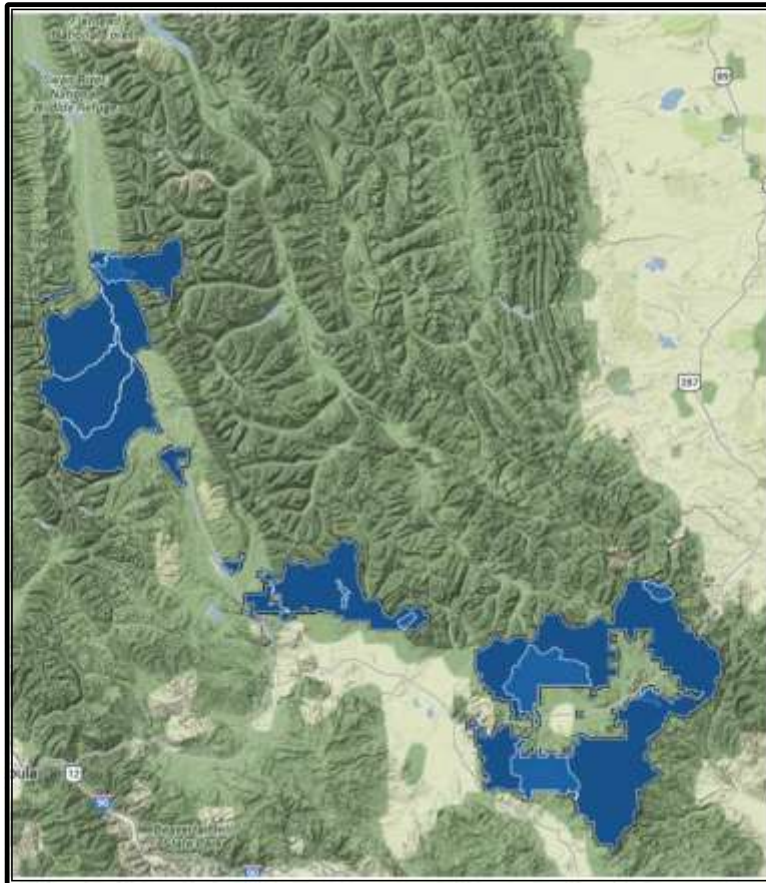




**SOUTHWESTERN CROWN**  
COLLABORATIVE

## **Baseline Southwestern Crown of the Continent CFLRP**

### **Fire Manager Study**



**Keith Stockmann, PhD**

**December 5, 2013**

## Executive Summary

A questionnaire and follow-up discussion were used to obtain baseline results regarding fire manager perceptions on a range of topics relevant to wildfire management and costs. Monitoring questions asked fire managers in the Southwestern Crown of the Continent Collaborative Forest Landscape Restoration Project Area whether this large landscape project is expanding options for fire managers from multiple agencies to allow fire to play its historic role in forest disturbance. Quantitative results as well as narratives with summaries from the first round during 2012 are presented. Documentation of the communication materials and questionnaire are also included.

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## **Long-term plan objectives which pertain to this proposal include**

D3: Reduce fire management costs

### **Questions**

Have Southwestern Crown of the Continent (SW Crown) vegetative and fuel treatments expanded the options of SW Crown fire managers to allow fire to play its historic role in forest disturbance?

What is the likelihood that federal, state and rural fire managers could choose more passive options and what are the determinants of this likelihood?

### **Introduction**

A major goal of the Southwestern Crown of the Continent Collaborative (SWCC) is to reduce the costs of fire management and to allow fire to play more of its historic role in forest disturbance. Restoration and fuel reduction treatments may result in improved conditions on the ground, but fire management costs will not change unless decisions made by fire managers change. This project will track changes in fire managers' perceived options for more passive fire management as conditions on the ground change.

### **Integration**

The project will complement the Risk and Cost Analysis Toolkit (R-CAT) national indicator analysis. It will also complement stand and landscape-level fire modeling conducted by the vegetation resources group.

### **Instrument Information**

An economist from the social and economic working group of the Southwestern Crown of the Continent multi-party monitoring committee developed a pre-notification letter (Appendix A), a letter requesting participation (Appendix B), a questionnaire (Appendix C) and follow-up discussion questions during Spring 2012 to establish a baseline for the long-term multi-party monitoring effort. Edits were offered by Krista Gebert, Cynthia Manning, and Cory Davis. Dr. Kathy Kuipers, Associate Professor and Chair of Social Science at The University of Montana supported questionnaire development through a partnership agreement.

The original document consisted of 77 questions and was converted to an online instrument by Cynthia Manning and Nat Hile. A link to this questionnaire was sent to desirable Federal, State and Rural Fire Department Fire Manager participants in an informative email. The email was originally sent to 19 Forest Service employees, 1 BLM employee, 7 State of Montana employees, 2 rural fire department staff and 1 volunteer fire department staff. Responses began during June 2012 and ended in December 2012. There were 18 respondents to the online survey, representing a 60% response rate. Simple questions tended to get a full set of responses; however tables with lots of options tended to have much lower response rates. A synthesis of the responses can be found below. In cases where Forest Service responses varied dramatically from other responses they are highlighted, however, the small total number of respondents and smaller Forest Service number of respondents prevent any statistical statements regarding differences in responses. The full set of responses can be found in Appendix D.

Respondents included Montana Department of Natural Resource Conservation (7), Forest Service (5), Other (3) Volunteer Fire Department (2), Rural Fire Department (1) and USDI, Bureau of Land Management (1) respondents thus far, nearly all indicated considerable experience, most have been on fire teams. **The following is a profile of experience “Making cost/risk decisions on active fires,” 21% minimal experience, 29% some experience, 50% considerable experience. 79% of all respondents and 100% of Forest Service respondents have experience making cost/risk decisions on both initial attack and large fires, while 14% of all respondents have experience limited to initial attack and 7% have experience limited to large fires.** The majority of respondents (60%) have entered costs into the Wildland Fire Situational Analysis (WFSa), Although only have of the respondents have entered costs into the Wildland Fire Decision Support System (WFDSS), 80% of the Forest Service employees have entered costs into this system. Very few respondents (13%) have collected costs as part of preparing a 10-year Comprehensive Strategy Implementation Plan report. The following is a profile of Incident Commander Experience, 53% *IC Type 3*, 13% *IC Type 2*, 7% *IC Type 1*, and 40% *no IC experience*. 56% of all respondents and 80% of Forest Service respondents have written a letter delegating authority for fire management. For those who help plan fuel treatments, they often work with timber staff, silviculturists, recreation planners, biologists, and less frequently with botanists, entomologists, or economists. Forest Service employees showed higher percentages of inclusion than other respondents for all specialties.

Following completion of the online survey, participants were contacted by Roger Marshall, Stewardship Forester for the Swan Ecosystem Center, operating through a partnership agreement for follow-up discussions, consisting of eight additional questions. These questions attempt to find specific areas where treatments could be helpful at increasing fire management options, augmenting recent treatments, road management, letters delegating authority, guidelines to prioritize treatments, feedback for the SWCC, and any additional information they wanted to share. Ten survey respondents completed follow-up questions between July 26, 2012 and December 14, 2012. A full listing of the results of these discussions is provided in Appendix D. Some responses included suggestions for additional participants.

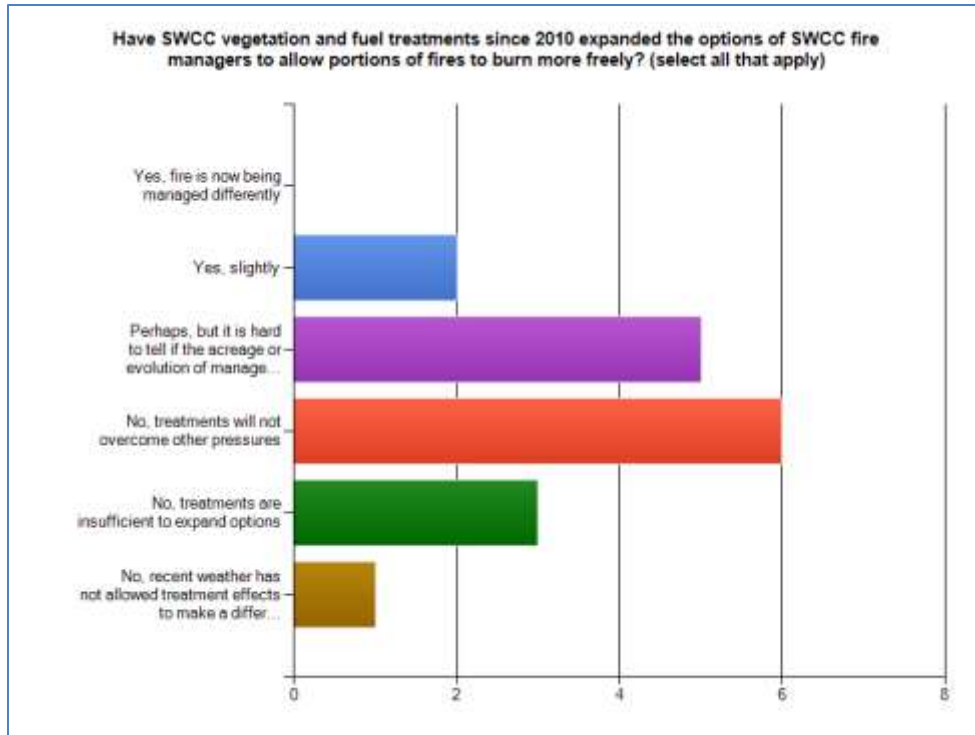
### **Temporal Context for the Baseline Assessment**

It is worth noting that prior to and during the baseline evaluation, two fires occurred in the SW Crown that may have influenced some respondents. During August 2010, The Davis 5 Fire, formerly a 100-acre prescribed fire, escaped on the Lincoln district. It forced some evacuations, burnt private lands and prompted an investigation and review (<http://wildfiretoday.com/documents/DavisRxFireReview.pdf>). In addition, during the summer of 2012 (while the baseline survey was open), the Condon Mountain Fire burnt for several weeks, and was a demonstration of how fuel treatments can help fire managers. Appendix F is a description entitled “Restoration Management Successful in Protecting Large Trees, Property, and Providing Successful Anchor for Fire-fighters.”

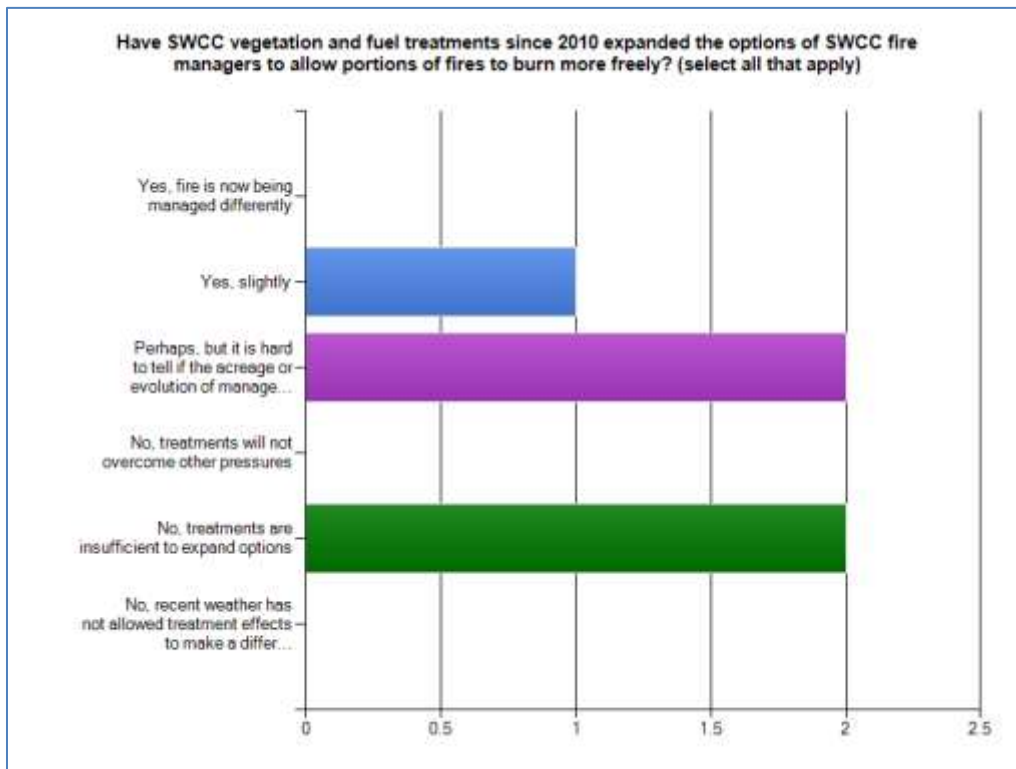
## Key Findings from Questionnaire Responses

- **Are you familiar with CFLRP?** Overall familiarity with CFLRP is split roughly into thirds, with 35% *very familiar*, 30% *somewhat familiar*, and 35% *barely familiar*. All 17 respondents to this question had heard of it. Familiarity with SWCC (the local CFLRP effort) and its projects are higher, with 41% very familiar, and 29% each, *somewhat* and *barely familiar*. Forest Service respondents were all at least *somewhat familiar* with CFLRP, as well as the SWCC Landscape Strategies and Proposal and which projects are funded with CFLRP or matching funds.
- **Are fuel treatments effective in reducing fire intensity? Most fire managers felt fuel treatments are able to reduce potential fire intensity in the stands where they are conducted.** Whereas overall results ranged from *some of the time* to *all of the time*, **all Forest Service respondents selected *most of the time***. A much smaller portion of all respondents felt they *would be effective under all weather conditions*.
- **What influences your comfort level with using prescribed fire for retreatment?** The most common factors were *once the fire line has been completed in combination with roads and trails, when resources are available and on alert for escape, and if done within a short period of time since treatment*.
- **How well do you feel you understand the fuels conditions and social attitudes toward fire management in the SW Crown and how accessible is that information?** Although most managers are *slightly familiar* or *somewhat familiar* with fuels information in the SW Crown, only a quarter of all respondents (including 40% of Forest Service respondents) indicated they were *very familiar*. Most indicated they were *somewhat familiar* with social acceptability of various management strategies, attitudes toward fire preparedness programs, and perceptions of safety and risk. However, the difficulty of locating these types of information was mixed. There have been *very little increase* in requests for public information about fires since SWCC began, although there have been relatively few fires in the landscape in that time.
- **Has the pace of fuels treatments changed in the last three years and has placement effectiveness increased? The perception of the pace of fuel treatment in the last three years was mixed with most ranging from *somewhat faster* to *somewhat slower*, with little or no change in placement effectiveness on adjacent public lands. But some respondents indicated improved placement on NFS and private lands.** Forest Service respondents mostly saw no change in placement on NFS land since CFLRP started, but 20% indicated placement was *somewhat more effective* and 20% indicated it is *much more effective* now than previously.
- **Are fuels treatments keeping up with fuel accumulation?** Most fire managers seem to indicate fuel treatments are making *some progress* or *little progress* keeping up with fuel accumulation in the SWCC. **Not a single respondent indicated *we are making considerable progress in reducing fuel accumulation***.

- **Are the Community Wildfire Protection Plans from the Healthy Forest Restoration Act influencing treatment placement?** Community Wildfire Protection Plans that are in place for the SW Crown area are *mostly influencing* treatment locations.
- **How long do fuel treatments remain effective? Treatment longevity (for management and fire treatments) generally suggested a range of 10-20 years with some outliers indicating zero if not burned, 7 years for some fuel types, but even up to 40 years.** Factors perceived to control this were *new density, time since previous burn, previous burn severity, species composition* and *new crown spacing*.
- **Are there short-term threats to reducing treatment effectiveness?** Short-term threats are pile and scattered activity fuel seasoning prior to broadcast burning condition windows being open. **There may be opportunities to reduce these short-term threats by incentivizing removal of small or non-saw activity fuels.** This finding supports a closer look at the impact on sale value from requiring this removal, which is another question in the current long-term monitoring plan.
- **Are there long-term threats from treatments?** The greatest potential long-term threats from fuel treatments were higher winds (43%) and greater solar incidence (43%).
- **Have treatments since 2010 increased your options for allowing portions of fires to burn? A real mix of opinion exists about expanded options for fire managers to allow portions of fires to burn more freely following SW Crown vegetation and fuel treatments since 2010.**

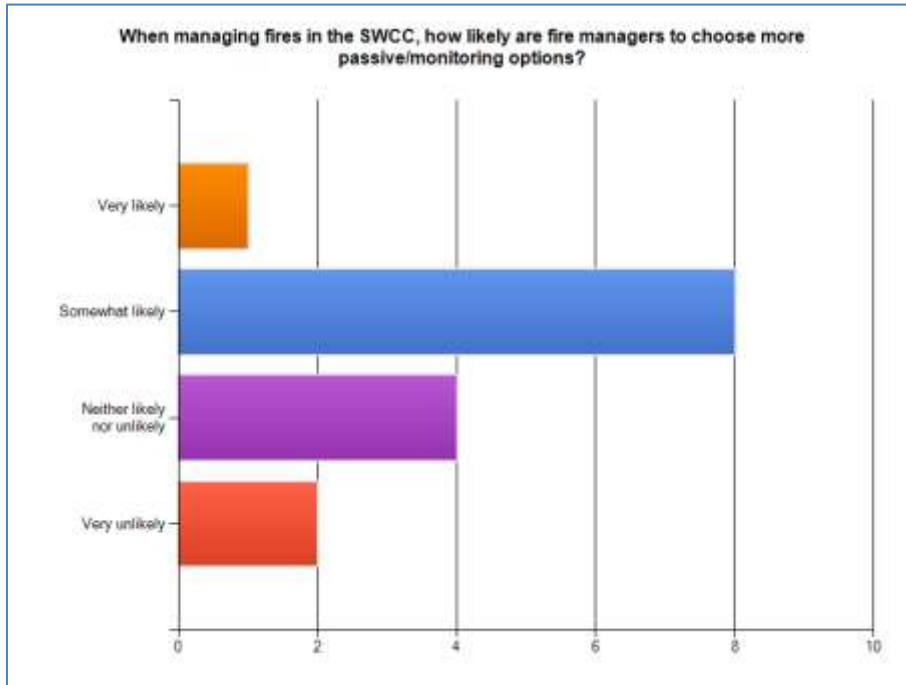


ALL RESPONDENTS (17)

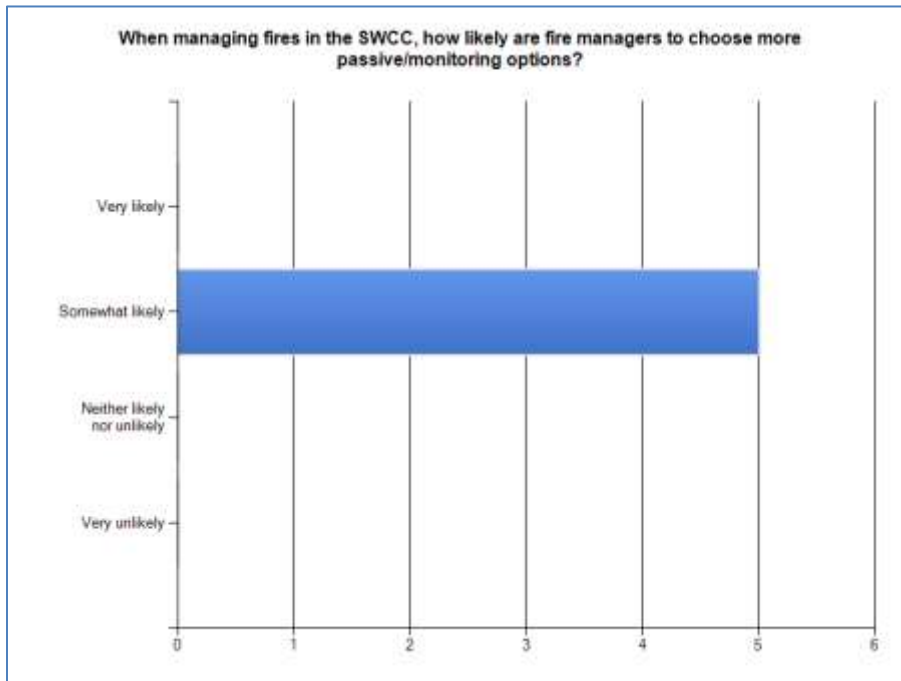


FOREST SERVICE RESPONDENTS (5)

- How likely are fire managers to choose more passive/monitoring options? Overall respondents were split, however, all Forest Service respondents selected *somewhat likely*.



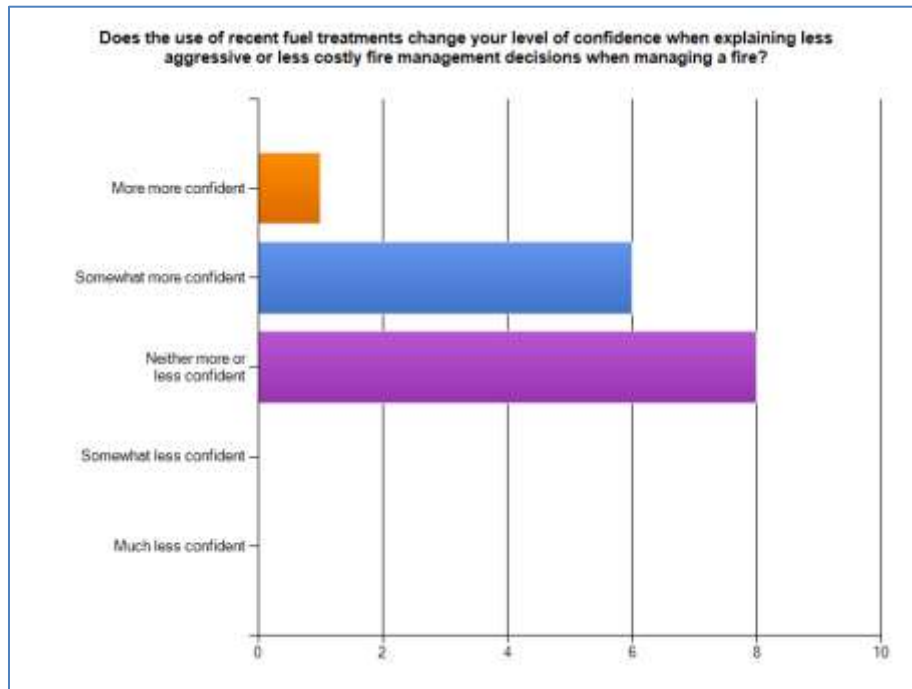
ALL RESPONDENTS (15)



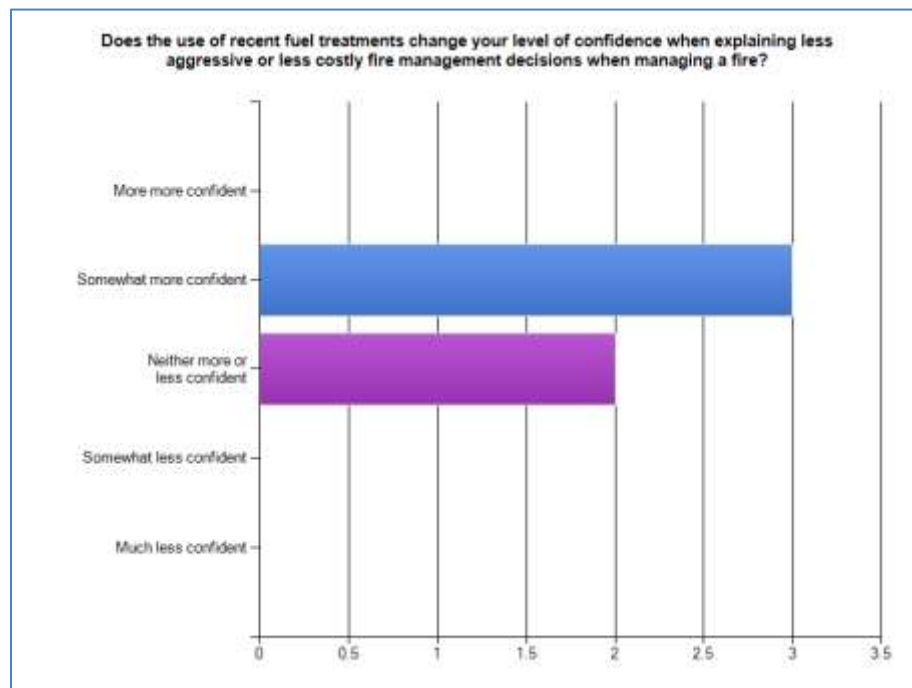
FOREST SERVICE RESPONDENTS (5)



- The majority of respondents felt recent fuel treatments are *somewhat important* or *very important* in making contingency plans for fires in the SW Crown.
- **Do fuels treatments provide justification for less aggressive strategies? There is increasing confidence for explaining less aggressive and less costly fire management decisions and for making contingency plans for fires in SW Crown.**



**ALL RESPONDENTS (15)**

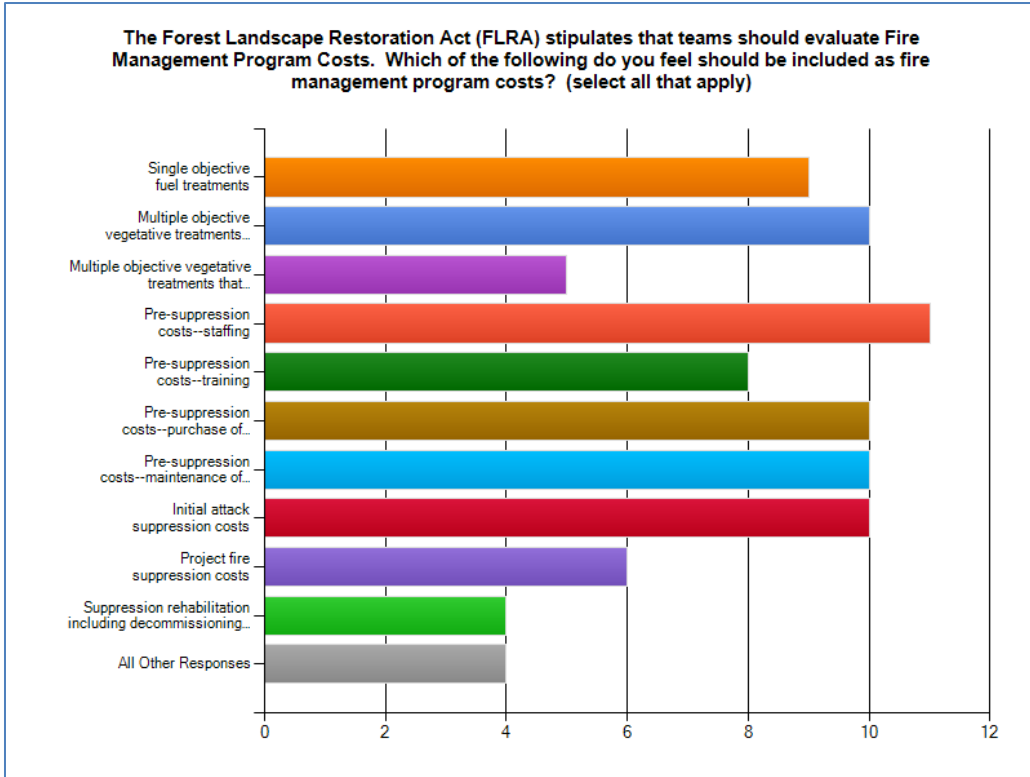


## FOREST SERVICE RESPONDENTS (5)

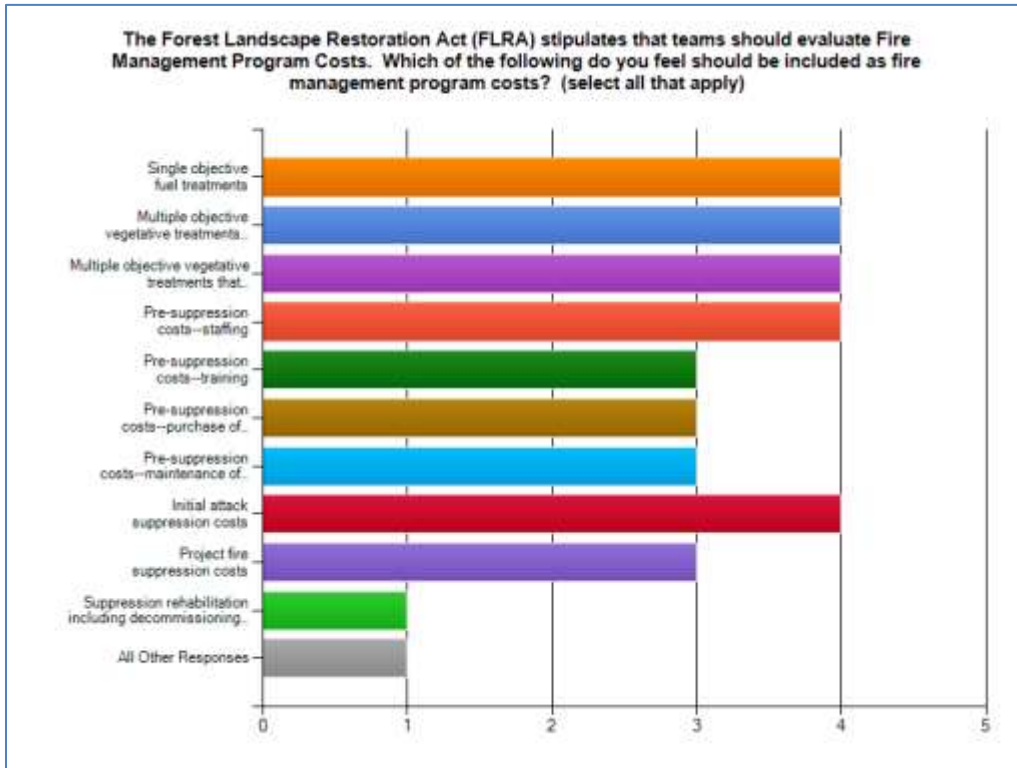
- **Do fuel treatments change your risk perception when managing fires?** Managers suggest knowledge of fuel treatments and recently burned areas are very important in dictating strategies and tactics, and somewhat important for resource ordering. 80% of Forest Service respondents *agree* that “fuel treatments change my risk perception when managing fires.”
- **Managers seem to suggest treatments and recent burns are somewhat to *very influential* for safety, costs, perceptions of agency competence, protection of public and private resources, recreation, outfitter guides, etc.**
- **How does road access influence fire management decisions? Roads are *somewhat influential* or *very influential* in fire management decisions and costs,** most strongly impacting firefighter safety (69% - 1 = most important, 25% - 2) and resource mobility (27% most important, 27%- 2, 27% - 3). Road access is seen as least important for public-safety health concerns.

### Fire Program Management Costs

- **How much decision space do managers have to reduce costs:** Respondents were split on their perception of the level of decision space (true latitude to make decisions given laws and policies) they have as individuals to change fire management costs, with most participants (56%) selecting *some*, 25% selected *yes* and 19% selecting *no*. Nearly all Forest Service respondents selected *some*, one selected *no* and none selected *yes*.
- **What should be included when analyzing fire costs: Fire managers show support for including most aspects of fire management in the analysis of fire program management costs.** The least support was for including: *long-term rehabilitation* (8%), *Burned Area Emergency Response (BAER)* - 23%), *suppression rehabilitation including decommissioning and recontouring roads and fire lines* (33%), and *multiple objective vegetation treatments that reduce standing trees but do not change surface fuels* (42%). **It is interesting that only 46% of all participants thought project (large) fire suppression costs should be included in the analysis.** Forest Service participants had similar responses, with even less support for including *long-term rehabilitation*, *BAER* and *Suppression Rehabilitation*. They also showed slightly lower support for including all three categories of pre-suppression, but higher support to include all types of fuel treatments, and 60% support to include project fires.

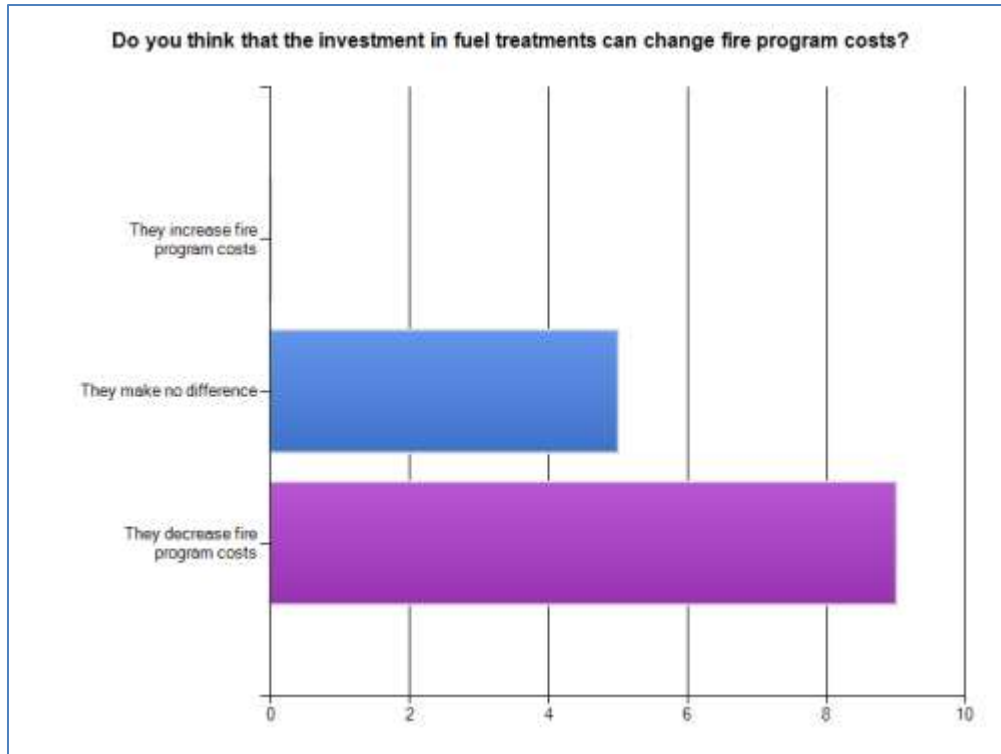


**ALL RESPONDENTS (13)**

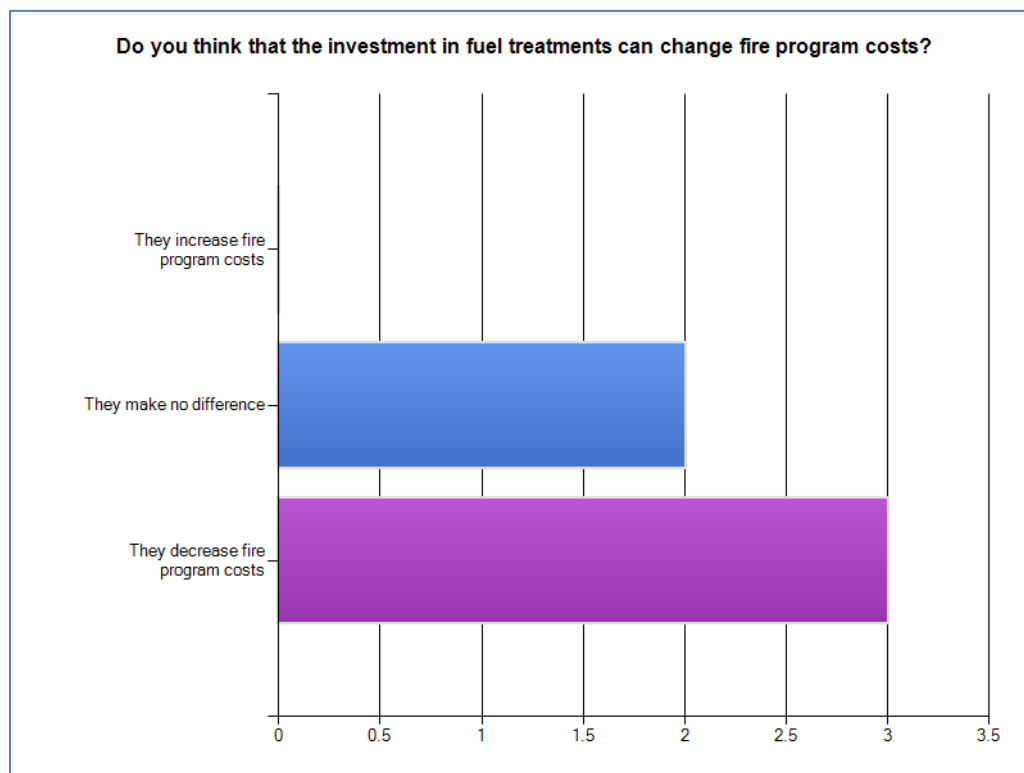


**FOREST SERVICE RESPONDENTS (5)**

- **What does it cost to maintain fuel treatments?** Re-treatment costs were generally expected to be 0-75 percent of initial treatment costs, with *less thinning required* and *simpler burning* serving as main explanations. Nobody indicated retreatment costs would be more than initial treatment.
- **How much of a watershed needs to be treated?** To improve initial attack success, respondents generally think 0-25% or 26-50% of a watershed/fireshed needs to be treated with relatively recent treatments to be effective. There was general optimism that fuel treatments in the SW Crown landscape can decrease initial attack costs. Respondents generally think 26-50% or 51-75% of a watershed/fireshed needs to be treated to reduce large fire costs in the SW Crown landscape, with some participants selecting 0-25% and 76-100% as well.
- **Can fuel treatments in the SW Crown decrease the number of fires needing initial attack?** Overall, 50% of participants answered yes compared to 40% of Forest Service respondents; 37% overall said *maybe*, and 13% said *no*, but 40% of Forest Service respondents answered *no*.
- **All respondents expect small fire costs to *decrease* in the SW Crown as treatments are implemented.**
- There is optimism that large fire costs can be decreased as SW Crown treatments are implemented, with **63% of all respondents and 40% of Forest Service respondents selecting yes, when asked do you think fuel treatments implemented across the SW Crown landscape can decrease large fire costs?** While only 6% of all respondents selected *no*, 20% of Forest Service employees did.
- **There is general optimism that a strategic set of treatments could be capable of affecting fire behavior in untreated stands located among treated stands.** Overall 25% selected *yes*, 69% selected *maybe* and 6% selected *no*. 60% of Forest Service employees responded *yes*, 20% *maybe* and 20% *no*.
- Rehabilitation costs might be reduced if fuel treatments are implemented across the SW Crown landscape, not a single respondent selected *no*.
- The majority of respondents said there are detectable trends in contracted firefighting costs, with them going up in the last 3-15 years.
- Having treatments inside or near a burning fire don't seem to influence aviation resource use for most respondents.
- **All respondents, including the subset of Forest Service employees, were split in their thoughts about the influence of investment in fuel treatment to change fire program management costs, with the most (64%, 60%) suggesting *they decrease fire program costs*, and another group of respondents (36%, 40%) suggesting *they make no difference*. Not a single respondent selected *they increase fire program costs*.**



**ALL RESPONDENTS (14)**

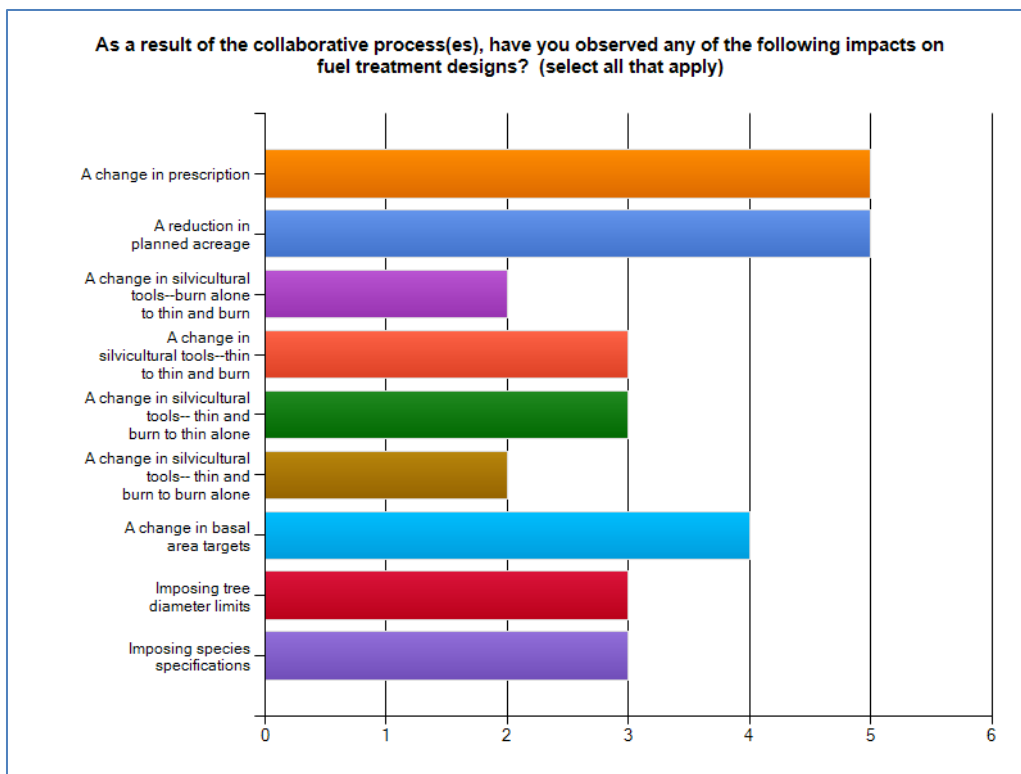


**FOREST SERVICE RESPONDENTS (5)**

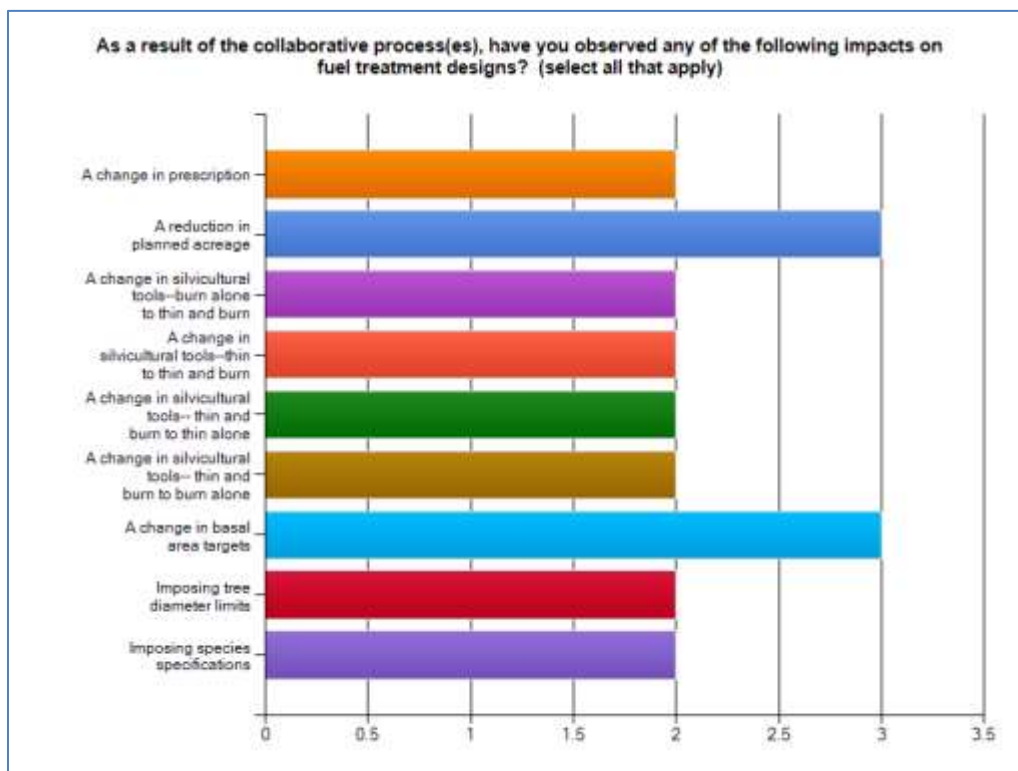
- There was very little familiarity with R-CAT. **All but one respondent selected I am unfamiliar with R-CAT.** Only one respondent was familiar with R-CAT, and that person did think it could be useful *for selection of proposals to fund, to develop fuel management plans that prescribe treatment and location, and to demonstrate the benefits to taxpayers from land management investments.* That person did not think it could be useful *to determine the allocation of funding among selected teams.*

### **SWCC Influence**

- When asked “Do you think input from the collaborative process(es) in the SW Crown is influencing treatments?” 50% selected *somewhat more effective*, and 21% selected *much more effective* and 21% selected *no impact*. One respondent (7%) selected *somewhat less effective*.
- As a result of the collaborative process, all respondents (and Forest Service respondents specifically) observed the following impact on fuel treatment designs:
  - **Changes in prescriptions - 63% (50%)**
  - **Reduction in planned acreage - 63% (75%)**
  - Change in basal area targets - 50% (75%)



**ALL RESPONDENTS (8)**



**FOREST SERVICE RESPONDENTS (4)**

- The most limiting in reaching fuel treatment objectives:
  - **Reduction in planned acreage - 100% (100%)**
  - Changes in prescriptions - 33% (40%)
  - Imposing tree diameter limits - 33% (40%)
- When asked if fuel treatment funding might influence options to allow fires to burn more freely, nearly half (47%) said no increase or decrease, but several (33%) expected a slight increase and others (20%) expected great increases in their options. Results from the subset of Forest Service respondents were similar.

### **Key Findings from Follow-up interviews**

- Local fire managers see high value in fire modeling and would like to see more of it up-front in project documents. They understand the importance of strategically placed treatments, and have some suggestions for treatment areas that have or can open up more passive fire suppression options or reduce fire suppression costs.
- Local fire managers think more at the landscape level than many other district folks.
- Treatments need to be bigger than traditionally implemented to be effective.
- Closed roads will almost always affect initial attack.
- Treatments bordering private and state lands are needed.
- Most local fire managers think fuels management should be priority one. Treatment effectiveness suffers when other disciplines alter treatments; this is especially true in the WUI.



## Synthesized Discussion Responses

### SOUTHWESTERN CROWN OF THE CONTINENT FIRE MANGER STUDY – BASELINE 2012-2013

#### 1. Are there specific areas of recent CFLRP treatments in the Southwestern Crown that would currently allow fire managers to choose more passive options?

**Summary:** Four did not think so, four offered general areas, and two offered specific locations.

- No specific examples but believes possible particularly in the WUI area. Many examples are likely from recent large fires. Talk to specific fire managers. May not have to be as resource intensive in treated areas. Cannot map specific units.
- Not SWCC treatments. Yes for fire use areas, RX fires, suppression or managed fires. Does believe that when preparedness levels are highest (4,5) most fires are suppressed. When levels are lowest (1,2) can manage fires, even wildfires. We had a long discussion about fire use, particularly in high elevation WBP ecosystems. Also about budgets or lack of for fire use versus suppression.
- No
- Yes, fuels treatments give firefighters a chance to do more burnouts and catch spreading fire early, create anchor points, i.e., along highway 93 in Idaho last summer, Seeley area 2007. Some tactics for firefighting are helped by treatments. Treatments should not be limited to WUI. Do on a landscape scale and strategically place, the more we do, the more anchor points are created (Discussion about additional information potential from Mark Finney with Fire Lab in Missoula, landscape scale vs. WUI). Example, previously historically burned areas where fire behavior changes to less intense burning. Treat outside WUI for 3 miles in a regular pattern. Pattern matters! Moving away from WUI would be good. Stagger treatments but in orderly method.
- No. Past treatments should be recorded, use FLAM Map today.
- No, would defer to districts for specific places. Much of current fuels work does allow for more passive fire management. Planned treatments
- Yes, cannot map but this would depend on unit layout. There is political push to suppress large fires but that is often not realistic/possible. Need cohesive strategy as to where risks are highest and where to apply less aggressive suppression.
- Yes, **Poorman project, Poorman Creek (started 1998) still in process. Alice Creek project, 2003,** both involved landscape burning, slash treatments. Fuels are his #1 priority.
- For CFLRP, some minor non-commercial treatments, but not any recently treated area that reduced fuels for CFLRP. **There are many on the books to be treated, Auggie Fuels, Horseshoe West, Morrell.**
- Yes, any treated areas on boundaries between ownerships.** Passive option not allowed on state, private lands (usually full suppression required).

**2. Are there other areas inside the identified future project areas where we are nearing the threshold for fuel treatment effectiveness and where new CFLRP treatments could affect fire management decisions?**

**Summary:** Five did not think so, one said yes for Federal, three offered specific locations.

- No
- Not tracking actual units. Concern that **Districts not using predictive modeling to find where critical pathways are that might show where to put treatment units.** More of a gut level feel. Believes modeling helps provide best information that may be needed for public scrutiny.
- Yes, issue not on private or state but federal.
- No, does not know specific areas. Perhaps areas more than 20 years old
- No, make strategic placement of treatments. Place to create resilient landscape.
- Not specific for maps but **Westside of Swan planned treatments and eastside recent treatments.**
- None to map and feels treatment areas need to be larger than 1000 acres and up to 10,000 acres to be effective.
- Yes, **Stonewall project, North of Lincoln,** problem - it's harvest oriented, super fuel model 10, lots of dying trees, mixed conifer with in growth. NEPA may be problematic. Weather windows limited.
- Yes, **Colt Summit area** (decision waiting), and **Morrell Trail** in process. **Horseshoe West** that is east and south of Seeley. **Thunder Horse.**
- Not enough ability to answer. Any treatment lowers intensity of fire. More options for fire suppression. Fuel treatment is a good thing.

**3. Are there other outside of identified future project areas where we are nearing the threshold for fuel treatment effectiveness and where new CFLRP and/or partner, private neighbor treatments could affect fire management decisions?**

**Summary:** Four did not think so, one offered Douglas-fire and Ponderosa pine forest types, one suggested insect affected areas, one suggested old treatments, two suggested private lands, three offered specific areas, one assumed so but thought fire management officers on each district would know.

- No
- No, but generally yes, **Seeley area, Monture and Lincoln Scapegoat. Private lands**, state lands, need to bring neighbors along. Other collaborative members. State does not like FS policies for fire use.
- No answer as feels not aware or informed enough.
- Thinks so, private neighbors have done more and partnering with them would be the best place. **Barber Creek to Holland Lake** as possible areas to look at.
- Yes, look at dry **DF and PP forest types**.
- Assumes so but would be best asked at the district level. Check with FMO's, AFMO's.
- No, did not believe that private partner treatment could help FS land (?), no specific examples.
- Yes, lots of areas that need treatment and need it now! Many areas at threshold. Every area on district is in need. **Spruce budworm and pine beetle created need. Stonewall Face, Ogden Mountain** in dire need of treatments. **Dalton**. District level has 10-year plan for treatments. Has map of plan. Can be had from district.
- Yes, old treatments, but not an inventory. Fuels people could map them.

4. **In question 31, we asked a series of questions about road closings, road prisms, and fire decisions. We wondered whether roads open for administrative use only or roads open to the general public have any bearing on your planning. Can you elaborate on that for us?**

**Summary:** Roads are good fire breaks and facilitate burnouts, closed roads increase response time and require additional tools (chainsaws). Open roads are more useful and better for firefighter safety. Obliterated roads raise cost of suppression, slower response and more aerial resources needed. Gated roads are better for firefighting than obliterated, but not are maintained as well as open roads and can be an obstacle.

- Public Roads are usually of a higher standard and tend to make better fire breaks. More effort would be required on closed roads. **Affects initial attack response time if road is closed and in poor condition. Adds time and cost to suppression when response time is increased. Roads provide opportunity for burnout** also.
- Yes, huge bearing, fire managers usually aware of closed roads and how that factors to use of resources. Rapid response ability is definite factor affected by road maintenance levels.
- Sure. Need roads for access by fire crews. **Obliterated roads raise cost of suppression. Time to get to fire. More need for air support.**
- Yes, **increases type of tools needed.** I.E. **chainsaws** if road has blowdown across it.
- Closed roads are often an unknown quality. Base initial attack capabilities on open vs. closed roads. **May have to go air as opposed to ground.**
- In general no, can always open with a bulldozer, as long as it is put back to the way it was. **Can change initial attack capabilities.** Impact to IA is on a case by case basis.
- If road is **open and easier to access, more cost efficient opportunity, less risk to fire fighters**, if road is closed and access is slower, then chance for greater fire growth and more cost.
- A lot! Longer it takes to access a fire, the more time it has to grow and add to size. **Definitely hinders fire-fighting capabilities based on access quality. Gated roads better** when somewhat good travel way.
- **Admin only roads not as often maintained. Takes time to reopen if not maintained.**
- Grizzly security demanded roads closed and put to bed that has slowed down ability to get to fires, fires would be larger and more costly. Gated vs. bermed makes a big deal. Gated roads without frequent use can be an obstacle.

**5. In the letter delegating your authority, you are given broad direction over fire management decisions. Does your direction in the letter make any consideration of fuel treatments? If so, please explain.**

**Summary:** Ownership and Forest Plan direction seem to be commonly conveyed. One respondent suggested the letter sometimes states where treatments are and asks to model what might happen. Most respondents suggested this is an opportunity to share how to get and use fuels information, but it not normally used this way.

- Not unless directly involved in on ground ops. More for safety of operations across the larger landscape.
- Is needed, Rangers are hopefully using. Forests need to be specific about level of active suppression given knowledge of treatment areas. Yes, definitely should. Based on resources to protect, management action points, prior treatments.
- Fuels will determine active management options on fires. Industrial lands more treated.
- Doesn't know. Should be something left to IC's and fire officer's decision. Maps of treatments, previous fires might be helpful.
- Could be mentioned for strategic operation decisions, not so much in actual letter.
- Yes, is given from line officers. Get current fuels information for that specific area and model what might happen. Delegation allows for appropriate management response based on values at risk, seasonal conditions, fuels that are present (treated or not), weather, topography. With FS policy are almost always given that latitude.
- Most authority comes from land management plan on forest, what is or is not allowed. Do what is most cost efficient and safest way possible.
- He thinks no, but fights fire based on fuel conditions at the place and time.
- No, not really if for hazard fuels reduction but yes for firefighting and control of the fire. Example shaded fuel breaks as alternate RX for fire control. Authority allows for some discretion in the treatments for firefighting. Also allows for how fire is managed in treated and untreated area.
- Options are available and ownership makes a difference in management tactics. Treated areas can impact operations. Usually quantify in post fire reports. Suppression actions can be documented in treated areas. Closeout after fire incident provides opportunity to share lessons learned to inform administrators about how fuels treated areas affect costs, suppression effectiveness, less fire fighter exposure.

6. **What guidelines can you offer to help the SWCC and agency prioritize where to locate fuel treatments?**

**Summary:** Use fire history, use flam Map and other fire modeling, use Finney guidelines of three miles from WUI, place in areas that can slow fire spread, apply multiple tools and use a landscape scale, connect the dots for areas treated and burned, make them large enough to be useful, use the Community Wildfire Protection Plans and work in conjunction with private lands on borders.

- **Use fire history** to see where fires occur and have occurred and likely to occur again.
- **Use Flam Map and other models for fire behavior.** Fire history, issue in Swan, and difference of opinion on best science that is used. Suderland vs. Barrett. Use best science and need to share it and get information out. Share with the public and fire managers. Study area in Seeley by Suderland with publishable data. Also many districts resist RO, top down, management. Opinion, RO seems to be trying to force the issue sometimes. Use new information.
- Use Mark Finney's work and landscape treatments for 3 miles outside of WUI. Pattern matters. **Break up horizontal fuel matrix.** Roadless areas are a problem, **use multiple tools**, may need more prescribed fire, harvest, harvest and fire, managing wildfire in moderate or low fire years. WBP and Lynx management are at risk because of the lack of treatment. Consider again the landscape scale.
- Based on objectives for landscape. WUI could be site specific, try to modify fire behavior and intensity.
- In the WUI. FS is still challenged with private landowners not up to date managing their fuels issues. FS land needs some review and do what can be done as well. Look across landscape look at where potential might be worst, **find opportunities for lines of defense that can make a difference to stop fire spread. Connect dots for areas treated, burned.** Condon Mountain fire, etc.
- Take a look at what has been done both private and otherwise, tie treatments into those, make them large enough in size to modify fire behavior. Look at the resiliency of the ecosystem to handle fire. Can it withstand it? Monture is an example of an area that should be treated to protect the forest values.
- Have diverse projects with many treatments applied to break up fuels, mechanical option very doable. Work with silviculturists to meet multiple objectives. Do WUI first and adjacent to WUI next. Other areas that need it for ecological reasons.
- **The CWPP!** Should be S.O.P. Seeley-Swan Fire Plan, Blackfoot Fuels Assessment should inform where to prioritize.
- More success where bordering state and private and within WUI. That is the right priority. Don't just do a donut around this though, do further back also. Cost of suppression fire will be less on treated ground. **Work in conjunction with private treatments.** Feather treatments (crown density) such that it is more open closer to private and state lands and less so farther away. Treatment on larger scale more effective and helpful.

7. **If you could share feedback with local collaboratives or the SWCC regarding the impact of multiple objective silviculture on fuel treatment effectiveness, what would it be?**

**Summary:** While there is support for addressing multiple objectives, most fire managers want fuel treatment and fire planning to be the leading objective with a clear purpose and need, some emphasized the need to inform locations with modeling, as pattern matters. Some respondents suggested that increasing treatment area size helps address multiple objectives, but some also cautioned that not all objectives can be met in all locations, and that wildlife may be impacted to get back to a fire resilient landscape.

- What we are doing is good. Prescribed fire is beneficial and now more mechanical treatments are effective and less invasive. Thinning is helpful.
- **Use modeling and keep it available**, do not cover up your tracks. Fuels and silviculture need a close working relationship. Rise above personal issues. **Integrate concerns**. Wildlife important. Use the ID team concept. “Combat biologist” strong biologist vs. weak fire person. Sometimes compromise cannot be found (district level). Be team players in all disciplines. **Avoid tunnel vision for your resource use**. Fisheries, recreation, all.
- **Multiple objectives might not always be doable**. Do not compromise fuels treatments now, **fuels should be given highest priority**, particularly in face of climate change. Keep fuels treatments as the foremost first objective, **multiple other objectives will fall in line when we have created enough diversity and spatial variations**. Try to restore resilient forests. Not always defined by historical conditions. More likely to restore to what is “native resiliency” conditions. May not be best to call it fuels treatments. **May not be able to always do at the stand level what needs to be done at the landscape level. Pattern matters!**
- **Likely not to get an acceptable product if all needs are pursued**. Develop clear purpose and needs statement. The why here and why now has to be very clear. Do in the prework which will help streamline process. NFMA needs well defined purpose and need.
- Understand fuels treatments have effect in space and time. Thin but expect results at differing rates. Some more so than others, most only last a set time. Perhaps only 20 years. Large fire is the dynamic with stand replacement effects. Can mitigate that. **Fuels treatments need maintenance**. Find that level of need. What should we manage to? How much fire should we use on the ground to maintain that dynamic?
- Any block can be effective to meet multiple objectives by being large enough. **Managing forests back into natural/historical conditions might change enough of the forest to alter wildlife needs at a given stand level**. If treatments are large enough, then that can be offset so as not to threaten or endanger a species, water, recreation. **10,000 acre treatments would be better than smaller treatments**. Incorporates more of the silvicultural objectives.
- Mix of diverse treatments to reduce fuel and enhance other objectives, a dynamic mixture of treatments. Landscape level and big projects are needed because it appears they are so far behind. **Current state of fuels warrants very large treatments**.
- All influence what can be done. Are constraints and shape fuels mitigation plans. Meet multiple objectives driven by fuels but shaped by other disciplines. Find and define ecological considerations.

- Grew up in this environment. **If goal is to reduce fire risks, then that should be the primary focus.** Can do both but maybe not to the level all other disciplines want.

**8. Do you have any additional information or comments that you would like to include? Please write them below.**

**Summary:** In general there is support for larger more aggressive treatments that affect a sufficient amount of area to enhance resiliency, but at least one respondent noted we are behind on the planning required to make that happen. One respondent suggested we need to use fire more, during the season it normally operates August/September. One respondent noted that we rarely salvage from fires so perhaps large treatments would reduce the loss of resource values from these fires.

- Thinks we are on the right track and that the collaborative ventures pay off a lot more. Much better than a one party effort. Thought this was a good approach. Didn't see anything to create fireworks or a controversy.
- Wants to email them. Have not received.
- Unmanaged vegetation is a risk and should be considered for treatments and when actively suppressing fire.
- **Give more attention to fire modeling, landscape level.** Mark Finney work should be more investigated. Look at landscape scale as opposed to stand level for future project potential.
- Didn't feel some of the questions matched well with the answer provided.
- Old fires may or may not allow for varied treatment.
- **Treat sufficient amount of ground/area to provide for resiliency.**
- Will be interesting to see how it all plays out.
- **Need to be much more aggressive in treatments,** look at the natural history and model that type of treatment regime. Use fire. **Use it frequent and in the same season nature might have (August, September).** Reintroduce fire into older burns (Canyon Creek), make plans to reburn in fall to open it up in stages again. 10 year fire frequency should be the norm.
- Excellent opportunity now. Need more planning now as not enough projects on the shelf to do. **Behind in the planning phase.** Treat the landscape correctly (obviously many different opinions as to what that is).
- Thanks!
- Questions about fuel management and treatment. Make that the focus. Funding should go there and the larger scale of the treatment the better. Fires today are larger and often get little salvage afterwards. **Treatments pre fire might mean less need for salvage, less change to the resource value cause by uncontrolled wildfire.**



## **Adaptive Management**

The results of this survey effort are now being distributed to the Southwestern Crown of the Continent Collaborative. The intent is to use this information in adaptive management and to substantiate RCAT analysis. It will provide feedback on the potential effectiveness of fuel treatments for the life of the SW Crown. Feedback from fire managers will spatially inform line officers about if and how much fuel treatments are opening opportunities to allow naturally ignited fires to burn, reducing costs, and achieving cost-effective fuel treatments.

## **Future plans**

Current plans call for replication of this survey effort two more times as part of the long-term monitoring plan. It is expected that this would be done in roughly 5 years (2017) and 10 years after the baseline (2022).

## **Annual and total budget estimates**

\$2,000 for design and \$2,000 each survey cycle, total of \$8,000

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## Appendix A – Pre-notification Letter



**SOUTHWESTERN CROWN**  
COLLABORATIVE

May 27, 2014

XXXXX  
Cooperative Fire Management  
Region 1  
Missoula, MT 59802-8508

Dear XXXX:

We are writing to ask for your help with an important study being conducted by the Southwestern Crown of the Continent Collaborative Forest Landscape Restoration Program (SWCC-CFLRP) to understand assessments of existing fire and fuel conditions, changes in these conditions over time, opinions on modeling fire costs, and decision-making for fire management. The best way we have of learning about these practices and issues is by asking fire managers who work in the area to share their thoughts and opinions. You have been selected to participate because you are one of a number of fire managers working in the Southwestern Crown of the Continent project area.

In the next few days you will receive a telephone call requesting your participation in this two-part project. (1) You will be asked to set up a time to meet with one of us and discuss your views on the issues mentioned above. (2) We also will ask for confirmation of your email address so that we can send you a link to our online questionnaire. We ask that you go to the link and provide answers about your perceptions and assessments of these important issues facing fire managers.

We would like to do everything that we can to make it easy for you to participate in the study. I am writing in advance because many people like to know ahead of time, first, that they will be contacted and, additionally, a little bit about the study and the questions that they will be asked. This research can only be successful with the generous help of people like you. Results from this study will be used in decision-making on policy and restoration project development, along with generating a better sense of the local fire management community's needs.

The questionnaire should take less than hour to complete. Your responses are voluntary and will be kept confidential. Your name is not attached to the questionnaire and your answers will never be associated with your name or address. If you have any questions about this study of fire manager decision-making, please call Keith Stockmann or Cory Davis, the study directors, by telephone at XXX-XXXX or contact them by email at XXX@XXXXX.

I hope that you find the questionnaire interesting and take advantage of the opportunity to voice your thoughts and opinions about fire management in the Southwestern Crown of the Continent project area.

Sincerely,  
Keith Stockmann, PhD  
Economist and Project Director  
USDA Forest Service, Northern Region  
Missoula, MT 59807-7669

Cory Davis  
Monitoring Coordinator,  
Southwestern Crown of the Continent Collaborative  
Missoula, MT 59812

## Appendix B – Letter Requesting Participation



**SOUTHWESTERN CROWN  
COLLABORATIVE**

May 27, 2014

Dear Fire Manager,

Last week, we sent you a letter requesting your help with a study about fire management, changes in fuel conditions, opinions on fire costs, and decision-making for fire management. In order to obtain different perspectives and the most reliable information, we are asking for your help by completing our online questionnaire. The information that we collect will be used by the Southwestern Crown Collaborative (SWCC) to determine the effects of fuels treatments and better understand the local fire management community's needs. We will share the results with decision-makers on policy and restoration project development.

The SWCC is a group of individuals and organizations dedicated to a sustainable Southwestern Crown landscape with the full array of ecosystem services and economic and social benefits. The goals of the Collaborative include facilitating "the reduction of wildfire management costs, including through reestablishing natural fire regimes and reducing the risk of uncharacteristic wildfire" and demonstrating "the degree to which- various ecological restoration techniques ... affect wildfire activity and management costs." The SWCC's Monitoring Committee designed this study to: understand current fuel conditions and changes over time in the Southwestern Crown area, understand influences on fire management decision-making, understand fire managers' opinions about costs, and solicit input from fire managers for the Collaborative.

As you probably know, the collection of valuable information about topics like this depends very much on the willingness of those questioned to provide accurate and timely responses. Therefore, we ask you to support the process by responding to the questions within two weeks of receiving this email. The questions will take about 30 to 40 minutes to complete. Your participation in this study is voluntary and you may skip questions that you may not be comfortable with or you may stop taking the questionnaire at any time. Your privacy and confidentiality are important to us. **Your name or identifying information will not be included or linked to your responses.**

I will call you to schedule a follow-up meeting to get your opinions on a few open-ended questions and complete a short mapping exercise. We ask that you complete the online portion prior to our meeting. If you have questions about particular responses you may ask for clarification during your follow-up discussion. If you are interested, you may request a copy of the final results and analysis once they are available.

Please read each item carefully and answer as honestly as possible. Simply click on the following link, or copy and paste it into your browser window:

<https://www.surveymonkey.com/s/QM9Z97S>

If you have any questions regarding this study, now or in the future, please contact me, Roger Marshall, at 406-754-3137, or by email at MT.Forester@yahoo.com or Sandy Mack, SWCC Liaison Officer, 406-329-3817, or by email at spmack@fs.fed.us. If you have any questions regarding confidentiality, you may contact Regional Social Scientist, Cynthia Manning at 406-329-3240.

Thank you in advance for your participation in this important study.

Sincerely,

Roger Marshall  
Stewardship Forester  
Swan Ecosystem Center  
6887 MT Highway 83  
USFS Condon Work Center  
Condon, MT 59826-9005  
406-754-3137

**Appendix C – Blank Instrument**

Filename: **Survey\_28665865[1].pdf**

**Appendix D – Survey Results**

Filename: **SurveySummary\_11192013.pdf**

**Appendix E – SWCC Success Story Thin Effective Condon Mountain Fire**

Filename: **2013-08-13-SWCC-Success-Story-Thin-Effective-CondonMountainFire.pdf**