



National Park Service Fire Ecology Annual Report Calendar Year 2010 Mediterranean Coast Network

Marti Witter, Fire Ecologist

A. Summary

The MEDN fire ecology program is focused on 1) community wildfire protection; 2) optimizing fuels management practices to maximize treatment effectiveness, minimize the impacts of fuel modification treatments, and maximize resource protection; and 3) understanding and anticipating wildfire effects in the three Mediterranean parks, including climate change. See Section B for specific 2010 activities related to these objectives.

Table 1. Fire Effects Plot Workload (2010) and Total Plots Installed

The following table summarizes the total number of fuel modification and fire monitoring plots installed at the MEDN network parks. The “Pre-burn 2010” and “Postburn 2010” columns show the number of plots visited this year only. The “Total Plots” column is the total number of plots installed in the Monitoring Unit to date.

Park	Monitoring Unit ¹ Includes controls ² Never burned	Type of Plot (FMH, photo point, other)	Pre- burn 2010	Immed. Post 2010	Postburn (1- 20 yrs) 2010	Total Plots
CHIS	LEGACY SRI Coastal Sage Scrub (ARCA) ¹	FMH brush				21
CHIS	LEGACY SRI Coastal Grassland (NAPU) ¹	FMH brush				19
CHIS	COND CLASS SCI Fennel (FOVU1) ²	FMH brush	3			5
CHIS	COND CLASS SCI Mixed Fennel (FOVU2) ²	FMH brush	6			7
CHIS	COND CLASS SCI Mixed Coastal Sage Scrub (MCSS) ²	FMH brush	4			6
CHIS	COND CLASS SCI Island Manzanita (ARVI1) ²	FMH brush				
CHIS	COND CLASS SCI Island Manzanita (ARVI2) ²	FMH brush, overstory tree	3			5
CHIS	COND CLASS SCI Island Scrub Oak (QUPA1) ²	FMH brush				
CHIS	COND CLASS SCI Island Scrub Oak (QUPA2) ²	FMH brush, overstory tree	4			6
CHIS	COND CLASS SCI 2005 Cruz Fire CSS Recovery (CSSR)	Modified Whittaker			6	6
CHIS	COND CLASS SCI 2005 Cruz Fire Fennel Recovery (FOVU)	Belt transect, 1m ² plots				2
TOTAL			20		6	77

Table 1. Continued

Park	Monitoring Unit ¹ Includes controls ² Never burned ³ Reburn 2005 Topanga fire	Type of Plot (FMH, photo point, other)	Pre- burn 2010	Immed Post 2010	Postburn (1- 20 yrs) 2010	Total Plots
SAMO	LEGACY Non-native Annual Grassland (AVFA) ^{1,3}	FMH grass				11
SAMO	LEGACY Non-native Annual Grassland (BRDI) ^{1,3}	FMH grass				10
SAMO	LEGACY Non-native Annual Grassland (BRNI) ^{1,3}	FMH grass				1
SAMO	LEGACY Native Perennial Grassland (NAPU) ³	FMH grass				8
SAMO	LEGACY Coastal Sage Scrub (ARCA) ³	FMH brush			2	16
SAMO	LEGACY Coastal Sage Scrub (MALA)	FMH brush				1
SAMO	LEGACY Chamise Chaparral (ADFA) ³	FMH brush			6	19
SAMO	LEGACY Big-pod Ceanothus Chaparral (CEME)	FMH brush				11
SAMO	LEGACY Greenstem Ceanothus Chaparral (CESP)	FMH brush				5
SAMO	LEGACY Hoary-Leaf Ceanothus (CECR) ³	FMH brush			1	1
SAMO	LEGACY Black Sage Chaparral (SAME)	FMH brush				1
SAMO	LEGACY Eastwood Manzanita Chaparral (ARCGLAN)	FMH brush				2
SAMO	LEGACY Oak Woodland (QUAG) ¹	FMH Forest				12
SAMO	FUEL MOD CHE Non-native Annual Grassland (ANGR) ¹	FMH grass, biomass			10	12
SAMO	FUEL MOD RSV Non-native Annual Grassland (ANGR) ^{1,2}	FMH grass, biomass				12
SAMO	FUEL MOD CHE Native Perennial Grassland (DISP)	FMH grass			1	1
SAMO	FUEL MOD Defensible space	Rapid Assessment			22	22
SAMO	FUEL MOD Strategic Fuel Modification	Rapid Assessment			30	30
SAMO	FUEL MOD Non-native Annuals (FORB) ¹	FMH grass			16	16
SAMO	FUEL MOD Valley Oak Saplings (QULO) ^{1,3}	FMH Pole-size Trees (n=100)			2	2
SAMO	COND CLASS Valley Oak Planted Seedlings ⁽²⁾	Demography (n=~4000)	40			40
SAMO	COND CLASS 2005 Topanga Fire Burn Severity	CBI, FMH, twig d				77
SAMO	COND CLASS 2005 Topanga Fire CSS Recovery	Modified Whittaker				26
SAMO	COND CLASS 2005 Topanga Fire Nassella Recovery	1m ² plots				70
SAMO	COND CLASS 2005 Topanga Fire Postfire Diversity	20 x 20 m ² relevee, 1m ²				189
SAMO	COND CLASS 2007 Corral Fire Burn Severity	FMH, twig d				67
SAMO	COND CLASS 2007 Corral Fire Chaparral and CSS Recovery	Modified Whittaker			30	30
SAMO	COND CLASS 2007 Corral Fire Seedling Demography	1m ² species counts			41	41
TOTAL			40		161	733

Table 2. Fire Ecology Staffing 2010

Ecologist and Monitors	Starting Date	Ending Date	# of Pay Periods	READ Qualified (Yes or No)	Training and Development
Marti Witter MEDN	1/1/10	12/31/10	26	Yes	
Tim Handley MEDN	4/12/10	9/24/10	12	No	ESRI online GIS training
Joey Algiers MEDN Fuels	1/12/10	12/31/10	26 (P/T)	No	
Wende Rehlaender PORE	5/11/10	5/19/10	1		See SFBAN report
Rosa Schneider PORE	5/11/10	5/19/10	1		See SFBAN report
Forest Taipale PORE	5/11/10	5/19/10	1		See SFBAN report
I&M MEDN					
Tarja Sagar	4/12/10	6/30/10	2		
Interns MEDN					
Mike Kane	3/16/10	7/30/10	10		
Mark Leung	4/1/10	5/30/10	2		
Kirstina Barry	5/24/10	9/10/10	8		
Angelina Kong	8/2/10	9/2/10	2.5		

Table 3. Management Objectives and Monitoring Results

Monitoring results will be submitted in December 2011.

The standard fuel reduction or forest stand density objectives common to the fire effects monitoring programs at other PWR parks are not appropriate for the shrubland dominated MEDN parks. Many of these other parks are forest dominated with excessive fuel loads and significant fire return interval departures (FRID). In contrast to forest parks where mechanical fuel treatments or prescribed fire can meet the multiple objectives of sustainable forest restoration, reduced fire severity, and improved community wildfire safety; fuels treatments at SAMO are not ecologically self-sustaining. In grasslands or shrublands reduced fuel loads must be maintained by repeated annual treatments. With the exception of mowing of non-native grasslands, repeated fuel treatments destroy or degrade grasslands and native shrublands. In the MEDN parks, prescribed burning does not restore ecosystem structure or function or lead to sustainable, resilient communities. For these reasons, fuels treatments are limited to those areas that provide for direct community or infrastructure protection in strategic locations.

CABR has not had a recent history of wildfire or prescribed burning. There is no fuels monitoring currently as all fuel modification is mechanical hand removal immediately around park buildings.

CHIS has had several prescribed burns and a recent small wildfire. Monitoring of both prescribed burning and wildfire monitoring have shown reduced native shrub cover and slowed native shrub recovery. Fire use therefore appears to be inconsistent with the broad resource management objectives of the park to restore the native island plant communities.

SAMO has had a history of prescribed burning throughout the 1980's and 1990's as well as multiple WUI wildfires with major structure losses, deaths and injuries (1993, 1996, 2005, 2007). FRID values in the Santa Monica Mountains are predominately negative and native shrublands are threatened with type conversion by high fire frequencies and short fire return intervals. The SMM's are also the "hottest spot" in the United States for climate change impacts due to increased environmental variability. By any measure, wildfire in the SMMNRA is a major environmental stressor and a challenge to the inherent resilience of its plant communities. Fire effects monitoring is focused on 1) understanding and mitigating the impacts of fuel modification treatments and 2) understanding the variables that determine postfire vegetation recovery from analysis of FMH legacy data and monitoring of recent wildfires.

Monitoring Unit	Management Objective (Restoration)	Monitoring Results (XX% confidence interval)	Objective Achieved?	Year Last Analysis Completed
	SUMMARY DECEMBER 2011			

B. Fire ecologist accomplishments and areas of focus

PARK FIRE MANAGEMENT PROGRAM

- Work has continued work on the defensible space database of the 1,966 private properties within 200' of the NPS property boundaries. Once fully implemented, we will be able to address in a systematic way the need for, and impacts of, fuel modification on NPS property. This will be crucial for our next FMP update.
- Google Earth .kml files of our defensible space database have been created and other fire-related layers for community wildfire planning purposes (e.g. wind, fire history, vegetation). It is anticipated that we will be able to post these data on the park's fire management – community outreach web page.
- Prepared PEPC compliance documents for park's 2010 defensible space and strategic fuels projects
- Supervised the fuels biotechnician to GPS, map, assess and perform limited weed treatments in all fuel modification areas. The 2010 information is the first complete set of maps and descriptions of fuel modification work. Careful monitoring and mapping identified some egregious problems and will hopefully prevent future problems of that type. With baseline information established we can now do more proactive planning for weed management in 2011.
- All defensible space sites were visited with the FMO, fuels specialist, restoration ecologist and fuels biotechnician to identify obstacles to meeting fuel modification objectives, monitoring requirements and impact mitigation efforts.
- Review of the defensible space fuels management program by PWR regional fire staff supported an integrated versus piecemeal approach to prioritizing defensible space projects.
- Provided technical expertise to SMM's CWPP planning process.
- Contributed content and organization to the park's public website regarding fire management. Fire ecology webpage is at <http://www.nps.gov/samo/parkmgmt/fireecology.htm>
This is an ongoing project and more content will be added this year.

CORRAL BAER/BAR

- Coordinated implementation of the \$166,718 Corral BAR plan for FY2010. The plan supported debris removal from roads and trails and non-native invasive species control.
- Partially completed (in progress) the 2010 Final Corral Fire BAR report for the Corral Fire BAR Project.

FIRE EFFECTS MONITORING

- Requested reconfiguration of FEM crew again. Twelve pay periods of a GS 5 seasonal biotechnician was transferred from PORE and we were able to re-hire Tim Handley as the SAMO fire effects monitor. He was able to do all the SAMO fire monitoring plots in the spring with the help of Tarja, Tony and different vegetation interns.
- Coordinated 2010 field work at CHIS and SAMO with the PORE fire effects crew. PORE crew did YR5 measurements of the shrub plots that burned in the Topanga Fire and rereads of CHIS plots installed for

the SCI Del Norte fennel burn. The CHIS plots were re-read to establish a new baseline since the pig removal in 2008. The CHIS plots will be transferred to their I&M monitoring program for future reads.

- Continued to use the samofire wiki to track FFI database changes and other shared work documents and task tracking for FFI between the two parks. Tim continues to be one of the most insightful FFI users and has provided extremely useful feedback on the next system upgrade.
- Tim created a working draft of a 6-letter plant species code list for SAMO. The vegetation group needs to meet to adopt a formal list for use in the field.
- All 2010 fire monitoring data collected by the SAMO and PORE crews was entered into FFI and data checked. Each park crew took responsibility for entering the data they collected in the field. SAMO is continuing to migrate older, non-FMH fire monitoring data into the FFI database. This year we completed entry of the Cheeseboro valley oak pole tree data. Our next goal is the Nassella and CSS data from the Topanga Fire fire effects studies.
- We are continuing to work on having all fire monitoring data available in a digital format and retiring “closed” paper files to the museum. All FMH paper data folders were organized and the scanned data sheet pdf files organized. A second round of quality assessment needs to be done and then the closed files can be moved to the museum.
- It turns out that SAMO is ahead of the curve in digitizing our FMH plot photos and no other PWR parks have done this yet. The down side of this is that there are no standards for organizing photo archives, so we’ve had to develop our own methods with help from Tony Valois. All of our plot photos are now digitized and named so that each photo contains all the relevant plot information in format that will automatically establish a time series for each plot photopoint in its windows folder.
- Tim Handley completed analysis of three years of postfire data in the CSS plots on Santa Cruz Island (2006 Cruz wildfire on Nature Conservancy property). This needs to be summarized and distributed as a management brief.
- Three years of data from the 2007 Corral Fire monitoring plots has been exported in an analyzable format and some preliminary data summaries have been completed. Considerable time was spent on modeling seedling mortality and recruitment, which in the end showed that there is no substitute for really good data. So far our analysis has shown more where problems lie in field methods and has suggested necessary changes in field protocols. In the coming year it is planned to use the results of these data to prepare a fire monitoring program that can be rapidly implemented when we have our next wildfire.
- Amended MRT task agreement to accept USGS funding for analysis of CHIS long term vegetation monitoring data. Tim Handley began work on this project with Kathryn McEachern when his seasonal position here ended.

VOLUNTEER AND INTERN PROJECTS

- Volunteer Richard Redman completed the mapping and measurement of all planted oak trees at Cheeseboro and Malibu Creek State Park. This many months long project involved more than 3000 plants. Rich also assisted Ann in her *Dudleya* mapping and Tim in the Corral fire monitoring.
- Michael Kane, Angeline Kong and Kirstina Barry were brought on as fire ecology interns and assisted Tim Handley in the field with the Corral fire monitoring, FMH monitoring, and valley oak pole oak monitoring and fuels monitoring in Cheeseboro with Joey. They also assisted in data organization, entry and management. All three also contributed significant time to the *Dudleya* project with Ann and to vegetation surveys with Tarja.

SUPPORT FOR MEDN FIRE ECOLOGY RESEARCH/UNIVERSITY COLLABORATION

- James Hayes (Department of Geography, CSUN)
 - MS thesis based on Corral Fire burn severity data: Mohammad, Bedoor Adel. 2009. *Validating Measures of Fire Severity in the Santa Monica Mountains Using remote Sensing and GIS*. California State University, Northridge. MA (Geography), 74 pp.

- Valley Oak Population Dynamics at Three Sites in the Santa Monica Mountains. James J. Hayes Department of Geography, California State University Northridge (Draft poster)
- Pepperdine University, Stephen Davis Lab
 - Three 2010 ESA student presentations were funded at least partly by NPS. Funding sources from NPS to support the Davis lab have included a) 2007 Fire Reserve Funds for \$25,000. Project title: *Mechanisms and Effects of Resprout Failure on Post-fire Chaparral Regeneration*; b) 2007 BAR grant for \$8500 to support student biotechnicians to monitor drought impacts on postfire vegetation recovery; c) 2008 SAMO Youth grant for \$16,000 for summer student research projects (Tiszler).
 - #1. Using microsatellites to assess genetic variability in *Ceanothus megacarpus* in the Santa Monica Mountains of California. Caitlin D. Ishibashi, Anthony R. Shaver, David P. Perrault, Rodney L. Honeycutt, and Stephen D. Davis.
 - #2. Plasticity in cavitation resistance and mechanical strength of stem xylem in *Heteromeles arbutifolia*, adults versus post-fire resprouts. Iolana N. Kaneakua and Stephen D. Davis.
 - #3. Photosynthetic plasticity in post-fire resprouts of the chaparral shrub, *Heteromeles arbutifolia*. Mary C. Zuniga (Northern Arizona University) and Stephen D. Davis
- Paul Laris (Department of Geography, CSULB) will be bringing students to Cheeseboro to remeasure the planted valley oaks that were mapped and measured by Rich Redman.
- Our UCLA senior practicum proposal was accepted for the 2011 field season ("*Historical Distribution and Status of Coastal Sage Scrub in the Santa Monica Mountains National Recreation Area*")
- The UCSB Bren School MS thesis project that we solicited last year was completed. Its title is "*Using Surface Winds to Improve the Accuracy of Fire Spread Modeling for Hazard Assessment: A Case Study in Santa Monica Mountains National Recreation Area.*" Adam Anderson, Kyung Koh, Danica Schaffer-Smith, Erin Shapiro, Wendy Su.

TECHNICAL ASSISTANCE

- Santa Monica Mountains Fire Safe Alliance
- Correction to BARC image library for SMM's.
- SMMNRA burn severity data and issues with chaparral shrubland burn severity measures for Greg Dillon, USFS Missoula Fire lab.
- Peer review of USGS manuscripts

RESEARCH INFORMATION TRANSFER

- Trying to get LA County fire to change the critical threshold on their live fuel moisture graph from 60% to 80%. No success so far. Will propose as a test case for the JFSP California fire consortium.

PUBLICATIONS AND CONFERENCE ABSTRACTS

- George Wright Society March 2011 conference abstract. *Balancing park natural resources and fire safety in urban-wildland interfaces*. Irina C. Irvine, Kathryn Kirkpatrick and Marti Witter

OTHER PRESENTATIONS

- None

PROPOSALS

- 2010 PWR fire reserve request. *Santa Monica Mountains National Recreation Area Wildland Urban Interface Defensible Space Database*. Not Funded. Work ultimately supported by SAMO Fire Program funds (Gregory) and PSRM support for Luis.
- 2010 JFSP. *Mapping spatial and temporal variability in Southern California chaparral fine fuels using MODIS, Landsat, and field sampling*. Not Funded. Will resubmit modified proposals in 2010-2011.

OTHER ONGOING PARK PROJECTS

- Monitoring postfire effects in *Quercus lobata* sapling oaks.
- Mapping and growth measurement of planted QULO in Cheeseboro and Malibu Creek State Park (volunteer project)
- Data archives and maps from Klaus Radtke of structural losses in the 1993 Old Topanga Canyon Fire and the 2007 Corral Fire. Klaus Radtke's records of these fires are being transferred to the NPS. We have digitized the large scale maps of individual structure losses that we received from Klaus and have shared them with Alex Syphard (USGS) who is currently doing an analysis of factors contributing to structure losses in southern California. This is unique data and is invaluable in understanding how structures are lost in southern California wildfires. Klaus also has a wealth of information on the fire history of the Santa Monica Mountains and has played an important historical role in understanding fire history here. His records and hopefully an oral history of his time at the LA County fire department would be an important addition to our park's historical records.

PARK SUPPORT

- Sign Committee Chairman
- Science Fair Fire Ecology and Community Safety Posters
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 - Fire_PosterMarti_Autosuccession_EcologyBB
 - Fire_PosterMarti_Climate_REGIME_BB
 - Fire_PosterMarti_EMBER_CommProtection_BB
 - Fire_PosterMarti_Regeneration_Ecology_BB
 - Fire_PosterMarti_SMM Wildfires_CommProtectio_BBn
 - Fire_PosterMarti_Type Conversion_Ecology_BB
 - Fire_PostersRobertTaylor_IgnitionsWind_RegimeBB
- Nature Bridge Training sessions fire ecology

C. Fire effects crew accomplishments and areas of focus

Tim Handley, Fire Effects Monitor

Tim Handley, the SAMO seasonal fire effect monitor continued to be an exceptional asset to the Mediterranean Coast Network's fire monitoring program in his second season here. Tim continued to improve our FFI database. He has identified problems or structural defects in the operation of FFI and has provided among the most insightful recommendations for the proposed software updates to the FFI development team. He created an updated species crosswalk for field codes for SAMO plant species to be consistent with the SAMO's I&M local species codes. His next project will be to create the crosswalk between the CHIS I&M four letter field codes and the old FMH four-letter codes. Now that all older FMH SAMO and CHIS data have been entered into FFI, Tim began to enter SAMO non-FMH fire monitoring data, which will be continued.

Tim worked as the fire monitoring crew leader with Tarja Sagar, SAMO botanist; Michael Kane, fire ecology intern; Kirstina Barry, vegetation intern; Mark Leung, botany intern; Angeline Kong, vegetation intern, and Richard Redman, plant ecology volunteer to do 3rd year re-measurement of the 30 large 400m² Corral Fire shrub plots established in 2008. In addition Tim and crew members revisited the Valley Oak sapling plots, Corral Fire seedling plots, and strategic fuels grassland plots.

Tim was always extremely organized and prepared for the field and meticulous in data collection. He often anticipated potential problems or identified data discrepancies that needed to be clarified. He worked with many different people and was always flexible and happy to adjust to the needs of balancing available personnel among the many ongoing vegetation projects during the field season. I feel that Tim's organization and ability to lead and work with others enabled us to greatly increase our effective manpower and consequently expand the scope of our field objectives and obtain our data during the appropriate seasonal window for each project.

Tim's attention to detail in data analysis identified discrepancies in the GPS locations of the Cruz Fire plots on the aerial base layer used to determine the extent of pre-existing native CSS vegetation. He and the fire ecologist revisited the Cruz fire plots and were able to re-collect GPS data to resolve the georectification problem.

Tim supervised all of the work on the FFI database: from installing the system on multiple machines; working through the idiosyncrasies of the system to operate it as we needed; designing custom protocols for CHIS, SAMO and PORE; supervising data entry and quality control; and exporting clean datasets for analysis. We continued to use Tim's innovation of an FFI wiki site to post information that needed to be shared between the PORE and SAMO staffs. This allows coordination on the database and avoids version conflicts or other inefficiencies. Because Tim was so independent and capable, and did such high quality work, the fire ecologist had time freed to work on other projects in the fire ecology program that she otherwise would not have been able to do.

Tim worked with numerous SAMO staff in the field including Tarja Sagar, SAMO botanist; Michael Kane, fire ecology intern; Kirstina Barry, vegetation intern; Mark Leung, botany intern; Angeline Kong, vegetation intern, Richard Redman, plant ecology volunteer, and Marti Witter, fire ecologist. He also worked with the PORE fire effects monitoring crew on data issues. He was unfailingly considerate, courteous, and thoughtful when working with others. Because Tim worked so well with such a wide range of people, we were able to get a tremendous amount of field work done with many different people.

Tim exhibited the necessary flexibility, thoughtfulness and foresight to optimize his field time. He often would alter his schedule to accommodate completing a plot if it meant saving time that would have to have been spent returning to a remote plot location. The field staff that assisted Tim were working on several other projects and Tim was always flexible and happy to adjust to the needs of balancing personnel among the other projects during the field season.

Tim quickly established himself as an expert in the FFI database and was always available to help others solve their problems. Similarly Tim has outstanding programming and analytical skills and provided expert advice whenever asked.

Tim is a wonderful person to work with and improves the whole organization because of his ability to work well with others and by providing unique skills that are not otherwise available.

Because Tim was exceptionally efficient in his field and data management work, there was a significant amount of time available for data analysis. Tim again exhibited extraordinary initiative and outstanding analytical capabilities.

Tim completed the analysis of the Cruz Fire data with sophisticated analysis of species diversity, burn severity and vegetation recovery patterns. For the Corral Fire data set he has analyzed the rapid assessment burn severity plots (as distinct from the nested macroplots used to measure diversity and regeneration). Tim is continuing to work on this data set with Julie Yee at USGS to develop a model to relate burned twig minimum diameters of various species to chamise as a global standard in order to estimate burn severity in different vegetation types without chamise present. On the Corral Fire macroplot data set Tim exported all of the data into a series of useful analyzable data tables and has done preliminary analyses including stratification of sites; data checking for odd values or discrepancies; frequency distribution of species occurrence at different spatial scales; potential linking of macroplot burn severity data to the burn severity plot data; shrub mortality for individual species related to burn severity; seedling :resprout ratios for individual species; and estimation of experimental error in subplot relocation between years.

Tim's careful analysis of the burn severity, macroplot and seedling plot data all showed numerous areas in which improvement of the fire monitoring protocols and field methods could be improved. One of the goals from this year's analysis is to revise all of the experimental protocols prior to our next wildfire with a plan for where and how to collect data in advance of the event (hopefully not before fall, 2011 now). Eventually we hope to use the data from the 2007 Corral Fire, the 2005 Topanga Fire and plot data from Jon Keeley's 1993 plots established after the 1993 Green Meadow and Old Topanga Fires to provide us a comprehensive picture of the spatial distribution of the post fire flora of the SMMNRA.

For all of the analyses, Tim independently researched the most appropriate statistical methods and the most effective display of results. He always dug deeper to get the most information available from the data and to ensure that his results and conclusions were statistically defensible.

When Tim completed his seasonal appointment here we were very fortunate to have him hired to work with the USGS at CHIS on analysis of their long-term vegetation monitoring data. This will undoubtedly be of benefit to CHIS and hopefully will provide a good career development step for Tim.

Joey Algiers, Fuels Biotechnician

Joey has been an exceptional addition to the Mediterranean Coast Network's fuels treatment and weed management programs. Joey's outstanding combination of monitoring, weed treatment and mapping experience have made him invaluable for implementing this year's projects.

Joey is always extremely organized and prepared for the field and meticulous in data collection. His map making and data management are exceptional. He works independently and solves problems as they arise. Joey worked with numerous SAMO staff in the field including PSRM biologists and interns, CCC, SAMO Youth, fuels crew staff and LA County inmate crews. He is unfailingly considerate, courteous, and thoughtful when working with others. He is flexible and plans ahead to optimize his field time. If needed, he alters his schedule to accommodate other crew schedules. Because of his ability to lead and work with others Joey is a "force multiplier" that allows a much greater amount, and higher quality of work, to be accomplished.

When not leading work crews, Joey is a one-man team who assesses treats and maps the 17 fuel modification sites in the park. His initiative in early treatment of problem weed areas has resulted in significant declines of noxious weed populations in these areas.

Finally Joey is a valuable contributor to the park's restoration/weed treatment group as we have worked to develop standardized protocols for BMPS and standardized protocols for data collection and management. His insights from five years of field experience have allowed him to contribute substantive recommendations regarding the more vexing problems in assessing weed treatment and restoration activities e.g. how should populations be mapped? how should data be gathered and stored? How should data be displayed?

Table 5. Fire Effects Crew Accomplishments/Focus Areas

Category	Percent Time	Notes
FMH plots	See SFBAN report for PORE crew	
WUI plots		
CBI plots		
Other plot work		
Wildfire assignments		
Prescribed fire projects		
Non-fire fuels projects		
Data entry		
Data analysis		
Supervision/Admin		
Training		
Miscellaneous		

D. Additional Information

Table 6. Data Entry and Projects Monitored

Park	% 2010 Data Entered	% 2010 Data Quality Checked	# Prescribed Fires Monitored*	# Non-fire Fuels Treatments Monitored*	# Wildfires Monitored*	# BAER Treatments Monitored*
CHIS	TO BE COMPLETED DECEMBER 2011					
SAMO						

* Number of treatment units with treatment effects monitoring conducted. Include pre-burn and post-burn monitoring but not burn-day monitoring.

E. Optional Information

INSTRUCTIONS FOR UPLOADING 2010 ANNUAL REPORT

1. Save your report as a PDF file using the following file naming convention “2010 *Park/Network Name* Annual Report.pdf”.
2. Go to the NPS Fire Ecology Sharepoint site (<http://npsfamshare.nps.doi.net/wildlandfire/firescience/fireecology/default.aspx>). In Fire Ecology Documents, upload your report to the 2010 Park and Network Fire Ecology Program Annual Reports folder.
3. Please e-mail your regional ecologist, Nate Benson, and MaryBeth Keifer to let us know when you get your report uploaded.

Call MaryBeth Keifer (603-795-2333) or Nate Benson (208-387-5219) if you have any questions or problems.

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