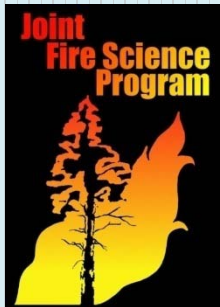


JOINT FIRE SCIENCE PROGRAM
SMOKE SCIENCE PLAN
QUESTIONNAIRE RESULTS



NINE POINTS SOUTH TECHNICAL PTY. LTD.
CLARKSON, WESTERN AUSTRALIA



SMOKE SCIENCE PLAN QUESTIONNAIRE

THE FOLLOWING ARE THE RESULTS of a short, 12 question, on-line questionnaire concerning wildland fire smoke. The questionnaire was open during October 2009 through February 2010. Five hundred and fifty-four (554) people responded to the questionnaire. As this was not meant as a scientific survey for publication as peer-reviewed research, these results should be appropriately interpreted as expressed opinions of responders only.

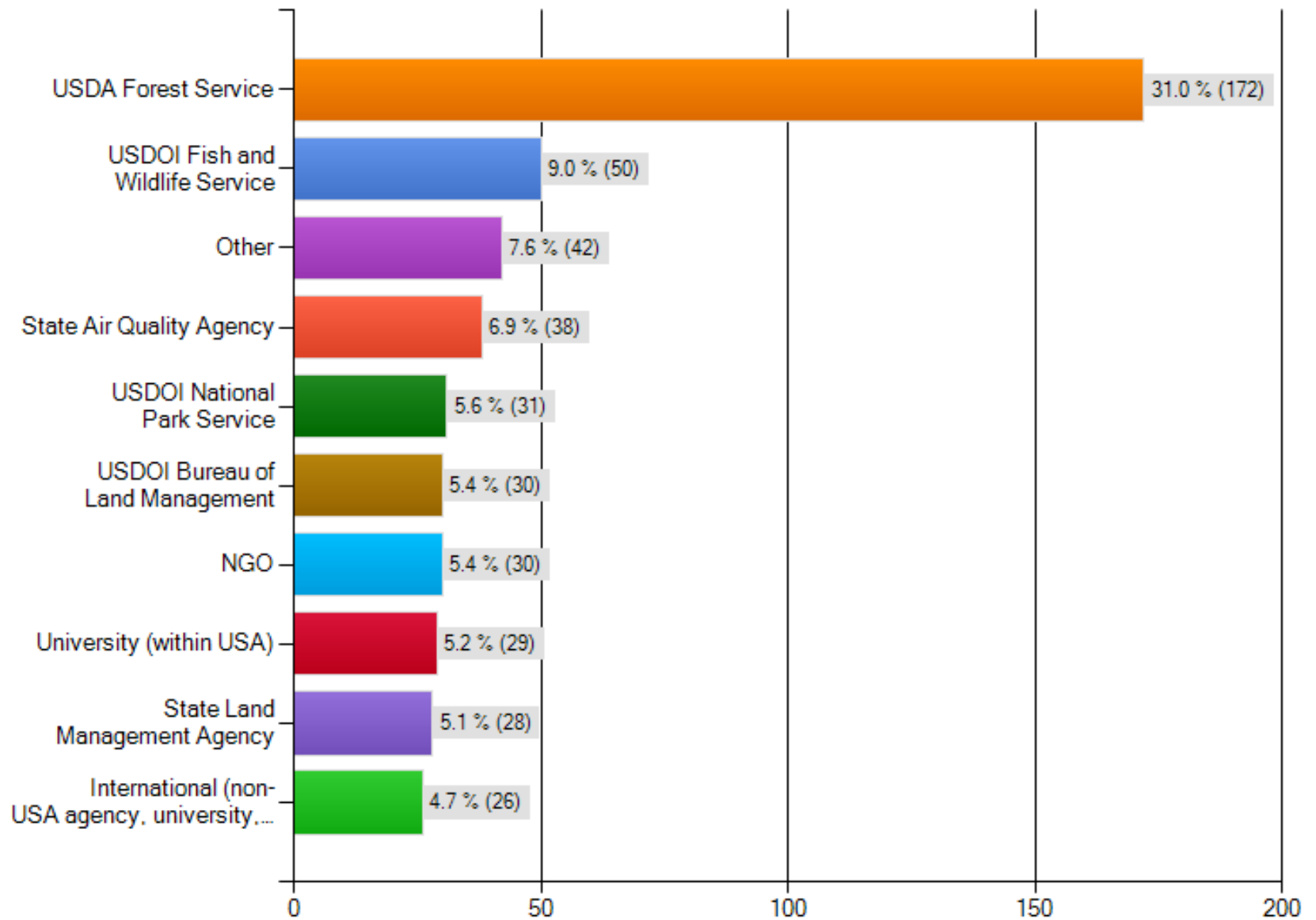
SMOKE SCIENCE PLAN QUESTIONNAIRE

THE PEOPLE WHO RESPONDED TO THE QUESTIONNAIRE were solicited to do so by *Nine Points South Technical* via email requests. They were asked to forward the web-link to the questionnaire to colleagues who might like to participate. We estimate that more than 60% of the responses to questionnaire came from individuals who received the web-link from a colleague.

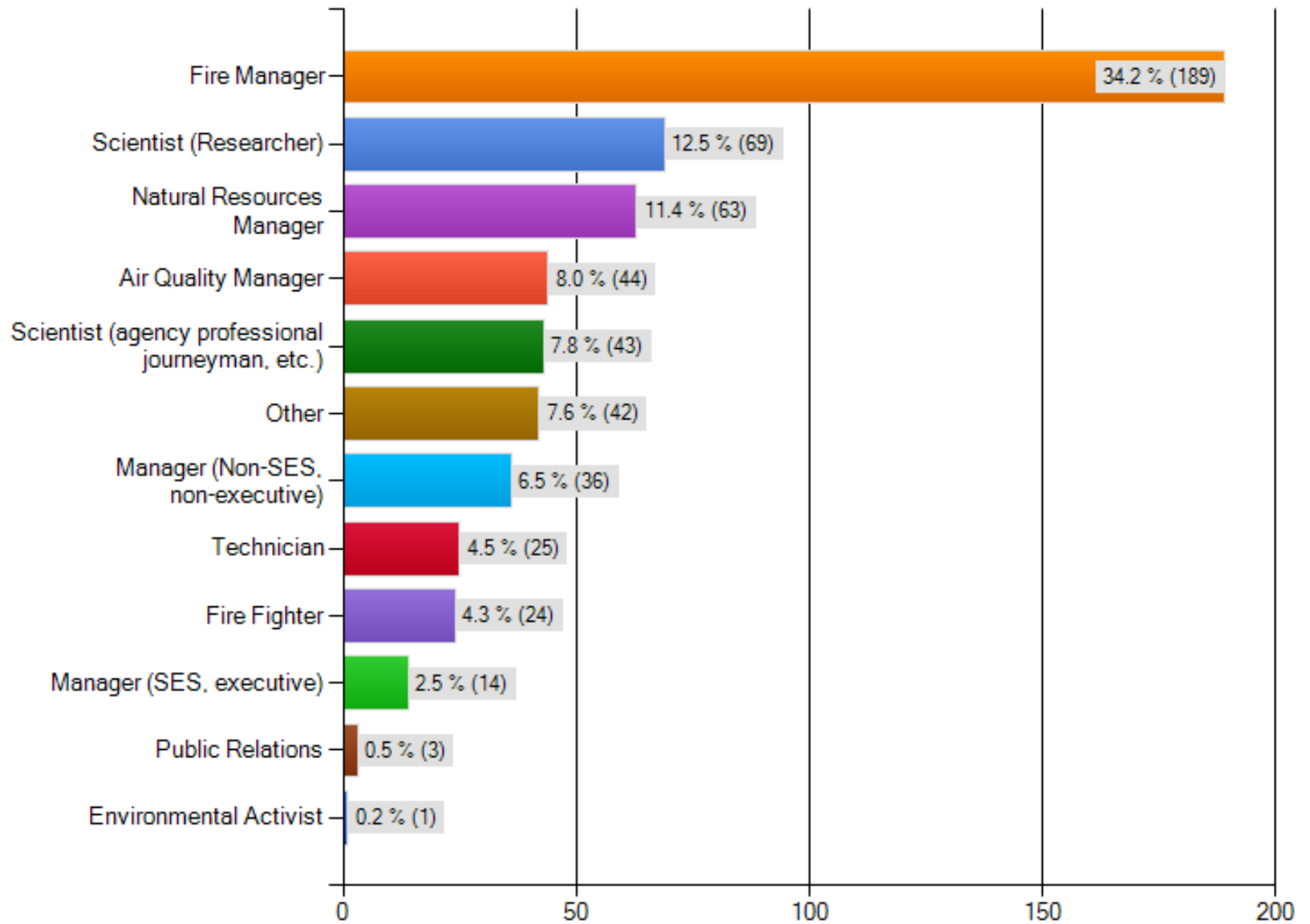
SMOKE SCIENCE PLAN QUESTIONNAIRE

THE PURPOSE OF THE QUESTIONNAIRE was to sense how people were thinking about wildland fire smoke as an issue and how they perceived the recommendations identified by the 2007 Joint Fire Science Program (JFSP) Smoke Roundtables. The information gathered will be used to help guide *Nine Points South Technical* in developing a Smoke Science Plan for the JFSP.

I work for:



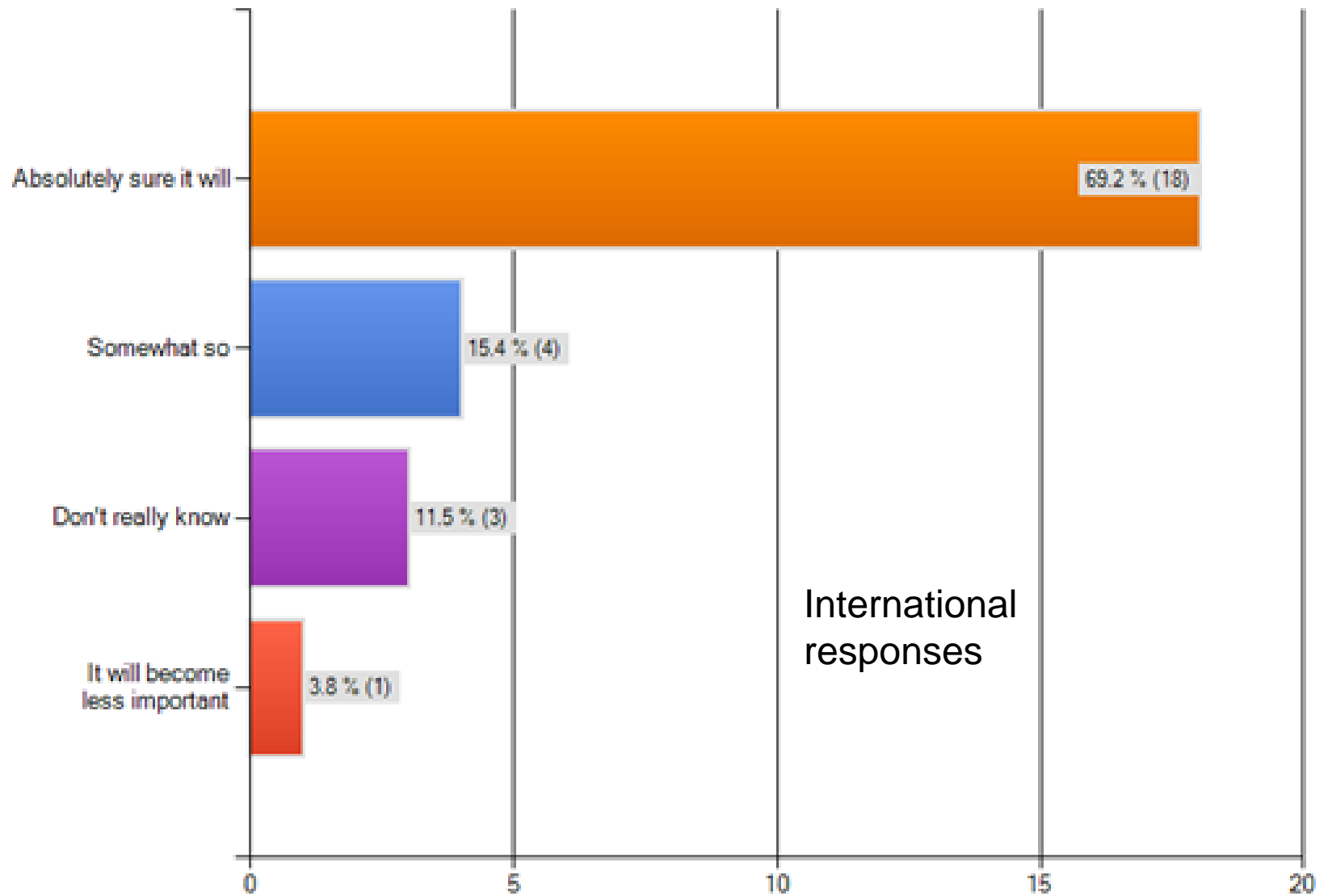
My primary job duties are:



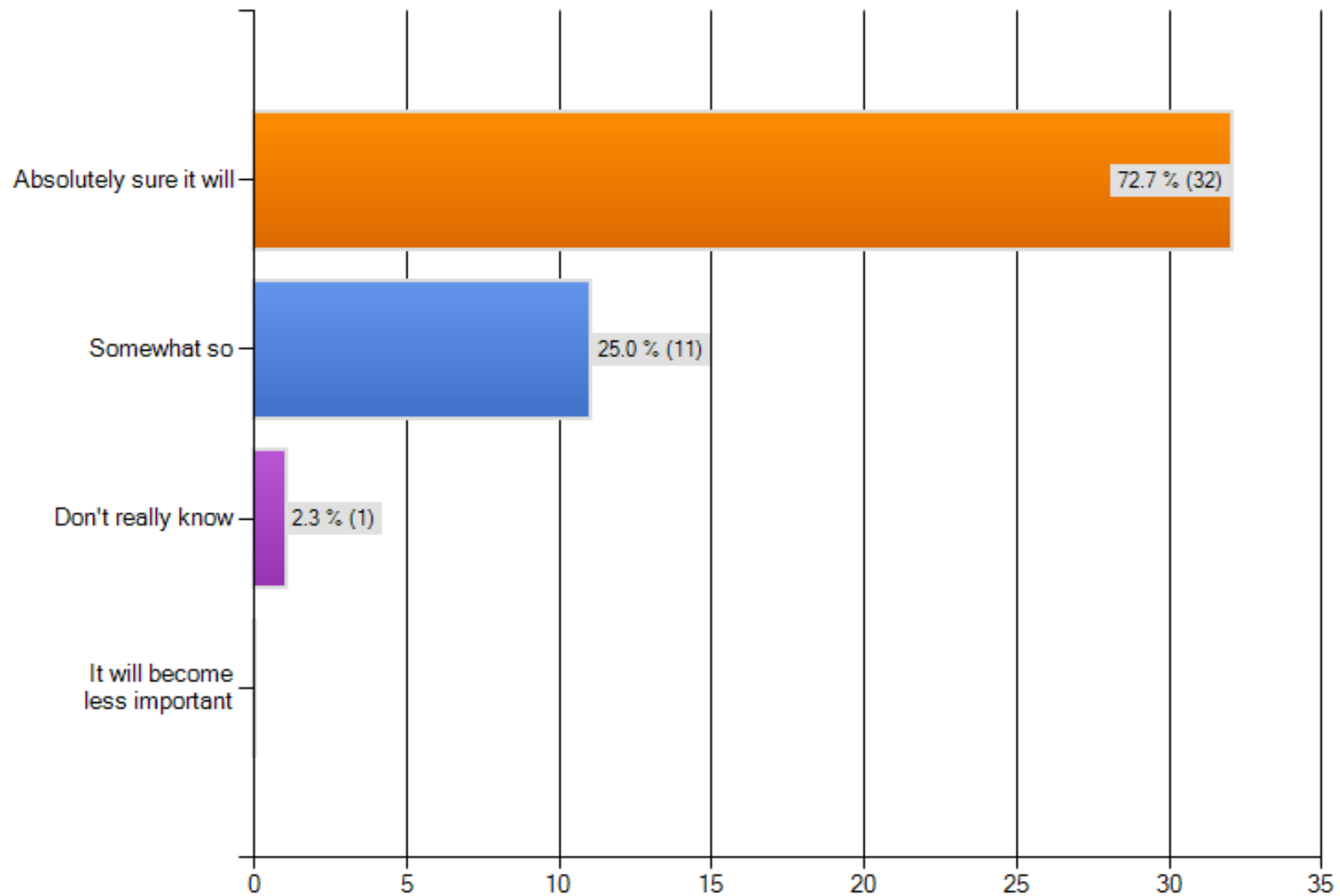
SMOKE SCIENCE PLAN QUESTIONNAIRE

Conclusion: THE NUMBER OF INDIVIDUALS AND SELF-DESCRIBED DUTIES of the people who responded to the questionnaire we believe make the questionnaire useful as a sensing tool for this community. In our experience, the absolute number of people who responded is large for this type of questionnaire. Where people work and what duties they have also appears to be varied and gives a reasonable sense that the results are useful (e.g., not dominated by researchers who might be thought to gain by a certain result, not dominated by air quality managers who some might consider as not understanding fire management).

Do you think fire smoke will become a more important issue to society in the next ten years?

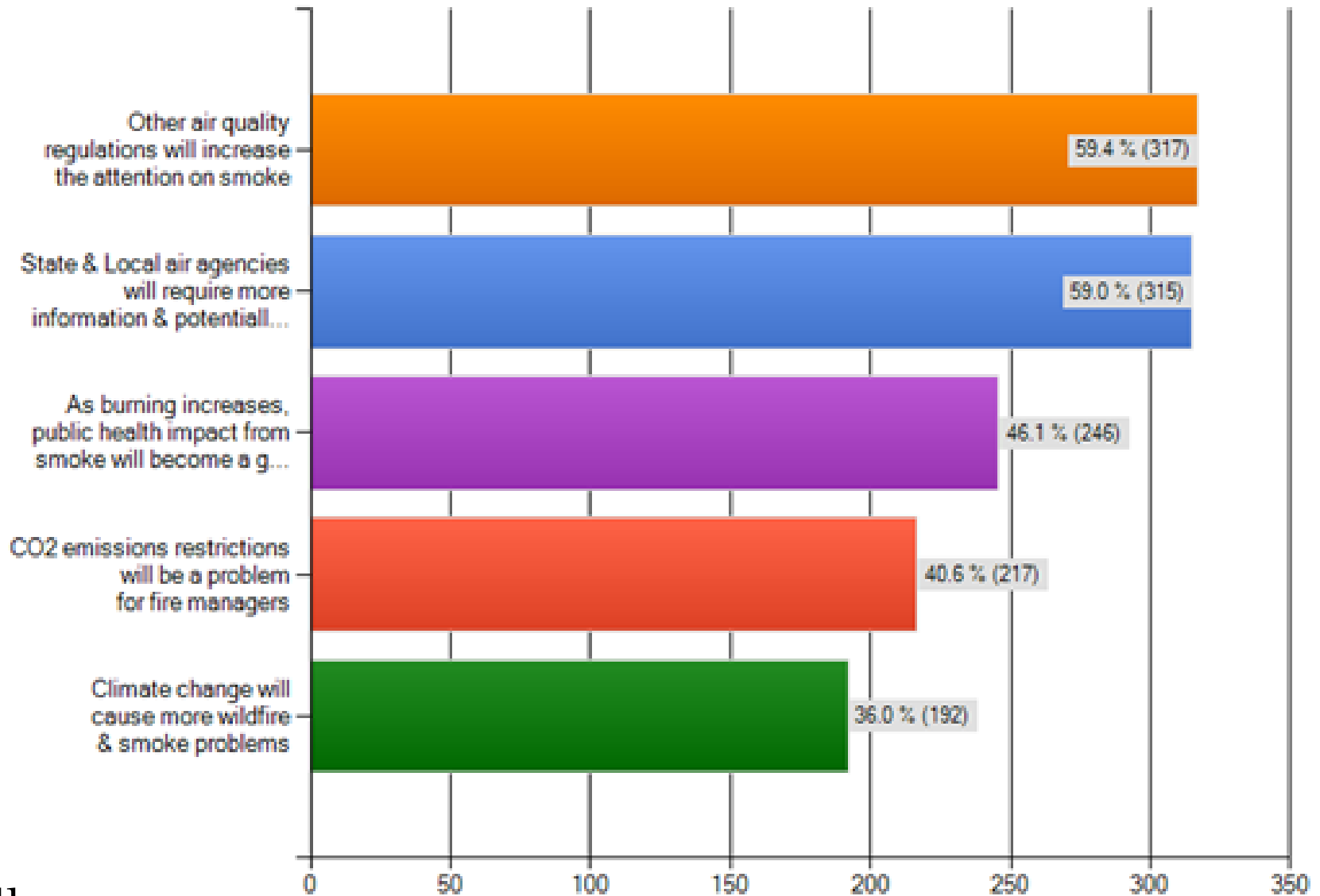


Do you think fire smoke will become a more important issue to society in the next ten years?



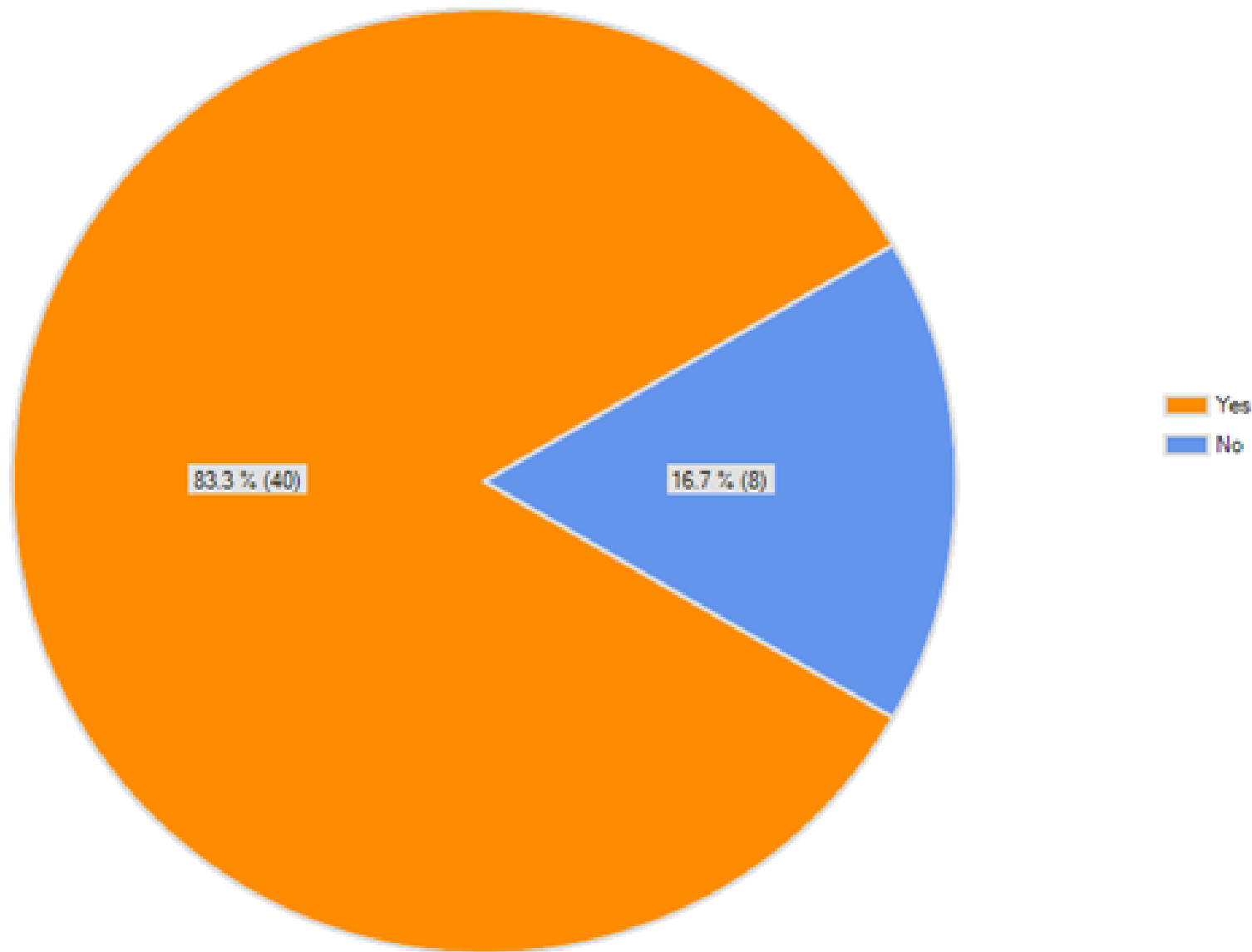
Air quality managers

If smoke were to become more important to society (even though you may not personally think it will), which of the following might be the reason?



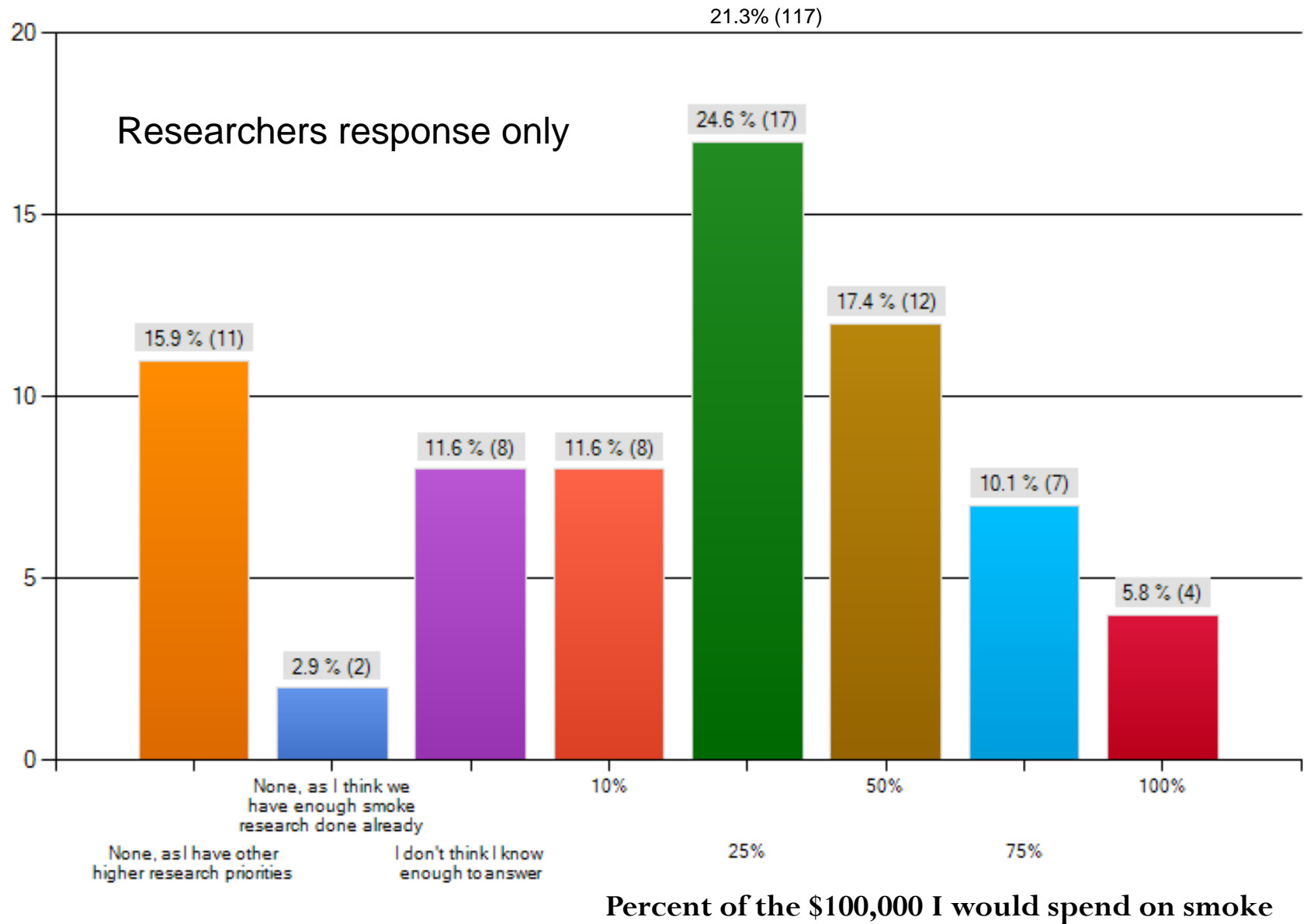
All responses

Should there be more research and development done in USA by the federal government, state governments, NGOs and universities on fire smoke?

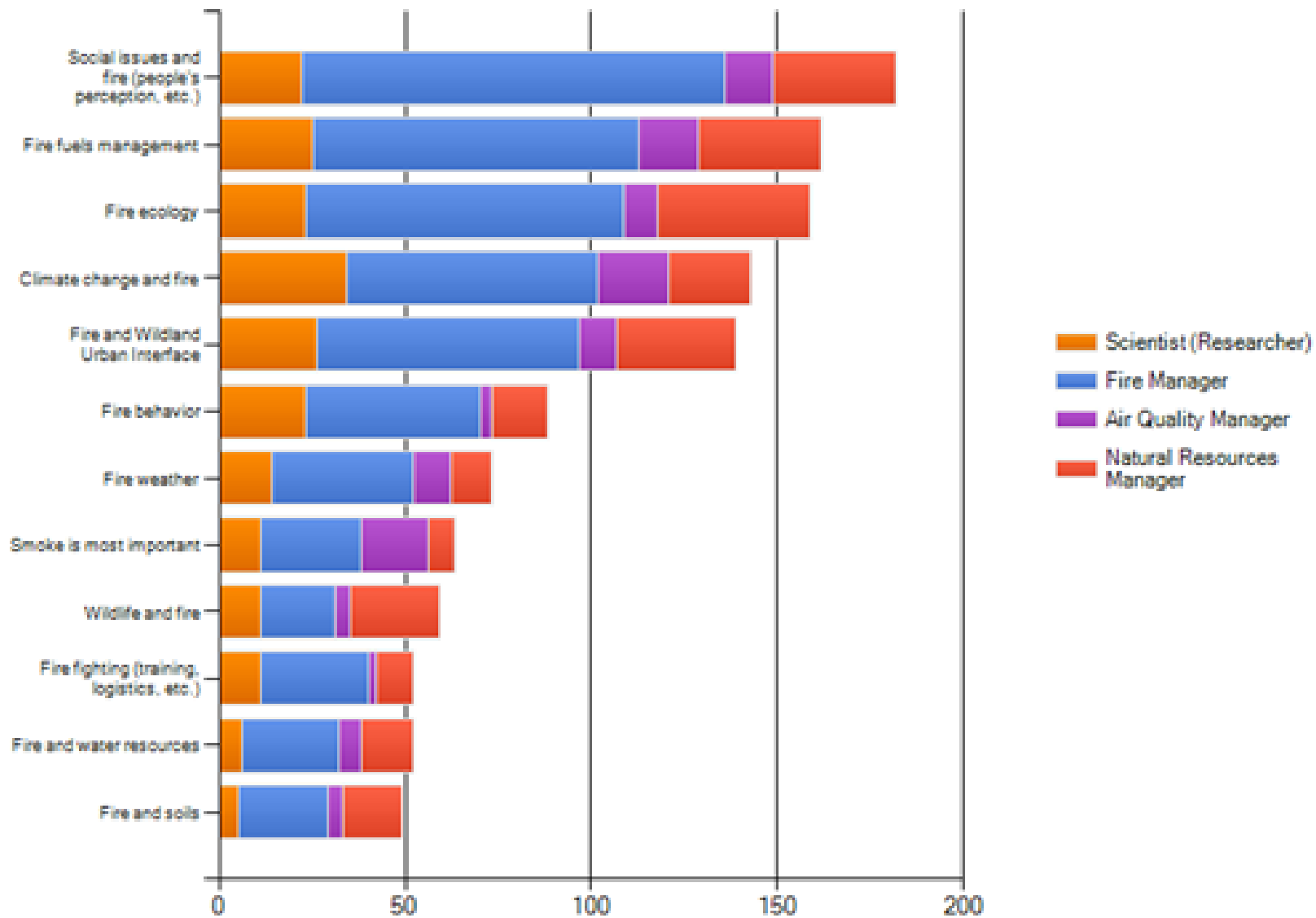


FWS responses

If you had \$100,000 that you had to spend on supporting research during the next twelve months, how much would you spend on smoke?



What issues concerning fires are more important research topics than smoke (you can chose as many as you like from the list below)?



SMOKE SCIENCE PLAN QUESTIONNAIRE

Conclusion: Smoke is clearly seen as an important issue. But it is clear it is not seen as the most important issue to be researched. Perhaps somewhat surprisingly, most see the reason that smoke will become more important is an increase in regulatory pressure and a corresponding need for more information to address this pressure. A clear signal appears that funding should be a significant percentage of available R&D funding, perhaps close to 25%. However, many also see a number of issues, such as people's perception of wildland fire, as higher priority R&D issues.

The 2007 Joint Fire Science Program Smoke Roundtables consisted of two meetings, one in the eastern and one in the western United States. The purpose of the meetings was to determine what R&D issues concerning wildland fire smoke were most important to address. The people who completed the questionnaire were asked to rank the Smoke Roundtable recommendations. The rankings demonstrate that results of the roundtables are relevant, but perhaps difficult to choose between. However, there is a fairly strong indication that **emissions inventory; fire and smoke model evaluation/validation; climate change, fire and smoke; and smoke and populations (e.g., public health and other people/smoke issues)** are important.

The issues or recommendations indentified by the JFSP Smoke Roundtables were...

- 1. Develop a web-based, spatially capable, system for tracking all fires (e.g., prescribed/wildland use, wildfires, and agricultural fires)**
- 2. Provide a website from which appropriate models can be selected and interpreted by the smoke management community**
- 3. Develop a synthesis to identify what information is currently available regarding carbon balance and fires at a global level**

The issues or recommendations indentified by the JFSP Smoke Roundtables were...

4. Develop a “smoke portal” website that provides access to model information and sample outputs to ease tool choice

5. Create a study plan to objectively validate existing models and sub-models for smoke management

6. Identify the greenhouse gas emissions from all fires in the USA

The issues or recommendations indentified by the JFSP Smoke Roundtables were...

7. Develop a predictive analysis of regulatory changes as a result of climate change

8. Develop best practices and guidance for informing public of health risks (e.g., reverse 911 and PSAs)

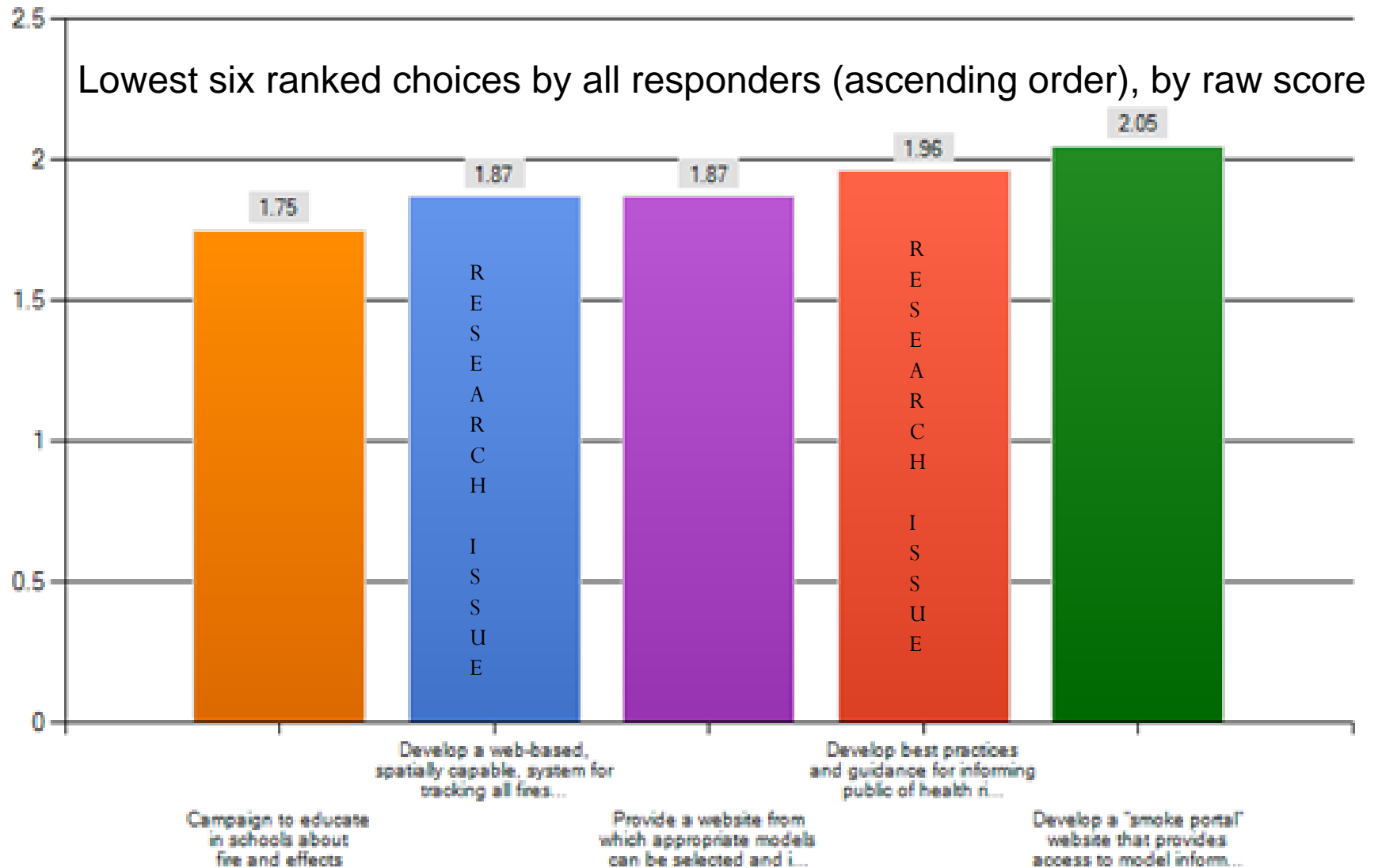
9. Campaign to educate in schools about fire and effects

The issues or recommendations indentified by the JFSP Smoke Roundtables were...

10. Hold annual “local” summits to share information and get contacts to start the relationship network needed to address all fire and smoke issues

11. Create a scalable decision tree to rationalize and provide options for contingencies planning, public notification and mitigation approaches

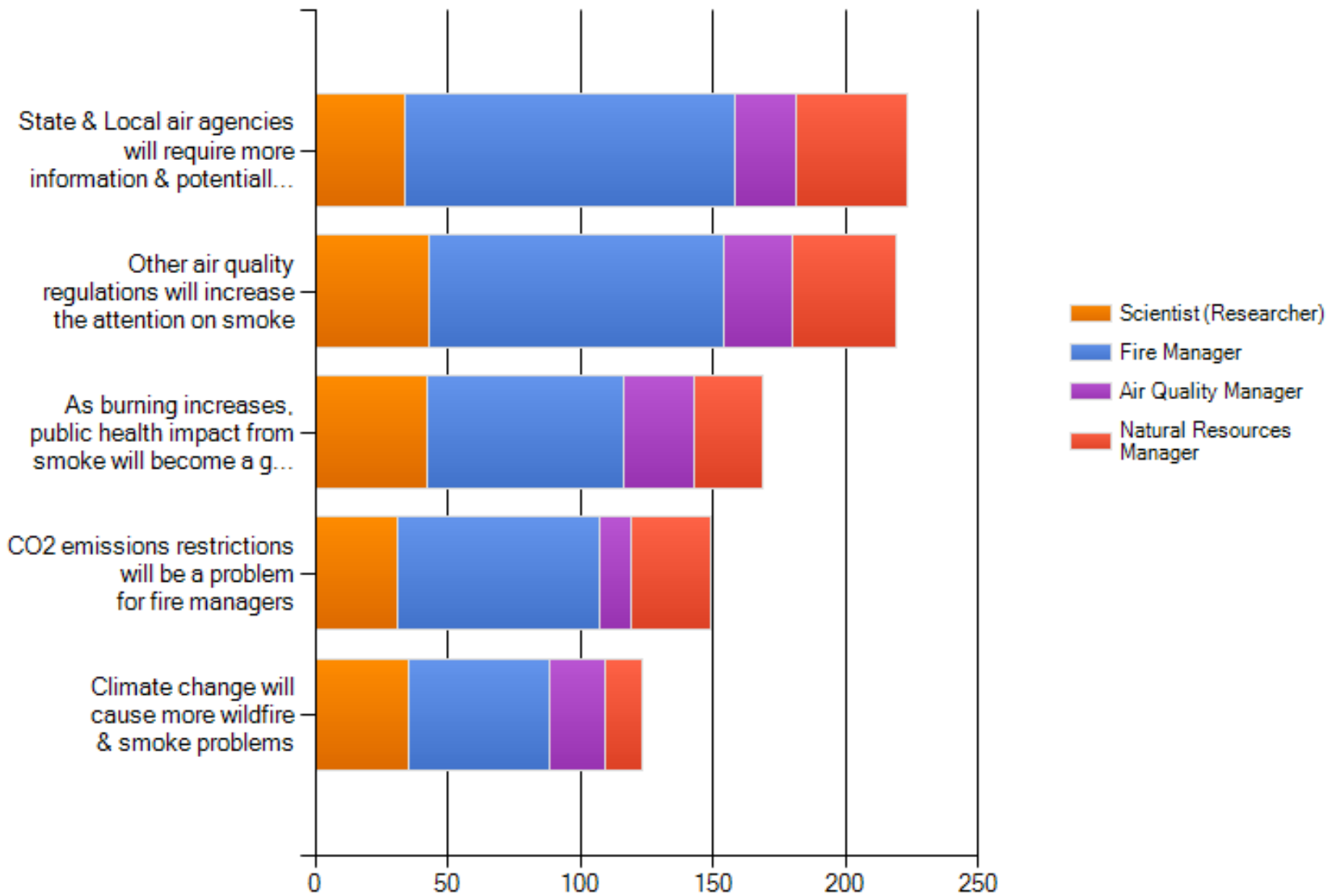
These smoke research/technology needs were identified during the JFSP Smoke Roundtables (two meetings were held, one east and one west) and are presented as they appear in the JFSP summary report for you to rank. The wording of the issues may be a bit confusing, but just take your best guess as to if they appear important to you. Please give each issue a rank.



SMOKE SCIENCE PLAN QUESTIONNAIRE

Conclusion: It is rather difficult to consider the outcomes of the smoke roundtables purely in a smoke research context. Some of the identified recommendations are more procedural than research and might be addressed as operational needs. However, emissions inventory for fires (including greenhouse gases), an issue which has R&D components directly related to the JFSP charter was ranked by almost 80% of our responders as either high or medium as a need. A research plan for smoke model validation and understanding/addressing public health risks from smoke were rated as high or medium needs by over 70%. Climate change, fire and smoke (expressed as carbon balance and emissions) was also ranked highly (about 60% medium and high).

If smoke were to become more important to society (even though you may not personally think it will), which of the following might be the reason?



SMOKE SCIENCE PLAN QUESTIONNAIRE

Our proposed smoke research themes: From what we have learned, and synthesis of the roundtable recommendations, we have chosen four smoke R&D focus areas or themes for the JFSP Smoke Science Plan. These focus areas or themes are --

- Emissions inventory
- Fire and smoke model validation
- Smoke and populations
- Climate change, fire, and smoke

SMOKE SCIENCE PLAN QUESTIONNAIRE

We will also be asking them for input as we move forward on the four proposed themes of the JFSP Smoke Science Plan.

SMOKE SCIENCE PLAN QUESTIONNAIRE

We will be corresponding with those people who responded in the questionnaire that they would like to be contacted with more information periodically about our progress and interim results / products (almost 300 individuals).

SMOKE SCIENCE PLAN QUESTIONNAIRE

We will be sending out in the next several weeks an email(s) specifically asking for input on our four Smoke Science Plan research themes. You have our thankyou in advance for any time you will be willing to spend on helping us move forward.

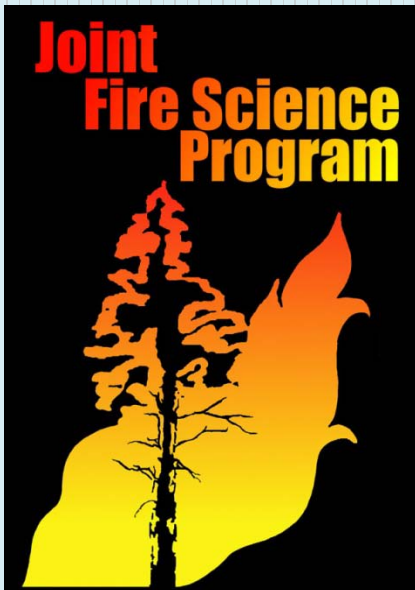
SMOKE SCIENCE PLAN QUESTIONNAIRE

If you have a question about the questionnaire, would like a copy of a graph from this presentation, or have a comment to share, please write us at:

smokeplan2010@msn.com

SMOKE SCIENCE PLAN QUESTIONNAIRE

We wish to thank and acknowledge the Joint Fire Science Program for their support of this work.



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