

North Pacific / Columbia Basin Fire Ecology Annual Report Calendar Year 2007

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Summary

The North Pacific / Columbia Basin fire effects monitoring crew had a full field season in 2007, reading a total of 52 plots within North Cascades National Park (NOCA), John Day Fossil Beds National Monument (JODA), San Juan Island National Historical Park (SAJH), and Lake Roosevelt National Recreation Area (LARO). The crew started field work immediately after they came on, quickly learning and refreshing skills while out in the field at SAJH. They efficiently completed the planned rereads, and then installed two new plots in subunit four, on the southwestern aspect of Young Hill. This was followed by the installation of 3 new plots in a new burn unit, Ft. Spokane, in the southern portion of LARO. This was followed by visits to the several Juniper and Sagebrush burn units at JODA to perform rereads in previously burned areas, and an additional trip to LARO to complete the rereads there.

By mid-July, the majority of the field work that remained was at NOCA. The crew quickly completed their reads of post-treatment plots in the Forest Fuel Reduction Areas along the valley floor, and went on to install nine new plots in the steep Buehler, Upper Boulder, and Ranch units of the Contour Prescribed Fire Area. Also, a day before we arrived in Stehekin the Tolo wildfire fire had been ignited by lightning in the upper Stehekin valley. It grew in size and became a complex operation. The fire effects monitors spent many of their days off, and some of their days on assisting with the fire management operations throughout late July and August.

September encompassed many important tasks that were not completed during the active field season. This included the completion of most data entry, the identification of many unknowns, the labeling and filing of plot pictures, the expansion of the herbarium, and the creation of a virtual (digital photography) herbarium. Overall it was a very productive year in which a cohesive, efficient, and highly skilled crew accomplished all the program's goals.

Table 1. Fire Effects Plot Workload 2007

Park	Monitoring Unit	Type of Plot	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plots
John Day Fossil Beds	Western Juniper	FMH forest plot	0	0	6	6
	Big Sagebrush	FMH brush plot	0	0	3	3
Lake Roosevelt	Ponderosa Pine	FMH forest plot	3	0	7	10
North Cascades	Stehekin Valley Forest Fuel Reduction	FMH forest plot	2	3	10	15
	Stehekin Contours	FMH forest plot	7	0	0	7
San Juan Island	Garry Oak Woodland	FMH forest plot	2	3	6	11
Whitman Mission	Giant Wild Rye – Meadow Restoration	FMH grass plot	0	0	0	0
Total			14	6	32	52

Table 2. Fire Ecology Staffing 2007

Monitor	Starting Date	Ending Date	# of Pay Periods	Training	Development
Karen Kopper Fire Ecologist	1/01/07	n/a	26	Fire Refresher	UW fire severity and fire history research in pursuit of PhD
Alina Cansler Lead Monitor	2/04/07	12/21/07	23	NPS Fundamentals I, II, III, IV, L280, Saw refresher, Pumps refresher, Fire refresher, Defensive Driving, First Aid and CPR	Completed HECM taskbook Worked on FFT1 taskbook
Garrett Boarts Fire Effects Monitor	4/29/07	10/13/07	12	S290, S131, S134, Saw refresher, Pumps refresher, Fire refresher, Defensive Driving, First Aid and CPR	Began FEMO taskbook Began FFT1 taskbook Completed Faller B
Shaun Collins Fire Effects Monitor	4/29/07	10/13/07	12	S134, Saw refresher, Pumps refresher, Fire refresher, Defensive Driving, First Aid and CPR	Completed FEMO taskbook Completed Faller A
Sarah Hoff Fire Effects Monitor	4/29/07	10/13/07	12	S110/190, Defensive Driving, First Aid and CPR	

Table 3. Management Objectives and Monitoring Results 2006

JODA: John Day Fossil Beds National Monument

Monitoring Unit	Management Objective (Restoration)	Monitoring Results 1 or 2 Years Post-burn	Objective Achieved?	Results for Comparison 5 Years Post-burn	Objective Achieved?
Western Juniper Forest (FJUOC1D06)	1) Reduce density of junipers 10 – 40 % by 1 year post-burn	1) x = 16.0% Reduction, 90%CI, (0.3<x<31.7), n=11 Pre=48.2, Yr1=40.5 trees/acre	1) Yes	1) x = 18.5% Reduction, 90%CI, (6.6%<x<30.3), n=8 Pre=46.5, Yr5= 38.0 trees/acre	1) Yes
	2) Reduce shrub density by 20 – 60 % by 1 year post-burn	2) x=52.7% Reduction, 90%CI, (-4.3 <x<109.7), n=9 Pre=190.2, Yr1=89.9 shrub/acre	2) Yes	2) x=81.5% Reduction, 90%CI, (38.7<x<124.2), n=9 Pre=190.2, Yr5=35.3 shrub/acre	2) Over Achieved
	3) Reduce or maintain cover of all exotics to within 10% of pre-burn cover by 2 nd year post-burn.	3) x=82.7% Increase, 90%CI, (37.3<x<128.1), n=11, Pre=19.9 Yr2=36.4 %Cover All Exotics	3) No	3) x=141.8% Increase, 90%CI, (95.8<x<187.7), n=9, Pre=15.9 Yr2=38.4 %Cover All Exotics	3) No
	a. Grasses	a. x=78.2% Increase, 90%CI, (32.6<x<123.5), n=11 Pre=17.3, Yr2=30.8 %Cover	a. No	a. x=119.3% Increase, 90%CI, (88.6<x<150.0), n=9 Pre= 14.6, Yr5=32.0 %Cover	a. No
	b. Forbs	b. x=112.5% Increase, 90%CI, (-45.4<x<270.4), n=11 Pre=2.6, Yr2=5.6 %Cover	a. No	b. x=400.0% Increase, 90%CI, (-22.0<x<822.0), n=9 Pre=1.3, Yr5=6.4 %Cover	b. No

JODA: John Day Fossil Beds National Monument

Monitoring Unit	Management Objective (Restoration)	Monitoring Results 1 or 2 Years Post-burn	Objective Achieved?	Results for Comparison 5 Years Post-burn	Objective Achieved?
Big Sagebrush Shrubland (BARTR1D02)	1) Reduce shrub density by 20 – 60 % by 1 year post-burn	1) x=70.7% Reduction, 90%CI, (53.7<x<87.7), n=14 Pre=427.8, Yr1=125.3 shrub/acre	1) Over Achieved	1) x=69.4% Reduction, 90%CI, (51.9<x<86.9), n=14 Pre=427.8, Yr5=131.0 shrub/acre	1) Over Achieved
	2) Reduce or maintain cover of all exotics to within 10% of pre-burn cover by 2 nd year post-burn.	2) x=43.3% Increase, 90%CI, (25.7<x<60.8), n=19, Pre=53.6, Yr2=76.8%Cover All Exotics	2) No	2) x=27.5% Increase, 90%CI, (6.0<x<49.1), n=14, Pre=56.1, Yr5=71.5%Cover All Exotics	2) No
	a. Grasses	a. x=22.3% Increase, 90%CI, (2.6<x<42.0), n=19, Pre=49.8, Yr2=61.0%Cover	a. No	a. x=9.6% Increase, 90%CI, (-5.0<x<24.1), n=14 Pre=54.5, Yr5=59.7 %Cover	a. Yes
	b. Forbs	b. x=540.4% Increase, 90%CI, (819.9<x<260.9), n=19 Pre=2.5, Yr2=15.8%Cover	b. No	b. x=650.0% Increase, 90%CI, (202.5<x<1097.5), n=14 Pre=1.6, Yr5=11.8%Cover	b. No

John Day Fossil Beds National Monument

The primary objectives for prescribed burning in the juniper forest and sagebrush shrublands are to reduce encroachment of juniper into the shrublands, and sagebrush into the grasslands. A secondary goal is to prevent the increase of non-native species. The monitoring results in this report analyze first or second year post-burn effects on the Windy Point, Picture Gorge, Middle Mountain, Foree, and Rock Creek prescribed fires, and fifth-year post-burn data from Windy Point, Picture Gorge and Middle Mountain.

Trees: The objective to reduce juniper encroachment in the forested areas within one year of the prescribed burn treatment was achieved, as indicated by a 16% reduction (-7.7 trees/acre) of juniper on 11 plots. Post-burn mortality after five years was not significantly different from the one year post-burn results.

Shrubs: The objective to reduce shrub density was achieved or over-achieved in the forest and shrub-dominated units within the first year post-burn. Although the initial reduction of shrubs in the juniper forest was within the desired range (52.7% reduction, -100.3 shrubs/acre), the delayed mortality of 54.6 shrubs/acre exceeded the desired reduction of big sagebrush, the species that was most often killed. The desired amount of shrub mortality in the sagebrush shrublands was exceeded within the first year after the burn (70.7% reduction, -302.5 shrubs/acre), although there was not a significant amount of mortality between the first and fifth years post-burn.

Non-Native Grass Cover: Although the objective to reduce or maintain non-native grasses within 10% of their pre-burn cover in the forest and shrubland areas was not achieved by the second year post-burn, it was achieved by the fifth year post-burn in the shrublands. Unfortunately exotic grass cover had increased an additional 41.1 % in the forested areas between the second and fifth year following the burns.

Non-Native Forb Cover: The cover of non-native forbs was not maintained within an acceptable level. On the juniper forested sites their cover had increased by 112.5% by the second year post-burn, and by an additional 287.5% by the fifth year. In the shrublands the cover increased by 540.4%, and another 109.6% within these same time periods. Despite the enormity of these unwanted effects, the pre- and post-treatment non-native forb covers are smaller than those of the non-native grasses.

LARO: Lake Roosevelt National Recreation Area				
Ponderosa Pine – Snowberry Forest (FPIPO1D10)				
Management Objective (Restoration)	Preliminary Results: North Gorge (1 Yr post thin = 01 PT)	Objective Achieved?	Preliminary Results: Rickey Point (1 Yr post thin = 01PT)	Objective Achieved?
1) Reduce mean basal area to 40 - 60 Ft ² / acre as measured 2 years after treatment.	1) Mean Basal Area Ft ² /acre n=3, Pre=92.3 (12.3 sd), 01PT=89.3 (5.2 sd)	1) No	1) Mean Basal Area Ft ² /acre n=4, Pre=59.1 (45.6 sd), 01PT=51.1 (44.0 sd)	1) Yes
2) Maintain an average woody fuel load of 2–6 tons/acre 2 years after treatment.	2) Average tons/acre 90%CI, n=3, Pre=16.0 (2.8 sd), 01PT= 17.8 (3.7 sd)	2) No (N/A)	2) Average tons/acre n=4, Pre=8.9 (3.5 sd), 01PT= 15.2 (7.6 sd)	2) No (N/A)
3) Reduce litter and duff fuel loading by 40-95% 2 years after treatment	3) x=25.9% Reduction, 90%CI (-3.3<x<5.5), n=3 Pre=28.7, 01PT=21.3tons/ac	3) No (N/A)	3) x=49.1% Reduction, 90%CI (34.2 <x<64.1), n=4 Pre=23.0, 01PT=11.7 tons/ac	3) Yes (N/A)

Lake Roosevelt National Recreation Area

The fire effects monitoring plots were read before and after the thinning treatments at Rickey Point and North Gorge in order to determine the effectiveness of thinning to reduce basal area, as well as to monitor fuel loads.

Trees: The objective to reduce mean basal area to 40-60 ft²/acre was achieved at Rickey Point (51.1 ft²/acre, -13.5%), but not at North Gorge (89.3 ft²/acre, -3.3%). The North Gorge site had substantially greater basal area than Rickey Point before the thinning treatment was undertaken.

Fuels: The woody fuel, litter and duff loadings were monitored after the thinning treatment although the objectives for fuel reduction are intended to be met after burning rather than thinning. As expected, the dead and downed woody fuel load increased within both units (North Gorge: +10.1%, 17.8 tons/acre, Rickey Point: +41.5%, 15.2 tons/acre) following thinning. The increase was most substantial at Rickey Point because the thinning treatment was more aggressive, and added a larger component of large diameter fuels to the forest floor. Interestingly, the litter and duff were substantially reduced in both units.

Other objectives: Data on the understory cover and composition was not collected after the thinning because the successes of these objectives are related to burning rather than thinning. Two years after burning, the objectives are to maintain 30% of the pre-burn native understory cover, and to accept no more than a 20% increase in non-native cover.

SAJH: San Juan Island National Historical Park

Garry Oak Woodland (FQUGA1D02)

Management Objective (Restoration)	2003 and 2005 Year 1 Post-burn (from 2006 report)	2003 and 2005 Burns Units 1 & 2 Year 2 Post-burn	Achieved?	2006 Burn Unit 3	Achieved?
1) ≤5% mortality of overstory oaks all w/in 5 yrs of burn.	1) 0% Mortality, n=6 10.1 trees/acre, SD 14.3	1) x= 13.3% Mortality, 80CI, (0.89<x<25.78), n=6 Pre=10.1, YR02=8.8 tree/ac	1) No	1) 0% Mortality, n=2 14.2 trees/acre, SD 14.3	1) Yes
2) Reduce the total fuel load by at least 50% immediate post-burn.	2) x=24% Reduction 80CI, (-27.7<x<76.5) n=5, Pre=17.6, YR01=13.28 tons/acre	2) x=22.1% Increase, 80CI, (48.1<x<92.3), n=6 Pre=20.7, YR02= 25.2 tons/ac	2) No	2) x=148.0% Increase, 80CI, (-85.9<x<381.8), n=2 Pre=5.2, YR01= 12.9 tons/ac	2) No
a. Litter and Duff*		a. x=42.6% Reduction, 80CI, (9.9<x<75.3), n=6, Pre=4.4 YR02=2.5 tons/acre	a. Not Quite	a. x=9.0% Increase, 80CI, (-97.6<x<115.5), n= 2 Pre=3.7, YR01=4.1 tons/acre	a. No
b. Ones, Tens, Hundreds*		b. x=52.6% Reduction, 80CI, (-5.8<x<111.0) n=6, Pre=6.0 YR02=2.8 tons/acre	b. Yes	b. x=238.7% Increase, 80CI, (-153.8<x< 631.2), n=2 Pre=0.7, YR01=2.4 tons/ac	b. No
c. Thousands*		c. x=93.7% Increase, 80CI, (-32.25<x<219.6), n=6, Pre=10.3, YR02=19.9 tons/ac	c. No	c. x=751% Increase, 80CI, (-1012<x<2522), n=2 Pre=0.8, YR01= 6.4 tons/ac	c. No
3) Decrease the percent cover of shrubs by 30% 2 yrs post-burn.	3) x=43% Reduction 80CI (-5.6<x<92.4) n=6, Pre=37.3, YR01=21.1 %Cover Shrubs	3) x=20.2% Reduction, 80CI, (-10.3<x<50.7) n=6, Pre=37.3 YR02=29.7 %Cover	3) No	3) x=18.8% Reduction 80CI, (-58.2<x<95.7) n=2, Pre=19.3 YR01=15.7 %Cover	3) No
4) Accept 20% increase in exotic species cover by 2 yrs postburn.		4) x=12.2%Reduction, 80CI, (-3.6<x<28.0) n=6, Pre=103.1, YR02=90.6 %Cover	4) Yes	4) x=31.7%Increase, 80CI, (14.2<x<49.2), n=2, Pre=37.1 YR01=48.8 %Cover	4) No
a. forbs	a. x=86% Increase 80CI (0.7<x<171.1) n=6, Pre=20.0, YR01=37.2 %Cover Ex Forbs	a. x= 39.1% Increase, 80CI, (-20.6<x<98.8) n=6, Pre=20.3 YR02=28.2 %Cover Exotic Forbs	a. No	a. x=546.3% Increase, 80CI, (-45.8<x<11.4), n=2 Pre=3.9, YR01=25.3 %Cover Exotic Forbs	a. No
b. grass	b. x=68% Reduction 80CI (44.6<x<91.3) n=6, Pre=82.6, YR01=26.5 %Cover Exotic Grass	b. x=25.5% Reduction, 80CI (3.6<x<47.5), n=6 Pre=82.6, YR02=61.5 %Cover Exotic Grass	b. Yes	b. x=29.1% Reduction, 80CI, (-21.3<x<79.5), n=2 Pre=33.1, YR01=23.5 %Cover Exotic Grass	b. Yes
c. vine		c. x=299.2% Increase, 80CI (19.9<x<580.0), n=6 Pre=0.2, YR02=0.8 %Cover Exotic Vine	c. No	c. none present	c. n/a

San Juan Island National Historical Park

This report compares the first and second year post-burn effects of two prescribed burns (Unit 1 in 2003 and Unit II in 2005) on tree mortality, fuel loading, shrub cover and exotic plant cover. Additionally, the first year post-burn results are reported for the 2006 prescribed burn of Unit III.

Trees: None of the overstory (> 15 cm dbh) Garry oak trees were killed in the fire effects monitoring plots within the first year of the prescribed burns. However, there was one tree that died between the first and second year after the 2005 prescribed burn. There has also been some mortality of overstory oaks within the prescribed burn units that were not within the plots.

Fuels: The objective to reduce the overall fuel loading by 50% has not been met within any of the prescribed burn units, however fine fuels, litter and duff were substantially reduced on Units I and II by the second year following the burns. The pre-treatment fuel loadings on Units I and II were collected after the thinning, whereas this data was collected prior to thinning on Unit III, resulting in a greater relative increase and smaller absolute increase in large diameter fuels on Unit III.

Shrubs: Snowberry (*Symphoricarpos alba*) is the most common shrub in Units I and II, although Nootka rose (*Rosa nutkana*) was also plentiful in the plots before the burns. Despite a successful reduction of the shrub cover within one year of the 2003 and 2005 prescribed burns (43% reduction, -16.2% cover), it had recovered to within 20% of its pre-burn level by the second year following the burns, thus failing to meet desired conditions. The 2006 burn of Unit III was less effective at reducing shrub cover than the previous burns. Unit III had more rose than snowberry, although only the cover of rose was reduced through the prescribed burn, whereas snowberry remained at its pre-burn cover.

Exotics: The overall cover of exotic species was within an acceptable level by the second year after the 2003 and 2005 prescribed fires, although exotic grass cover had recovered to within 25.5% of its pre-burn level by the second year post-burn. On the contrary, there was a substantial decrease (-9 %Cover) of exotic forbs by the second year following the treatments. The 2006 burn of Unit III did not successfully maintain the overall cover of exotic species to within 30% of its pre-treatment amount. The increase in non-native forbs was substantially greater than in the previous burns, and the reduction in exotic grasses was not as large.

NOCA: North Cascades National Park

Douglas fir / Ponderosa Pine Forest (FPSME2D08)

Management Objective (Restoration)	Monitoring Results (thin & burn)	Objective Achieved?
1) Decrease pole tree density by 50-85% by 1 year post-burn and post-thin.	1) x=50.6% Reduction Year 2, 90%CI, (-16.5<x<117.6), n=5, Pre=70.4, Yr2= 34.8 trees/acre x=52.9% Reduction, Year 5, 90%CI, (-12.6<x<118.3), n=5, Pre=70.4, Yr5=33.2 trees/acre	1) Yes
2) Reduce overstory tree density by 30 – 60% by 1 year post-burn and post-thin.	2) x=42.1% Reduction Year 2, 90%CI, (3.8<x<80.2), n=5, Pre=148.1, Yr2=85.8 trees/acre x=40.4% Reduction Year 5, 90%CI, (7.1<x<73.8), n=5, Pre=148.1, Yr5=88.2 trees/acre	2) Yes
3) Reduce total basal area by 40 - 60% by 1 year post-burn and post-thin.	3) x=32.7% Reduction Year 2, 90%CI, (-1.9<x<67.3), n=5, Pre=138.3, Yr2=93.1 Ft ² /acre x=27.1% Reduction Year 5, 90%CI, (-4.5<x<58.7), n=5, Pre=138.3, Yr5=100.8 Ft ² /acre	3) No
4) Individual numbers of exotic species to increase by no more than 20% by 2 nd year post-burn.	4) Cheatgrass: x=284% Increase, 90%CI, (-59<x<626), n=21, Pre=0.09, Yr2=0.33 %Cover Holosteum: n=21 Pre=0, Yr2=0.06%Cover (0.15 sd) Pearly everlasting: n=21, Pre=0, Yr2=0.33%Cover (0.46 sd) Lactuca species: n=21, Pre=0, Yr2=0.01% Cover (0.07 sd) All Exotics: x=367% Increase, 90%CI, (55.7<x<670), n=21, Pre=0.12, Yr2=0.53% Cover	4) No
5) Increase native vegetative ground cover by 10-30% by 2 nd year post-burn.	5) x=29.2% Reduction, 90%CI, (18.4<x<40), n=21 Pre=59.0, Yr2=41.8 %Cover	5) No
6) Reduce total fuel load by 30-75% by 2 nd year post-burn and post-thin	6) x=30.5% Reduction, 90%CI, (18.2<x<42.7), n=18 Pre=32.7, Yr2=22.8 tons/acre	6) Yes
a)1-hour fuels 55-90%	a) x=2.4% Reduction, 90%CI, (-14.8<x<26.0), n=18 Pre=0.61, Yr2=0.58 tons/acre	a) No
b)10-hour fuels 45-65%	b) x=7.7% Reduction, 90%CI, (-13.9<x<29.3), n=18 Pre=1.43, Yr2=1.32 tons/acre	b) No
c)100-hour 15-35%	c) x=13.4% Increase, 90%CI, (-28.8<x<55.6), n=18 Pre=1.24, Yr2=1.41 tons/acre	c) No
d)1,000-hour fuels 0-20%	d)x=118.4% Increase, 90%CI, (66.1<x<170.7),n=18 Pre=4.0, Yr2=8.8 tons/acre	d) No
e) litter and duff 40-85%	e) x=58.1% Reduction, 90%CI, (45.7<x<70.5), n=18 Pre=25.4, Yr2=10.6 tons/acre	e) Yes

North Cascades National Park

Fire effects monitoring plots are utilized to track fuel reduction and restoration objectives for tree density, understory cover, and dead and downed fuel loads in the Stehekin Valley. Each unit is thinned and burned as needed.

Trees: There are five plots in the Orchard/Rainbow prescribed burn unit for which fifth-year post-thin and burn results have been analyzed. The density reduction objectives were met for both the pole-size (2.5 – 14.9 cm dbh) and overstory (>15 cm dbh) trees within this burn-unit. There was a 50.6% and 42.1% reduction in the number of pole and overstory trees, respectively. By the fifth-year post burn there were slightly fewer pole-size trees, and slightly more overstory trees, because several of the pole-size trees that had survived the treatment, had graduated to the overstory tree class. The growth response of the surviving trees is evident by the basal area of the plots. The stands had lost 32.7% of their basal area by the second year following the treatments, but had regained 5.6% of it by the fifth year post-treatment.

Exotic Species: Non-native grasses and forbs are monitored for a greater than 20% change in cover. This analysis was performed on 21 plots two years after they had been burned. Although the overall cover of exotics was still very low (0.53% in 2nd year post-burn), there were some opportunistic invaders. Holosteum (*H. umbellatum*), pearly everlasting (*Anaphalus margaritaceae*), and two lettuce species (*Lactuca muralis*, *L. serriola*) were newly present on the plots, and cheatgrass (*Bromus tectorum*) had more than doubled its cover, achieving a 0.33% cover on the plots. The cheatgrass cover is currently being mapped throughout the prescribed burn units, because although its cover is still quite low within the plots, its presence throughout the units has become more apparent.

Native Ground Cover: Although the cover of the native understory vegetation was still substantial (41.8%) two years after burning, it had decreased by 29.2%. It may take longer than two years for the understory to recover from the treatments, and to gain additional cover.

Fuel Loading: There was a 30.5% reduction in the total fuel load, which met the overall objective for the second year following thinning and burning. However, this achievement was based upon the 58.1% reduction in litter and duff, whereas there was an increase in the larger diameter fuels (13.4% for 100 hours, 118.4% for 1000 hour fuels) rather than a reduction. Subsequent burns will be necessary to reduce the large woody fuels.

Fire Ecologist Accomplishments/Focus Areas

Category	Percent Time	Accomplishments and/or areas of activities
Planning	4	NOCA Contour Units Rx-Fire monitoring, LARO monitoring units, SAJH monitoring revisions, Fuels Mapping for LARO and NOCA
Presentations	1	SAJH fire effects data
NPS Meetings/ task groups	7	Cheatgrass Mapping Project for Stehekin and Ross Lake, Fuels Mapping Projects for OLYM, NOCA and MORA,
Interagency work	1	Domke Fire Severity
Fire Assignments	2	Tolo Fire
Research	50	Reconnaissance for Fire History Project in Stehekin, UW Research on historical fire severity and frequency of Stehekin
Data entry	1	Error checking against paper copies
Data analysis	2	Annual Reports (Write-up, additional objective assessments) Fire Severity data analysis
Supervision/Admin	21	Hiring, Training (SCAs for cheatgrass, fuels mapping & Fire Ecology)
Training	10	Fire Refresher, UW Coursework
Miscellaneous	1	NOCA Park activities (housing committee, wilderness committee, orientation)

Fire Effect Crew Accomplishments/Focus Areas

Category	Percent Time	Notes
FMH plots	70	Estimated amount of time spent collecting plot data; includes any preparation time.
WUI plots	0	
CBI plots	0	
Other plot work	0	Identify type of plot – WFU, exotic plants, etc.
Fire Assignments	10	Identify types of assignments
Fuels Project work	0	Fuels project work
Data entry	10	Estimated amount of time spent entering data from paper to PC
Data conversion	0	Estimated amount of time to convert FMH data to FEAT; includes preparing species lists, error checking, learning conversion program, etc
Data analysis	1	This is expected to be very low number or zero for fire effect crew/lead monitor
Supervision/Admin	1	Travel, payroll, etc
Training	8	
Miscellaneous		Things that don't fit in other categories – presentations, FMP, etc