Advances in the Development and Application of Prediction Models for FHB and DON

Erick De Wolf
Department of Plant Pathology
Kansas State University

Presentation Outline

- Progress in model development
- Advances in model application

Model Development

- Working with cooperators to gather new observations
- Data cleaning and quality assessment
- Evaluating the performance of current models
- Developing and testing the new models for potential application

Resources for Modeling

- Data set represents
  - 15 states
  - Time period range of 1982 – 2009
  - 527 cases
    - location, year, cultivar, anthesis date, residue level
    - Integrated management trials a rich source of data

Model Application

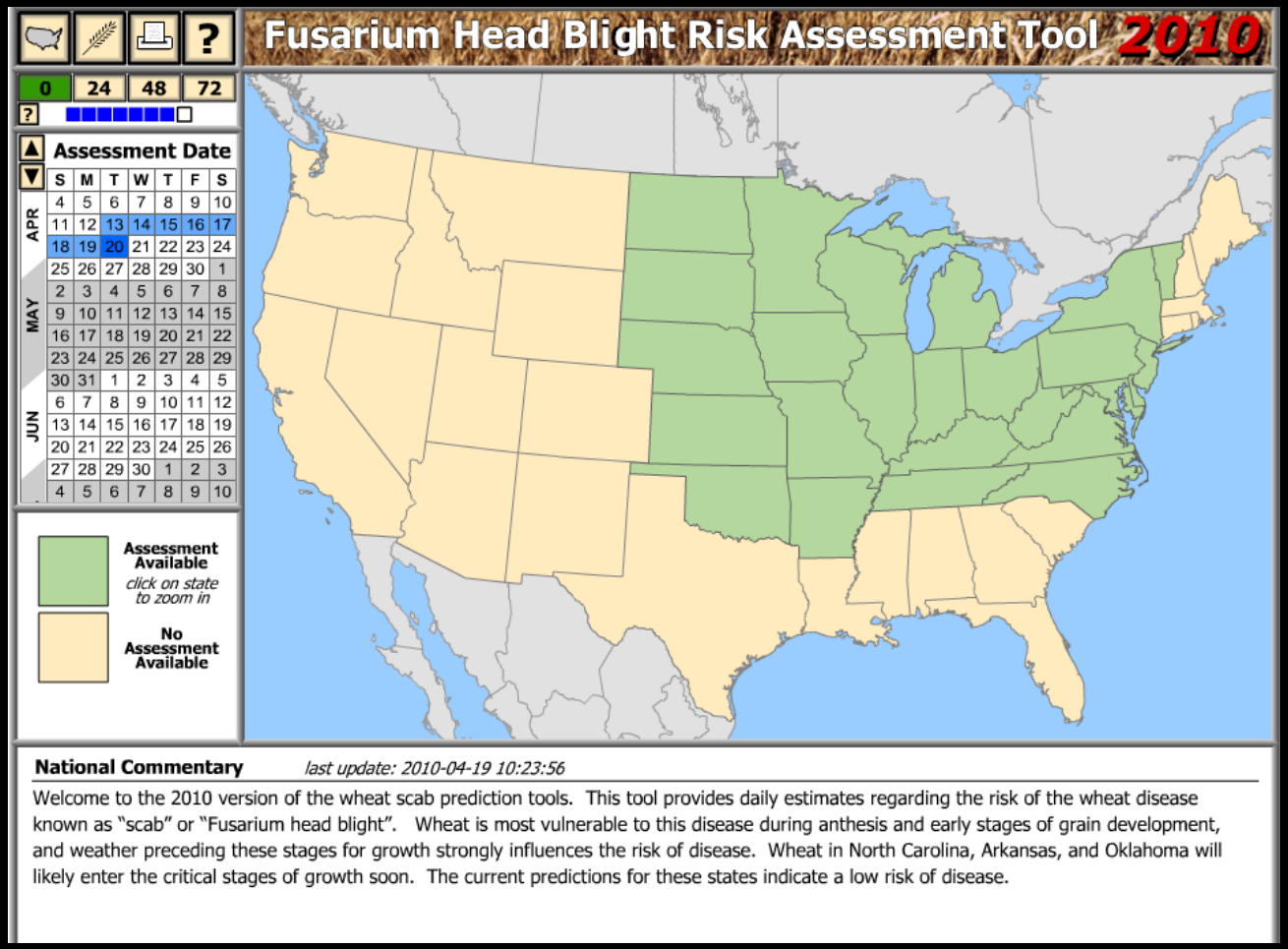
Current FHB Prediction models

Wheat market class	Model variables	Accuracy (%)	Sensitivity (%)	Specificity (%)
Spring	RH + Resistance	78	86	69
Winter	Temp/RH combination	72	78	68

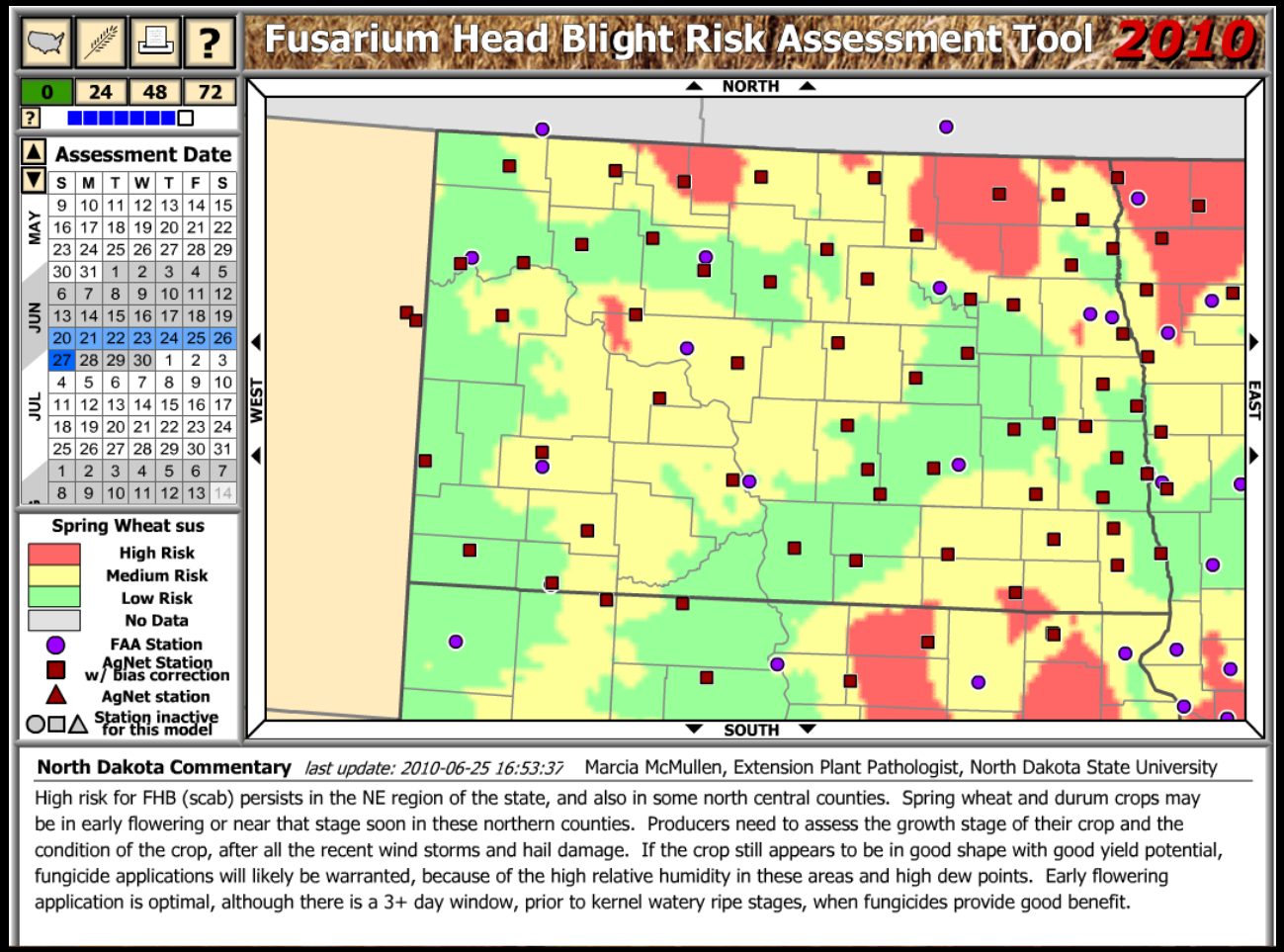
n=116

Molineros et al. 2007

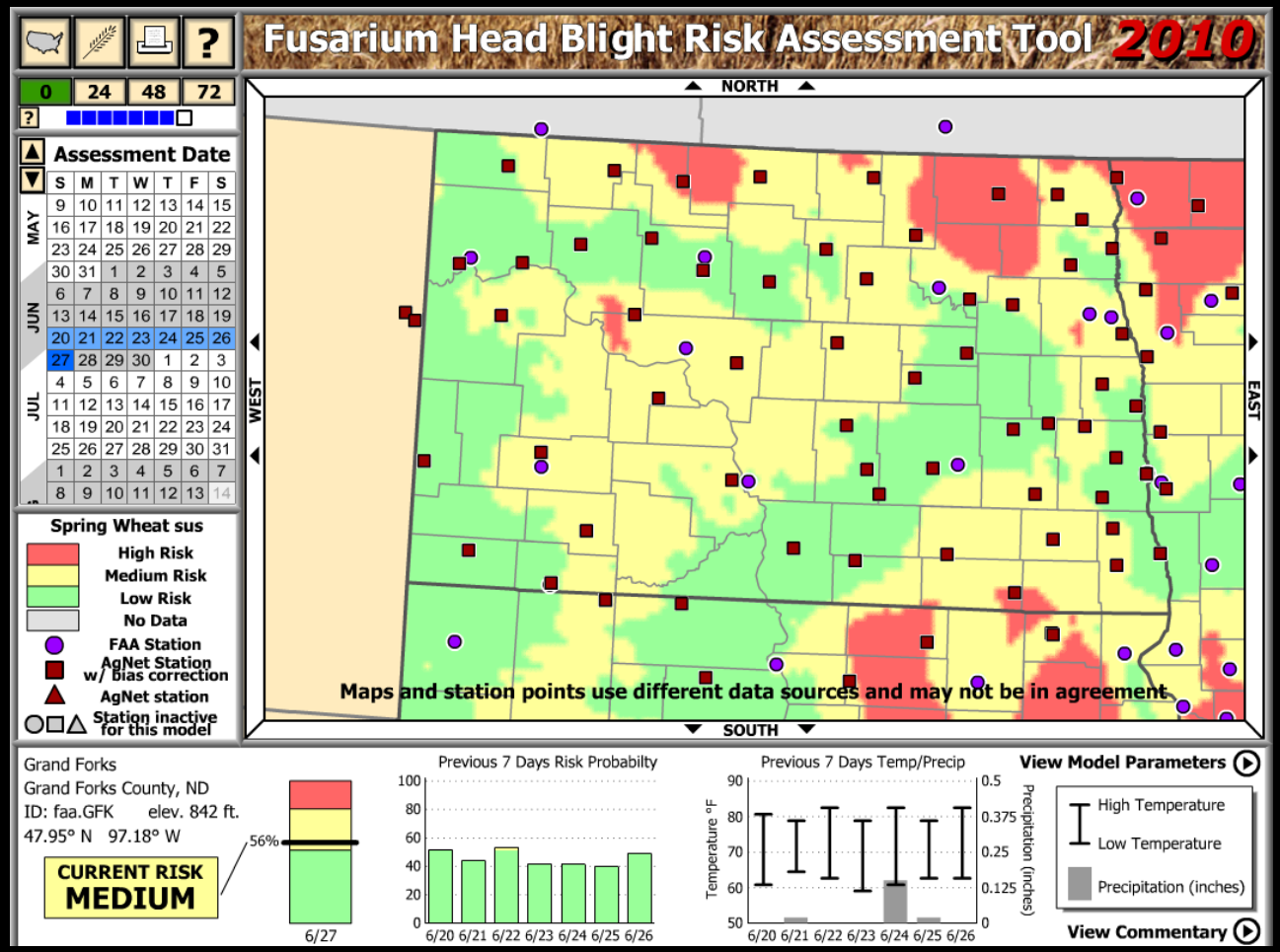
Model Application



Model Application



Model Application



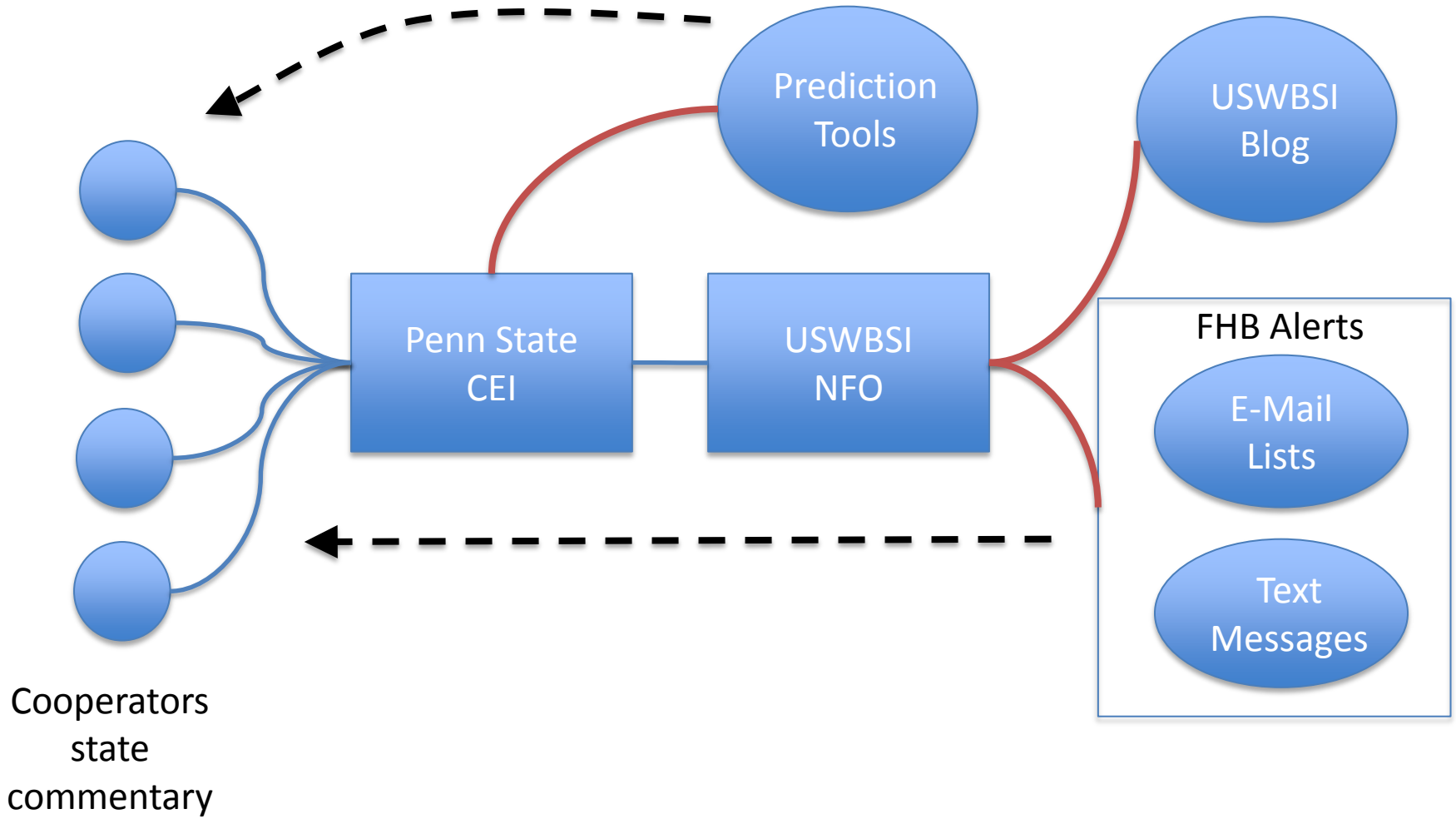
How Effectively Are We Communicating?

- Concerns emerge at 2009 FHB Forum
  - Some stakeholders were not getting the information they needed
  - Evaluate our cooperative efforts to communicate
- Ad-hoc committee appointed
  - Nashville meeting, March 29, 2010

Committee Recommendations

- Capitalize on emerging technologies to “push” the information out to stakeholders
- Energize the effort to develop state commentaries
- Develop a central location to organize information

Advent of the "FHB Alert"



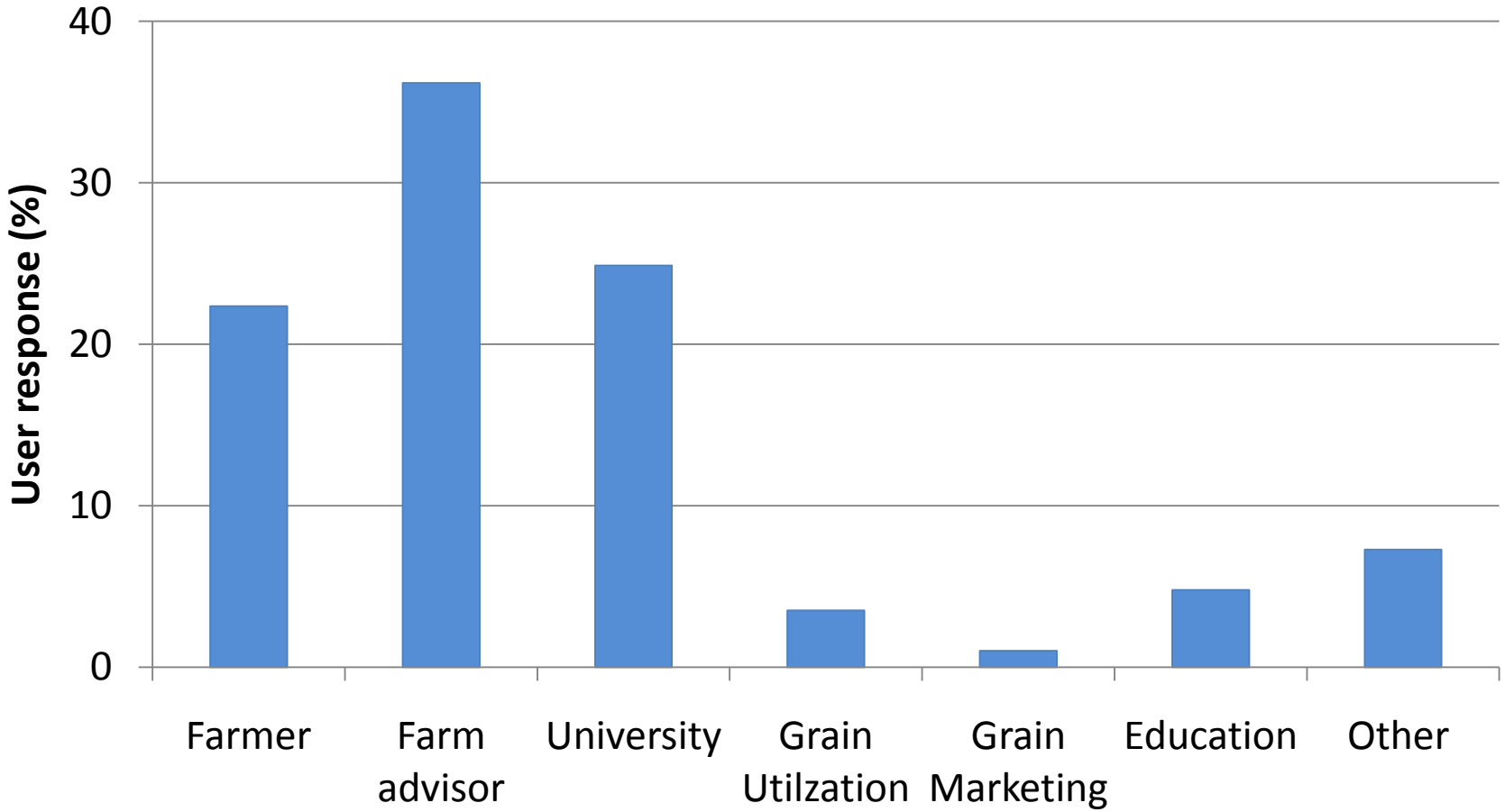
Cooperator Activity

	2009	2010
States participating	21	20
Commentaries submitted	90	132
States with 5 or more commentaries	8	13

User Survey 2010

- Evaluation of FHB Alert and web-tools
- Sent to FHB Alert subscribers
- Distributed via extension e-mail lists and electronic newsletters
- 356 participants, representing 20 states

Who is using the information?



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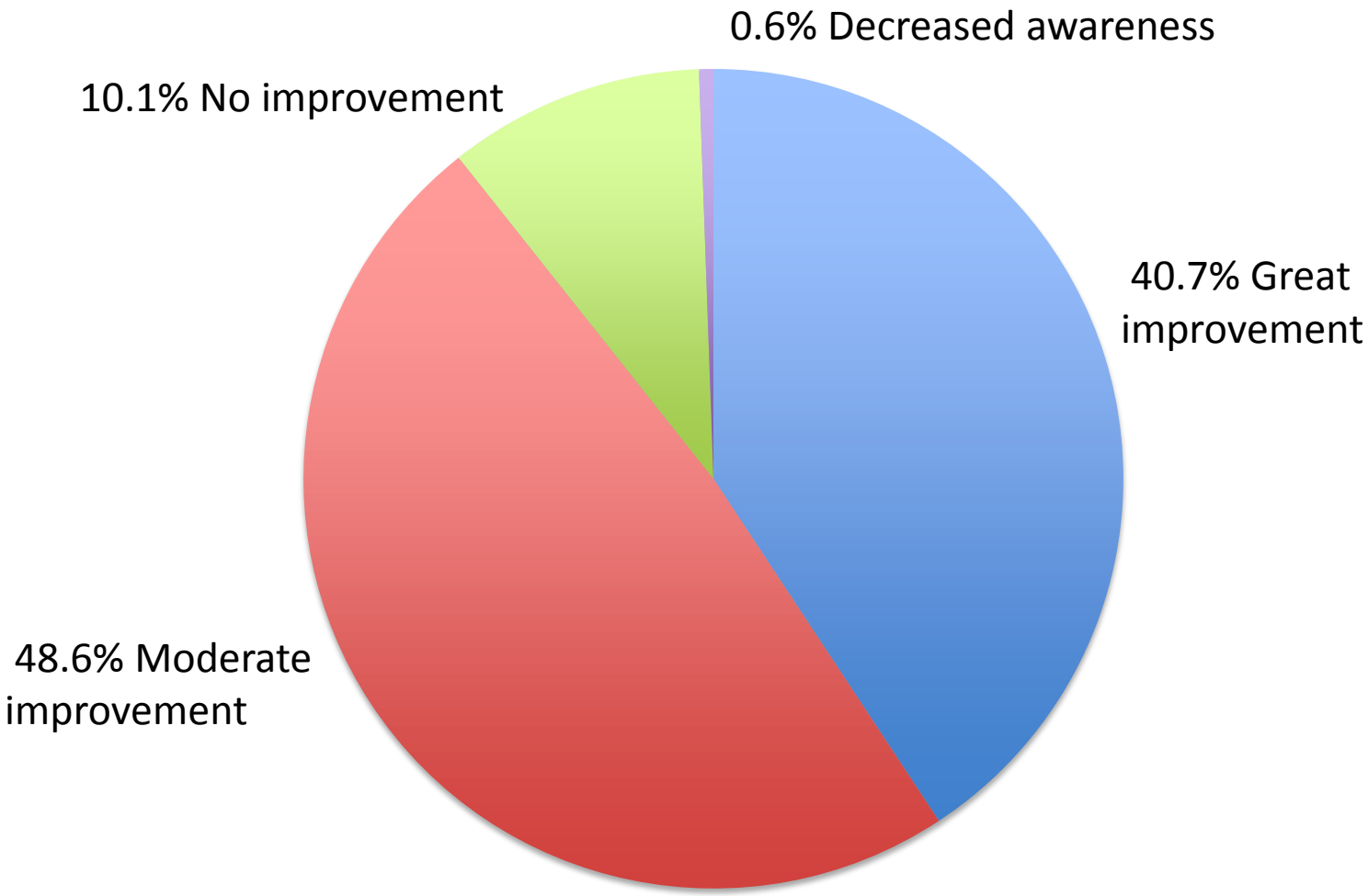
How did the information influence awareness of the FHB risk?



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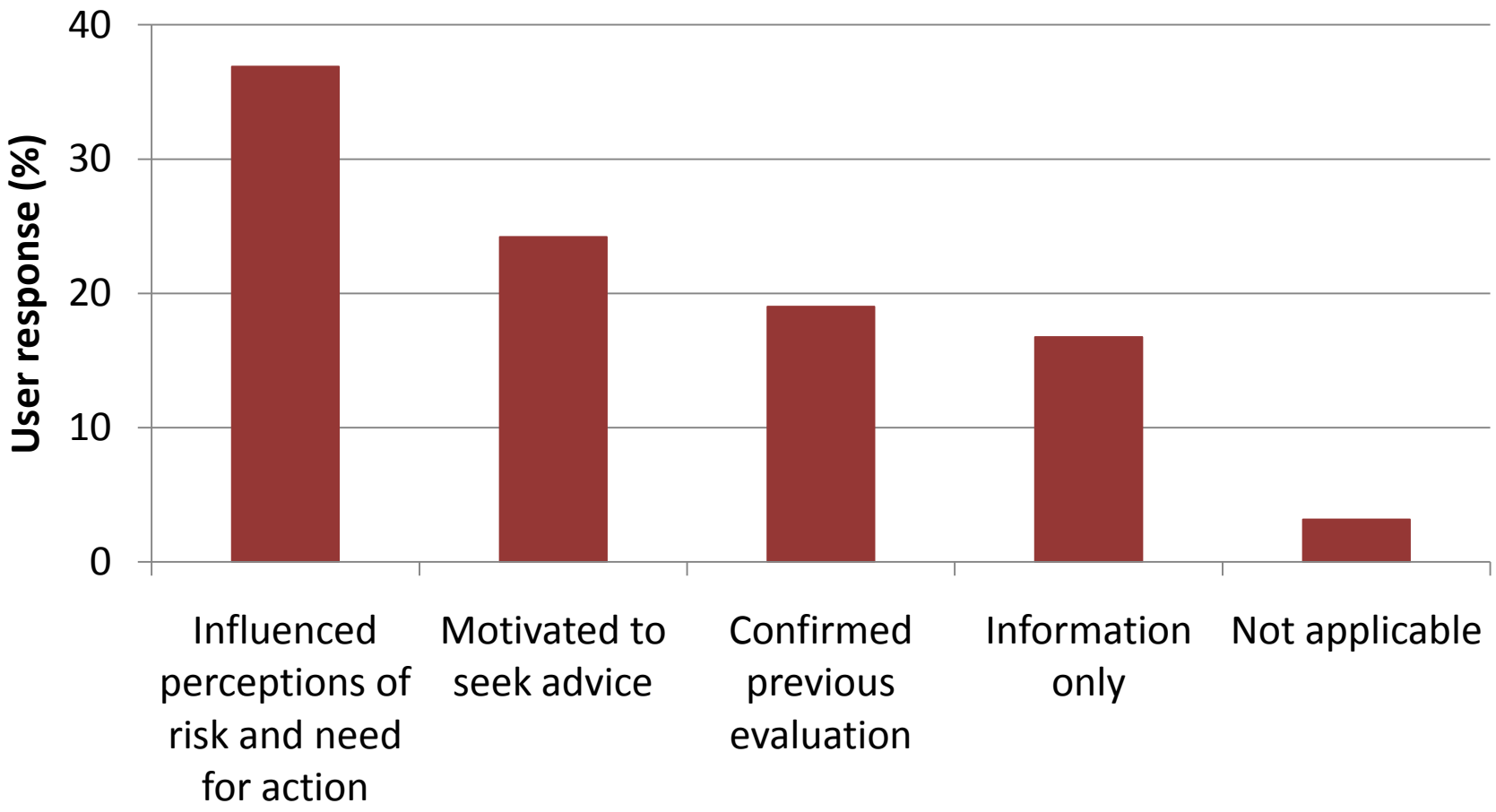
How did the information influence actions?



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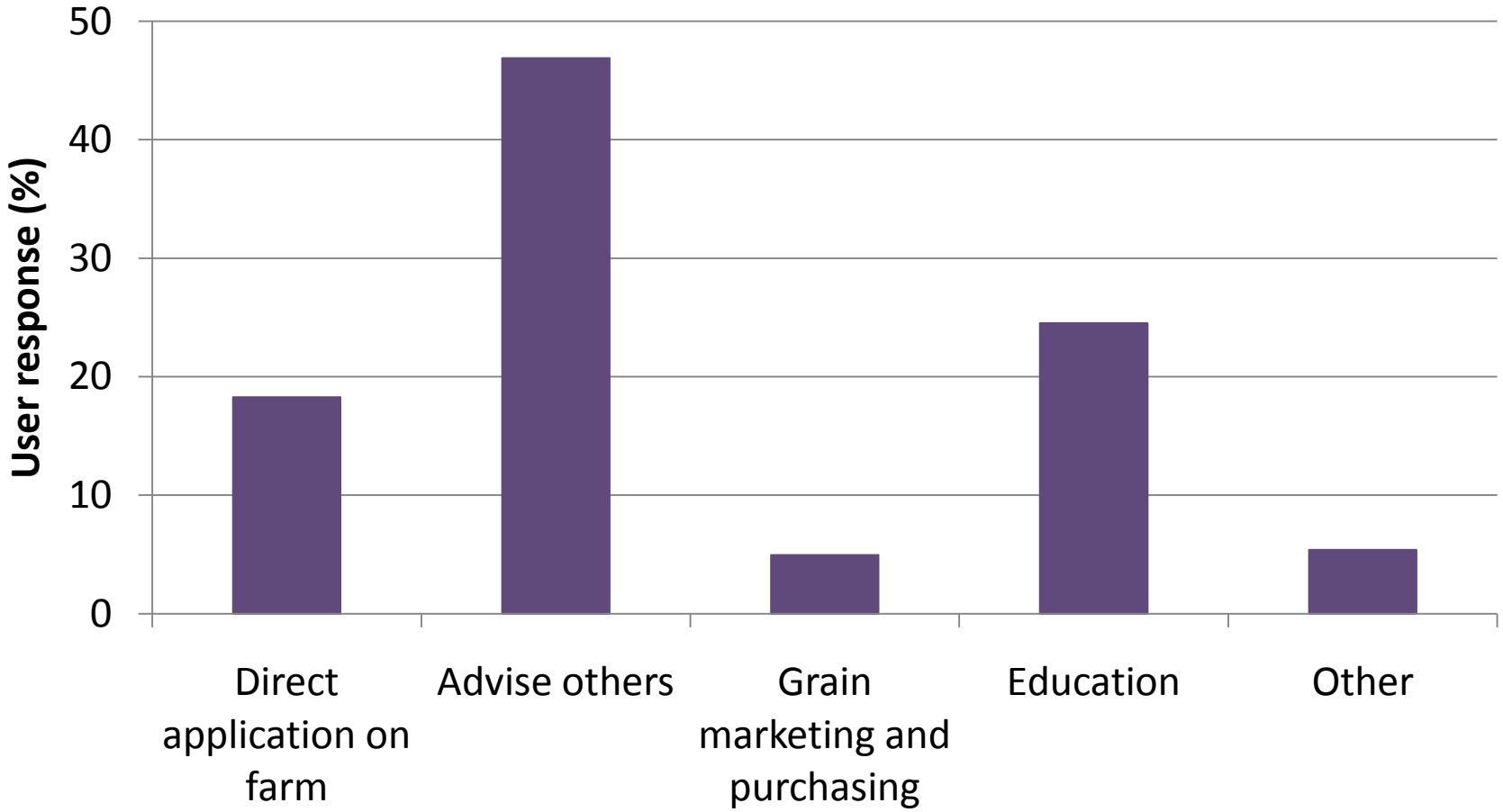
How was this information used?



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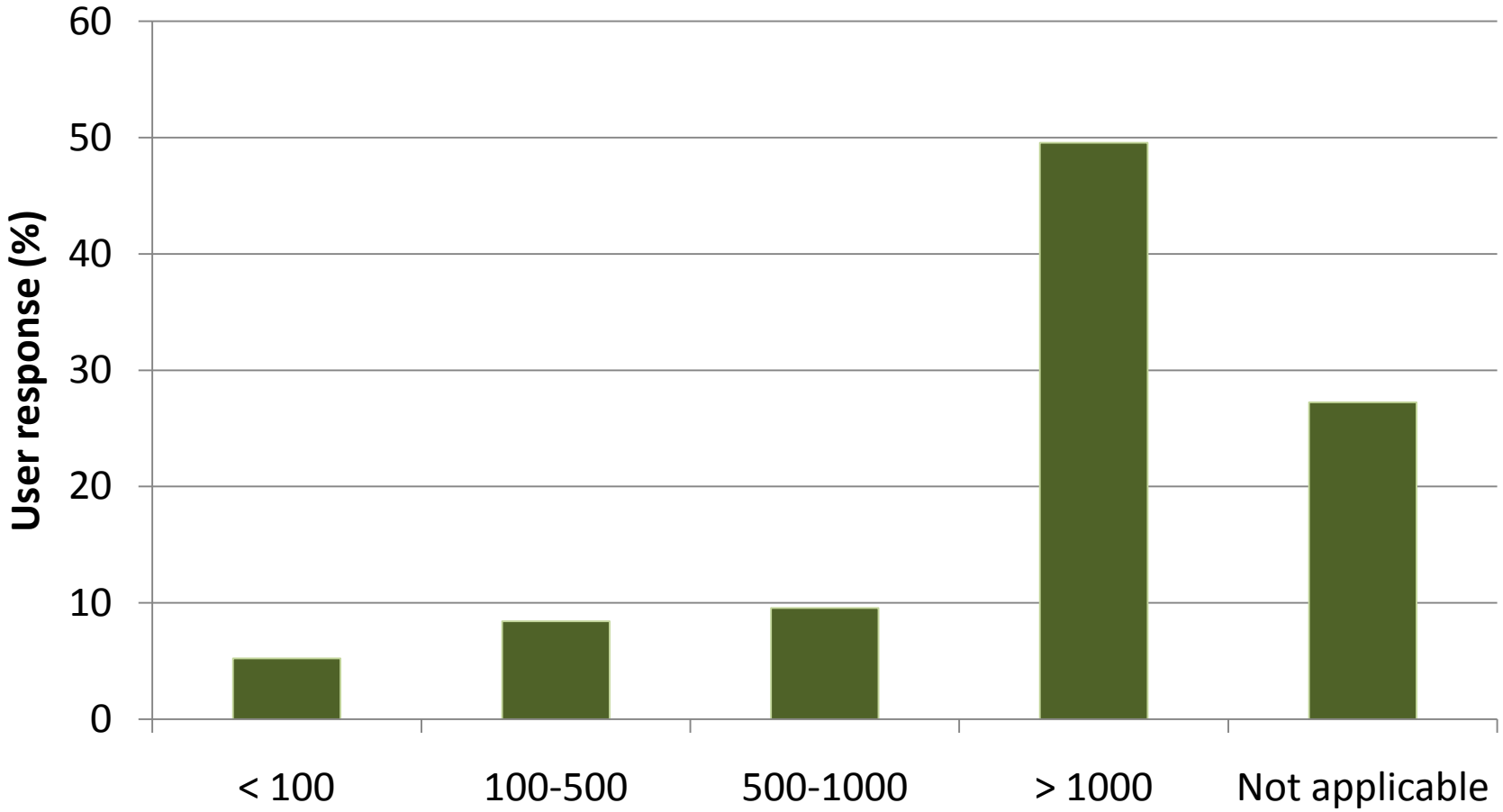
How many acres were influenced by each user?



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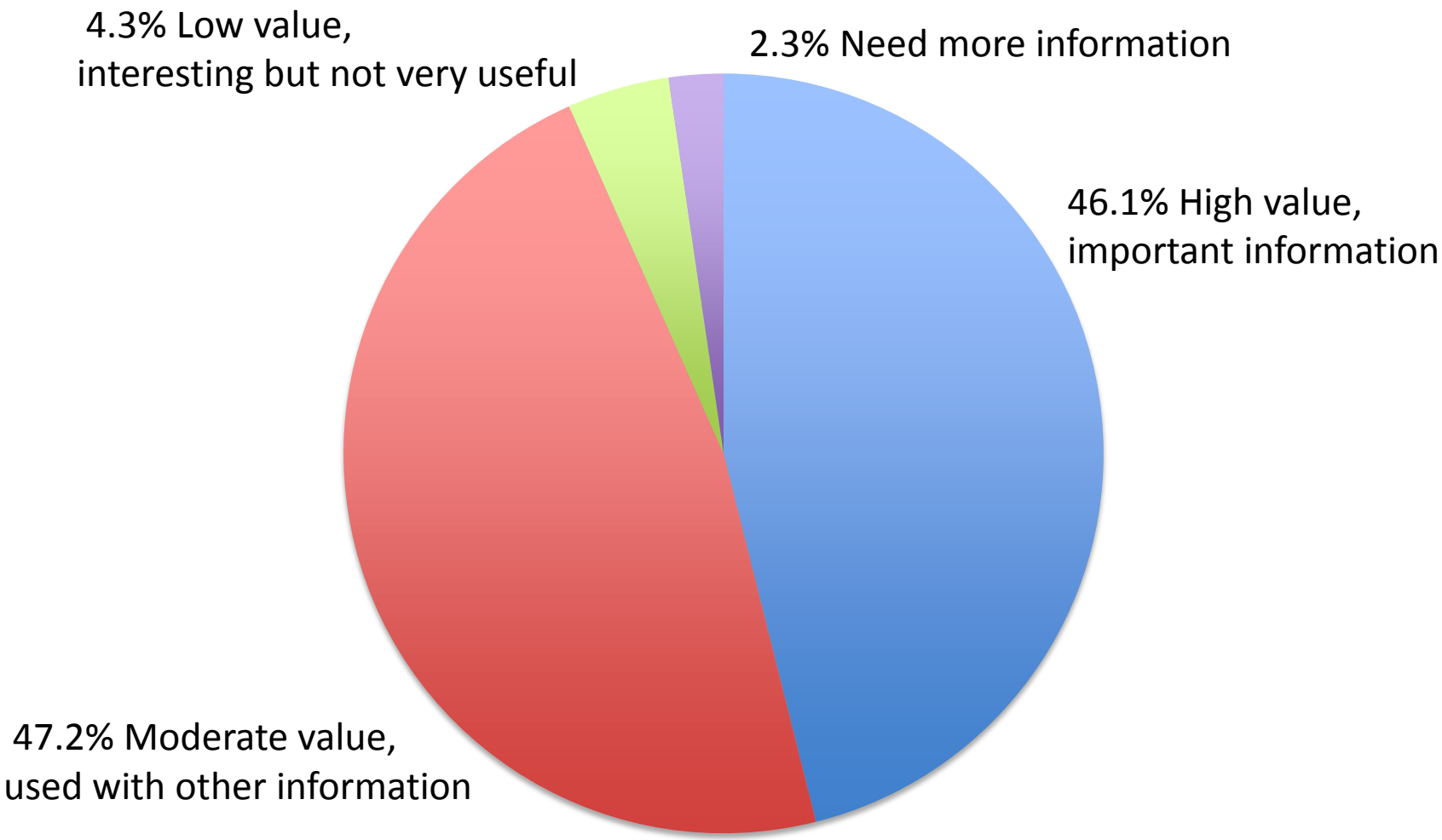
What is the value of the information?



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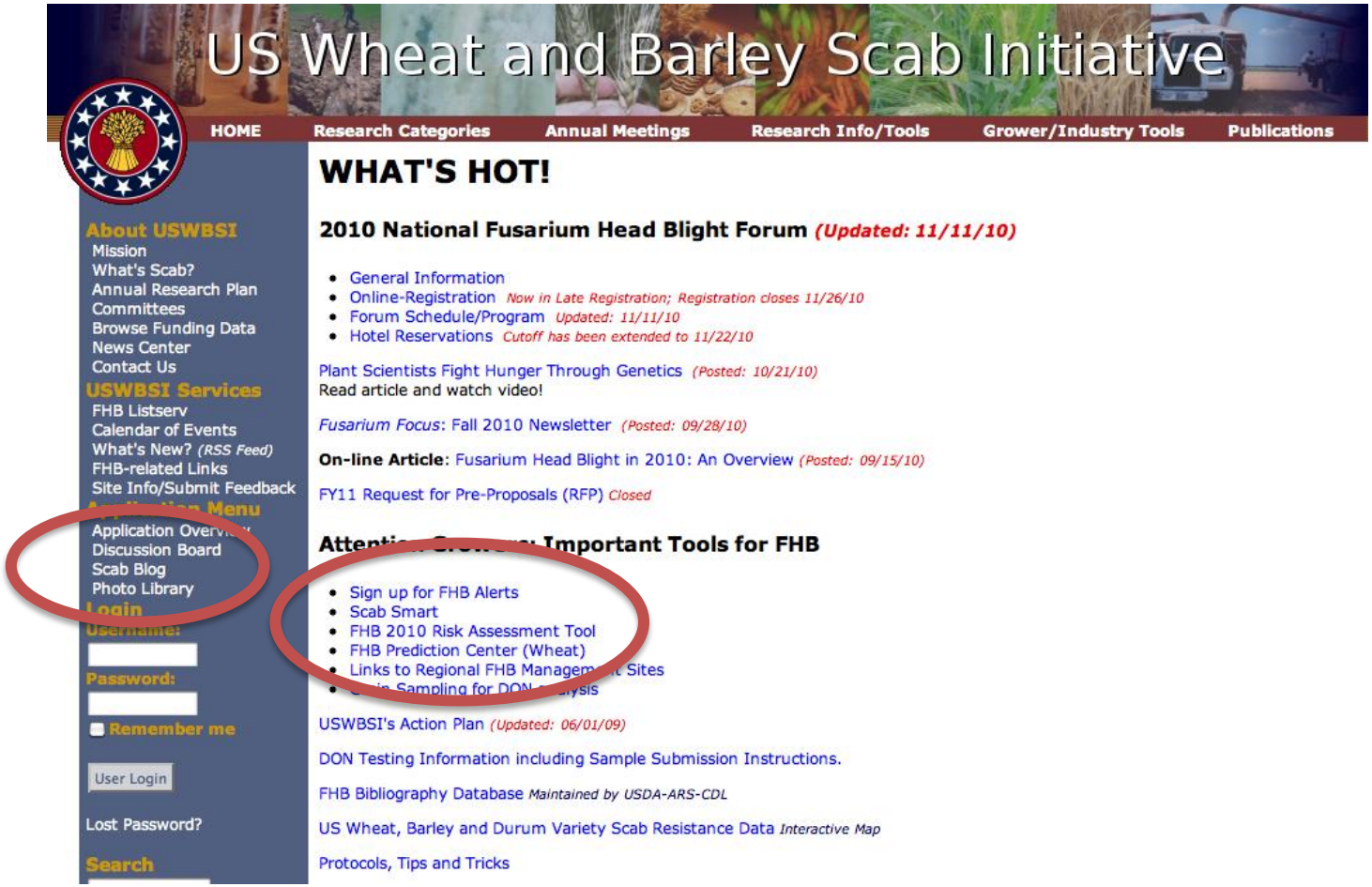
We Need Your Help!

- Cooperators working together to evaluate and communicate the risk of disease
- Promoting the use of the FHB Alert System

Access to the FHB Alerts

Via the USWBSI webpage: www.scabusa.org



Acknowledgements

Model development team

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Adam Sparks

Model Application

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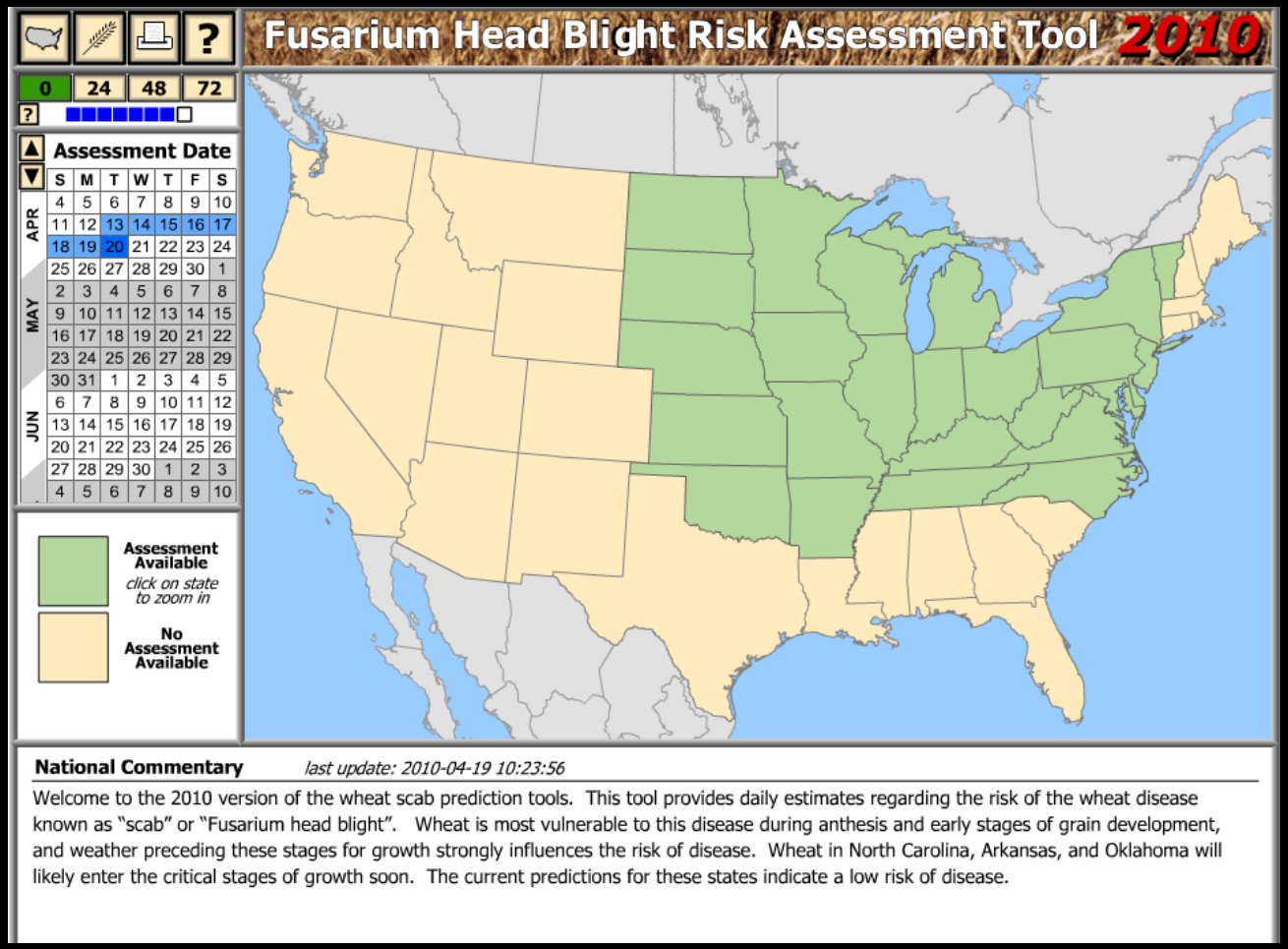
Steve Crawford
Sonja Miller
Tiffany Wisniewski

Cooperators in 25 states that contribute data and commentary

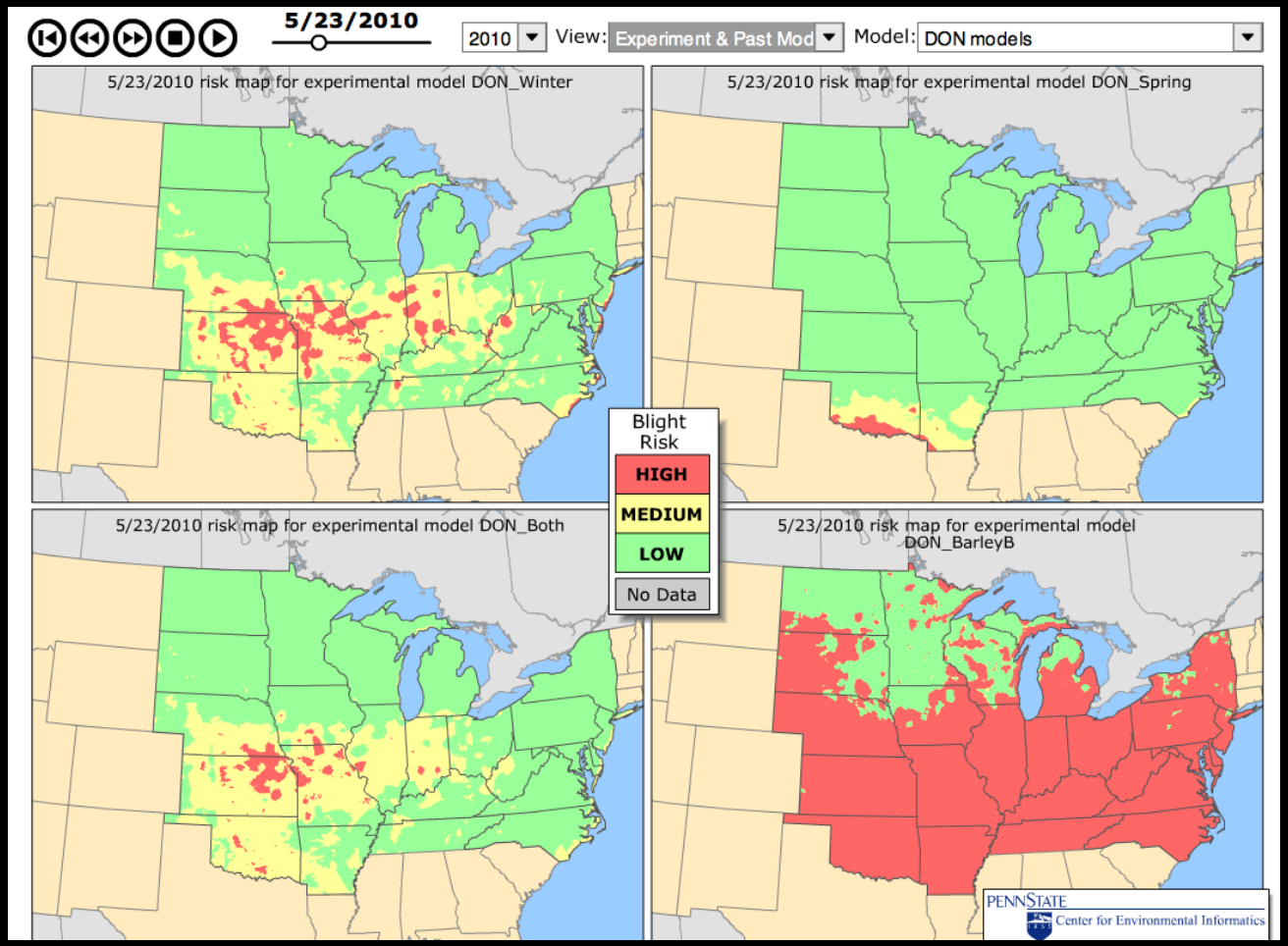
USWBSI NFO

Dave Van Sanford
Sue Canty
Dave Hane

Plans for Expansion in 2011



Platform for testing new models



Model Application

- Maintain flow of weather data
  - National weather service (NWS)
    - Base of RTMA
    - Hourly reporting stations (FAA)
  - Independent weather networks
    - 15 states