three day training for NPS employees in October.

Mixed Severity Conference in Spokane – attended with FMO and PFS.

Annual Bob Marshall Wilderness Complex Fire Meeting – attended with PFS and discussed recent fire season, Fire Use Module, Fire Use Manager Trainee opportunities, and fire monitor use.

Success Stories – wrote one fire information success story for the NPS Fire Website.

Duty Officer – I took my turn as the DO four times (one week shift) throughout the summer. This requires duct taping cell phone to head and being on call 24 hours a day.