

## **Addressing Community Concerns and Solutions on Climate Change and Forest Management in the Rogue Basin Cohesive Forest Restoration Strategy**

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### **Introduction:**

This workshop evolved from the "Our Critical Climate: Rogue Basin Summit" Conference hosted by Southern Oregon Climate Action Now (SOCAN) held in October, 2015. The Rogue Summit's final day ended with several break out groups charged with developing actionable next steps. Gwyn Myer facilitated the forestry break out group where two main themes emerged: Forest Management -and- Outreach and Education. During the break out session, Darren Borgias of The Nature Conservancy (TNC) introduced the Southern Oregon Forest Restoration Collaborative (SOFRC)'s Rogue Basin Cohesive Forest Restoration Strategy (RBCFRS) as a tool to prioritize treatments, but that there is a need for further public and stakeholder review and awareness, and for climate resilience to be better incorporated into the strategy. The group discussed these ideas and proposed holding a workshop to meet some of those needs. Subsequently, Gwyn Myer led a SOFRC effort to secure funding through the Model Forest Policy Program's Climate Solutions University to plan and hold a workshop to bring together rural and urban community members, other land management organizations, and those working on 'on-the-ground' projects such as Ashland Forests All-lands Restoration Project and the BLM and USFS to learn about the RBCFRS and provide constructive feedback specific to climate adaptation. Gwyn Myer convened representatives of SOFRC and SOCAN to develop objectives, processes, and logistics for the workshop. Working within the expectations of the CSU grant and the SOFRC contract, the group set out four objectives: 1: Outreach to key stakeholders and residents to engage them in the process leading up to the workshop and desired outcomes; Objective 2: Hold a workshop late 2016 for community members and natural resource specialists to come together to vet, discuss, and provide community values and other input on climate adaptation elements of the cohesive forest restoration strategy and its implementation; Objective 3: Based on outcomes of workshop, write a draft appendix for the RBCFRS; Objective 4: Conduct preliminary work to assess incorporating private land ownership into the SOFRC strategy.

### **Methods:**

SOFRC and SOCAN reached out to their networks to engage a group for planning the workshop. In order to gather stakeholder input on their initial knowledge of the RBCFRS and climate change and adaptation, the group agreed to use an online survey. The survey asked questions specific to forest land management, climate change, and land management under climate change. It inquired about the top concerns in the topics, level of approval of certain management strategies, and level of knowledge of certain management strategies (appendix A). To avoid leading questions, we asked a broad range of questions and encouraged responses to open ended questions. We sent the survey to 91 workshop invitees, and received 28 responses, a response rate of 31%, which was limited in part by respondent's interest or ability to attend the

workshop. We used the survey responses to inform the morning break out group tables, each focused on one of the four top concerns identified regarding land management and climate change. Participants were also provided with 2 page summaries of climate change impacts in the Rogue Basin and the RBCFRS to read prior to attending.

The workshop was designed for small group discussion. Within the local context, it is best to have group settings (Shome and Marx 2009, Toman et al 2011). People are able to better understand probabilistic information in groups where they are able to discuss issues, have diverse perspectives, and can work together on a problem. Groups also provide a better setting for individuals to process both analytically and experientially (Shome and Marx 2009, Leiserowitz 2006). While the knowledge deficit model of providing information and presentations at or to audiences is widely used, it is found to be ineffective (McComas 2006). Models of communication that are framed for the audience and take their decision making processes into account are critical if public action to mitigate or adapt for climate change is desired (McComas 2006). We also used open ended questions, which enables collection of data that provide an in-depth description and understanding of the factors influencing decisions and concerns (Creswell 2007).

The diverse 28 attendees were residents from around the Rogue Basin, bringing a variety of backgrounds, perspectives, and representation of the following organizations and interests: Greyback forestry, environmental education, Jackson county fuel committee, TNC, Applegate Watershed Council, the Applegate Neighborhood Network, small business, Southern Oregon University academia, Fire departments, the Bureau of Land Management, the US Forest Service, Oregon Department of Forestry, small woodland owners, concerned citizens, and the Oregon State University Extension Service.

The full day workshop began with individual stories of climate change impacts. Bringing complex issues to a personal, localized level results in higher engagement of participants (Shome and Marx 2009). Afterward, two brief introductions on: climate change in the Rogue Basin; and the Rogue Basin Cohesive Strategy were provided. Then participants divided into four groups to discuss the top concerns discerned from the survey respondents: Forest Density and Fuel Build Up; Wildfires and Climate Change Impacts on The Rogue Basin Forests; Forest Management Constraints; and Economics/Local workforce. Each table had paper and markers for participants to record their thoughts on the topic. Each table also had a facilitator and a key resource person that was knowledgeable about the topic to whom participants could ask clarifying questions. The groups rotated to each table in turn, and in discussion helped identify their top three concerns within the table thematic areas. Facilitators wrote these out.

During lunch break, participants placed a dot at each table for the concern at that table that was most important to them. They were also given 10 \$100 bills to place in envelopes next to the topics to prioritize which topics, of all of those identified regardless of table, were most concerning to them.

After lunch, scoring of the concerns was used to elevate refined concerns/opportunities, and the top scoring four were used to refocus the small group tables for discussion of solutions. As with the morning breakout, the participants were given butcher paper for notes, along with facilitator notes.

After the workshop, the authors considered the participant input with the SOFRC RBCFRS to point out where it could be strengthened.

## **Results**

**Morning Breakout on Concerns:** Participants held wide ranging discussions and brought up many concerns and desires for clarification. Below we list the greatest concerns or interests, based on the dot voting, and also list the “cash investments” participants made in addressing the concerns. See Appendix B for the questions asked at each table and the verbal and recorded responses from participants.

Prioritization of concerns based on voting and hypothetical investments at the SOFRC/SOCAN Workshop on Climate Adaptation and the Rogue Basin Cohesive Forest Restoration Strategy:

### **Forest Density and Fuel Build Up**

*16 dots, \$3600, Long term Carbon Sequestration*

*8 dots, \$1400, Soil and Ecosystem Health*

5 dots, Uncharacteristically severe fires

4 dots, Lack of coordination for management (within agencies and on private land)

### **Wildfires and Climate Change Impacts on The Rogue Basin Forests**

*14 dots, \$4600, Forest diversity structure & function loss (ecosystem services and habitat)*

5 dots, Failure to acknowledge benefits of fire (5 dots)

4 dots, \$600, Reduced water and drought

### **Forest Management Constraints**

*7 dots, \$1600, Funding and continuity*

*7 dots, \$1400, Timber revenue expectations*

*5 dots, \$3000, Public Policies*

1 dot, \$800, Public Awareness

0 dots, \$400, Air quality/smoke

### **Economics/Local Workforce**

*10 dots, \$1800, RBS needs to include long-term vision with ongoing maintenance treatment*

*10 dots, \$1700, Maintain/build processing/milling infrastructure (and process alternate forest products)*

4 dots, \$400, Federal and county agencies need to move away from only large commercial planning.

4 dots, Agencies need more employment for long term planning and management

0 dots, Concern with RBS funding. More wildfires = less \$ for mitigation/adaptation

In the afternoon rotating small group table topics focused on the highest dollar items to discuss solutions to the concerns. This enabled a glimpse into what participant's might approve of for land management and policy regarding forest land management and climate change.

**Solutions offered during the afternoon breakout to the primary concerns elevated in the hypothetical cash investment process:**

**Loss of forest diversity, structure, and function/ecosystem services and habitat (\$4600):**

- Use of wildfire and prescribed fire
- Thinning
- An increase in scale of management
- Implement the RBCFRS
- Use fire as a management tool more
- integrate protection, risk, actual management, and climate resilience into the RBCFRS
- Better integration in planning with schools, communities, landowners
- Better planning in general

**Long term carbon sequestration (\$3600):**

- Managing for healthy forests with more stable long term carbon flux
- Incorporating biochar; monetizing carbon storage/offsets
- Protecting old growth; and managing for maximum sequestration age.

**Public Policy (\$3000):**

- O&C Lands Act reform/change/eliminate
- A CCC-type program for youth and economy
- Better coordination and cohesion with strategies
- Streamline projects (coop agreements, CCC, public support via story sharing); agencies/private landowners, cross-boundary project coordination
- Use of FEMA money for fire suppression
- Need for long term management strategies.

**Economics (Long term maintenance \$1700; milling infrastructure \$1800, timber revenue expectations \$1400):**

- Eliminate the O&C Act, reducing timber target, enabling more Stewardship Agreements
- Uncouple agency funding from timber board feet, and measure other values
- Create alternative revenue streams
- Encourage innovative contracting
- Tax incentives/penalties for fuel reduction work
- Carbon credits
- Use of FEMA money for fire suppression.

To see the complete write up of responses for these tables see Appendix B.

After the workshop, we reviewed the survey and workshop participant input in light of the SOFRC RBCFRS to recommend how the strategy could better address concerns and solutions discussed.

## **Key Recommendations and Findings**

Areas well addressed by the SOFRC RBCFRS:

- Uncharacteristically severe wildfire
- Thinning and fuels reduction (overly dense forests and fuel build up)
- Integrated management approach within agencies and private landowners
- Better management and planning for fire risk reduction
- Updated fire plans (survey responses considered this important)
- Managing for old growth/late seral habitat
- Increase in scale of management

Areas that could be better addressed:

- *Long term carbon storage/sequestration*

Along with ecosystem and climate resilience, stakeholders elevated interest in long term carbon storage, a topic which v.1 of the strategy side stepped. Carbon flux advantages can result from fire risk reduction with concomitant reduced carbon release (above and below ground), along with late seral habitat promotion, which better sequesters carbon. Including a paragraph on how the strategy promotes long term carbon storage is recommended, and Halofsky et al 2016 is a good source for that material.

- *Long term maintenance/management*

Another high level concern discussed in the survey and workshop regarded long term management and maintenance strategies. 2 main concerns emerged from within this topic: concerns about insufficient funding and lack of long term planning; and potential losses of milling infrastructure to carry out long term thinning and fuels reduction. While the strategy discusses a need for long term management, there are no steps outlined on how it would be achieved. Next steps outlining efforts to obtain a long term management plan, a maintenance plan, and what infrastructure is needed should be included in the strategy or developed in an implementation plan for the strategy.

- *Alternative sources of funding/using a different metric to measure values*

While the RBCFRS accounts for High Value Resources and Assets and reflects ecosystem services provided from the forests in an array of natural resources and human assets, it could perhaps achieve greater social impact and potentially change economics for the strategy. The strategy or an implementation plan might more explicitly call for shifting present emphasis on timber board feet as a driver for forest management and instead using other human values and ecosystem services, e.g. clean water, recreation access, fire resilience human asset protection. Better incorporating a range of human values is a step toward shifting revenue expectations and desired outcomes from board feet to other metrics, such as ecosystem services.

## **Discussion**

Upon reviewing the concerns, solutions, and other feedback obtained from the survey and workshop, it was found that the SOFRC RBCFRS addresses many of the top concerns discussed, as well as meeting several solutions identified that reasonably belong in a cohesive forest management strategy. Those aspects that are reasonable to address in the strategy and discussed in the recommendations should not be difficult to integrate into the strategy in order to better address community concerns and supported management strategies. Several studies have been completed on commonly-used practices including mechanized thinning and manager-ignited prescribed fire finding high levels of social acceptance of some use of both prescribed fire and mechanized thinning treatments in several locations (e.g., Absher & Vaske 2006, McCaffrey 2006, Toman & Shindler 2006b, Vogt et al. 2007, Lim et al. 2009). This research finds the most common predictors of treatment acceptance include knowledge and familiarity with the practice and trust in agency managers (Winter et al., 2002, Shindler & Toman, 2003, Brunson & Shindler, 2004, McCaffrey, 2004). In a study by Toman et al. (2011) increased confidence in agency managers to effectively implement certain treatments on federal lands had the strongest impact on public acceptance of the treatment, even when accounting for other variables. The SOFRC RBCFRS allows an opportunity for a cohesive, integrative management strategy and could be strengthened based on workshop and survey feedback. Designing future implementation of the strategy to include events such as this workshop, which allow opportunities for the public to discuss in small groups with agency managers their concerns and management objectives, can build stronger relationship between the public and agencies and increase public support for management strategies.

## References

- Absher, J. & Vaske, J. (2006). *An analysis of homeowner and agency wildland fire mitigation strategies*. In: Peden, J.G., Schuster, R.M. (Eds.), *Proceedings of the 2005 Northeastern Recreation Research Symposium*, April 10-12, 2005, Bolton Landing, NY; GTR-NE-341. USDA Forest Service, Northeastern Research Station, Newtown Square, PA, pp. 231-236.
- Brunson, M. & Shindler, B. (2004). Geographic variation in social acceptability of wildland fuels management in the western United States. *Society and Natural Resources*, 17(8), 661-678.
- Halofsky, J., Peterson, D., Metlen, K., Myer, M.G., & Sample, V.A. (2016). Developing and Implementing Climate Change Adaptation Options in Forest Ecosystems: A Case Study in Southwestern Oregon, USA. *Forests*, 7, 268
- Leiserowitz, A. (2006). Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values. *Climate Change*, 77, 45-72
- Lim, S., Bowker, J., Johnson, C., & Cordell, H. (2009). Perspectives on prescribed fire in the South: Does ethnicity matter? *Southern Journal of Applied Forestry*, 33(1): 17-24.
- McCaffrey, S. (2004). Fighting fire with education: What is the best way to reach out to homeowners? *Journal of Forestry*, 102(5), 12-19
- McCaffrey, S. (2006). *Prescribed fire: What influences public approval?* In: Dickinson, M.B. (Ed.), *Fire in Eastern Oak Forests: Delivering Science to Land Managers*, *Proceedings of a Conference*, November 15-17, 2005, Columbus, OH; GTR-NRS-P-1. USDA Forest Service, Northern Research Station, Newtown Square, PA, pp. 192-198.
- McComas, Katherine. (2006). Defining Moments in Risk Communication Research: 1996-2005. *Journal of Health Communication*, 11, 75-91.
- Shindler, B. & Toman, E. (2003). Fuel reduction strategies in forest communities. *Journal of Forestry*, 101(6), 8-15.
- Shome, D. and S. Marx. (2009). *The Psychology of Climate Communication: A Guide for Scientists, Journalists, Educators, Political Aides, and the Interested Public*. *Center for Research on Environmental Decisions*. <http://cred.columbia.edu/guide>.
- Toman, E., Shindler, B. (2006b). *Wildland fire and fuel management: Principles for effective communication*. In: McCaffrey, S.M. (Ed.), *The Public and Wildland Fire Management: Social Science Findings for Managers*; GTR-NRS-1. USDA Forest Service, Northern Research Station, Newtown Square, PA, pp. 111-123.

Toman, E., Stidham, M., Shindler, B., & McCaffrey, S. (2011). Reducing fuels in the wildland urban interface: Community perceptions of agency fuels treatments. *International Journal of Wildland Fire*, 20, 340-349.

Vogt, C., Winter, G., McCaffrey, S. (2007). *Community views of fuels management: Are national forest local recreation users more supportive?* In: Burns, R., Robinson, K. (Eds.), Proceedings of the 2006 Northeast Recreation Research Symposium; GTR-NRS-P-14. USDA Forest Service, Northern Research Station, Newtown Square, PA, pp. 546-550.

Winter, G., Vogt, C., Fried, J. (2002). Fuel treatments at the wildland-urban interface: Common concerns in diverse regions. *Journal of Forestry*, 100(1), 15-21.



## Appendix A.

### Managing for Climate Adaptive Forests in the Rogue Basin: Survey Summary

The Southern Oregon Forest Restoration Collaborative (SOFRC) received funding through the Model Forest Policy Program's Climate Solutions University to plan and hold a workshop that brought together rural and urban community members, other land management organizations, and those working on 'on-the-ground' projects such as AFAR (An extension of the Ashland Forest Resiliency Project) and the BLM and USFS to provide constructive feedback on the SOFRC cohesive restoration strategy. As part of the first objective of this grant: *outreach to key stakeholders and residents to engage them in the process leading up to the workshop and desired outcomes*, the organizing team developed a survey. The survey was sent out to invitees for the workshop. The responses from 28 of 91 invitees is a response rate of 31%, the same response rate as the workshop. Most of those who responded to the survey also attended the workshop, with a few respondents that were unable to attend. We pursued questions surrounding the stakeholders' opinions on the largest challenges or threats to the Rogue Basin forests, how climate change might impact the Rogue Basin forests and management, and what types of management they favored or opposed. This provided us with insight to develop tables in the morning break out session of the largest concerns/threats mentioned in the survey. Additionally, it showed us the level of concern with climate change. And lastly, it provided insight into what types of management people supported, and whether or not those management strategies people favored or opposed were in the SOFRC's Rogue Basin Cohesive Forest Restoration Strategy. A summary of the results is below, with a more in depth summary of all responses following the summary.

The biggest challenges/threats to the forests listed by respondents were: Climate change; forest density and fuel build up; larger, more severe wildfires; and politics and funding. These responses were used to establish themes for the four morning break out tables: Forest density and fuel buildup; wildfires and climate change impacts on the forests; forest management constraints; and economics/local workforce. While economics/local workforce was not specified in the survey, several responses and comments in the survey indicated a need to explore the topic further, which is why it was made a morning break out session.

#### **Summary with the largest areas (> 70%) of agreement on forest management:**

Overall the survey respondents agreed Climate Change is real and a serious issue (100%), with negative impacts.

Under the question, what, if any, type of forest management changes need to occur in response to climate change:

- 89% of respondents said an increase in prescribed burning
- 85% said forest thinning and fuel reduction.

When asked what vegetation treatments that currently occur, and the level of agreement or opposition:

- 92% are in favor of vegetation treatments that are conducted for long term forest health

- 92% are in favor of fuel reduction and reducing fire threats to special habitats and aesthetic/recreational values
- 89% are in favor of forest fuel reduction and thinning to reduce fire threats to life and property
- 89% are in favor of forest fuel reduction and thinning to reduce fire threats to create/improve wildlife habitat

When asked what management strategies they favor or oppose for reducing fire risk to communities:

- 100% are in favor of thinning plantations for more natural space and clustering
- 96% are in favor of thinning to reduce fire risk
- 92% are in favor of prescribed fire to reduce fire risk
- 89% are in favor to reduce ladder fuels to reduce fire risk
- 89% are in favor of thinning from below, leaving large and legacy trees
- 78% are in favor of using naturally ignited fire for resource benefit
- 74% oppose no action

When asked what management strategies they favor or oppose when it is not for fire risk reduction close to communities:

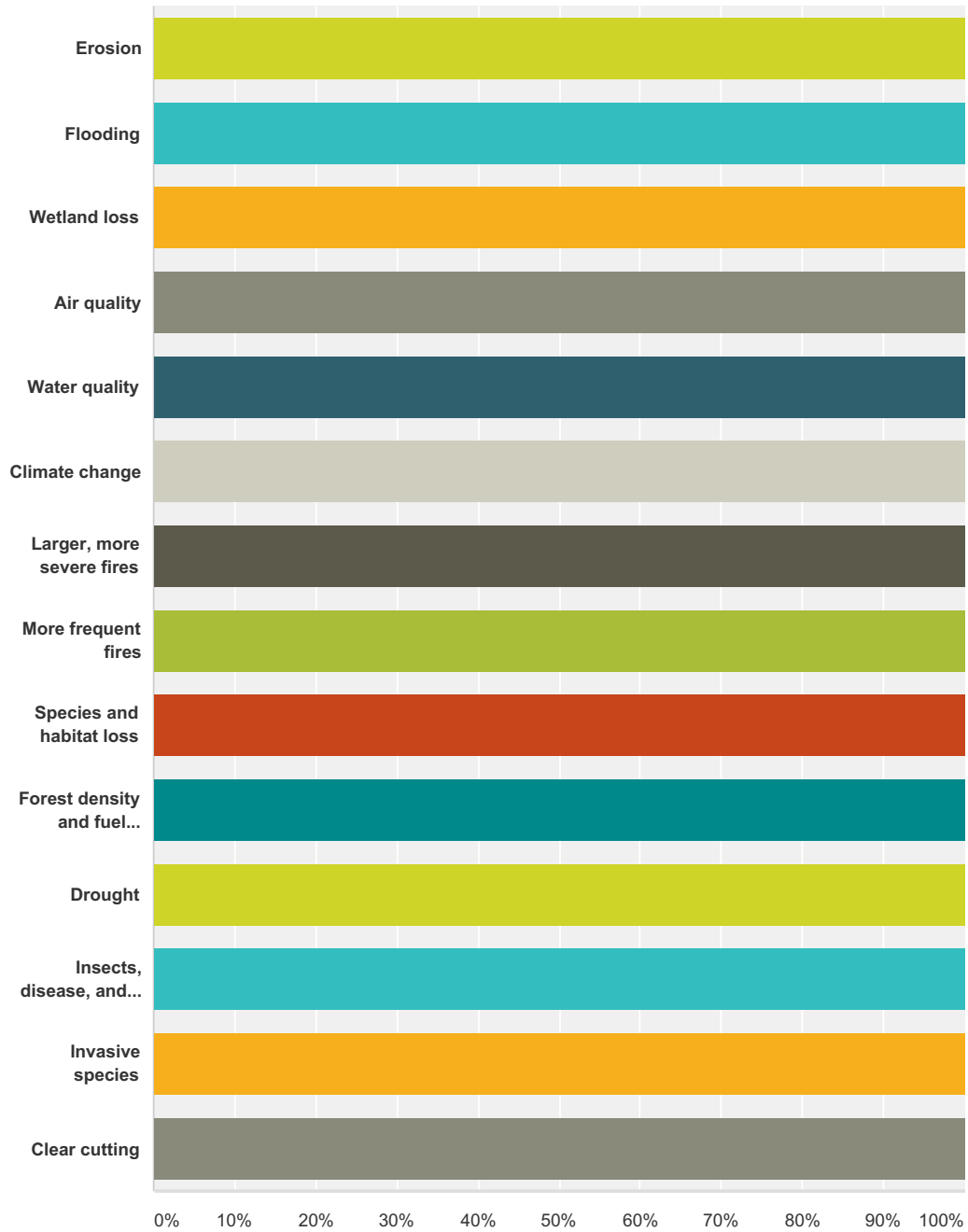
- 100% are in favor of prescribed fire and controlled burns
- 85% are in favor of forest thinning
- 85% are in favor of thinning for more natural space and clustering
- 85% are in favor of thinning for open plantations to speed development of large trees for owl habitat
- 85% are in favor of thinning below, leaving large and legacy trees
- 77% are in favor of using naturally ignited fire for resource benefit
- 74% are in favor of thinning fuels and tree density near, but not within, prime owl nesting habitat to reduce fire risk
- 74% oppose clear cutting (> 5 acres)

Overall, the participants strongly support thinning and prescribed fire as a management tool. Many of the areas in the survey with the largest amount of support are in line with the management strategies suggested in SOFRC's Rogue Basin Cohesive Forest Restoration Strategy. And likewise, those management tactics opposed (clear cutting and no action) are not management tactics promoted by the strategy. For more in depth responses and comments, continue to the next page.



### Q1 What physical and biological challenges or threats do Rogue Basin Forests and Watersheds currently face? (Please check all that apply)

Answered: 28 Skipped: 0



(no label)

(no label)	Total Respondents
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Erosion	100.00%	16	16
Flooding	100.00%	10	10
Wetland loss	100.00%	14	14
Air quality	100.00%	11	11
Water quality	100.00%	19	19
Climate change	100.00%	23	23
Larger, more severe fires	100.00%	24	24
More frequent fires	100.00%	13	13
Species and habitat loss	100.00%	22	22
Forest density and fuel build-up	100.00%	25	25
Drought	100.00%	25	25
Insects, disease, and pathogens	100.00%	24	24
Invasive species	100.00%	22	22
Clear cutting	100.00%	15	15

#	Other (please specify) or additional comment:	Date
1	Clear cutting on private lands	11/11/2016 9:52 AM
2	Tree mortality, fire danger severity	10/6/2016 10:35 AM
3	This question is too broad. "Watersheds" includes the entire landscape. One threat begets another. Drought and climate change bring insects, pathogens, and invasive species. Invasive species includes the barred owl.	10/6/2016 9:54 AM
4	Sprawl, WUI, Zoning.	10/5/2016 11:20 PM
5	Clear cutting is only a threat on private - and maybe state? lands. Federal lands have done no clearcutting in decades and no direction from Washington on down would indicate that will change (barring the election of Donald Trump).	10/4/2016 12:10 PM
6	The impacts associated with large scale thinning are largely the same as those associated with logging, including erosion from roads, sedimentation in streams, invasive species, loss of moist microclimate, and greenhouse gas emissions associated with vehicles, machinery, and cutting of trees. The most important impact, however, is that important conservation funds are being used on large scale thinning instead of on restoring mature forest habitat for wildlife.	10/3/2016 4:20 PM
7	The categories are rather vague. For example, flooding - some years during heavy winter rains we do have flooding which can cause landslides and take out large swathes of forest such as what happened on Wagner Butte. Forest density and fuel build-up - is a very vague category. What type of forest density???? and located where? If its around residences its an issue. If its miles from nowhere, less of an issue. YOU have to pick you priorities... Clear cutting - hasn't been a blm policy for years but could be again... need more detail to respond usefully. You also don't have a category for lack of federal government funding for US Forest Service and BLM to properly manage forests or for the language in the Oregon Forest Practices Act which allows virtually anything on private forest lands and creates the erosion/clear cutting etc. you list above. How about the O&C Act which creates much of the management emphasis for getting out the cut? That's a huge threat.	10/3/2016 10:23 AM

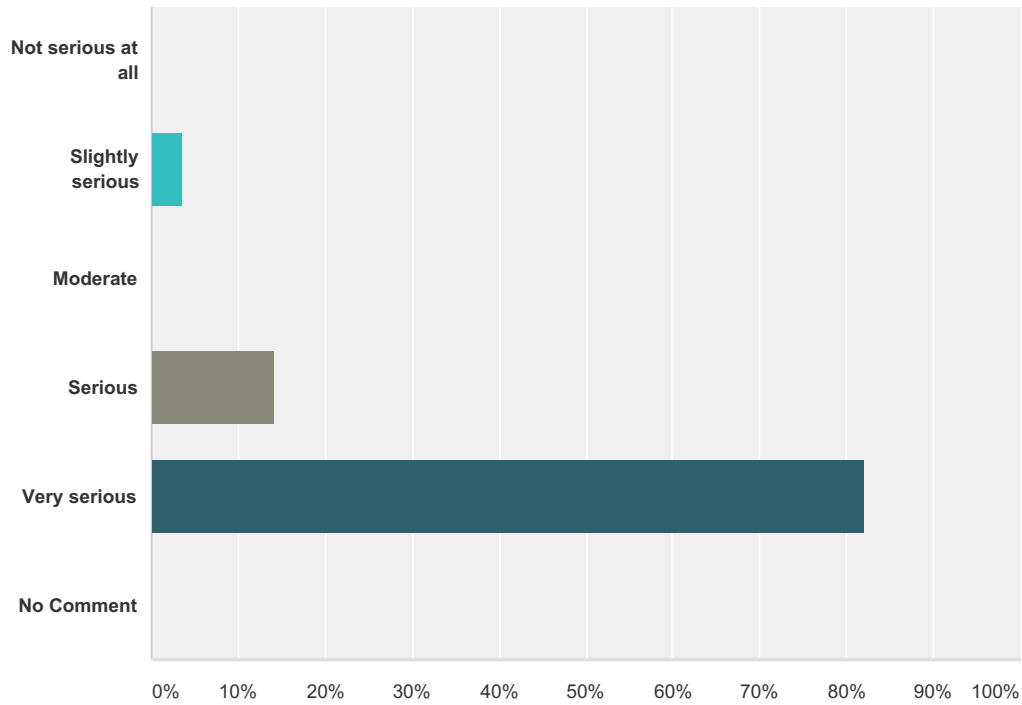
**Q2 Of the challenges you checked or added above, please type in the one you believe is the biggest current challenge to forest management in the Rogue Basin?**

Answered: 28 Skipped: 0

#	Responses	Date
1	Climate change because it will affect many of the others	11/11/2016 9:52 AM
2	climate change	11/2/2016 9:35 AM
3	drought	10/31/2016 4:15 PM
4	Forest Density and Fuel Build Up	10/18/2016 12:17 PM
5	CLimate Change	10/13/2016 8:09 PM
6	Climate Change impacts	10/11/2016 12:39 PM
7	Larger, more severe fires	10/10/2016 7:48 PM
8	Forest density and fuel build up	10/9/2016 7:32 AM
9	Insects affecting weakened trees.	10/6/2016 10:35 AM
10	Climate Change	10/6/2016 10:04 AM
11	Fire	10/6/2016 9:54 AM
12	Climate change	10/5/2016 11:20 PM
13	Forest density and fuel build up - because it drives mega-fires, insect outbreaks, greatly exacerbates the effect of drought, and is composed of species that are less adapted to the coming climate changes. It underlies most of the above issues.	10/4/2016 12:10 PM
14	Forest density and build-up	10/4/2016 9:25 AM
15	species and habitat loss	10/3/2016 4:55 PM
16	logging and thinning	10/3/2016 4:20 PM
17	Larger more severe fires	10/3/2016 2:57 PM
18	larger, more severe fire, "mega-fire"	10/3/2016 2:11 PM
19	Climate Change and Fuel Build-up due to Fire Suppression leading to Catastrophic Wildfires	10/3/2016 10:32 AM
20	Climate change impacts (drought, more frequent intense fires, floods, erosion, water quality degradation)	10/3/2016 10:28 AM
21	Regulatory framework that allows actions on federal and private lands that create all of the problems and more listed above.	10/3/2016 10:23 AM
22	Forest Density and Buildup	10/3/2016 8:15 AM
23	Insects, disease, and pathogens	9/30/2016 12:46 PM
24	Large and more complex fires.	9/29/2016 8:24 AM
25	Larger more severe fire	9/29/2016 7:42 AM
26	Drought	9/28/2016 4:22 PM
27	climate change	9/28/2016 3:51 PM
28	Larger, more severe fires	9/28/2016 2:59 PM

### Q3 How serious is this in terms of environmental/social/economic impacts?

Answered: 28 Skipped: 0



Answer Choices	Responses
Not serious at all	0.00% 0
Slightly serious	3.57% 1
Moderate	0.00% 0
Serious	14.29% 4
Very serious	82.14% 23
No Comment	0.00% 0
<b>Total</b>	<b>28</b>

### Q4 Considering just federal forest lands in the Rogue Basin, what do you believe is the biggest current challenge or threat to the Rogue Basin's Federal Forests?

Answered: 28 Skipped: 0

#	Responses	Date
1	Drought & insects	11/11/2016 9:52 AM
2	political opposition to treatments and lack of funding	11/2/2016 9:35 AM
3	forest density and fuel build-up	10/31/2016 4:15 PM
4	Forest Density, Fuels buildup	10/18/2016 12:17 PM
5	Climate Change	10/13/2016 8:09 PM
6	Inability to manage forests in a healthy way due to gridlock with timber v. environmentalists and the structure of the financial system of federal land management which impedes a more holistic approach and creates silos	10/11/2016 12:39 PM
7	Same	10/10/2016 7:48 PM
8	Forest density and fuel build up	10/9/2016 7:32 AM
9	fire danger/severity	10/6/2016 10:35 AM
10	Wildfire	10/6/2016 10:04 AM
11	Same, fire	10/6/2016 9:54 AM
12	Lack of money.	10/5/2016 11:20 PM
13	Analysis paralysis and timidity on the part of forest managers is the biggest problem, fueled by the "cottage industry" of environmental protagonists whose economic well-being is predicated on fomenting discord. Unstable and declining non-fire budgets is also a problem.	10/4/2016 12:10 PM
14	Drought	10/4/2016 9:25 AM
15	species and habitat loss	10/3/2016 4:55 PM
16	A misconception that fuels are the primary driver for wildfire, that wildfire is "bad" and "catastrophic", and that we need to "restore" forests by controlling fuels (logging and thinning) and logging post-fire landscapes. Millions of dollars are being spent on this effort instead of being spent to restore and protect mature forest ecosystems that have much lower wildfire risk. Resources should be redirected to protecting peoples' homes from wildfire and changing land use policy to move development away from high risk areas.	10/3/2016 4:20 PM
17	Forest Density and Fuel Build-up	10/3/2016 2:57 PM
18	uncharacteristically severe fire, or larger more severe fire, or mega fire-- read them as synonyms	10/3/2016 2:11 PM
19	Same as above	10/3/2016 10:32 AM
20	Climate change impacts (drought, more frequent intense fires, floods, erosion, water quality degradation)	10/3/2016 10:28 AM
21	see above - regulatory framework - O&C Act and the guidance/pressure to cut, cut, cut to create money for the O&C counties. Dumb way to manage a forest. Forest Management has to be decoupled from generating money for the O&C counties... get these counties off the dole at the expense of the forests.	10/3/2016 10:23 AM
22	Public Perception	10/3/2016 8:15 AM
23	Insects, disease, and pathogens	9/30/2016 12:46 PM
24	Management of fuels.	9/29/2016 8:24 AM
25	Insects, diseases, & pathogens	9/29/2016 7:42 AM
26	Insects	9/28/2016 4:22 PM
27	increasing pressure to manage for timber at the expense of other values	9/28/2016 3:51 PM



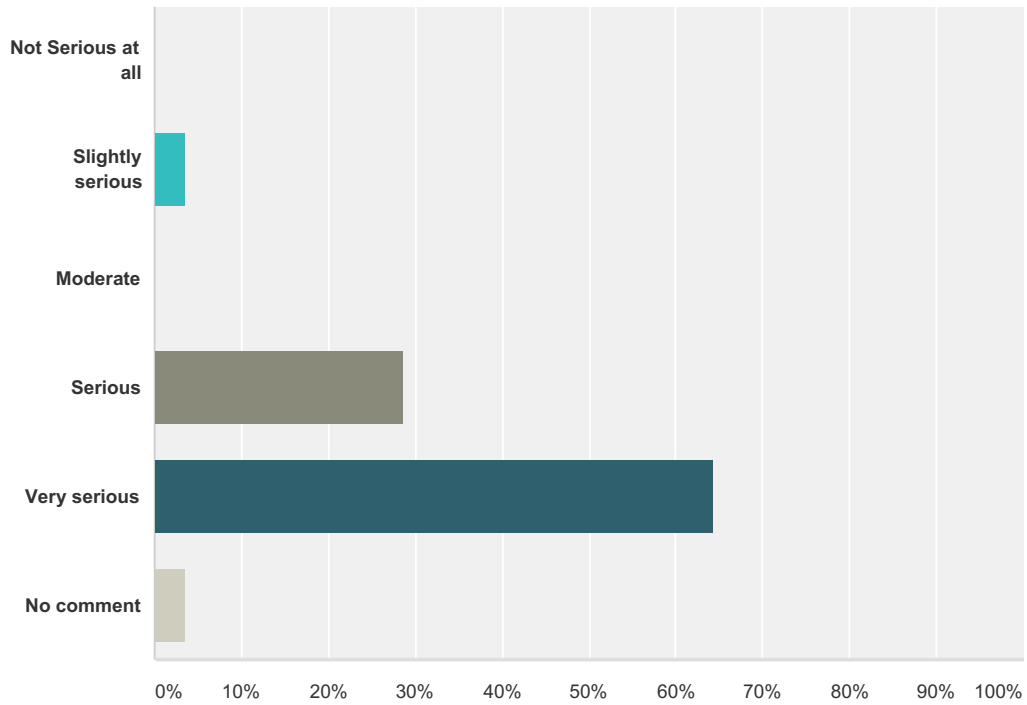
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28	forest density and fuels build up	9/28/2016 2:59 PM
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### Q5 How serious is this in terms of environmental/social/economic impacts?

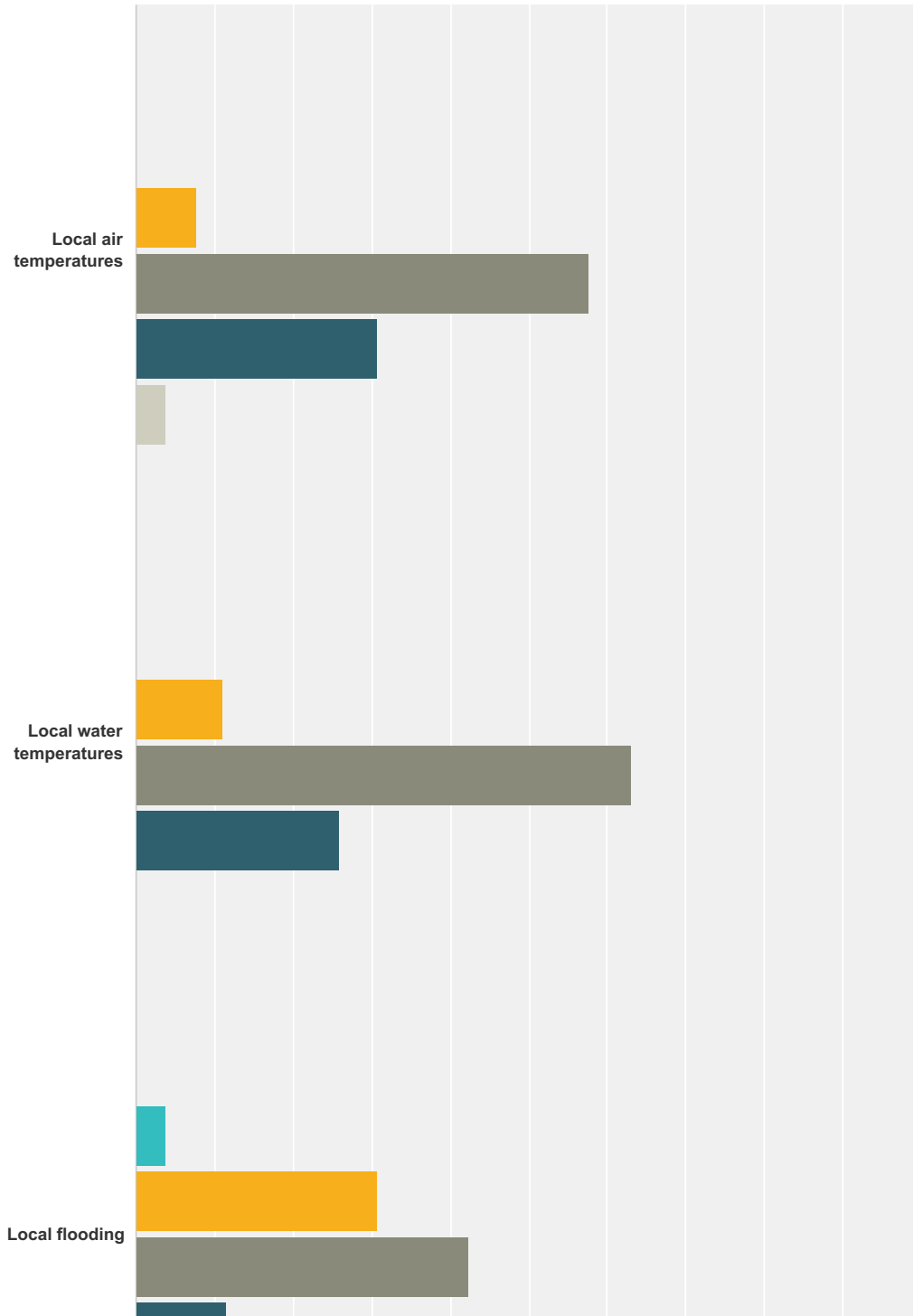
Answered: 28 Skipped: 0

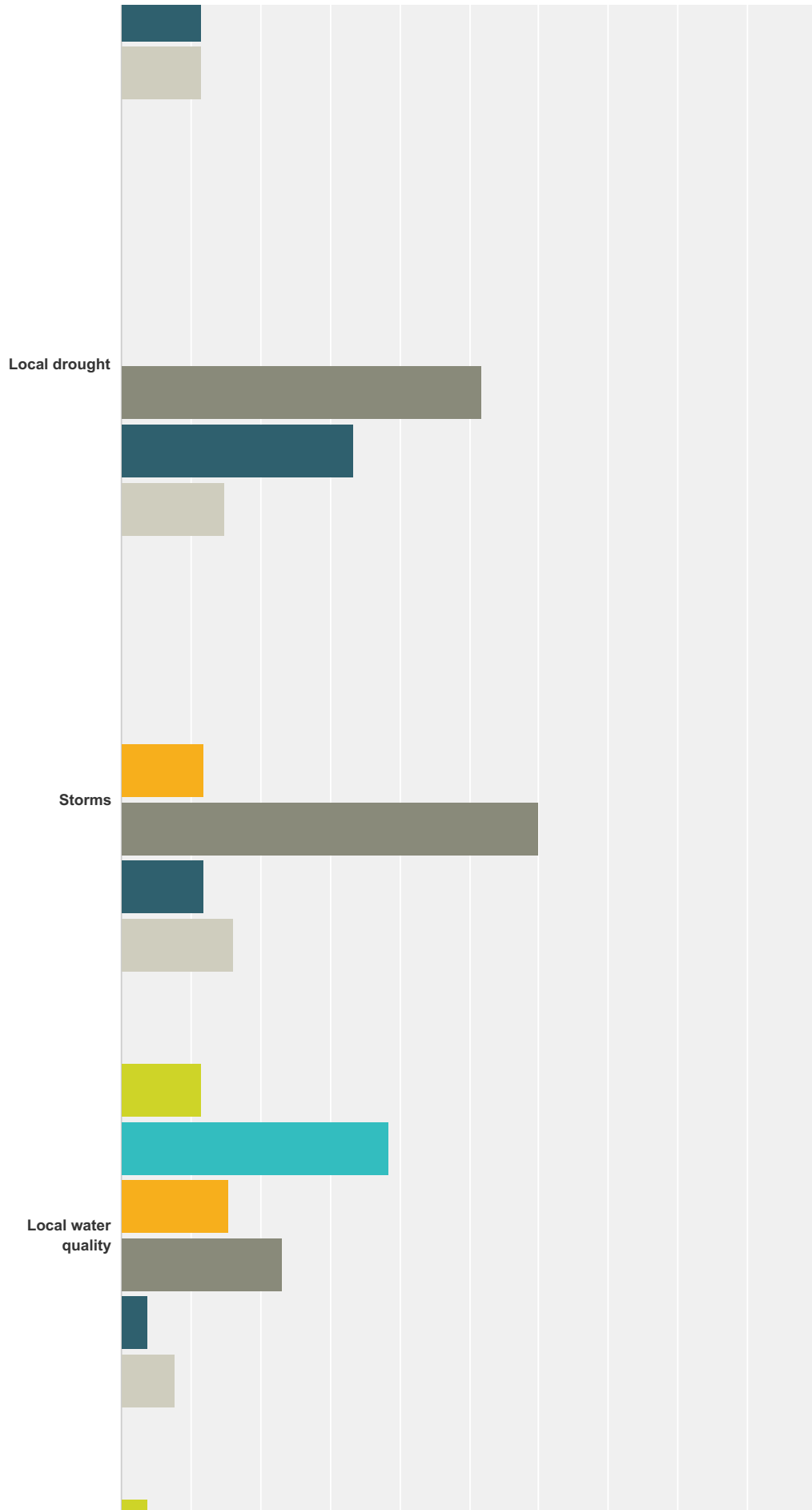


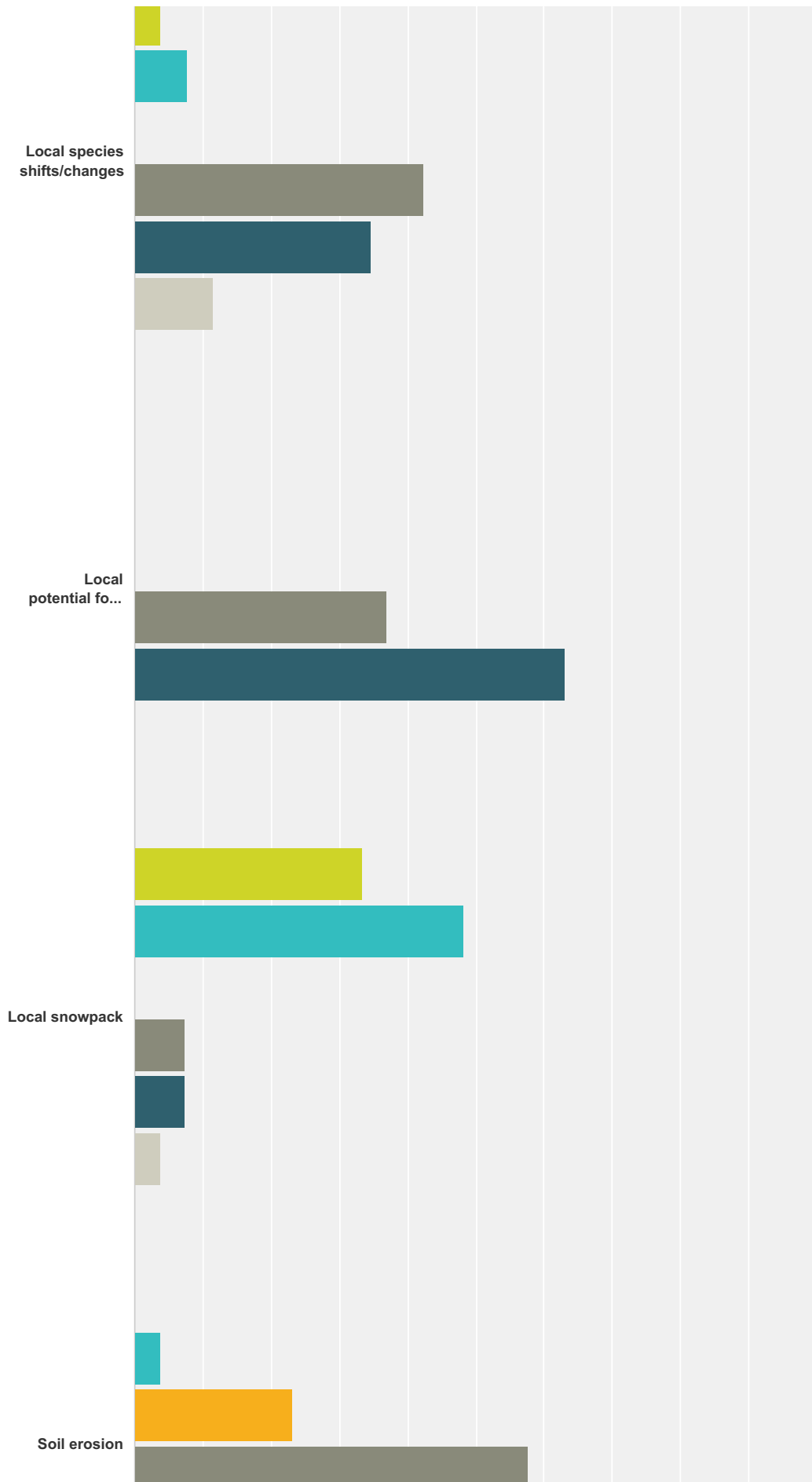
Answer Choices	Responses
Not Serious at all	0.00% 0
Slightly serious	3.57% 1
Moderate	0.00% 0
Serious	28.57% 8
Very serious	64.29% 18
No comment	3.57% 1
<b>Total</b>	<b>28</b>

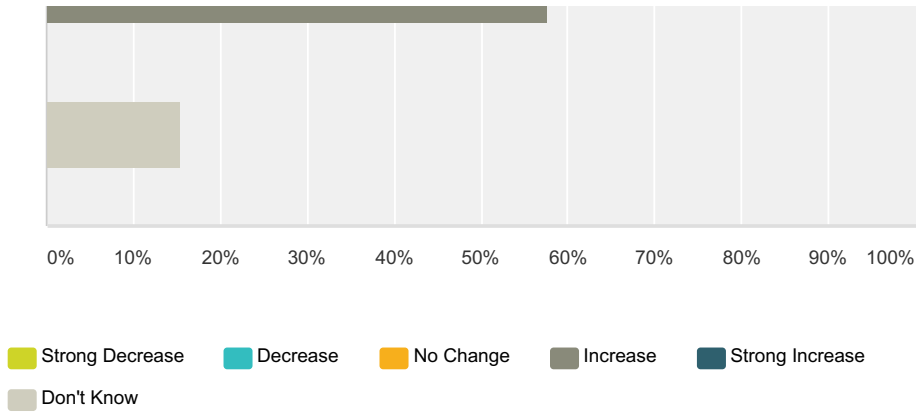
**Q6 Based on your knowledge and views, how might climate change impact federal lands in the Rogue Basin? Even if you have not previously considered the potential impacts of climate change on federal lands, please offer your best estimate of the following:**

Answered: 27 Skipped: 1







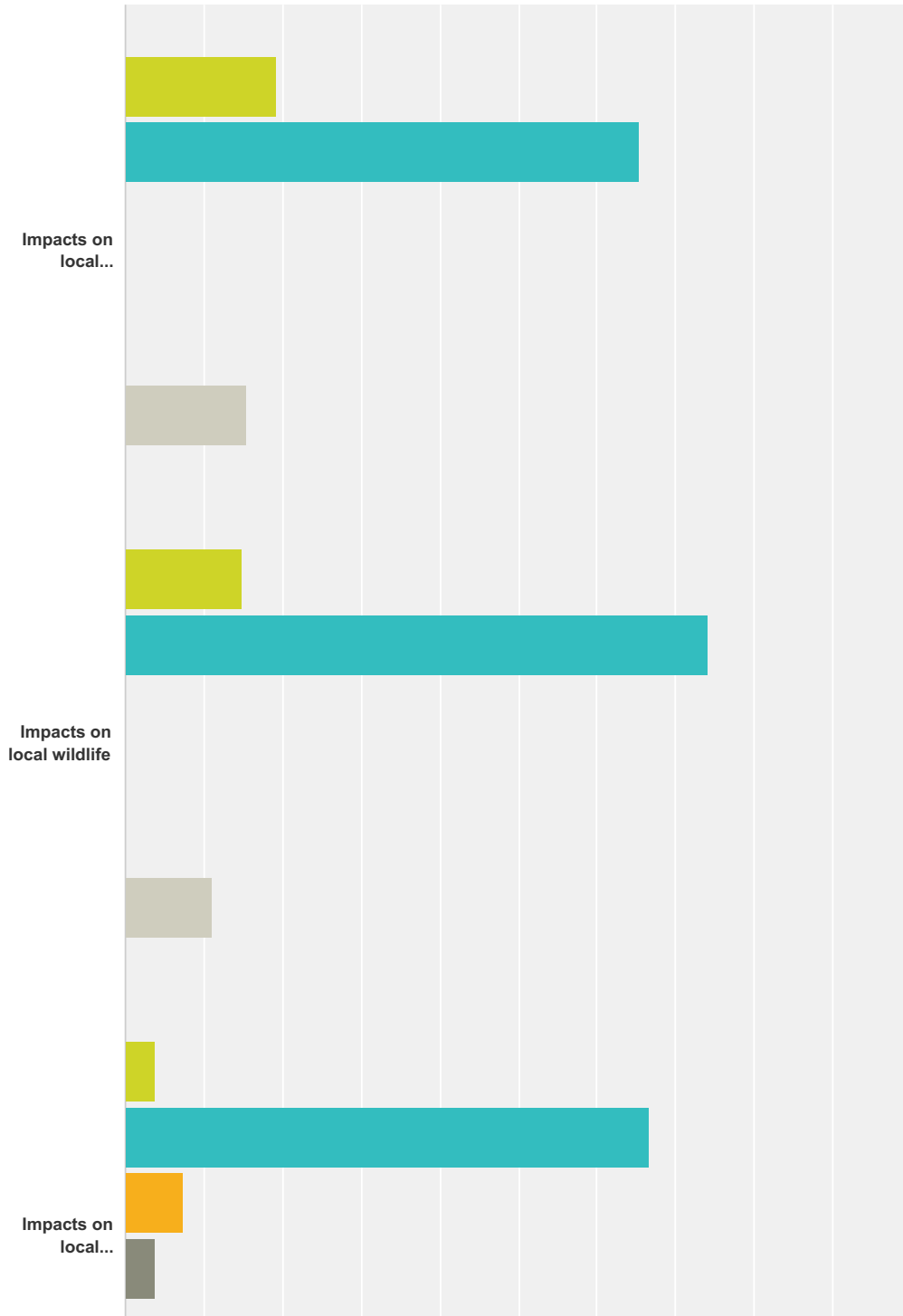


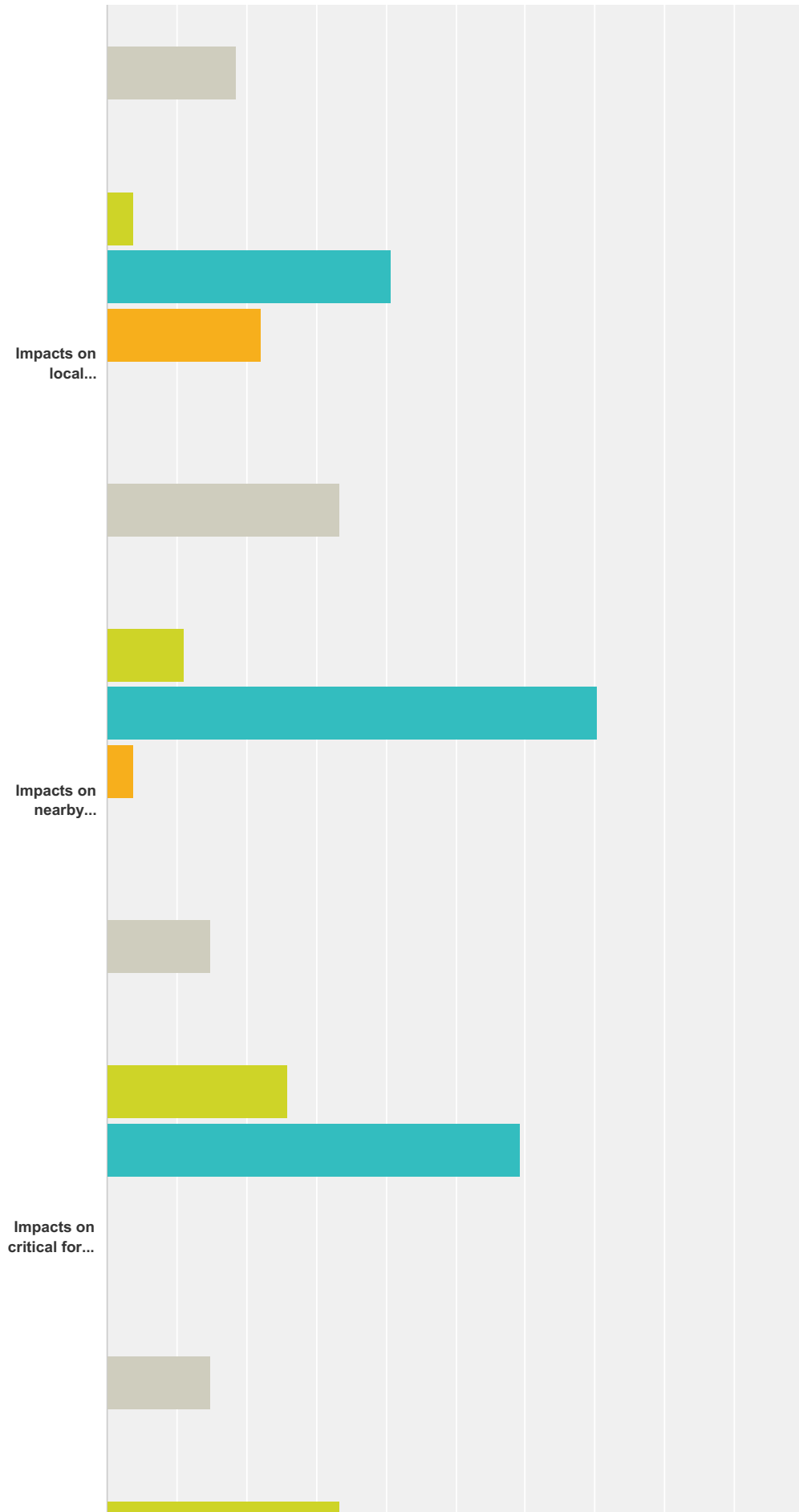
	Strong Decrease	Decrease	No Change	Increase	Strong Increase	Don't Know	Total
Local air temperatures	0.00% 0	0.00% 0	7.69% 2	57.69% 15	30.77% 8	3.85% 1	26
Local water temperatures	0.00% 0	0.00% 0	11.11% 3	62.96% 17	25.93% 7	0.00% 0	27
Local flooding	0.00% 0	3.85% 1	30.77% 8	42.31% 11	11.54% 3	11.54% 3	26
Local drought	0.00% 0	0.00% 0	0.00% 0	51.85% 14	33.33% 9	14.81% 4	27
Storms	0.00% 0	0.00% 0	12.00% 3	60.00% 15	12.00% 3	16.00% 4	25
Local water quality	11.54% 3	38.46% 10	15.38% 4	23.08% 6	3.85% 1	7.69% 2	26
Local species shifts/changes	3.85% 1	7.69% 2	0.00% 0	42.31% 11	34.62% 9	11.54% 3	26
Local potential for uncharacteristically severe wildfire	0.00% 0	0.00% 0	0.00% 0	37.04% 10	62.96% 17	0.00% 0	27
Local snowpack	33.33% 9	48.15% 13	0.00% 0	7.41% 2	7.41% 2	3.70% 1	27
Soil erosion	0.00% 0	3.85% 1	23.08% 6	57.69% 15	0.00% 0	15.38% 4	26

#	Additional Comments:	Date
1	Everyone likes to focus on local species shifts and changes - I guess it's "sexy." But as Steve Running, an IPCC panel member and forest ecologist from Montana said, "Anyone who tells you they know how climate change will affect species distributions is lying." At least on a terrestrial level. For aquatics, rising stream temperatures are already lethal for some salmonids. I believe TNC's approach to climate resilience is the correct one: to identify and conserve those critical parts of the landscape that a) serve as conduits, and b) provide diversity in habitats. Beyond that, promoting more drought-tolerant and fire tolerant tree species, along with re-adopting the deliberate and effective use of fire, are the best chances we have at making a positive difference. Geos' report notwithstanding, changes in wolverine habitat and distribution is NOT an issue for the Rogue Basin. Can we please interject some reality into the discussion?!?	10/4/2016 12:10 PM
2	The term uncharacteristically severe wildfire is ambiguous. It depends on what time frame you look at and whether you are comparing historic wildfire (within the last 100 years) or long term natural frequency and severity of wildfire spanning thousands of years. The rate of climate change is one of the greatest threats. Changes are expected to happen far faster than native species can keep up. "Shifts" are unlikely simply because most species cannot shift at the rate to track their suitable climate, making extinctions (local or global) more likely.	10/3/2016 4:20 PM
3	During what time frame????	10/3/2016 10:23 AM

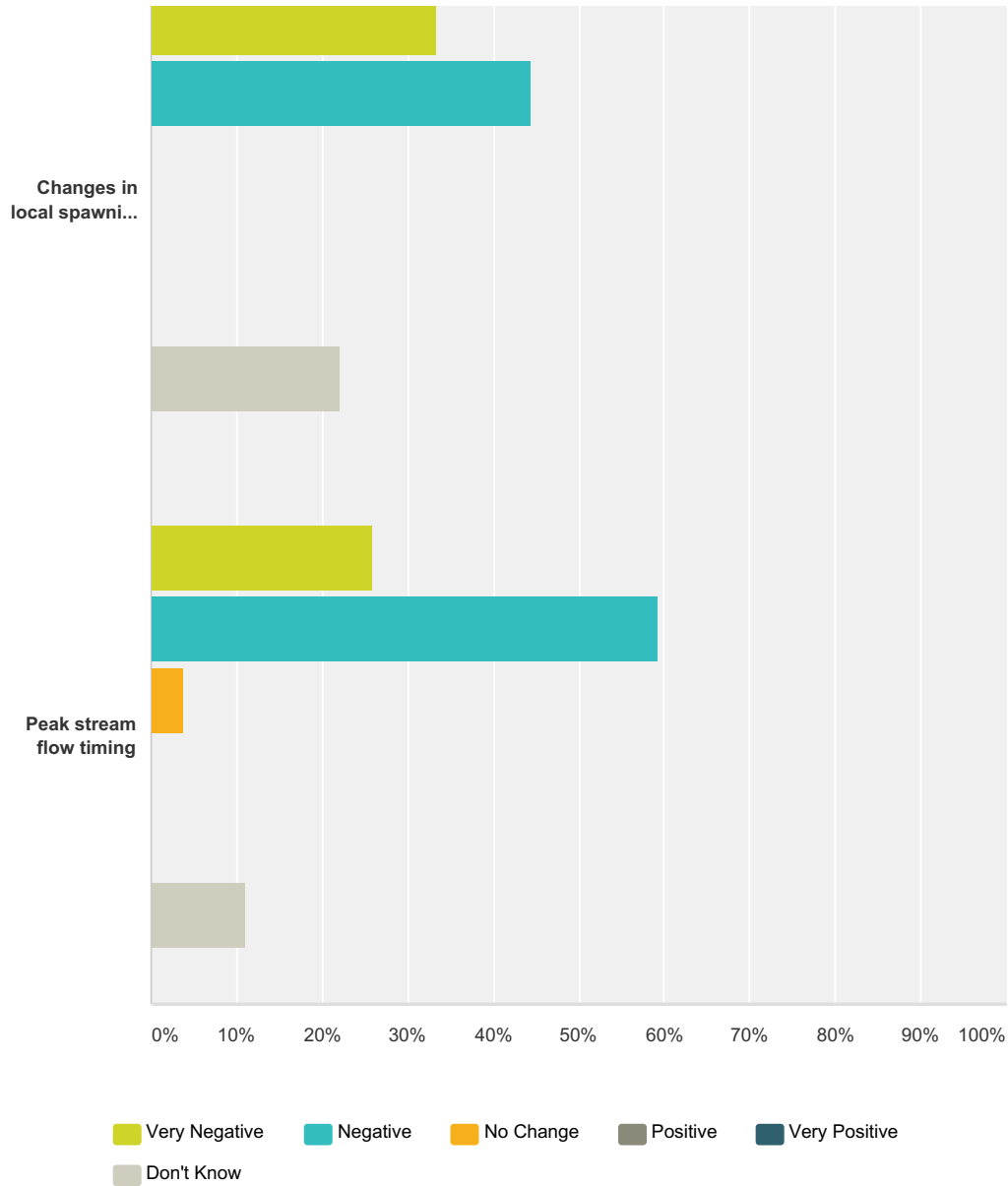
**Q7 (Continued) - Based on your knowledge and views, how might climate change impact federal lands in the Rogue Basin? Even if you have not previously considered the potential impacts of climate change on federal lands, please offer your best estimate of the following:**

Answered: 27 Skipped: 1









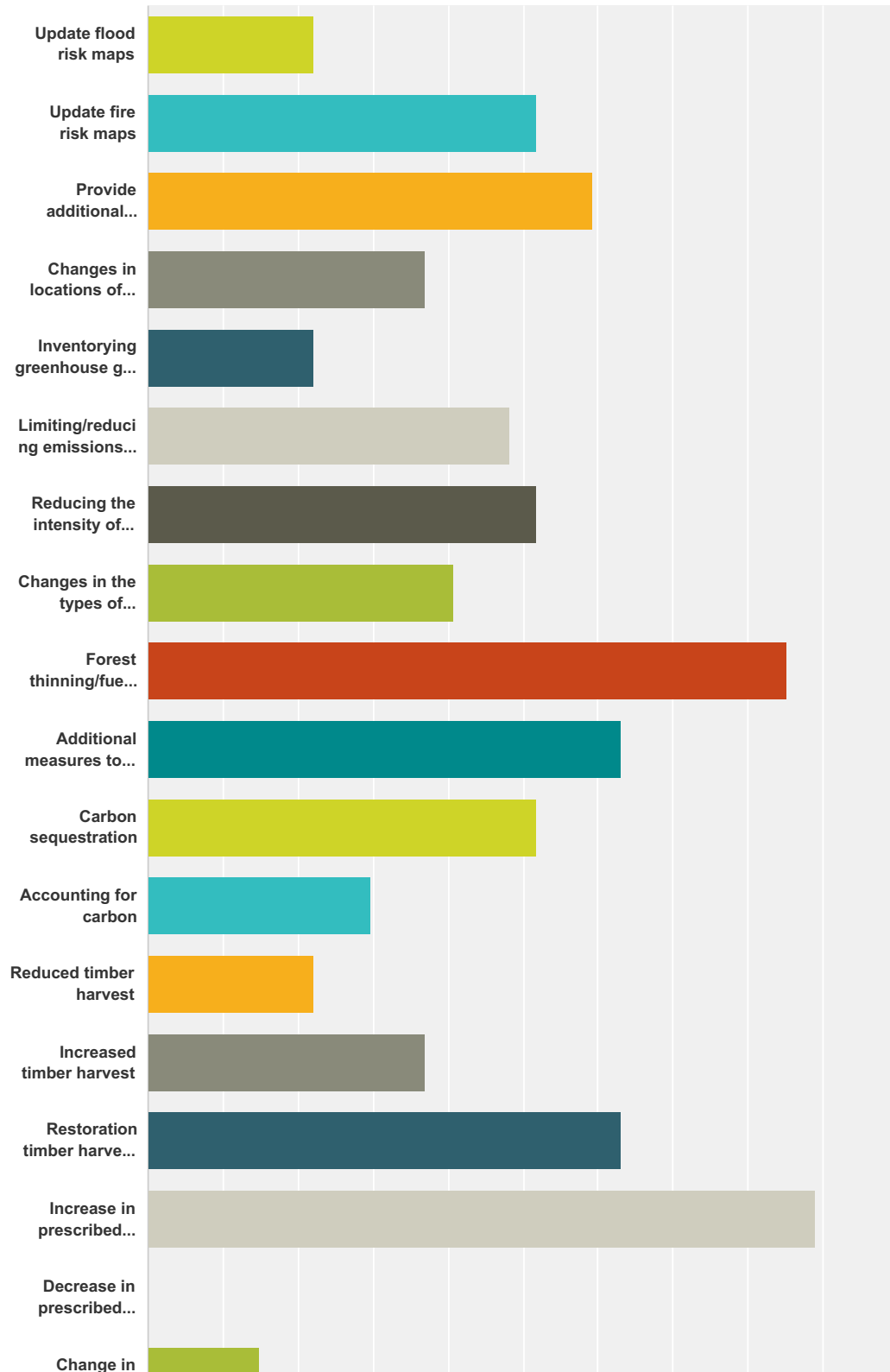
	Very Negative	Negative	No Change	Positive	Very Positive	Don't Know	Total
Impacts on local ecosystems	19.23% 5	65.38% 17	0.00% 0	0.00% 0	0.00% 0	15.38% 4	26
Impacts on local wildlife	14.81% 4	74.07% 20	0.00% 0	0.00% 0	0.00% 0	11.11% 3	27
Impacts on local recreation	3.70% 1	66.67% 18	7.41% 2	3.70% 1	0.00% 0	18.52% 5	27
Impacts on local permittees	3.70% 1	40.74% 11	22.22% 6	0.00% 0	0.00% 0	33.33% 9	27
Impacts on nearby communities	11.11% 3	70.37% 19	3.70% 1	0.00% 0	0.00% 0	14.81% 4	27
Impacts on critical forest tree species	25.93% 7	59.26% 16	0.00% 0	0.00% 0	0.00% 0	14.81% 4	27
Changes in local spawning times of aquatic species	33.33% 9	44.44% 12	0.00% 0	0.00% 0	0.00% 0	22.22% 6	27

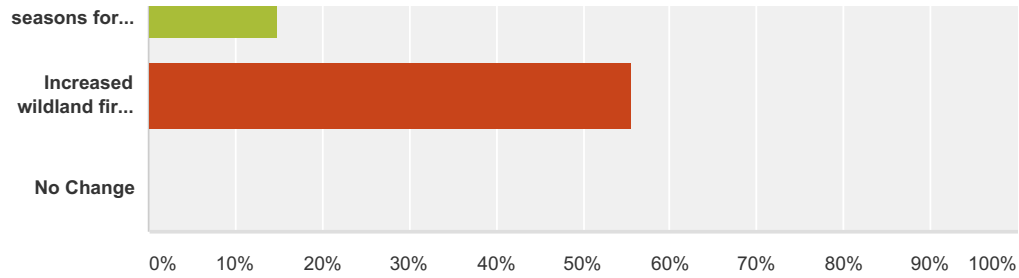
Peak stream flow timing	25.93% 7	59.26% 16	3.70% 1	0.00% 0	0.00% 0	11.11% 3	27
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#	Additional Comments:	Date
1	Climate change will be just that, a change. That change will bring alterations to current systems, cycles, and patterns. Those changes and alterations will be perceived in general as negative as many parts of the greater system and it species will not be able to adapt, thus my answers.	10/6/2016 9:54 AM
2	The effect on all these elements will be strong to very strong. Whether or not that impact is positive or negative depends. For peak stream flow, we know (and have already seen) that it is coming earlier. Just being different, I suppose that is negative. But the real issue is non-peak stream flow. For forest tree species, it depends on what you consider "critical." Douglas-firs that have encroached in the last 70-100 years in pine-oak are dying in droves from flathead borers. I see that as a good thing, as we have homogenized our forests to mid-closed DF dominated stands through fire exclusion and logging practices, greatly reducing diversity across the landscape. The Rogue Basin forests never were, and should not be, solid spotted owl NRF. The good news (for a wide variety of species) is that climate change is rendering that goal moot. The question is whether or not we will respond proactively and appropriately for maximum ecological diversity, productivity, and resilience.	10/4/2016 12:10 PM
3	would like more info on how these cumulatively affect salmon runs.	9/28/2016 3:51 PM

**Q8 What, if any, federal forest management changes do you feel need to occur in response to climate change? (Check all that apply)**

Answered: 27 Skipped: 1





Answer Choices	Responses
Update flood risk maps	22.22% 6
Update fire risk maps	51.85% 14
Provide additional information/educational materials to the public	59.26% 16
Changes in locations of activities allowed	37.04% 10
Inventorying greenhouse gas emissions (from vehicles, buildings, etc.)	22.22% 6
Limiting/reducing emissions (from vehicles, buildings, etc.)	48.15% 13
Reducing the intensity of land use	51.85% 14
Changes in the types of activities allowed	40.74% 11
Forest thinning/fuel reduction	85.19% 23
Additional measures to protect wildlife	62.96% 17
Carbon sequestration	51.85% 14
Accounting for carbon	29.63% 8
Reduced timber harvest	22.22% 6
Increased timber harvest	37.04% 10
Restoration timber harvest techniques (please specify more in comments)	62.96% 17
Increase in prescribed burning	88.89% 24
Decrease in prescribed burning	0.00% 0
Change in seasons for prescribed burning (please specify more in comments)	14.81% 4
Increased wildland fire use (please specify more in comments)	55.56% 15
No Change	0.00% 0
<b>Total Respondents: 27</b>	

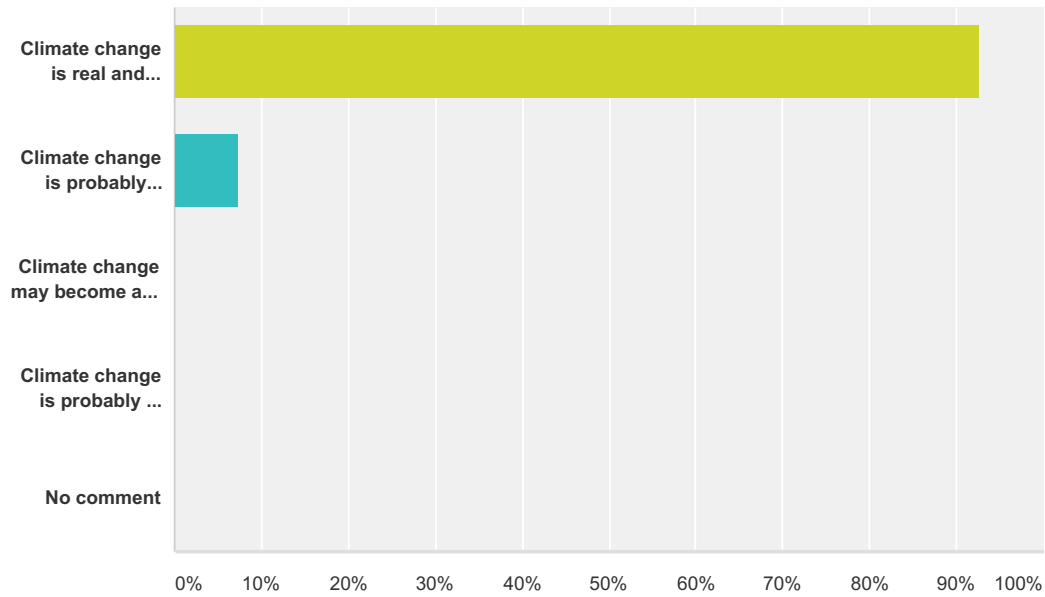
#	Additional Comments:	Date
1	Thin the plantations	11/11/2016 9:52 AM
2	Restoration treatments are needed in forests subject historically to frequent fire. Timber harvest is one tool that can help with restoration treatments. There has been over 70 years of fire suppression in which small trees become large trees. Protection of old large trees is important but younger large trees are part of the problem. Wildland fire use can be beneficial if it is managed correctly with local input and knowledge.	11/2/2016 9:35 AM

3	Our forests are in profound danger. The Business As Usual scenario of accelerating fossil fuel use, logging, and GHG emissions, if followed, will likely produce a trajectory that will result, by the end of the Century, in conditions that preclude the existence of forests in Southern Oregon. We need to maximize carbon sequestration in our forests, minimize logging, and undertake management that promotes healthy resilient forests that can survive the rising risk of wildfire. Given the BAU scenario, we probably should manage under the assumption that humanity will not follow that trajectory since, if we do, no management will suffice to protect our forests	10/13/2016 8:09 PM
4	Restoration timber harvest techniques- techniques that are climate adaptive- that can help to adapt to the effects of climate change to try to have more resilient forests. Prescribed burning- increase but not in summer. Must be aware of smoke to the public and health risks so needs to be done wisely, but a good way to remove fuel build up and adapt to the potential increase in fires. Increased wildland fire use - using updated information on habitat, fuels, etc. making educated steps to try to protect areas that need to be protected, take measure to reduce the size of fire, but let it clear through areas to reduce fuel buildup. Use fire to our advantage to restore forests to a more resilient state; we can never get all the forests to a resilient, climate adaptive state, especially not with thinning and/or prescribed burning alone. We must use the tools we have and natural fire is a cost effective tool if we are prepared and educated on how to best use it.	10/11/2016 12:39 PM
5	Prescribed burning should follow burn days for public support.	10/6/2016 10:35 AM
6	Creating more fire resilient landscapes. Letting wildfires burn in appropriate locations and under appropriate conditions.	10/6/2016 10:04 AM
7	Forests and their ecosystems need to be managed to buffer and protect them from future changes. Forest health, species protection, and ecosystem health needs to take priority.	10/6/2016 9:54 AM
8	Fire risk maps are updated fairly regularly by the agencies, and the SOFRC Cohesive Restoration Strategy just recently completed an extensive, state of the art fire risk assessment. Restoration forestry is needed to undo the effects of 100+ years of increasing fire exclusion and allow for the broad reintroduction of Rx fire and managed wildfire (fire herding for resource benefit). Increased timber harvest will result from this, but should not be a goal in itself. The single biggest change that is needed in federal forest management is to change from commodity targets (MMBF) to outcome targets (acres restored, attainment of HRV for vegetation, attainment of PFC for streams, etc.). Twenty plus years ago, the mantra was "just protect habitat and the spotted owl will do fine, and it is a surrogate for all forest species." (No one seems to care about species dependent on more open habitats.) The increasing presence of barred owls has proved that wrong - and meanwhile we are trying to create "Willamette-style" NSO habitat in a completely different eco-region. Why don't we try to recreate the forest habitat that is appropriate for our region, instead of chasing some fantasy. Our climate and physiography is more like California than western Oregon. Carbon sequestration is already happening. We can very marginally improve it by keeping healthy forests and not consuming hundreds of thousands of acres in wildfire.	10/4/2016 12:10 PM
9	If there is not room for an increase in fire fuels reduction, fires should be permitted to burn in areas where reduction is not allowed.	10/4/2016 9:25 AM
10	Need to see more use of progressive forestry techniques that favor old tree structure and structural and species diversity, while mitigating the past effects of large scale timber harvest. Rather than modeling and mapping fire risk why not map all of the clearcuts and thins from above since the 1950s and use that map to target and prioritize restoration treatment units? In a mixed conifer hardwood, mixed fire regime system its rather fuzzy to say that all our efforts are about mitigating fire suppression effects. The clearest restoration cause and effect to mitigate is loss of old tree structure from decades of industrial forestry (followed of course by a policy of fire suppression resulting in overly dense young tree structure). Use prescribed fire during all available dry seasons, i.e., night burns toward the end of fire season, winter during dry frost conditions, etc. Use managed wildfire as possible.	10/3/2016 4:55 PM
11	Forests should be managed to intensively store carbon in the near term while supporting ecological systems and biodiversity. PNW forests should be seen as an important and immediate tool in reducing GHG emissions at the national level. We need to focus less on fuels reduction. Weather and climate are the primary determinants of the total acreage burned in nearly all western forests, woodlands and shrublands (Littell et al. 2009, Jolly et al. 2015, Jin et al. 2015). While past human activities—like fire suppression or logging—can fuel bigger, hotter fires, these effects are small compared to the role of drought, temperature and wind on annual area burned.	10/3/2016 4:20 PM
12	Timber harvests can be utilized as a tool to produce skips and gaps forest stands. Managed fire is a great way to bring fire back to the land when nature allows it. Liability and risk of the fire going beyond projected limits need to be considered, but a lot of times, due to a lack of funding and political support, the only way these forests are going to see a reduction in fuel load is because of something like a wildfire. If the conditions are right, then rather than fire exclusion, which will continue this build up, utilize a low intensity burn to remove fuels.	10/3/2016 2:57 PM
13	Expand AFR, apply as in SOFRC RBCFRS. Expand AFR type treatments to better enable use of wildland fire for resource objective and reduced long term fire risk	10/3/2016 2:11 PM
14	Increase in harvest of over-stocked stands of PSME, no more harvest of trees with old-growth characteristics (use Van Pelt, etc). Prescribed fire at landscape scale.	10/3/2016 10:32 AM

15	Need more integrated fuels management with a emphasis on utilization, and small timber sale harvest within Fuels Reduction Projects. Strategic locations along ridges and roads to preplan fire breaks. Allow more Prescribed Burning within all the Seasons. With Fire and our current climate there are multiple windows for Rx burning within each season of any given year. Change the mindset of Wildland Fire and have Prescribed Fire Manager and Burn Boss positions to Overhead on Fire Management Teams. So often back burns get conducted too fast and put too much fire down torching the canopy and having too hot of burn. Needs more oversight of Hot Shot Crews in Burning!	10/3/2016 8:15 AM
16	Our practices should be more like mimicry of a natural occurrence. We need to focus on a more patchwork type of landscape, with open areas, corridors, and snags left standing and on the ground. Thinning is not going to cut it in the future...	9/30/2016 12:46 PM
17	Restoration harvest techniques to restore species diversity.	9/29/2016 7:42 AM
18	Not sure if prescribed burning can be safely used on checkerboard lands. Would like to know the carbon impacts of prescribed burning and the amount of carbon released by current industrial forest practices (burning of slash piles) and fuel reduction pile burning.	9/28/2016 3:51 PM
19	encourage prescribed burns, thin overstocked plantations, reduce road networks to lower erosion and improve water quality	9/28/2016 2:59 PM

### Q9 Which of the following statements regarding climate change do you agree with most?

Answered: 27 Skipped: 1

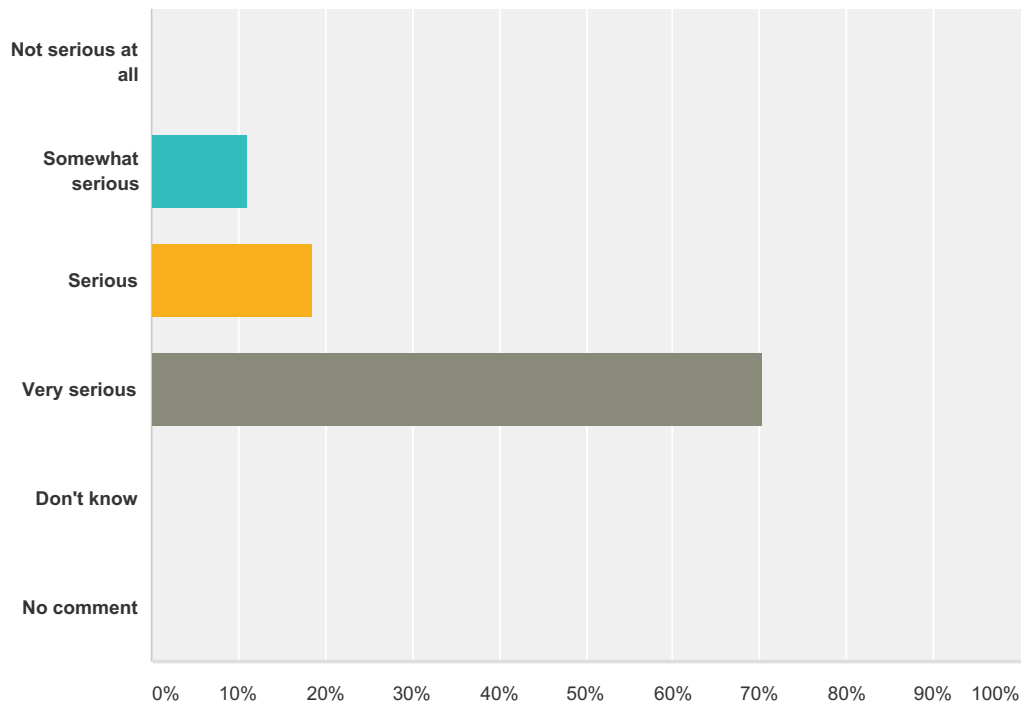


Answer Choices	Responses
Climate change is real and already happening	92.59% 25
Climate change is probably happening and we will start seeing impacts in the near future	7.41% 2
Climate change may become a problem in the longer term	0.00% 0
Climate change is probably not happening now and will not cause problems in the future	0.00% 0
No comment	0.00% 0
<b>Total</b>	<b>27</b>

#	Additional Comments	Date
1	The only explanation for answering other than the first choice is ignorance or blind commitment to a philosophical principle that must deny reality	10/13/2016 8:09 PM
2	I have no patience for climate-change deniers. The data are so clear and strong, one can only compare deniers to those who in the 1700's were still arguing that the Earth is flat!	10/4/2016 12:10 PM

### Q10 In your opinion, how serious is the problem of climate change?

Answered: 27 Skipped: 1

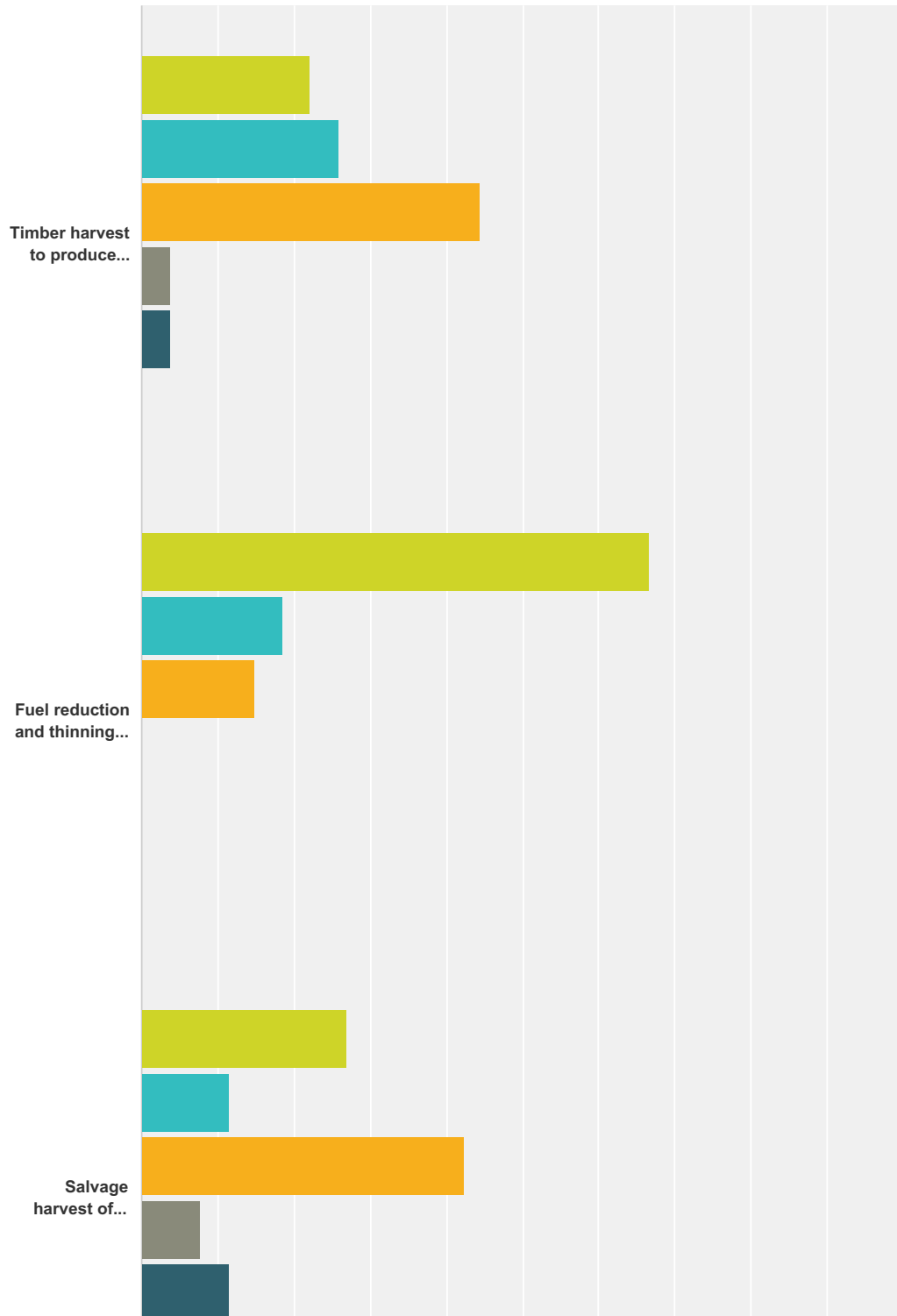


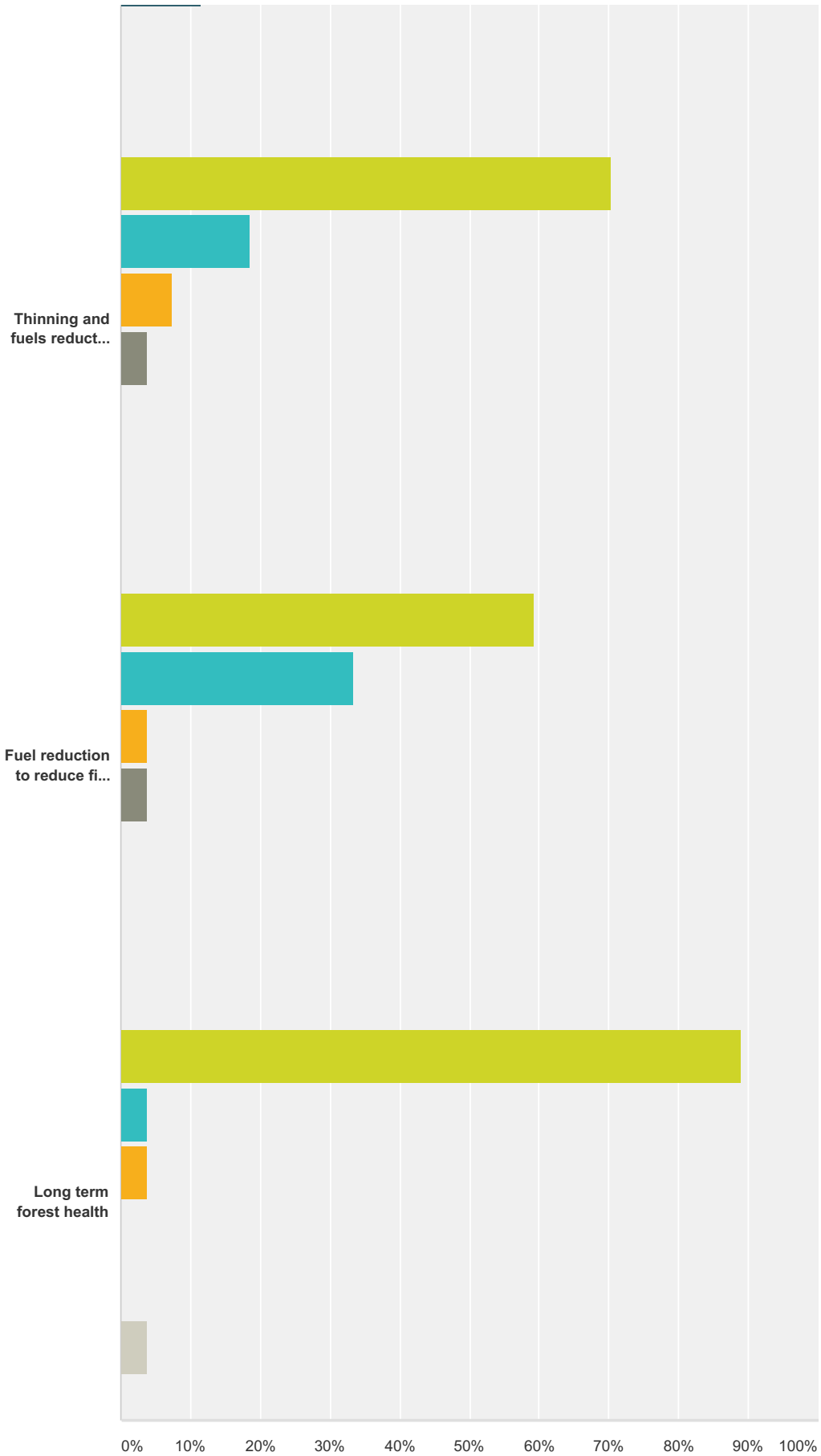
Answer Choices	Responses	
Not serious at all	0.00%	0
Somewhat serious	11.11%	3
Serious	18.52%	5
Very serious	70.37%	19
Don't know	0.00%	0
No comment	0.00%	0
<b>Total</b>		<b>27</b>

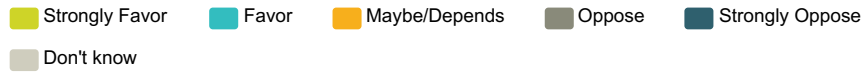


**Q11 Vegetation treatments currently occur for the following purposes on federal lands in the Rogue Basin. Please indicate the level at which you favor or oppose such management on federal lands of the Rogue Basin:**

Answered: 27 Skipped: 1







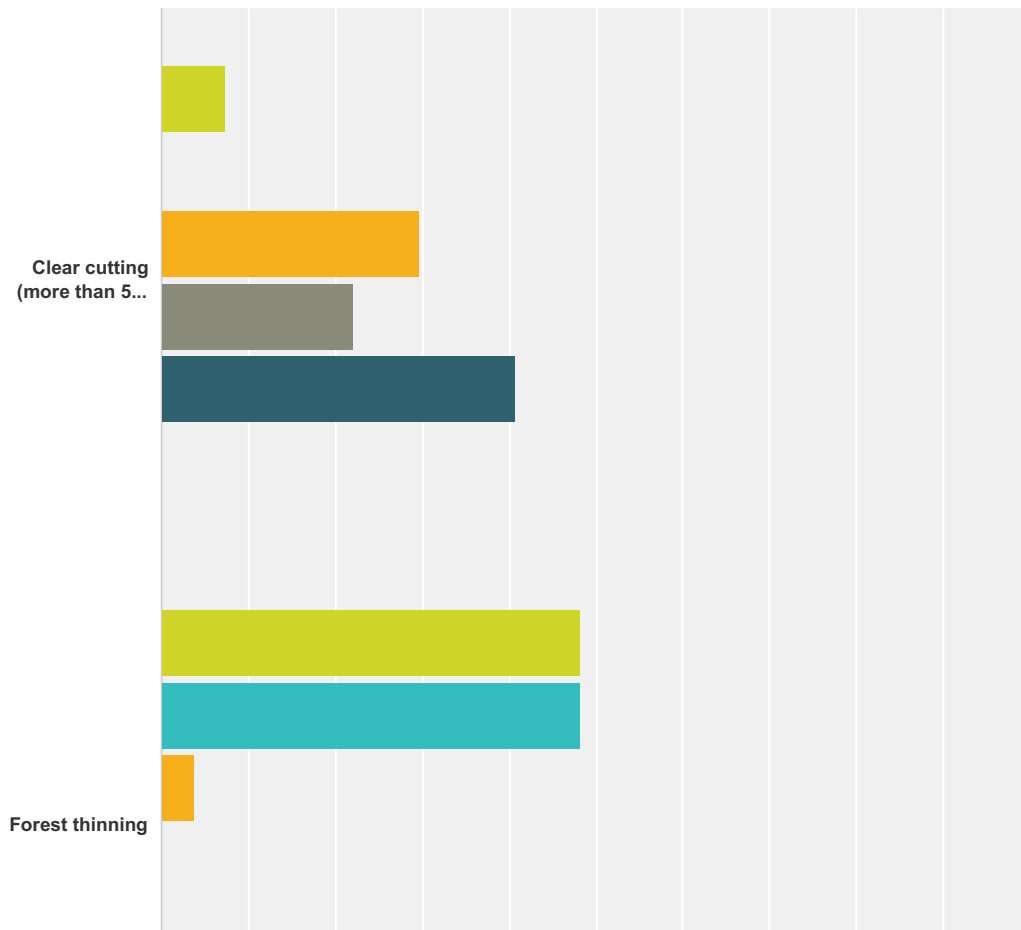
	Strongly Favor	Favor	Maybe/Depends	Oppose	Strongly Oppose	Don't know	Total
Timber harvest to produce forest products	22.22% 6	25.93% 7	44.44% 12	3.70% 1	3.70% 1	0.00% 0	27
Fuel reduction and thinning to reduce fire threats to life and property	66.67% 18	18.52% 5	14.81% 4	0.00% 0	0.00% 0	0.00% 0	27
Salvage harvest of dead/dying trees	26.92% 7	11.54% 3	42.31% 11	7.69% 2	11.54% 3	0.00% 0	26
Thinning and fuels reduction to reduce fire risk to create or improve wildlife habitat	70.37% 19	18.52% 5	7.41% 2	3.70% 1	0.00% 0	0.00% 0	27
Fuel reduction to reduce fire threats to special habitats and aesthetic/recreational values	59.26% 16	33.33% 9	3.70% 1	3.70% 1	0.00% 0	0.00% 0	27
Long term forest health	88.89% 24	3.70% 1	3.70% 1	0.00% 0	0.00% 0	3.70% 1	27

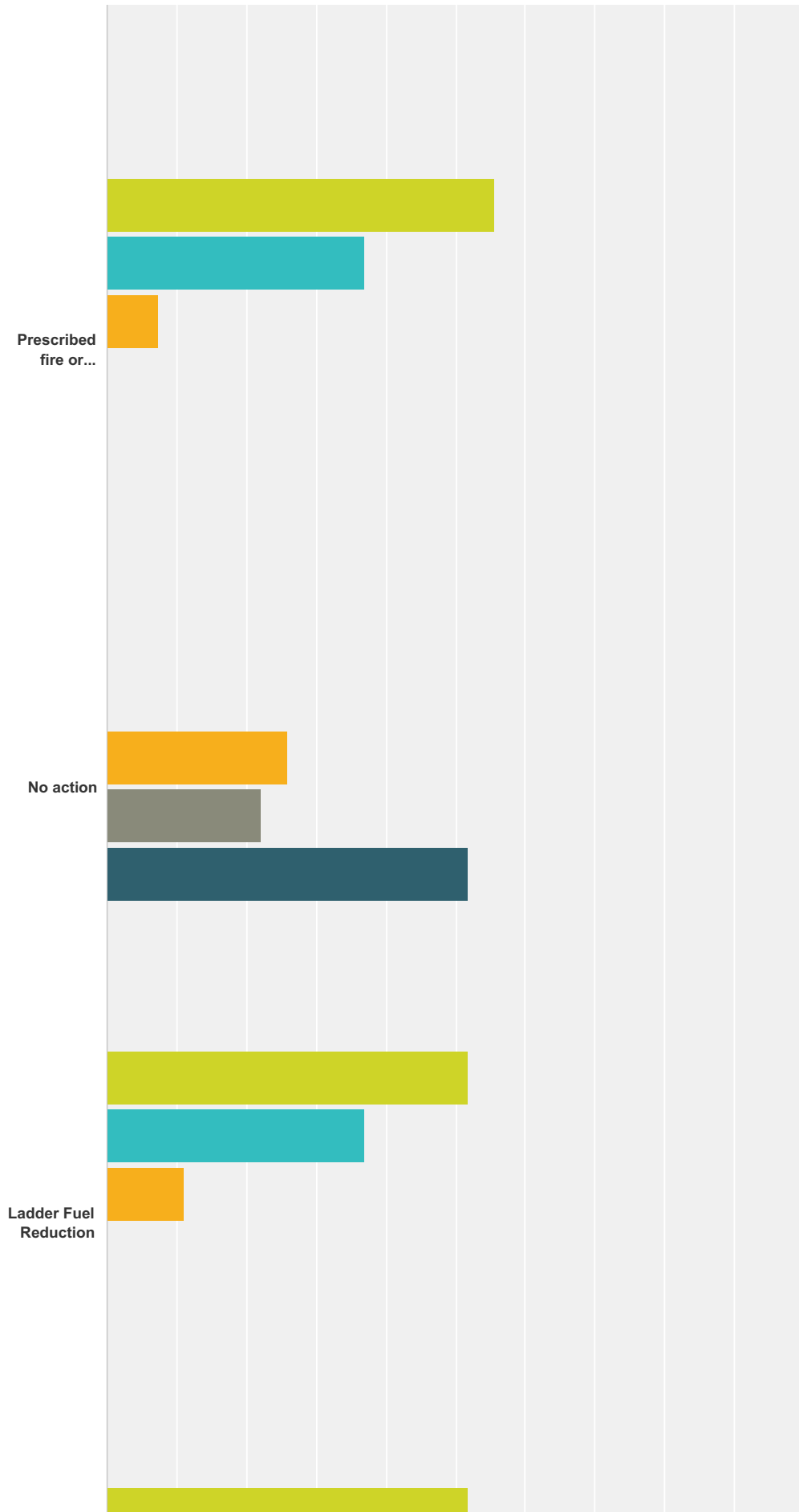
#	Additional Comments/Thoughts	Date
1	Fuel reduction should be done around homes and in plantations. No timber harvest of large, older trees in late seral forests.	11/11/2016 9:52 AM
2	I think part of the problem with salvage logging is what happens on adjacent private timber lands. It seem when they take every single tree it increases erosion which can cause serious problems on adjacent lands. I don't know if that happens every time on private lands or not.	10/18/2016 12:17 PM
3	What about "long term forest health?" It doesn't seem to fit.	10/6/2016 10:04 AM
4	We just need to get on with it, big time. Even if we tripled our efforts, the vast majority of federal land would still not get treated in a timely manner. Some consider restoration treatments as a risky "experiment." One could argue that "leaving it to 'nature'" is just as risky and is happening over a much larger percentage of the landscape. Human influence and management of these forests dates back millennia. We would do well to pay attention to those who did a better job of it than our industrial society.	10/4/2016 12:10 PM
5	All depends on how and where its done. Mangement can be great, and we all like wood products. More thoughtful integration of disturbance ecology and wildlife habitat needs to be integrated with silvicultural treatments --- from fuels treatments around homes to large scale forest restoration efforts. An understanding of the scale dependence (both spatial and temporal) of fire regimes needs to be included in large scale restoration efforts to avoid further forest homogenization as a treatment effect.	10/3/2016 4:55 PM

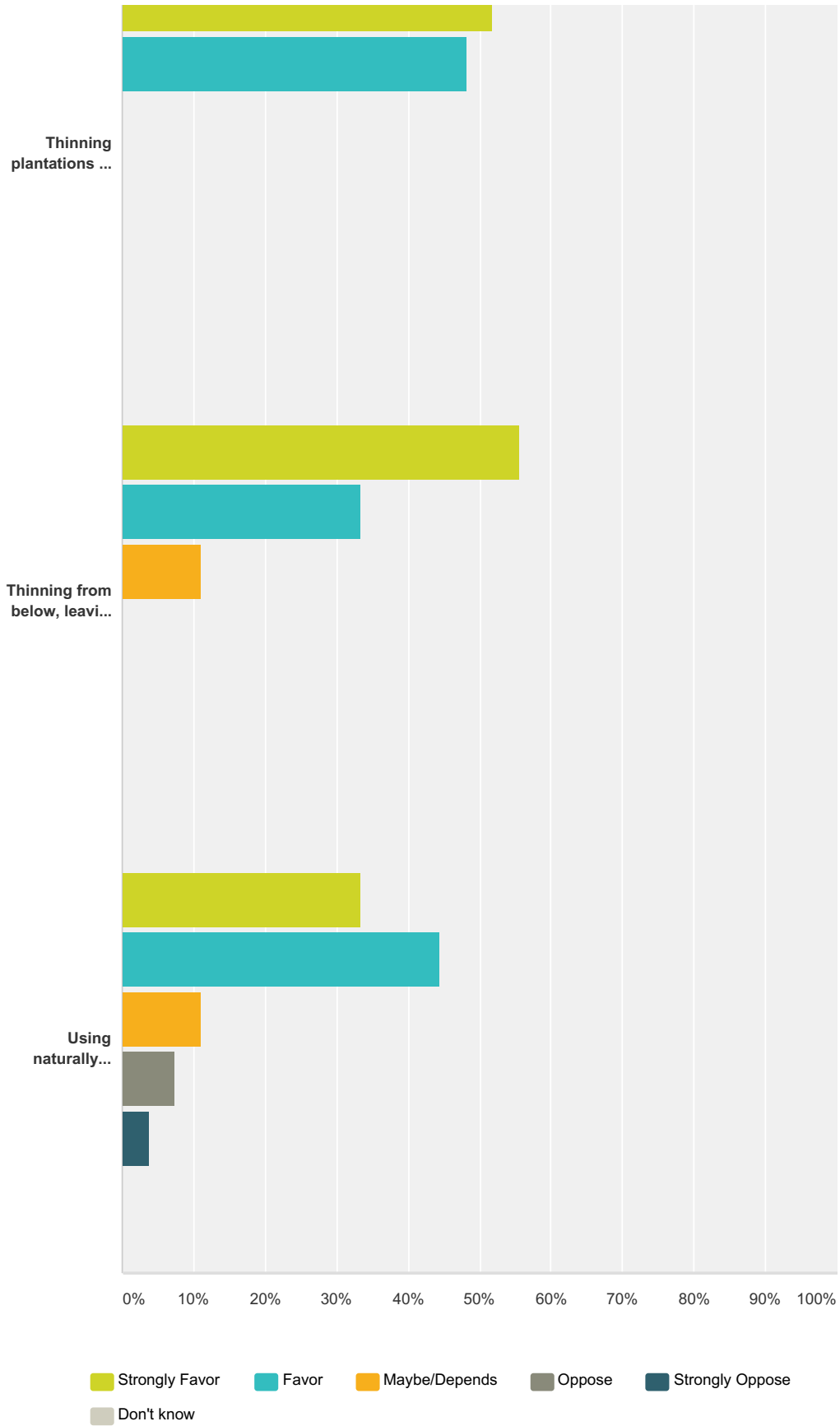
<p>6</p>	<p>Climate change has reached a point of emergency as we cross the 400ppm mark, and this calls for emergency actions such as an immediate halt and reassessment of our timber harvest approach on both public and private lands. The need for forest restoration to undo the effects of past fire suppression is often invoked in fire policy discussions, yet only some landscapes need such restoration (Schoennagel et al. 2004). Restoration is often appropriate in dry forests where logging and fire suppression since the 1950s have shifted open, park-like forests to less patchy, dense forests today. In contrast, moister and cooler high-elevation forests naturally support high tree densities and fires of mostly high severity. Here, forest densities have changed little from their pre-suppression-era condition; therefore, such restoration IS NOT NEEDED. A large portion of western forests fall in between these two extremes, and the restoration need in such mid-elevation, mixed-severity-fire forests is highly variable and the subject of active debate. Climate change may render restoration less important than adaptation and mitigation in many natural systems, since future environmental conditions may or may not resemble those of the past. High-severity fires are the norm in many systems, such as chaparral, lodgepole pine and spruce-fir forests. While it is easy to understand why humans perceive severe fires as “catastrophic”, severely burned landscapes are neither “destroyed” nor “lifeless” in terms of their ecological integrity. Many plant and animal species require recently blackened forests of standing dead trees to persist (Bond et al. 2012, Hutto et al. 2015) and are clearly adapted to high-severity fire. Such adaptations also confirm what we know from tree-ring and lake-sediment records, namely, that severely burned conditions have occurred for millennia across a broad range of shrublands and forests throughout the West (Whitlock et al. 2008, Keeley et al. 2011). Large severe fires often create complex patterns in which much of the burned area is close to unburned seed sources. In these landscapes, trees and/or shrubs naturally re-establish soon after fire without active post-fire restoration efforts (Turner et al. 1994, Kemp et al. 2015). Severe fire is not necessarily ecologically catastrophic, but rather a natural mechanism of renewal and diversity.</p>	<p>10/3/2016 4:20 PM</p>
<p>7</p>	<p>Economic Timber Salvage position depends on extent and approach. It's conceivable that by only salvage logging small timber leaving the largest snags could be ecologically beneficial, a reasonable hypothesis to test.</p>	<p>10/3/2016 2:11 PM</p>
<p>8</p>	<p>People need to stop building homes in the woods, and providing no defensible space. It's not favorable to use federal dollars to protect million dollar homes, in my opinion. Timber products are a huge part of our economy and can be harvested properly to continue to serve the mills, and also bring a positive impact to wildlife.</p>	<p>9/30/2016 12:46 PM</p>

**Q12 Different forest types require different types of management to reduce the risk of wildfire damage to surrounding communities and infrastructure. The following is a list of treatments currently used in federal land management in the Rogue Basin. Where communities are concerned, a trade-off decision sometimes must be made between conducting vegetation treatments and no vegetation management, for example when balancing risk to human life and private property loss due to a possible wildfire with home privacy created by plants or trees. Considering the following list of treatments currently used in federal land management in the Rogue Basin, would you favor or oppose these actions to reduce the risk of wildfires close to communities?**

Answered: 27 Skipped: 1







	Strongly Favor	Favor	Maybe/Depends	Oppose	Strongly Oppose	Don't know	Total
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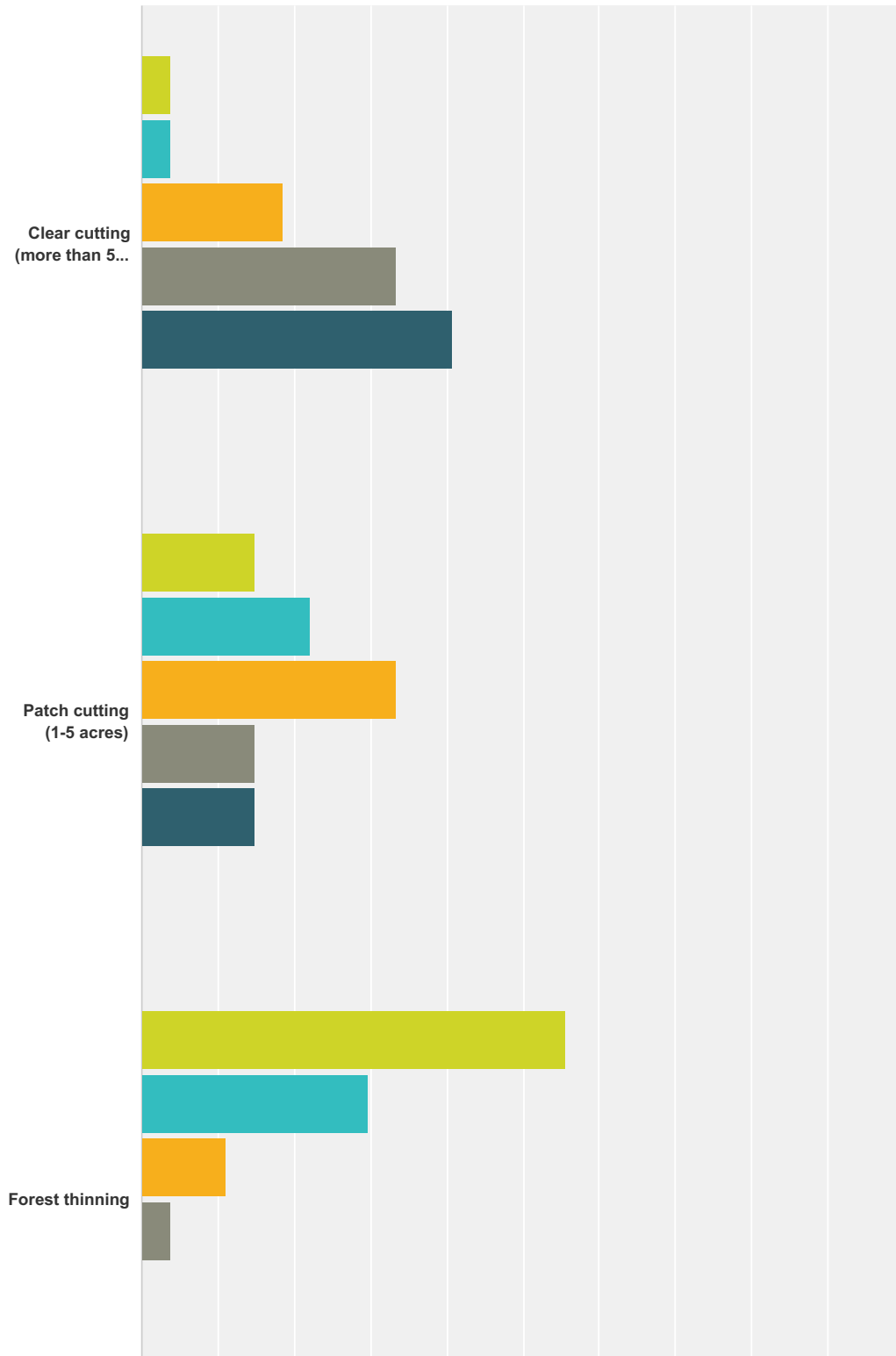
Clear cutting (more than 5 acres)	<b>7.41%</b> 2	<b>0.00%</b> 0	<b>29.63%</b> 8	<b>22.22%</b> 6	<b>40.74%</b> 11	<b>0.00%</b> 0	27
Forest thinning	<b>48.15%</b> 13	<b>48.15%</b> 13	<b>3.70%</b> 1	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
Prescribed fire or controlled burns	<b>55.56%</b> 15	<b>37.04%</b> 10	<b>7.41%</b> 2	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
No action	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>25.93%</b> 7	<b>22.22%</b> 6	<b>51.85%</b> 14	<b>0.00%</b> 0	27
Ladder Fuel Reduction	<b>51.85%</b> 14	<b>37.04%</b> 10	<b>11.11%</b> 3	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
Thinning plantations for more natural spacing and clustering	<b>51.85%</b> 14	<b>48.15%</b> 13	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
Thinning from below, leaving large and legacy trees	<b>55.56%</b> 15	<b>33.33%</b> 9	<b>11.11%</b> 3	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
Using naturally ignited wildfire for resource benefit	<b>33.33%</b> 9	<b>44.44%</b> 12	<b>11.11%</b> 3	<b>7.41%</b> 2	<b>3.70%</b> 1	<b>0.00%</b> 0	27

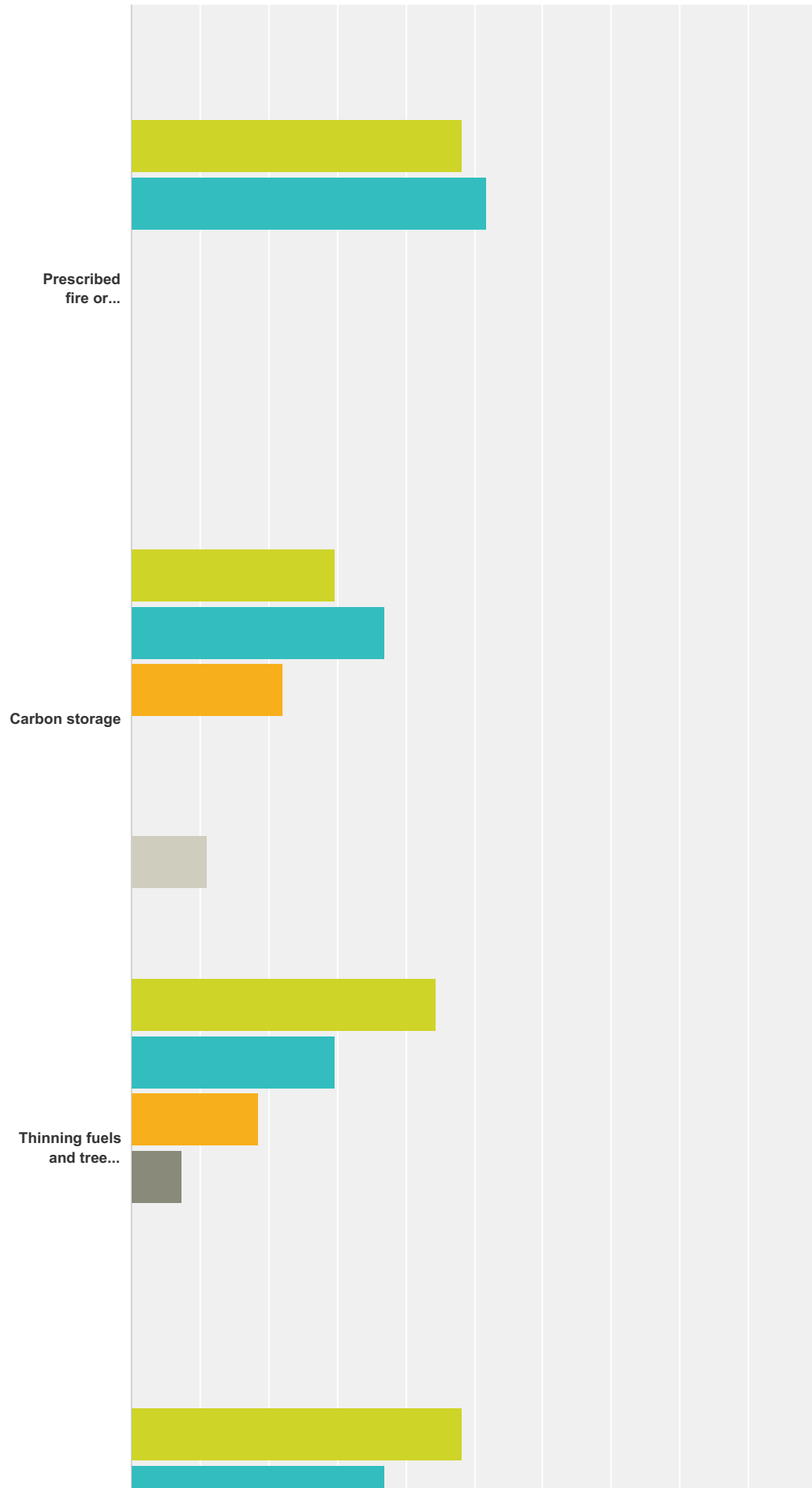
#	Additional Comments/thoughts:	Date
1	I would hope that in the future we could use naturally caused fires to benefit the forest, but there is too much as risk with fuels build up and more and more people in the WUI.	10/18/2016 12:17 PM
2	I don't believe there has been much if any clearcutting on federal land in the Rogue Basin in the last 10-15 years.	10/10/2016 7:48 PM
3	Clear cutting is appropriate only to re-establish habitats or species that have been encroached on through fire exclusion (e.g., meadows, opening for shade-intolerant species such as pines, oaks, etc., fire-dependent sensitive plants, pollinator habitat).	10/4/2016 12:10 PM
4	Thinning near homes and development to protect people should be carried out within a certain distance. But this needs to be combined with changes to our zoning and land use codes to reduce further development in the WUI. Efforts to "thin the threat" and expand fuels reduction treatments (e.g. thinning and/or prescribed fire) on federal lands are often promoted to reduce the flammability of wildlands and save homes. Increasing the pace and extent of fuel treatments is a valuable goal because treatments can sometimes reduce fire severity and assist tactical firefighting locally (Hudak et al. 2011). However, the costs of thinning are high and the operational challenges are considerable, limiting where, and the extent to which, treatments are feasible (Calkin et al. 2015, North et al. 2015, Boer et al. 2015). Furthermore, federal fuel management programs do not have jurisdiction to directly mitigate fire risk on private lands, where the threat to public safety and property is most acute. By some estimates, private land accounts for 52 million acres of forests considered to be at highest fire risk across the Western states (American Forest Foundation, 2015) and most land in and around western communities is private, limiting federal agency ability to treat near homes (Schoennagel et al. 2009). We will never be able to treat enough land to alter the trend of increasing acreage burned, but prioritizing federal fuel treatments around communities and creating better mechanisms for reducing fuels on private land can help reduce home loss and better protect communities.	10/3/2016 4:20 PM
5	If thinning occurs in plantations the need to do something with the fuels that are cut. If nothing happens to these fuels ie (hand pile and burn) then when wildfire occurs these areas burn too hot and kill all vegetation and sterilize the soils.	10/3/2016 8:15 AM

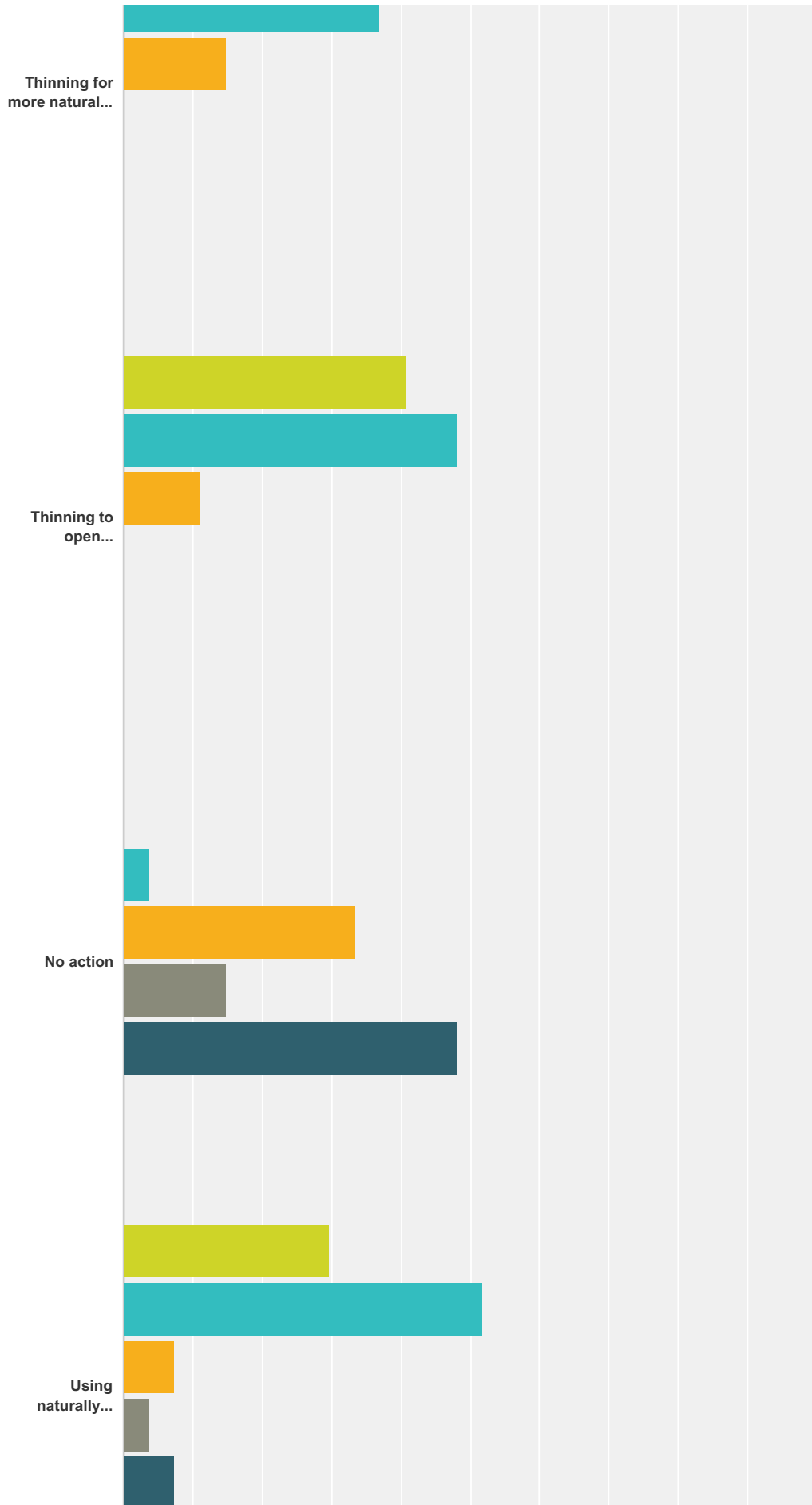


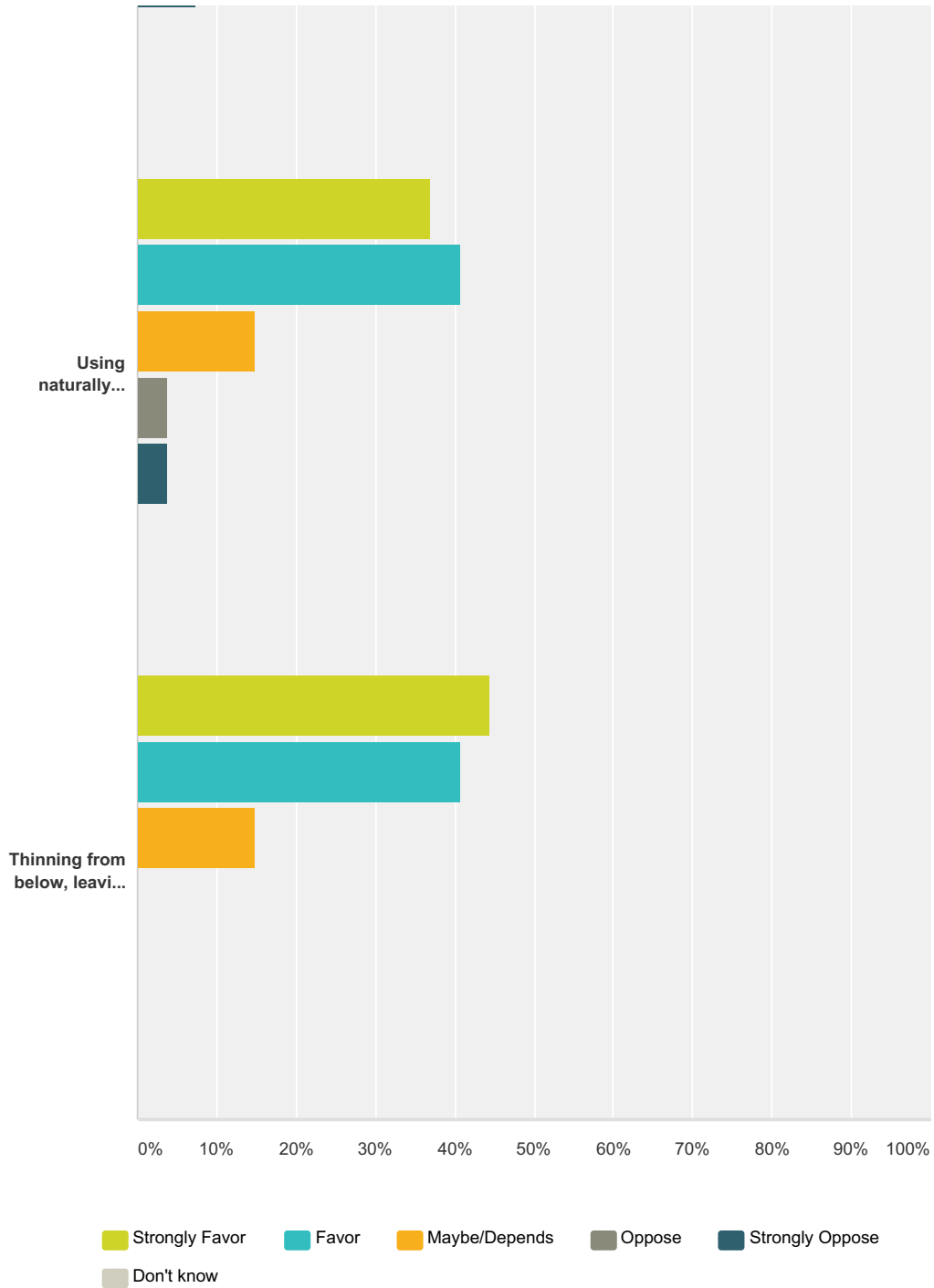
**Q13 For purposes other than wildfire risk reduction close to human communities, please indicate the extent to which you favor or oppose the following types of vegetation treatments on federal lands:**

Answered: 27 Skipped: 1









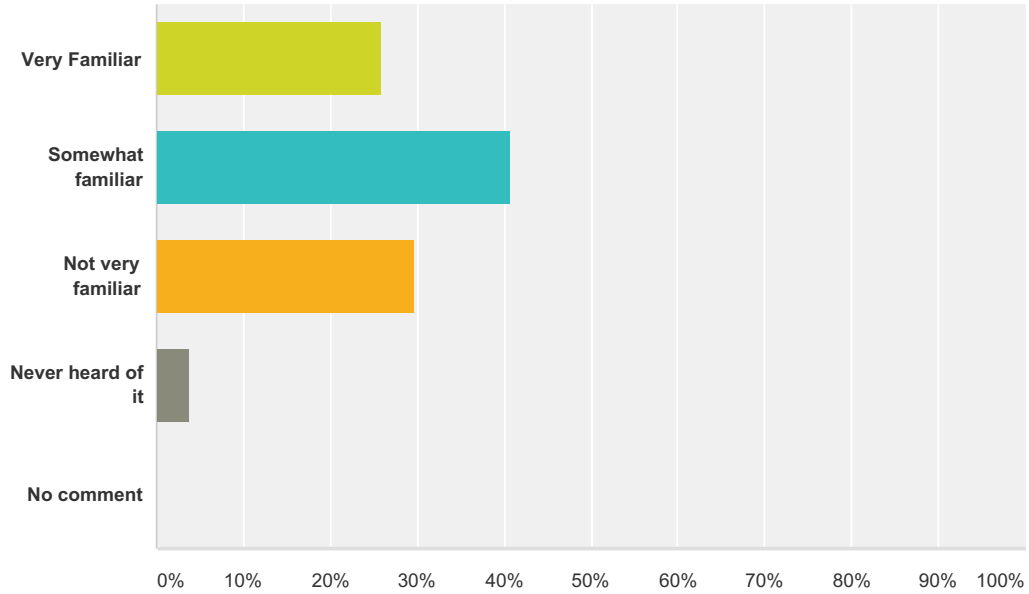
	Strongly Favor	Favor	Maybe/Depends	Oppose	Strongly Oppose	Don't know	Total
Clear cutting (more than 5 acres)	3.70% 1	3.70% 1	18.52% 5	33.33% 9	40.74% 11	0.00% 0	27
Patch cutting (1-5 acres)	14.81% 4	22.22% 6	33.33% 9	14.81% 4	14.81% 4	0.00% 0	27
Forest thinning	55.56% 15	29.63% 8	11.11% 3	3.70% 1	0.00% 0	0.00% 0	27
Prescribed fire or controlled burns	48.15% 13	51.85% 14	0.00% 0	0.00% 0	0.00% 0	0.00% 0	27

Carbon storage	<b>29.63%</b> 8	<b>37.04%</b> 10	<b>22.22%</b> 6	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>11.11%</b> 3	27
Thinning fuels and tree density near, but not within, prime owl nesting habitat to reduce fire risk	<b>44.44%</b> 12	<b>29.63%</b> 8	<b>18.52%</b> 5	<b>7.41%</b> 2	<b>0.00%</b> 0	<b>0.00%</b> 0	27
Thinning for more natural spacing and clustering	<b>48.15%</b> 13	<b>37.04%</b> 10	<b>14.81%</b> 4	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
Thinning to open plantations and speed development of large trees for owl habitat	<b>40.74%</b> 11	<b>48.15%</b> 13	<b>11.11%</b> 3	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27
No action	<b>0.00%</b> 0	<b>3.70%</b> 1	<b>33.33%</b> 9	<b>14.81%</b> 4	<b>48.15%</b> 13	<b>0.00%</b> 0	27
Using naturally ignited fire for resource benefit	<b>29.63%</b> 8	<b>51.85%</b> 14	<b>7.41%</b> 2	<b>3.70%</b> 1	<b>7.41%</b> 2	<b>0.00%</b> 0	27
Using naturally ignited fire as a thinning and fuel reduction tool to reduce risk in subsequent fires	<b>37.04%</b> 10	<b>40.74%</b> 11	<b>14.81%</b> 4	<b>3.70%</b> 1	<b>3.70%</b> 1	<b>0.00%</b> 0	27
Thinning from below, leaving large and legacy trees	<b>44.44%</b> 12	<b>40.74%</b> 11	<b>14.81%</b> 4	<b>0.00%</b> 0	<b>0.00%</b> 0	<b>0.00%</b> 0	27

#	Additional Comments:	Date
1	Carbon storage is too vague. A downed log is carbon storage; a growing tree is carbon sequestration. Are you talking bio-char, or what?	10/4/2016 12:10 PM

### Q14 How familiar are you with the Southern Oregon Forest Restoration Collaborative's Rogue Basin Cohesive Forest Restoration Strategy?

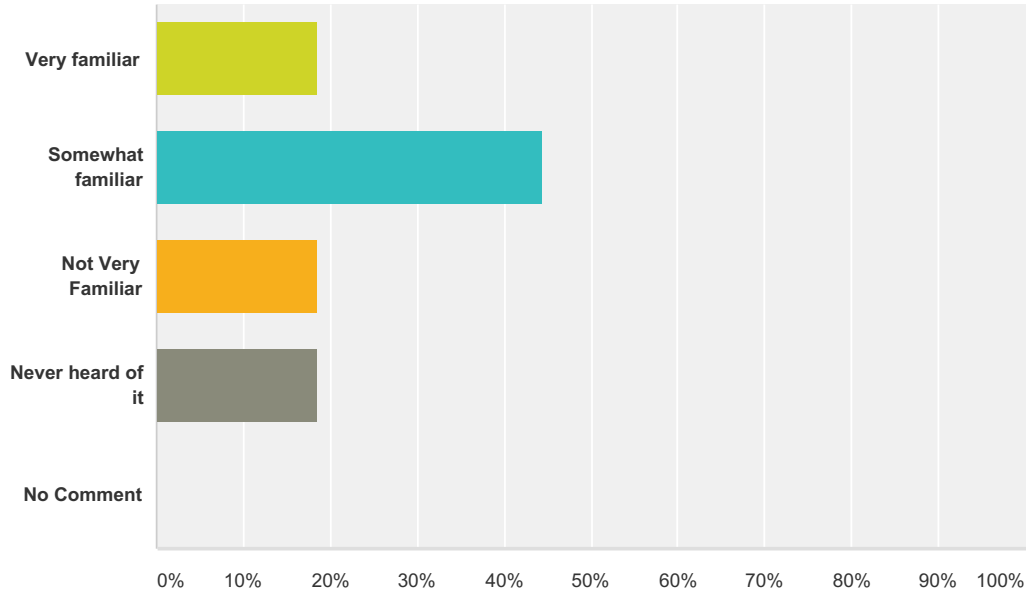
Answered: 27 Skipped: 1



Answer Choices	Responses
Very Familiar	25.93% 7
Somewhat familiar	40.74% 11
Not very familiar	29.63% 8
Never heard of it	3.70% 1
No comment	0.00% 0
<b>Total</b>	<b>27</b>

### Q15 Are you familiar with the National Cohesive Wildland Fire Management Strategy?

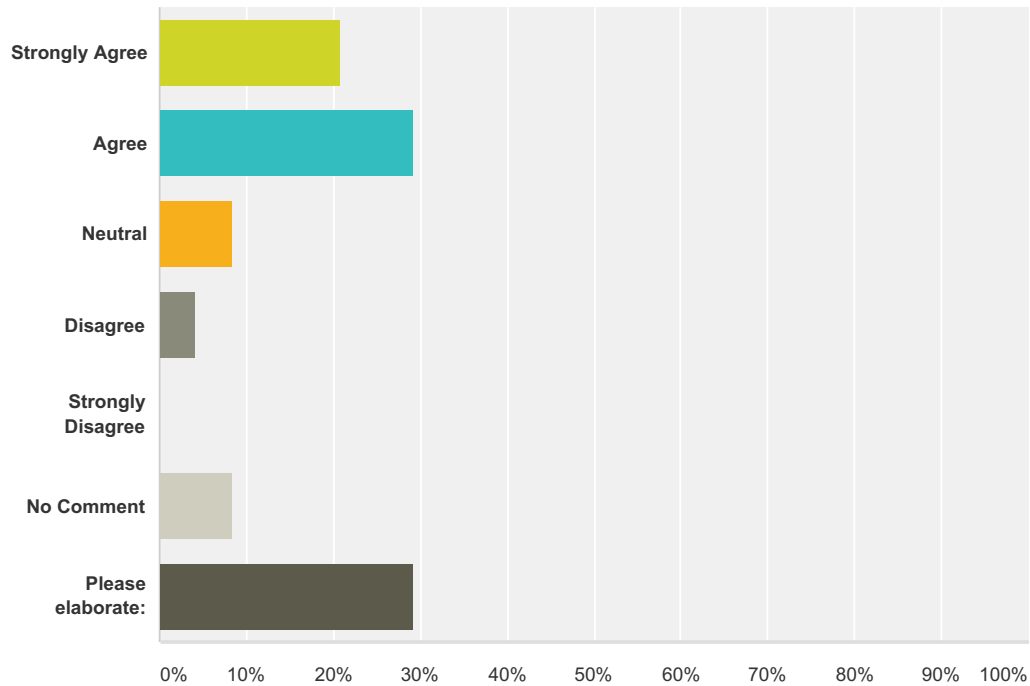
Answered: 27 Skipped: 1



Answer Choices	Responses
Very familiar	18.52% 5
Somewhat familiar	44.44% 12
Not Very Familiar	18.52% 5
Never heard of it	18.52% 5
No Comment	0.00% 0
<b>Total</b>	<b>27</b>

**Q16 If you have heard of the Rogue Basin Cohesive Forest Restoration Strategy or the Wildland Cohesive Forest Restoration Strategy, please indicate the extent to which you agree that they provide good frameworks for forest restoration and management.**

Answered: 24 Skipped: 4



Answer Choices	Responses	
Strongly Agree	20.83%	5
Agree	29.17%	7
Neutral	8.33%	2
Disagree	4.17%	1
Strongly Disagree	0.00%	0
No Comment	8.33%	2
Please elaborate:	29.17%	7
<b>Total</b>		<b>24</b>

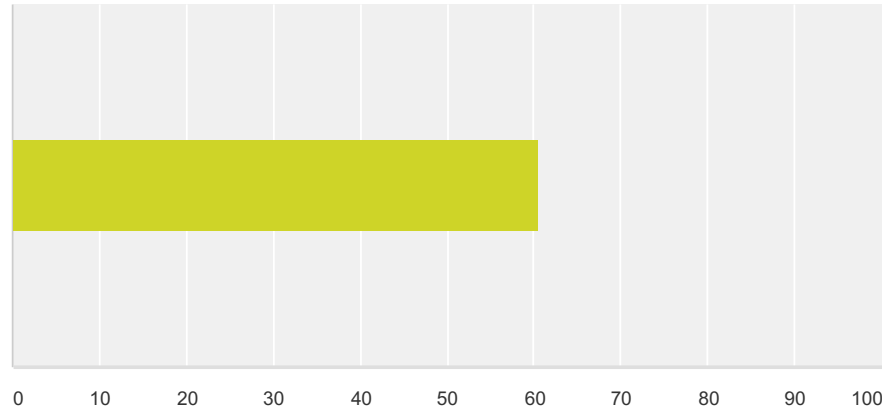
#	Please elaborate:	Date
1	Need more info	11/11/2016 9:52 AM
2	Agree. But needs to be looked at more holistically. these are primarily based on fire risk and fire risk reduction, which is a large risk associated with climate change. But other risk factors and management tactics need to be vetted and considered as well.	10/11/2016 12:39 PM



3	<p>Though fire is a very important disturbance to forests, it is not the only one. Documents developed with a fire risk focus should not be the sole framework for developing forest restoration and management plans because they are inherently focused on only one aspect of complex forest disturbance ecology. A forest restoration and management framework should have a broader base than is encompassed in either of the above mentioned documents.</p>	10/3/2016 4:55 PM
4	<p>Most of the comments above are from a recent review of the science on wildfire. Please take a look at the following paper: Headwaters Economics. 2016. Insights from wildfire science:A resource for fire policy discussions <a href="http://headwaterseconomics.org/wildfire/insights/">http://headwaterseconomics.org/wildfire/insights/</a></p>	10/3/2016 4:20 PM
5	<p>I actually "Strongly Agree", however if I choose to elaborate in this box, then the choice of "Strongly Agree" automatically changes to "Please Elaborate" Accepting that glitch, and being on record as strongly agree, I would elaborate by saying that I have yet to see another landscape strategy developed as thoughtfully and completely.</p>	10/3/2016 2:11 PM
6	<p>I don't know enough about it to answer this question</p>	10/3/2016 10:28 AM
7	<p>I don't have enough info for an informed opinion.</p>	9/28/2016 3:51 PM

**Q17 What percentage of the forested landscape do you think needs restoration fuels reduction and thinning? Click a spot on the bar.**

Answered: 25 Skipped: 3



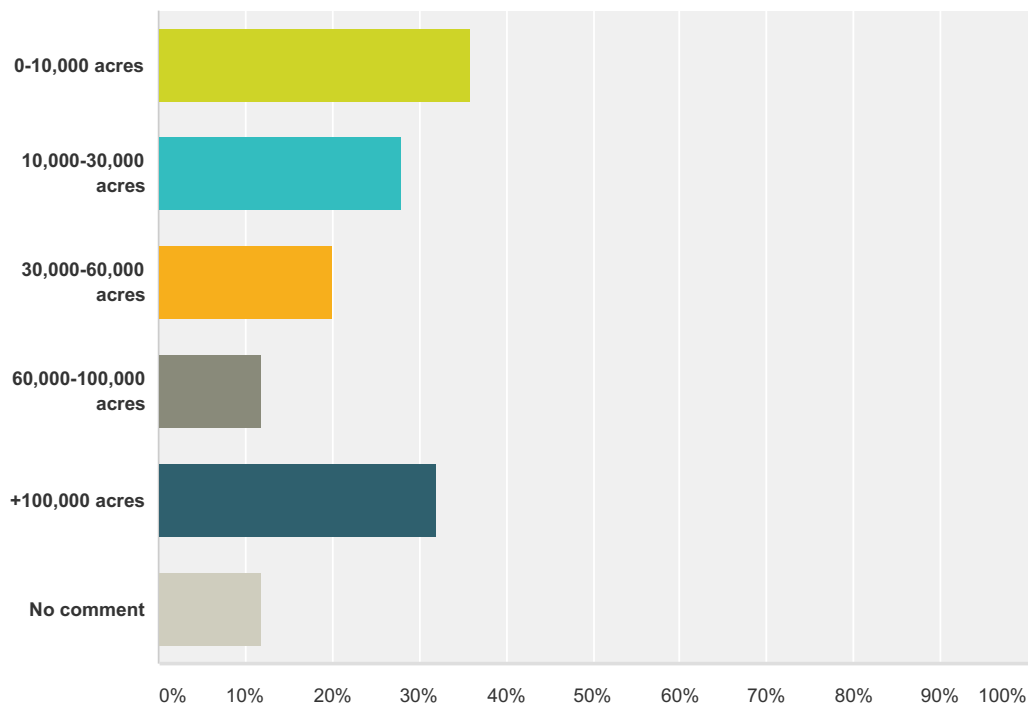
Answer Choices	Average Number	Total Number	Responses
	61	1,515	25
<b>Total Respondents: 25</b>			

#		Date
1	40	11/11/2016 9:52 AM
2	47	11/2/2016 9:35 AM
3	87	10/31/2016 4:15 PM
4	60	10/18/2016 12:17 PM
5	90	10/13/2016 8:09 PM
6	68	10/11/2016 12:39 PM
7	100	10/10/2016 7:48 PM
8	56	10/9/2016 7:32 AM
9	60	10/6/2016 10:35 AM
10	45	10/6/2016 10:04 AM
11	63	10/6/2016 9:54 AM
12	49	10/5/2016 11:20 PM
13	70	10/4/2016 12:10 PM
14	65	10/4/2016 9:25 AM
15	30	10/3/2016 4:55 PM
16	2	10/3/2016 4:20 PM
17	88	10/3/2016 2:57 PM
18	49	10/3/2016 2:11 PM
19	70	10/3/2016 10:32 AM

20	70	10/3/2016 8:15 AM
21	70	9/30/2016 12:46 PM
22	95	9/29/2016 8:24 AM
23	51	9/29/2016 7:42 AM
24	20	9/28/2016 4:22 PM
25	70	9/28/2016 2:59 PM

### Q18 What do you believe is an appropriate project planning size on federal lands?

Answered: 25 Skipped: 3



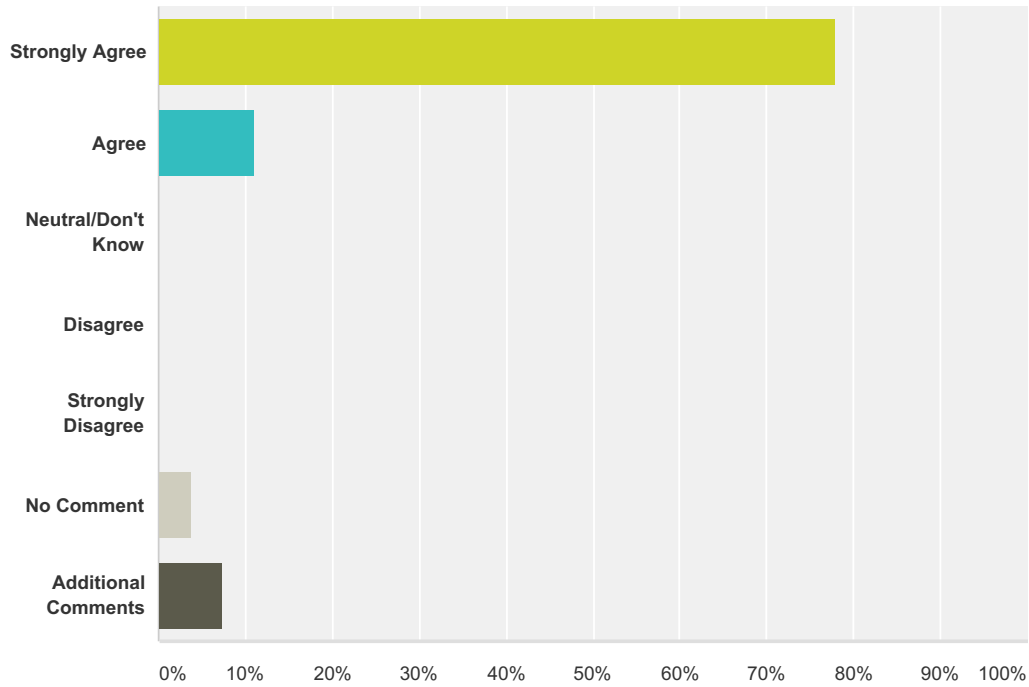
Answer Choices	Responses
0-10,000 acres	36.00% 9
10,000-30,000 acres	28.00% 7
30,000-60,000 acres	20.00% 5
60,000-100,000 acres	12.00% 3
+100,000 acres	32.00% 8
No comment	12.00% 3
<b>Total Respondents: 25</b>	

#	Additional Comments:	Date
1	Hard to say, I think for a particular timber sale smaller is better. The pilot projects in the Applegate seem about the right size (each one individually).	11/11/2016 9:52 AM
2	It depends on the type of planning. Is it strategic or for implementation only	11/2/2016 9:35 AM
3	I would think that smaller sized projects would be better, but I doubt we have the time or man-power to implement so many projects on a smaller scale.	10/18/2016 12:17 PM
4	Smaller projects can be completed. It is important to not leave debris from thinning projects.	10/6/2016 10:35 AM
5	One size fits all is not appropriate for ecosystems on the landscape scale. Thus environmental and habitat variations and their smaller geographic areas need to be addressed for their specific requirements and conditions.	10/6/2016 9:54 AM

6	We need to be looking at at least a HUC5 landscape and the pattern, amount and variety of vegetation types and successional stages and get deliberate about where we are treating and where we are not treating, When we decide to treat and area, we need to do an adequate job of thinning to achieve all the ecological objectives desired - not just a minor reduction in fire risk.	10/4/2016 12:10 PM
7	Many small projects may be preferable to large projects if part of the forest management goal is to identify and protect site diversity (topographic, species and habitat diversity) and avoid homogenization of forest conditions across the landscape.	10/3/2016 4:55 PM
8	Scale depends on the eco-sociological context but bigger is better. We have a lot of work to do to catch up and turn the corner on mega-fire	10/3/2016 2:11 PM

### Q19 To what extent do you agree that the ecosystems of the Rogue Basin are exceptionally diverse in terms of species, habitats, and natural setting conditions.

Answered: 27 Skipped: 1

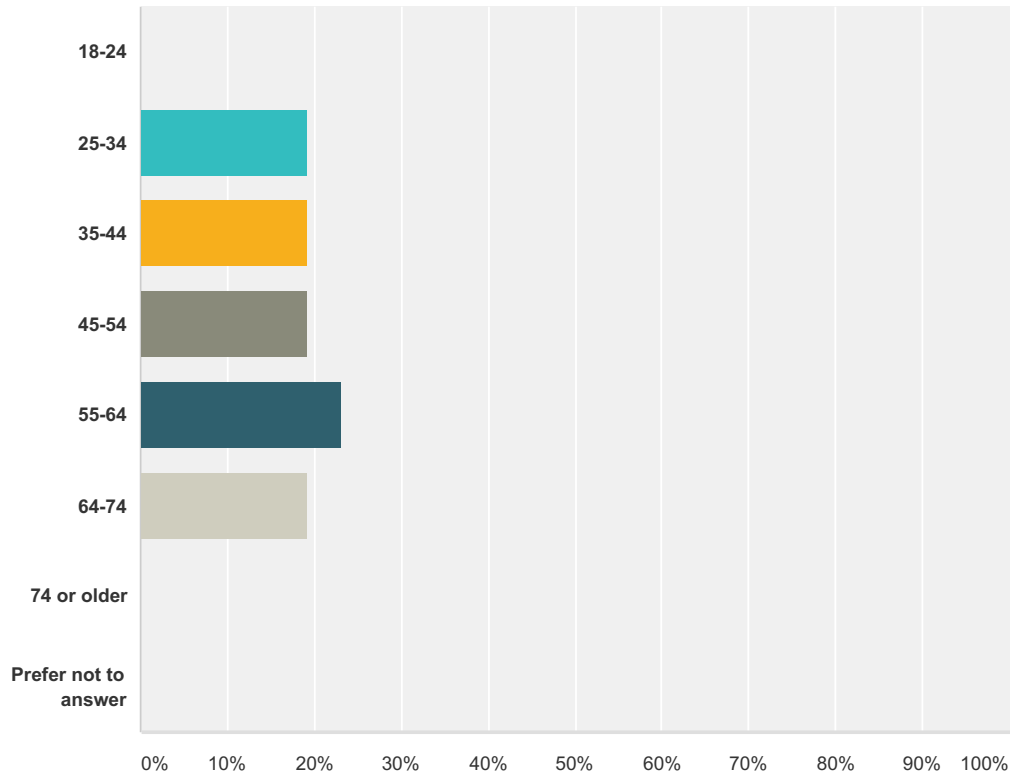


Answer Choices	Responses	
Strongly Agree	77.78%	21
Agree	11.11%	3
Neutral/Don't Know	0.00%	0
Disagree	0.00%	0
Strongly Disagree	0.00%	0
No Comment	3.70%	1
Additional Comments	7.41%	2
<b>Total</b>		<b>27</b>

#	Additional Comments	Date
1	Because of the unique soil characteristics and climatic history, this area boasts a wealth of refugia and endemic species.	10/13/2016 8:09 PM
2	Because of the diversity of habitats, species, and conditions, it is imperative that assumptions not be made that areas need "restoration" or that they need to be thinned to reduce wildfire risk. The diverse conditions mean that each area or ecosystem has differing conditions and needs.	10/3/2016 4:20 PM

### Q20 What is your age?

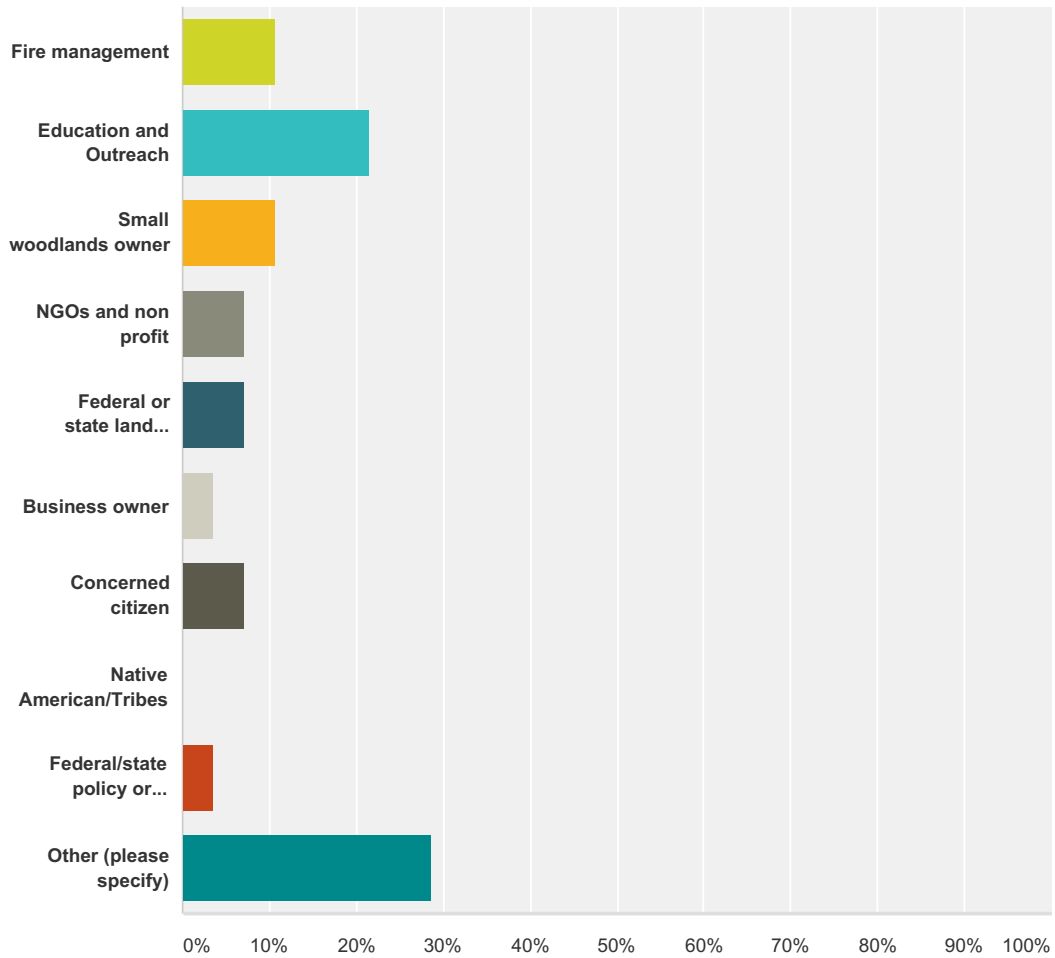
Answered: 26 Skipped: 2



Answer Choices	Responses	
18-24	0.00%	0
25-34	19.23%	5
35-44	19.23%	5
45-54	19.23%	5
55-64	23.08%	6
64-74	19.23%	5
74 or older	0.00%	0
Prefer not to answer	0.00%	0
<b>Total</b>		<b>26</b>

### Q21 What is your background?

Answered: 28 Skipped: 0



Answer Choices	Responses
Fire management	10.71% 3
Education and Outreach	21.43% 6
Small woodlands owner	10.71% 3
NGOs and non profit	7.14% 2
Federal or state land management	7.14% 2
Business owner	3.57% 1
Concerned citizen	7.14% 2
Native American/Tribes	0.00% 0
Federal/state policy or political field	3.57% 1
Other (please specify)	28.57% 8
<b>Total</b>	<b>28</b>



#	Other (please specify)	Date
1	Education and outreach, non profit, business owner, concerned citizen	10/11/2016 12:39 PM
2	Water resources, environmental education & outreach, nonprofit & NGO	10/6/2016 9:54 AM
3	Forest Ecology background	10/3/2016 4:55 PM
4	Previously worked for the USFS and USDA. Current position as Climate Change Scientist.	10/3/2016 4:20 PM
5	Several, most importantly NGO, but also fire management, and concerned citizen	10/3/2016 2:11 PM
6	Wildlife Biologist	10/3/2016 10:32 AM
7	Watershed Council Coordinator	9/30/2016 12:46 PM
8	Deputy Fire Marshal/Concerned Citizen	9/28/2016 4:22 PM

**Q22 Thank you for taking the time to complete this survey. Please provide any additional comments or thoughts you have surrounding Federal land management in the Rogue Basin, Climate change, and/or the Rogue Basin Cohesive Forest Restoration Strategy below**

Answered: 6 Skipped: 22

#	Responses	Date
1	We need to keep the carbon in the forests as much as possible. Thin to protect near homes only. I realize this goes against the BLM's mandate in the O&C act. That act needs to be changed in light of climate change!	11/11/2016 9:52 AM
2	Glad to see you keeping up this initiative.	10/4/2016 12:10 PM
3	Most firefighting risks and costs are directly related to protecting communities from active wildfires, especially during warm dry years, when widespread fires threaten many communities at the same time (Morgan et al. 2008, Rasker 2015). However, most fire policy and management to date has focused on taming fire risk in relatively undeveloped landscapes, not on directly reducing risk to communities. BETTER COMMUNITY PLANNING EFFORTS and homeowner practices will keep people and structures out of harm's way (Moritz et al. 2014, Calkin et al. 2014). Strengthening national programs like Fire Adapted Communities, Fire Adapted Communities Learning Network, and FIREWISE, will help homeowners select fire-resistant building and landscaping materials and encourage routine yard maintenance within ~200 feet of their homes. Social science indicates stronger incentives for builders and local governments will create more fire defensible developments that would ultimately reduce costs to taxpayers (Rasker 2015).	10/3/2016 4:20 PM
4	Climate may double the incidence of severe and in some cases mega-fire with catastrophic impacts on local communities of people and plant and wildlife species.	10/3/2016 2:11 PM
5	Good try on a survey but its almost too vague to be useful.	10/3/2016 10:23 AM
6	Thank you for taking a look at it. Best of luck with the results!	9/30/2016 12:46 PM

**Appendix B.**  
**Rogue Forests for the Future: Workshop Notes and Full Write up of Responses**

A brief introduction of climate change in the Rogue Basin and the Rogue Basin Cohesive Strategy was provided. Participants were then broke out into 4 groups with themes at each table developed from participants' responses and comments to a survey. Top concerns were identified within each topic area, and solutions were discussed to those concerns in the afternoon. Butcher paper and pens were provided at each table for comments and notes as well as flip charts used by the facilitators to write down the top 3 items discussed during each rotation. This is the full write up of the notes from the butcher paper on the tables and the flip charts. During Lunch, groups placed a dot on their highest concern at each table, and were also given 10 \$100 they could use at any table, on any topic, to put their money where they were most concerned. Those results are also included.

**The TOP PRIORITIES/CONCERNS listed at each table in the morning, and the number of dots placed at each table to prioritize:**

**From Table 1 - Forest Density and Fuel Build Up**

1. Long term Carbon Sequestration (16 dots)
2. Soil and Ecosystem Health (8 dots)
3. Uncharacteristically severe fires (5 dots)
4. Lack of coordination for management (within agencies and on private land) (4 dots)

**From Table 2 - Wildfires and Climate Change Impacts on The Rogue Basin Forests**

1. Loss of forest diversity structure & function (ecosystem services and habitat) (14 dots)
2. Failure to acknowledge benefits of fire (5 dots)
3. Reduced water/drought (4 dots)

**From Table 3 - Forest Management Constraints**

1. Funding and continuity (7 dots)
2. Timber revenue expectations (7 dots)
3. Public Policies ( 5 dots)
4. Public Awareness (1 dot)
5. Air quality/smoke (0 dots)

**From Table 4 - Economics/Local workforce**

1. Need to maintain/build processing/milling infrastructure (need to process alternate forest products) (10 dots)
2. RBS needs to include long term vision with ongoing maintenance treatment (10 dots)
3. Federal and county agencies need to move away from only large commercial planning. Agencies need more employment for long term planning and management (4 dots)
4. Concern with RBS funding. More wildfires = less \$ for mitigation/adaptation (0 dots)

**The TOP PRIORITIES/CONCERNS - How much money people put in**

\$4600 - Loss of forest diversity, structure, and function - Ecosystem services and habitat  
\$3600 - Long term carbon sequestration/storage  
\$3000 - Public Policy  
\$1800 - RBS needs to include long term vision with ongoing maintenance treatment  
\$1700- Need to maintain/build forest processing infrastructure - need to use alternative forest products  
\$1600 - Funding and continuity of funding  
\$1400 - Timber revenue expectations  
\$1400 - Soil and Ecosystem health  
\$800- Public awareness  
\$600 - Reduce water/drought  
\$400 - Federal and county agencies need to move away from only large commercial planning agencies. Need more employment for long term planning and management  
\$400 - Air quality/Smoke  
\$0 - Concern with too much money going to wildfires - not enough for planning and adaptation

**All recorded notes at the tables from the morning:**

**1. Forest Density and Fuel Build Up- Facilitator – Gwyn Myer; Resource- Kerry Metlen**

- a. Is Forest Density and/or Fuel Build up a concern? Why or why not? (Everyone said Yes)
  - b. How does climate change affect forest density/fuel build up?
- Prioritize treatments to areas most altered
    - Past management history
    - Fir encroached woodlands
    - Most propensity for uncharacteristic fuel dynamics
    - Close to communities
    - Maintain Sites- not thin, then leave
  - Soil Moisture
  - Fire Likelihood and severity
  - Plantations- too high density; neglected by agencies
  - Fire as a part of maintenance
  - Checkerboard ownership an issue
  - Hotter, faster fire
  - Density changes how we can fight fires/tactics and economic and ecological outcomes
  - Bigger fires - more dangerous for firefighters
  - FAC- not a priority unless close to homes/communities
  - Weather can override fuels
  - Dead/dying trees- training for firefighters/fire suppression - creates dangerous conditions
  - Species composition shifts
  - Increase in disturbances/occurrences

- Increase in fuels - hotter, faster - changes in forest continuity
- Fuel moisture/loading - bigger fires, snags, safety; firefighters more indirect approach
- Will decreasing density change forest composition?
  - Increase trees that like sunlight?
  - Change species - will trees be more or less fire tolerant?
- Long term management using fire
- Risk to firefighters- faster moving fires
- Some communities are adapted to high severity and often weather overrides fuels
- Fuels are an issue, especially in high graded stands, plantations, and some low elevation sites are encroaching on woodlands- need to prioritize
- In sites that are opened and not maintained could have a shrub response
- Climate drives disturbance, vegetation
- Density/Fuel definitely a concern in plantations.
- Increased drought will change species makeup
- Support of local government/political capital
- A small percent of weather versus fuel driven fire
- Fire risk
- Altering fire behavior
- How get people on board?
- Climate change is causing fir die off, which then builds up fuels
- Land ownership and management (or lack of it)
- Density/Fuels near communities
- Optimized level of carbon sequestration vs. density reduction for fire risk - where/what is the balance?
- Species compositions shifts to shrubs?
- Money vs. ecosystem services/benefits
- Tax breaks for fuel reduction work on homes
- Does thinning affect major fire risk? Depends on fire (crown vs ground).
  - Burning/treating areas tend to aid in risk reduction
- How prioritize?
- Biodiversity- open habitat needed.
- Mixed canopy needed (open and closed)
  - Big gaps for hardwoods
- Unmanageable/uncharacteristic wildfire
- Density related to the increase in die off
- Social capital needed
- Broad vision needed
- Economic consequences/concerns- devaluing of forest/long term management
- Ownership patterns- no areas are remote
- Biodiversity
- Insurance incentives
- Tax breaks
- Don't concentrate on highly visible projects, think about other areas as well (i.e., AFR)
- Concerns- die off, uneconomical, fire, long term management

- Funding
  - ID acres most important
- Density is a problem. Treatments can aid wildlife corridors
- Re-evaluate treatment effectiveness, example brush treatments - reducing a single plant not effective in some areas, single plant die off (snow loads). Brush islands (healthy plants) more sustainable in areas.
- Reintroduce disturbance more cost effective than megafire management
- Need more political and social capital
- Insurance incentives for HI2 treatments
- Tax incentives for restoration work on private lands
- Tax incentives of public land incentives for carbon sequestration
- Low elevation PSME die off
- Die off reducing value of forests limiting public subsidized funds and private landowner options
- Density related die off for PSME and PIPO
- Lack of a coordinated, cohesive strategy
  - By BLM, USFS, FS districts, BLM resource areas, etc
  - And with private lands
- Species composition plays into forest density. Needs to be a part of the question- is it alive? Will it stay alive? What species is it? (fire prone? resistant? ) i.e., in the biscuit where it was not dense, trees were killed but the soil was not severely affected. Organic matter still was there. Soil erosion and infiltration and happen in hotter, more dense fires, even from slash and burn
- Checkerboard landscape creates challenges
- Is density decreasing in sites? (W. facing- douglas fir die off - but then fuels increase)
  - N. facing - dense forests, build up in canopy
- Concern: Effects of high severity fire with high fuel buildup
- Soil effects- more severe if high severity on the ground
- Increase resilience if soil is not smoldered. Extreme conditions are bad.
- Concern excessive density leading to excessive fuel build up
- Concern/need to increase fuel density to maximize Carbon sequestration/uptake
- Continuity and funding
- Multiagency planning needed
- Long term C storage
- Intense fire soil effects- consumption of organic matter (shallow); decrease in infiltration/increase in erosion
- Federal agency fire coordination discussion for 25 years
- Federal and private coordinate in watersheds
- Climate change could open window for prescribed burning (potentially) or riskier
- Land erosion
- TEK use of fire (top down) protects soil - do backfires top down
- Carbon storage/low fires (charcoal, in soil)
- Nutrient cycling
- Competition for water

- Watershed functioning
- Lack of fire - increase in density, species composition impacts; nutrient cycling decline
- Lack of diversity
- Reintroduction of fire as a tool
- Increases in uncharacteristic fire could cause stand replacements
- Disease control
- Forest recovery
- Loss of large trees, threats to legacy trees
- Change in forest composition
- Fire use - carbon storage vs. treatment, short term cost (50 years) vs. long term benefit (+50 yrs)
- Invasive species
- Loss of understory species diversity
- Soil and watershed effects
- Density is a problem driven by fire suppression
  - Ecosystem diversity decline
  - Adjacent community fire risk
  - Cost of fire management
  - overcrowding /competition for water/nutrients
  - Disease control/fire/erosion
- Lack of fire has other effects besides fuel build up/density
  - Mega fires
  - Property loss
  - Disease
  - Nutrient cycling
  - Water competition
  - Erosion and soil loss
  - Soil health
  - Deforestation

**2. Wildfires and Climate Change Impacts on The Rogue Basin Forests Facilitator:  
Kathy Conway; Resource – Alan Journet**

- a. What are the greatest threats climate change poses to the Rogue Basin Forests and Watersheds?
- b. To what extent do you think wildfires currently threaten and/or benefit the forests (e.g., ecologically and economically)?

A.

- Compromise viability of forest species through decreasing water availability and increasing temperatures
- Increase in severe wildfire risk
- Failure to acknowledge forests are fire adapted
- The minimization of the amount of atmospheric carbon sequestration

- Less water
- Changes in species composition
- Changes in economic impacts (change to lower commercial value species) and changes in wildlife/plant species
- Change to economic crops in response
- Loss of snow water
- Increasing loss of snowpack- impacts streams and water resources
- Increased wildfire
- Loss of species and doug fir dominant forests
- Loss of carbon sequestration by shifting from doug fir forest to shrubland
- Fire suppression from years ago exacerbated climate change
- Increased invasive species
- Species disappearing in local ecosystems. Less diversity
- Changes in economic opportunities for people in the Rogue Valley
- Higher population density if people moving to area because their area isn't habitable anymore (doug fir, grapes)
- Changing the climate such that current species viability are compromised
- Threats:
  - Drought - water wars
  - Depletion of forest ecosystems
  - Social-culture change
- Drought and its impacts
- Threat of wildfire to communities (people)
- Loss of Carbon storage; stand replacing forest wildfires; threats to community water supplies; increase of plant/species that are less fire tolerant
- Loss of habitat
- Increased fragmentation and decreased habitat connectivity
- Species decline
- Over manipulation of forest structure/over confidence
- Drought
- Extensive fire suppression impacts (discretionary action)
- The idea all fire is bad
- Zoning issue
- Drought/drying soils
- Decline in resiliency - loss of structure, loss of diversity, species viability
- Quality of life (not only human). Resilience- loss of structure, diversity, and function of forest.
- Changes in species (all types); increased fire short term
- Health, Fish, Forests- fire adapted; water
- Larger, more explosive fire seasons from dense forests
- Reduction in soil moisture
- Less high elevation snowpack causing ecosystem shift
- Forest structure/changes/losses
- Loss of valuable habitat/ecosystems



- Economic losses - large fires
- Heavy rains vs. steady rain and snowpack more detrimental to soils
- Compromise species variability
- Compromise carbon storage
- Increase in severe wildfire risk

B.

- Following fire disturbance recovery may compromise different species
- As above, but with reduced carbon storage potential
- Water
- Economic impacts
- Acknowledge forests are fire adapted and dependent
- Reduced Carbon storage/sequestration
- Threats of larger fires with increased severity on soils, watershed function
- Some benefit if less severe wildfires are allowed to burn and restore historic fire frequency and keep fuels from building up
- Climate change exacerbates and causes extreme conditions in our forest and ecosystem
- Currently wildfires (extreme) threaten certain forest ecosystems
- The exclusion of wildfires from forest ecosystem 80 year age- has put us in a crash course with ecological disaster, because of extreme condition swings
- Currently fires are more of a threat than a benefit (\$\$\$, smoke, unpredictability) with increased climate change, the risk of megafires is terrifying.
- Impacts of fire suppression on 80 years fire dependent forest ecosystem - was 50/60 stems/acre; now 1200 stems/acre
- WUI expansion: increased risk to home, life, property; increased risk of human caused fires
- Wildfires are a large threat due to the expansion of the WUI
- Threaten to diminish forest diversity
- Increase in temperature causing increased drought, increased wildfire behavior, decreasing biodiversity, biomes.
- Increase in likelihood of wildfire that results in different plant association recovering
- Forests are fire adapted so fire can be beneficial to rejuvenate forests
- Extensive threats from wildfire
- Fire fighting tactics are threatened
- Hotter, more explosive fires
- Soil sterilization- erosion top soil
- Managed fire under use parameters - benefit night burning
- Manage with fire and acknowledge benefits
- Recognizing fire can be beneficial
- Loss of connectivity
- Fragmentation
- To community living within the WUI. Wildfire is one of the greatest risks to life, property, and quality of ecosystem services.

- Largely currently a positive factor, especially in large, intact areas
- Many wildfires are burning in characteristic patterns/severity
- Post fire logging impacts influence regeneration, carbon storage, resilience/recovery
- More benefits if we manage wildland fire use
- Threats to homes/communities, focus on protecting homes
- Natural process
- Extreme fire behavior is a threat - rehab is an opportunity to restore uneven aged management
- Increase fire risk
- Failure to acknowledge value of fire
- Catastrophic- destroy resources but in an unmanaged way
  - Non-catastrophic- managed wildfires- natural process
- Climate change - longer, hotter summer; worse fire risk short term
- Threats: extensive burned forest ->excess early seral; soil degradation; water quality; smoke
  - Benefits: Clean out fuels; creates biodiversity
- Larger, higher intensity
- With dense forests, fuel ladders will continue trend
- Pre 1950s fires burned about 20,000 acres per year, with about 12% being high severity; now they burn about 3,000 acres per year with over 55% high severity
- Cleans fuels, opens forest - lower intensity benefits
- If get a mosaic, that is good
- Change structure
- Creating more fragmentation/large fires
- Intense fire detrimental to soils
- Dense forests create drier, more susceptible to large stand replacing fires
- Benefit
  - Restore more historic conditions. Conifer dominated to more resilient oak pine woodland
- Failure to acknowledge value of fire in these fire adapted systems
- Return of different species composition and lower carbon storage

### 3. **Forest Management Constraints Facilitator: Jim Hays; Resource: Darren Borgias**

A. What are the greatest constraints to managing Southern Oregon public forests for climate adaptation and/or mitigation for climate adaptation and mitigation?

B. What are the greatest constraints to managing Southern Oregon private forests for climate adaptation and mitigation?

- Long term funding and durability
- O&C Act
- WUI Development
- Social License
- Need thoughtful priorities for prioritization
- Knowledge/risk/uncertainty

- Adaptive management
- Policy constraints
- Private forest constraints
- Land use laws, zoning
- Social concern about fire and smoke nuisance
- Increasing severe weather
- Plantation density/slash hazard
- Life Boat:
  - Climate- reduce stress/adapt
  - Fire - reduce disturbance/adapt
  - Carbon - restore need for long term carbon/mitigate
- Public constraints - agency differences
- Private- land use laws
- Forest restoration thinning in the right places
- Public constraints
  - O&C act
  - BLM RMP
  - Uncertainty in science
  - Industrial influence
  - Land use
  - FPA
  - Funding
- Private
  - Funding for residential land owners
  - Current private timber practices (even aged)
  - Education
  - Zoning
  - Clearcutting
- Greatest constraint: Funding projects to complete active management
  - Are we using all tools?
- Uncertainty about active v. passive management. How much?
- Public Policy - Federal land (O&C or Forest)
- Funding
  - Residential sources?
  - Public land
- Education
  - Land/home-owners
  - Public
- Even age management. Plantation density/fuel hazard
- Maintaining forest economic infrastructure- new methods
- Economic impact from climate refugees
- Problem implementing plan due to politics, prioritization of lands (change of use)
- Risk of new political order
- Milling/process infrastructure (maintain/grow)

- Agency contracts to enable alternate products from forest
- Promote recreation; economic benefits from forests
- RBS to include long term maintenance (treatment) - economic benefit
- RBS should also look at small scale implementation
- Decrease in economic benefit for same costs for treatment
- Developing new markets for alternative forest products
- Building local infrastructure for processing/treatment
- Increase in wildfire drives more money toward suppression (limited budget)
- Concern that RBS implementation has negative impact (rec; ecosystem services)
- Climate change increase in wildfires, use more \$, not available for mitigation/adaptation
- Need agency capacity and processing infrastructure to implement the plan, money to build vs. employment
- Where does long term funding come from?
- Barrier to implementing RBS is current commercial (O&C) plan, need long term vision
- Decreased forest product value with less doug fir

**4. Economics/Local workforce- Facilitator: Ray Mallette; Resource: Ed Reilly**

- a. What effect will climate change have on the local economy and workforce?
- b. What economic challenges/obstacles result from implementing recommendations of the Rogue Basin Cohesive Forest Restoration Strategy?

- Douglas fir timber impacts
- Salmon as a keystone species
- Increase in wildland firefighting jobs
- Change forest species
- How to fund it and continuity of funding
- Loss of income to local economy. Changing \$ to local economy- less for schools (and others funded through title II)
- Diversification of land uses
- Engineered products utilizing lower grade material
- Adoption of other non-wood building
- Maintain infrastructure supporting economic agency shift from old style timber sale acres
- Migration and population growth
- Climate refugees
- Boom and bust economy
- Loss of industrial capacity
- Loss of skills effect
- Economics of firefighting vs. thinning management
- Change thinning/make more cost effective

A.

- Less economic output, higher costs
- Effect on local economy, workforce and other drivers
- Crop failures
- Shift of economic focus from forest restoration

- Reduction of productivity of the forest
- Increased need for mechanical thinning requires larger/longer workforce
- Local infrastructure
- More \$ in fire suppression, impacts rest of budget
- Cultural change; economic feasibility; hard to find workforce; \$ pay increase
- Infrastructure disappearing (mills)
- Economic impact - Climate - Forests
  - Net unknown
- Fire Risk mitigation (thinning)
- Fire response
  - Salvage?
- Decreased opportunity for full range of timber products

## B.

- Higher costs
- Economic challenges/obstacles
- Funding source
- Increased costs
- Potential impact to ecosystem services
- Potential impacts to recreation economy
- Large subsidy required and lots of helicopter
- Lack of living wage jobs in on the ground crews, thus less interest in jobs
- Should consider smaller sales and contracts for smaller companies
- Funding, Education
- Obstacles to stewardship contracting
- Acreage of limitations
- O&C lands (country receipts)
- Small log utilization
- Most mills today use optimizers on head rigs and handle up to 24"
- Smaller diameters ( < 8") not very attractive
- Cost effective
- Retrofit local values, look at how recreation can contribute to forest products
- Funding for (consistent)
- Long term plan for treatment (\$1200/ac)
  - For long term follow up maintenance (\$2-300/ac)
- Activities could increase long term workforce
- Diverse shift from timber production only
- Stay away from returning to commodity based management
- Changes from current CWS direction
- Need for market change/shift from large diameter to small diameter
- Change local private industry- decline in productivity of doug fir
  - Opportunities to improve infrastructure?
  - <24" - NW pole
  - Agencies need to engage in economic development

- Utilization/contracts
- Change transition to recreation
- New values from forests
- Increase in population
- Change education of county commissioners
  - PILT payments
- Change knowledge of landscape- vegetation types
- Emphasize recreation and it's value
- Tools, equipment, field practices, scaled appropriately to stewardship/restoration principles
- Carbon and water markets to municipal investment in CLT/wood mass construction products
- Costs of management, management strategies
  - 1 firefighter - \$750/hour
  - 1 tanker - \$9000/hour
- Risk of loss of timber infrastructure
- Carbon tax/credits?
- Need to maintain timber industry capacity for small diameter and alternative forest products like biochar, wood pallets, mulch
- Value of water and ecosystem services
- Who will pay for mechanical thinning?

#### **Other thoughts/ideas - Parking Station**

- Turn slash into biochar
  - Reduce smoke
  - Sequester Carbon in soil
- First priority - turn around global warming at any cost. Act local, think global

### **SOLUTIONS -- AFTERNOON NOTES**

#### **Long term carbon storage**

- Managing for healthy forests promotes long term C storage
  - Retain denser, older, intact, functioning forests in appropriate landscape positions
  - Retain larger trees
- Incorporate biochar into strategy - e.g., burnpiles -> bio char
- Monetize carbon storage/offsets
- Protect old growth
- Manage for maximum sequestration age. Educate all of us about how to maximize carbon storage.
- Ok a carbon trust- sell to raise \$ for thinning

#### **Loss of forest diversity, structure, and function; ecosystem services and habitat**

- Managed wildfire when possible

- Thinning and prescribed fire - increased at landscape scale in appropriate locations (not everywhere) to create healthier, more fire resistant forests
- Tax incentives for private property owners, etc.
- Look for opportunities and burn in WUI *right after thinning*
- Connectivity for a fragmented landscape, wildlife corridors, plant dispersal
- Add a diverse set of treatments and monitor how different thinning and fire treatments respond to climate change (moving target)
- Soils- minimize displacement, big concern re: high temp fire damage to soil
- Extend RBS and seek funding to implement
- Acknowledge capacity of the K-5 region (multiple ecosystem niches) to retain biodiversity
- Demonstrate and monitor value of ecosystem services
- Plant appropriate species for future conditions and fire adapted species- assisted migration
- Soils activate management- push management strategies toward expected conditions (i.e., planting more resilient strains)
- Mid Klamath Watershed Council - Most effective use of prescribed fire as a resource. Frank lake, USFS
- Fire suppression- pre management conditions- diversity, not monoculture
- Reimpose fire
- Consider change as a consequence of climate change
- Manage for process, treat the root of the problem, not the symptom. Use fire.

### **Policy Solutions**

*Top ones - \*\*O&C reform/change; CCC for youth and economy; better coordination/cohesion with strategies; somehow streamline projects on the ground (cooperative agreements; CCC; public support through sharing stories nearby; integration of work between agencies and private land owners\*\**

- Better coordination with local agencies/cohesive management strategies
- Share stories (n. Cali) about forests to appeal to values/emotions/public and support of management and costs/economics with displacement, etc.
- ODF- small scale legislation to let BLM contract to include “herding fire”- include ODFW, and other state orgs, to assist/fund.
  - And insurance companies
  - Herding fire (USFS) would be more challenging for BLM
- Public awareness
- Public policies- apply pressure for O&C reform (locally based alternatives to replace funds)
- Coordinate effort for treatment policies across ownerships
- USFS/BLM - policies for long term management of treatments and follow up maintenance
- Federal policies affecting resiliency
  - NEPA, Clean Air Act, Broad scale national policies
- Cooperative agreements to move collaborative planning forward

- Cooperative plans between private and public for fire risk reduction when fire crews are available/resources around
- New payment structure- board ft/acre not the driver; use \$ for carbon sequestration/ecosystem services
- Pilot- education - economic benefits of reducing fire risk with prescribed burning and thinning vs. suppression @ RBS scale
- Encourage AMA
- BLM/private owner program - make easier
- Faster, better infrastructure- less time planning
- Revoke O&C Act - OR - add economic value to other components - interpret it differently.
- O&C lands- tax marijuana, take away O&C. O&C reform.
- Involve/educate county commissioners
- Local level
- Unrealistic expectation for economic return
- Adding undue pressure to private lands
- Trained workforce (timber sales, loggers)
- Local industry
- Buy-in from reform effort (HFRA)
- Locally based alternatives
- Learn from collaboration- cooperative agreements- communication with public and leadership- stay connected
- Insurance companies recognize fuel reduction work
- BLM contracts with ODF
- Tax incentives/penalties for homeowners treating lands
- "Pilot study" for prevention
- Support NCRS (make easier; too rigid now) to other private land conservation programs
- Stewardship- administrative
- "Fire Borrowing" - Reallocating from others
- Federal Fire under FEMA- Wyden, RVCC, others to sign on
- Hope Mountain Stewardship/AFR- examples of support when public is included.
- Experiments in collaborative planning
- Policy to use fire more (reduce risk aversion) ; "herding fire"
- CCC brought back = youth employment; firefighter training; local workforce; technical/hands-on education; fuels reduction; forest management
- State policy - heterogeneous stand levels. Mixed at industry/plantations
- TNC buy up private land chunks so can manage across landscapes (consolidation)
- Locally based fire management

### **Economic Solutions**

- Eliminate O&C Act
- PILT or alternative funding not tied to board feet- different metric for measuring value
- Revenue for carbon sequestration
- Create alternative revenue streams



- Educate county commissioners re: values from forests
- Encourage innovative contracting, especially for stewardship
- Tax incentives/penalties for fuel reduction. Penalty money can go to help pay for fuel reduction
- Shift budget priorities to prevention vs. fire fighting
- Connecting markets is complex but once it's started it can work (county, local, state, federal)
- Biochar - supply and demand
- Soil amendments (pot); old bark piles, etc)
- Include long term contracts
  - For alternative products; invest in capital (5-10 year)
- Reliable, sustainable resource products
- Remove "all salvage materials" purchase for "free" vs. federal management having to remove it
- Federal
  - Carbon credits
    - Volume \$1/taxpayer for CC/ecological services/public land revenue
  - Fire budget increase; is there a way to manage to reduce fire risk which reduces fire suppression costs
- Economy- Where is money coming from? Income; timber; mills - - - modify it to
  - Ecosystem services - proposed fee (i.e., in Ashland, \$1.29 per month water bill for AFR)
  - Fees for ecosystem services
- Local funding/match with state funding
- Rural fire/forestry tax base/incentives to manage; Fee/fine (more incentive) if property not managed for fire safety
- Bio char
- Stop using all the money for fire suppression vs. treatment
- Lack of funding for cohesive strategy (work on the ground)
- Optimize continuous/large land fires for treatments, fuel reduction
- Use of FEMA money for fire suppression
- ODF vs. NRCS paperwork for funding
- Use state/federal carbon tax to pay for infrastructure/treatment
- Federal and state tax incentive for forest treatment vs. ODF payment- shift from agency to general fund. Better for landowner timing.
- Shift of FS wildfire suppression dollars to FEMA
- Put more \$ into treatment

### **Uncharacteristically severe fire solutions**

- RBCFRS - Fuels, risk, climate, resilience. Integrating climate into RBCFRS
- Public fire ecology management - education. ODF agencies use crew for prescribed fire. (ODF, BLM, FS, public)
- RBCFRS
- Buy in, education

- Funding, treatment, state federal crews on prescribed fire
- Better fire planning
- Resource benefit fire
- Smoke notification/education safety
- Use fire more
  - More fall and spring burning
  - Incorporate use of prescribed burning on wildfire
- Policy/regulation smoke flexibility in prescribed fire
- Improve smoke modeling - in regulation
- Explore biochar in support of smoke management
- Regional prescribed wildfire smoke modeling
- RBCFRS- integrate protection, risk, and actual management. Get the mechanical work done.
- Build public buy-in
- Integrate (CWPP, Firewise, education, public school districts, planning engagement/communication, using fire, planning/engagement around smoke, integrating prescribed fire quickly after mechanical, create landowner incentives for treatment)
- Coordination cross boundary private/public neighborhoods
- Funding
  - Use suppression forces more on prescribed burning
  - Integrate both suppression and fire use
  - Better planning
- New tactics (drones, etc); new technology; more NWS engagement
- Public access/fire ignition issues