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# Firewood regulation at state campgrounds: it's role in changing movement of firewood by campers.

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# Firewood is a vector for invasive wood infesting pests & diseases

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- v Quarantines effective with organized industries but not with firewood.
- v Many invasives moving on firewood, some quarantined, some not.





Bugwood, USDA FS



# The further firewood travels,...

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- v the faster wood borne invasives can be spread,
- v the more likely that what infests it is not established at the destination.

# What can be done?

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- v Education
- v Persuasion
- v Make it easier/cheaper to not move firewood than to bring it along
- v What motivations are important to campers when making the decision to move firewood and how can we act on them?
- v Regulation

# Regulation of wood entering state campgrounds.

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- v An attention getting device applied when people are thinking about campfires.
- v Sensitizes them for education delivered next.
- v Enforcement is immediate.
- v Provides a recourse in cases of willful disregard.

# Follow regulation with education

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- v Parks staff are among the most valued and trusted sources of information by the public.
- v Use “teachable moment” when public is thinking about a campfire and trees and has just been sensitized by regulation.





# Precede regulation with direct notification

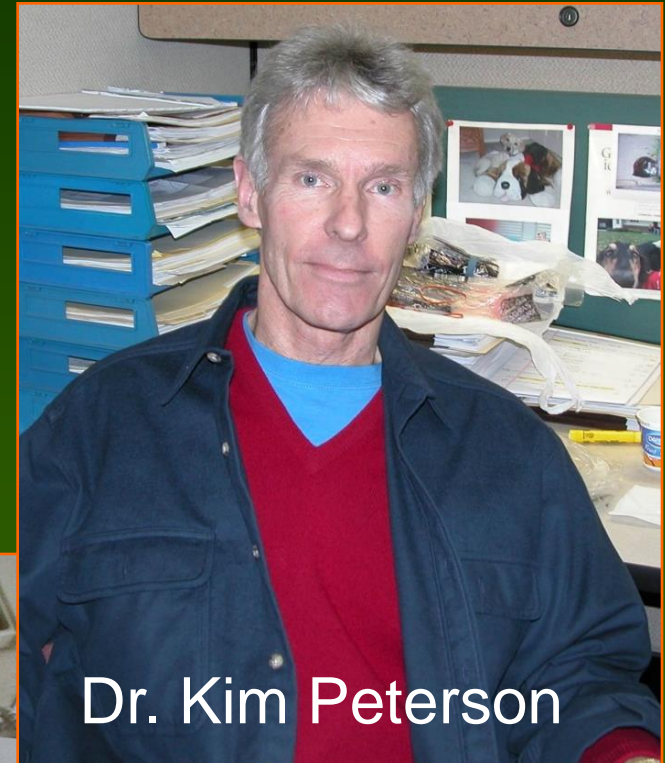
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- v Regulation mentioned in reservation process.
- v Repeated in message confirming reservation.
- v Reminder postcards in some years.
- v Asked again at check in.
  
- v “Don’t move firewood” message sent out with licenses for hunting, fishing, recreational vehicles.

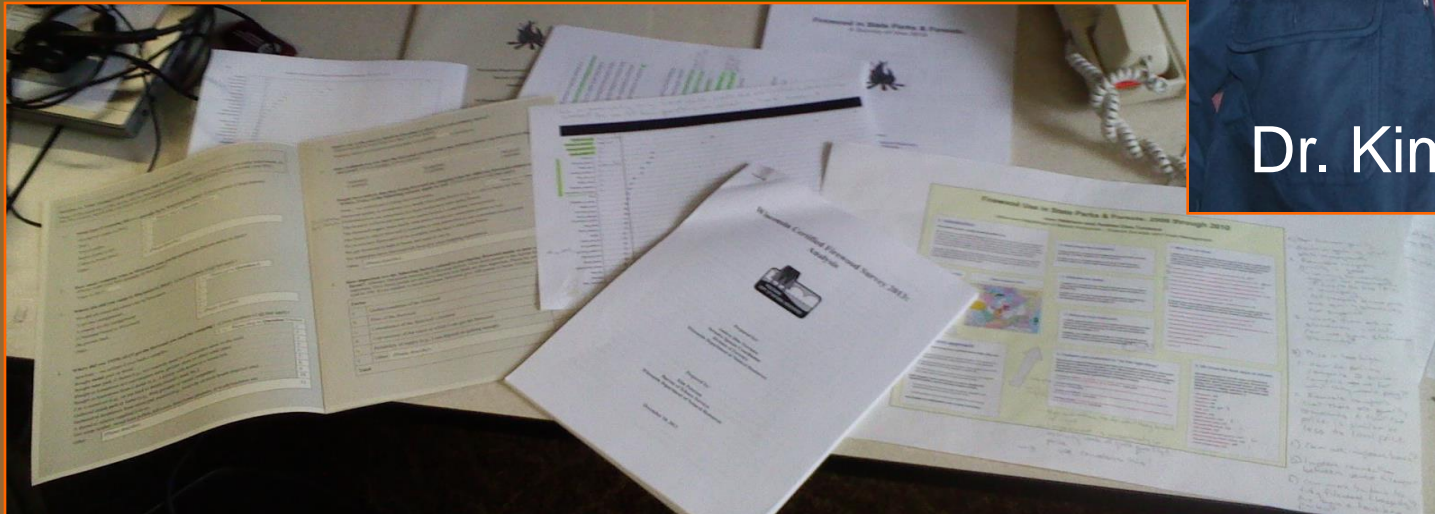


# Effects of regulation & education on public: survey results

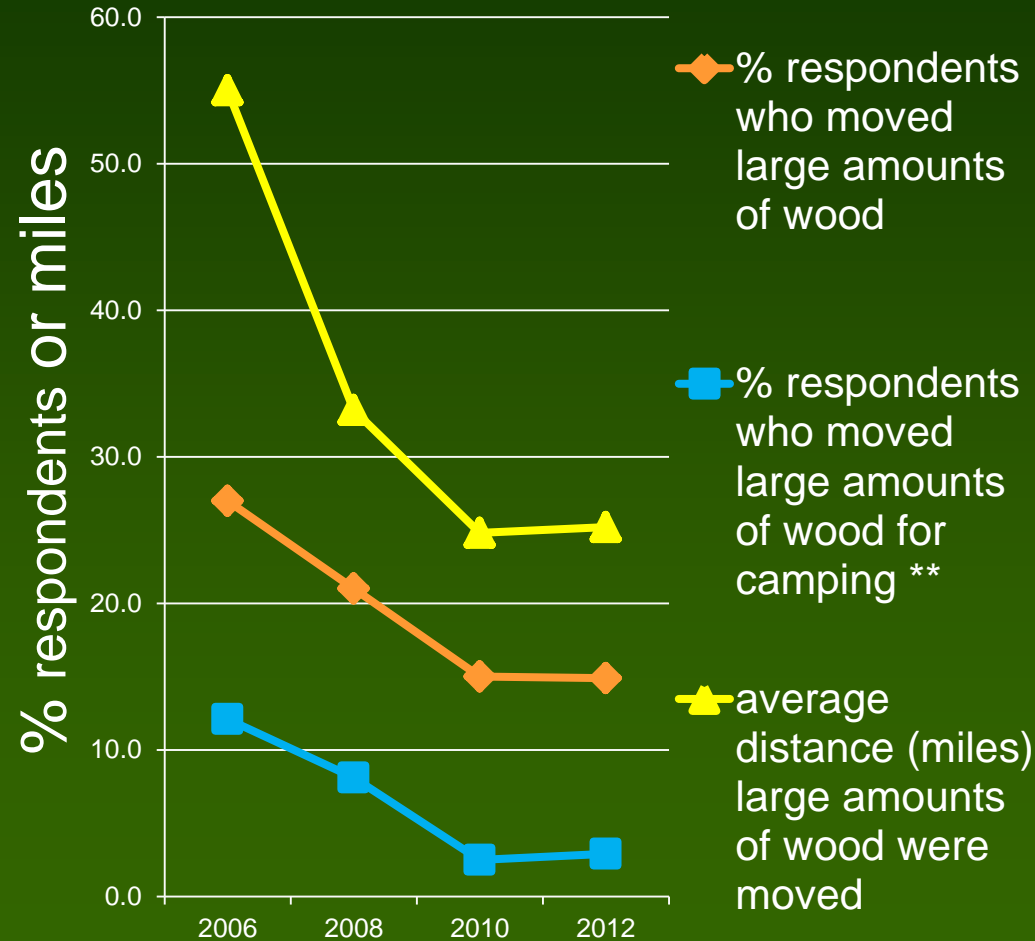
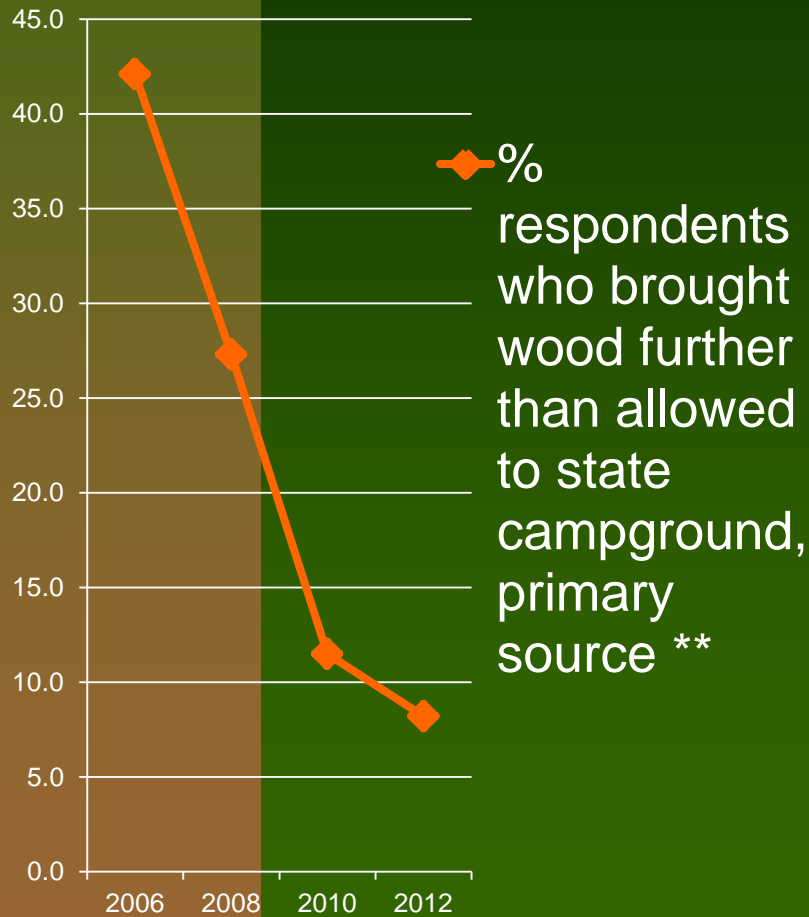
- v Repeated surveys  
2006, 2008, 2010, 2012
- v ~800 campers  
surveyed each time
- v >62% reply rate



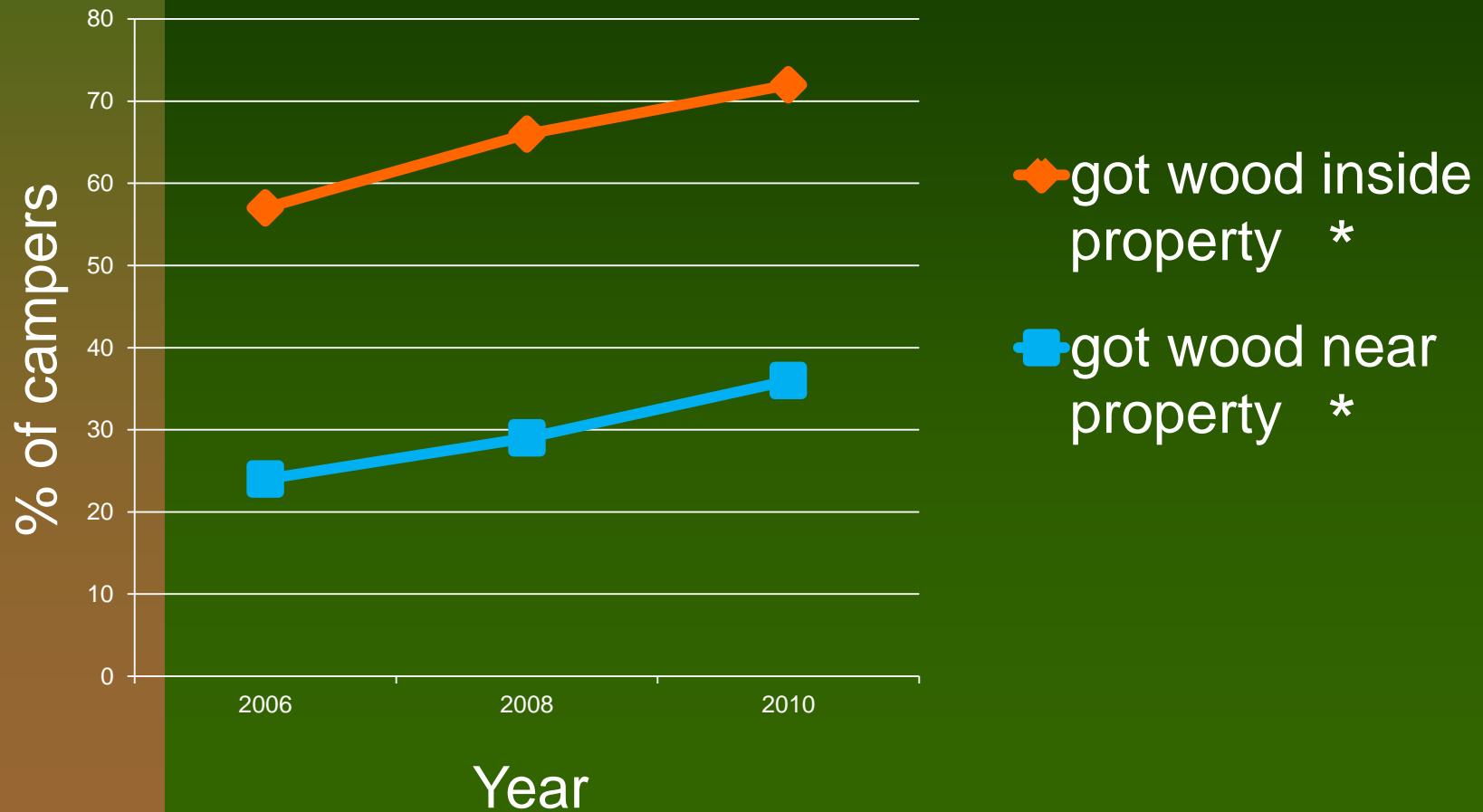
Dr. Kim Peterson



# Results: change in moving wood

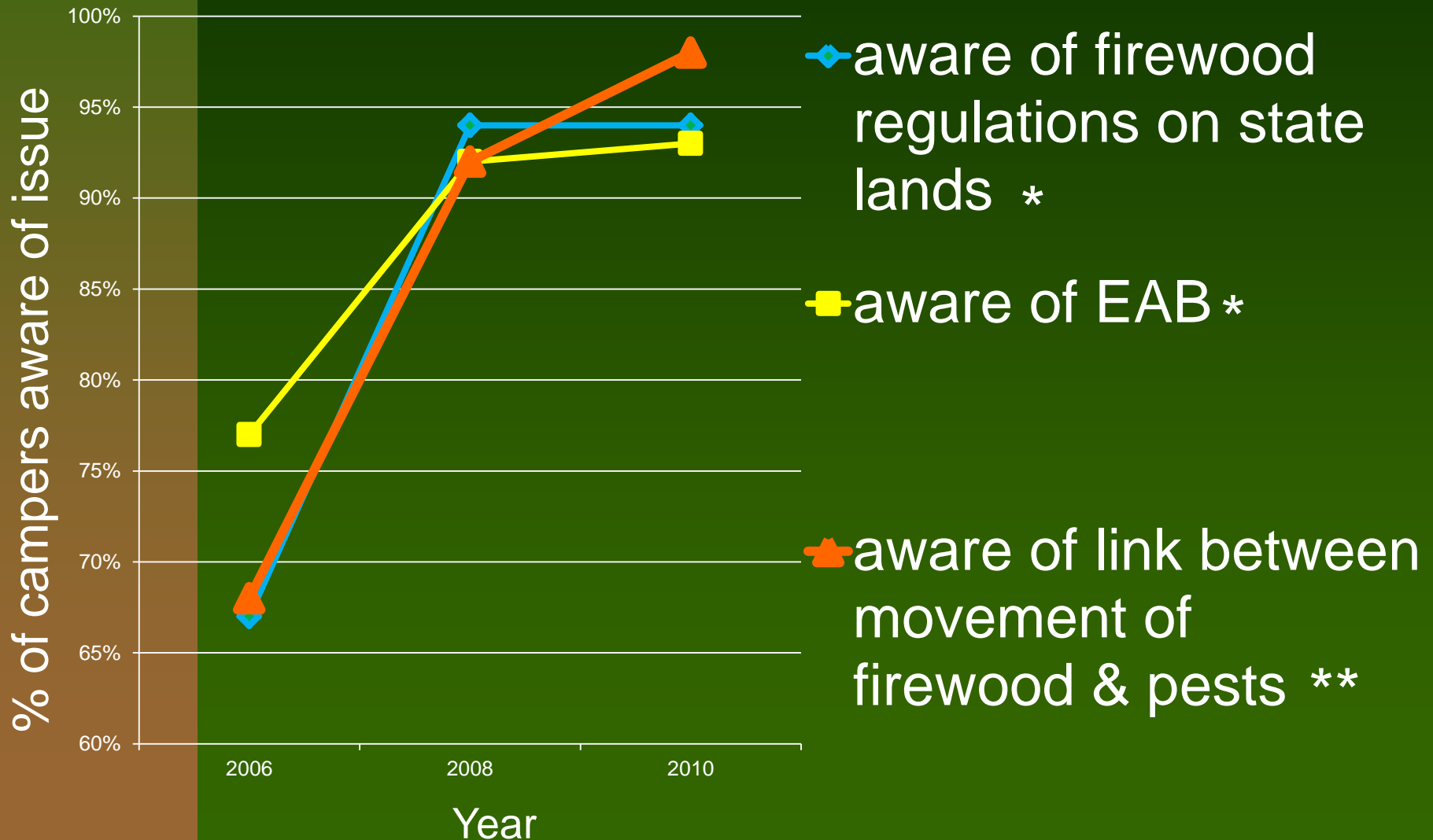


# Results: campers are getting wood close to where they camp



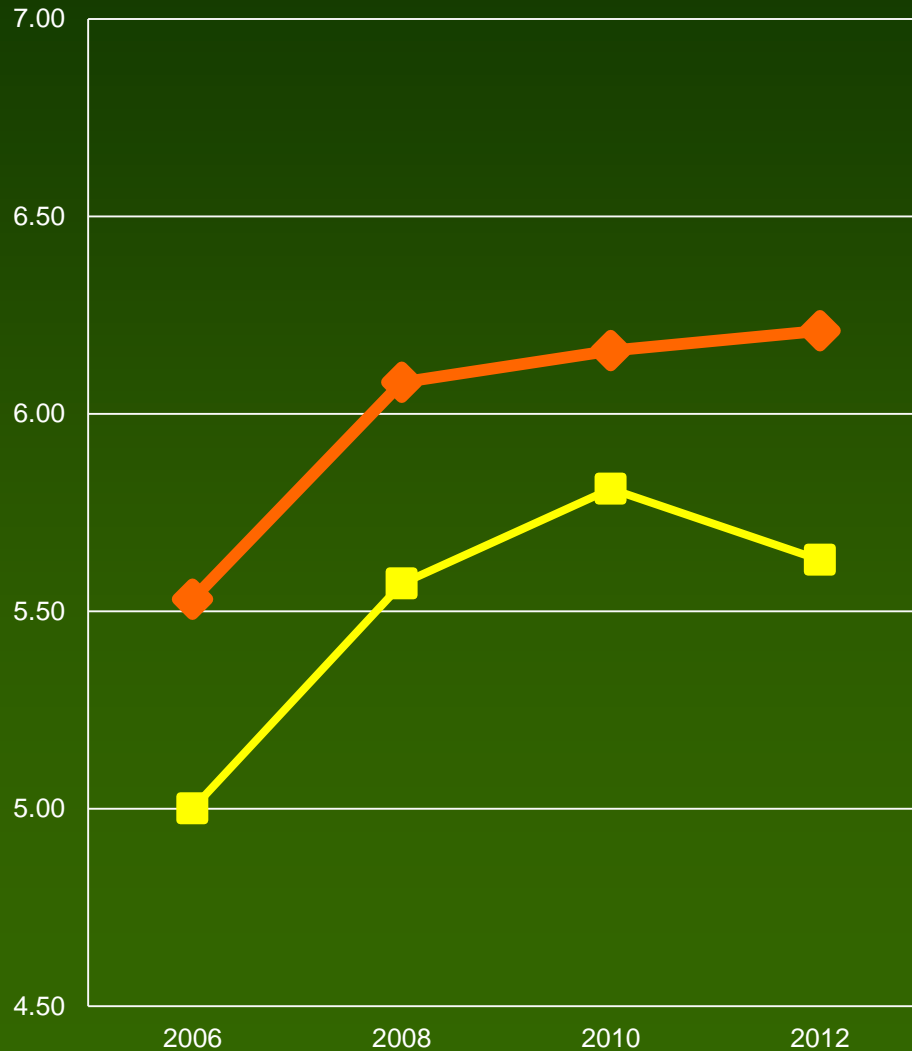


# Results: increase in awareness



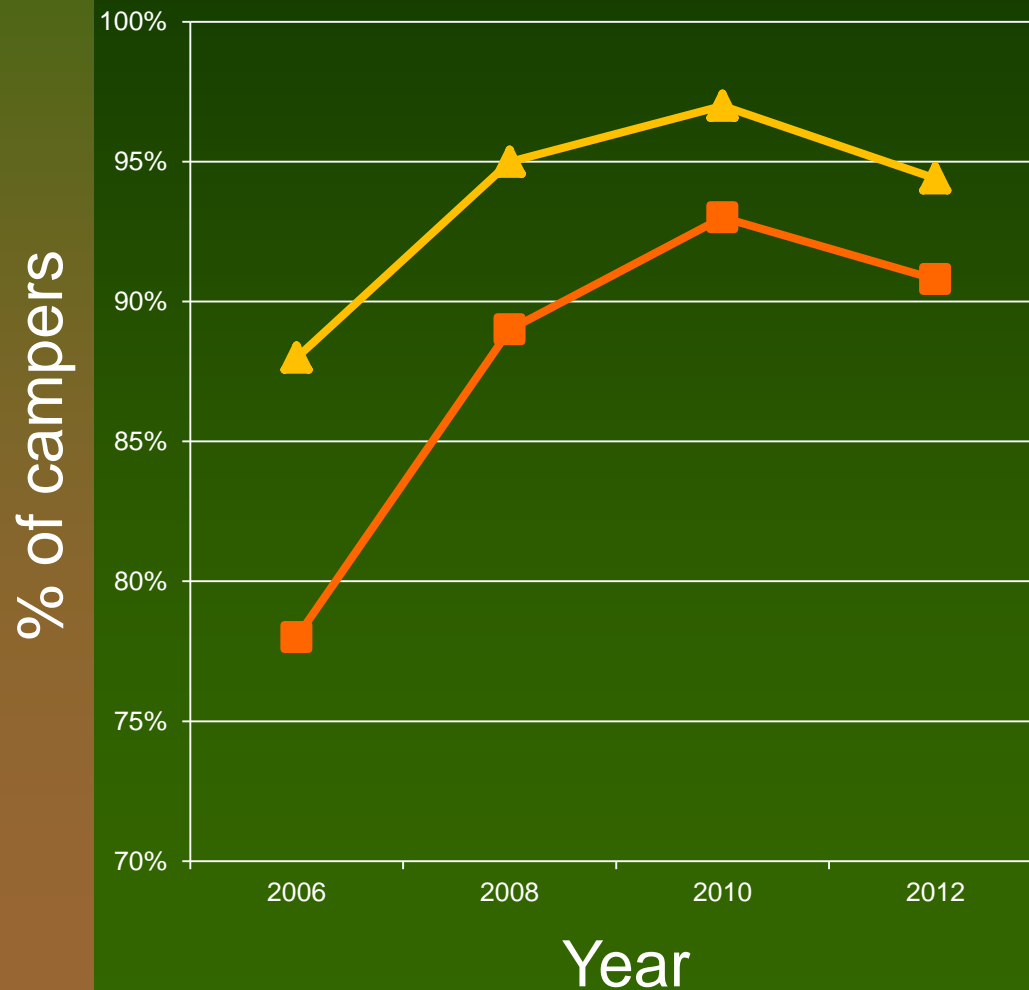
# Results: improvement in perception

Mean perception of importance or threat by campers : 7 is highest



- ◆ mean perceived importance of stopping firewood movement \*\*
- mean perceived threat of invasive pests & diseases \*\*

# Results: most people think it's important



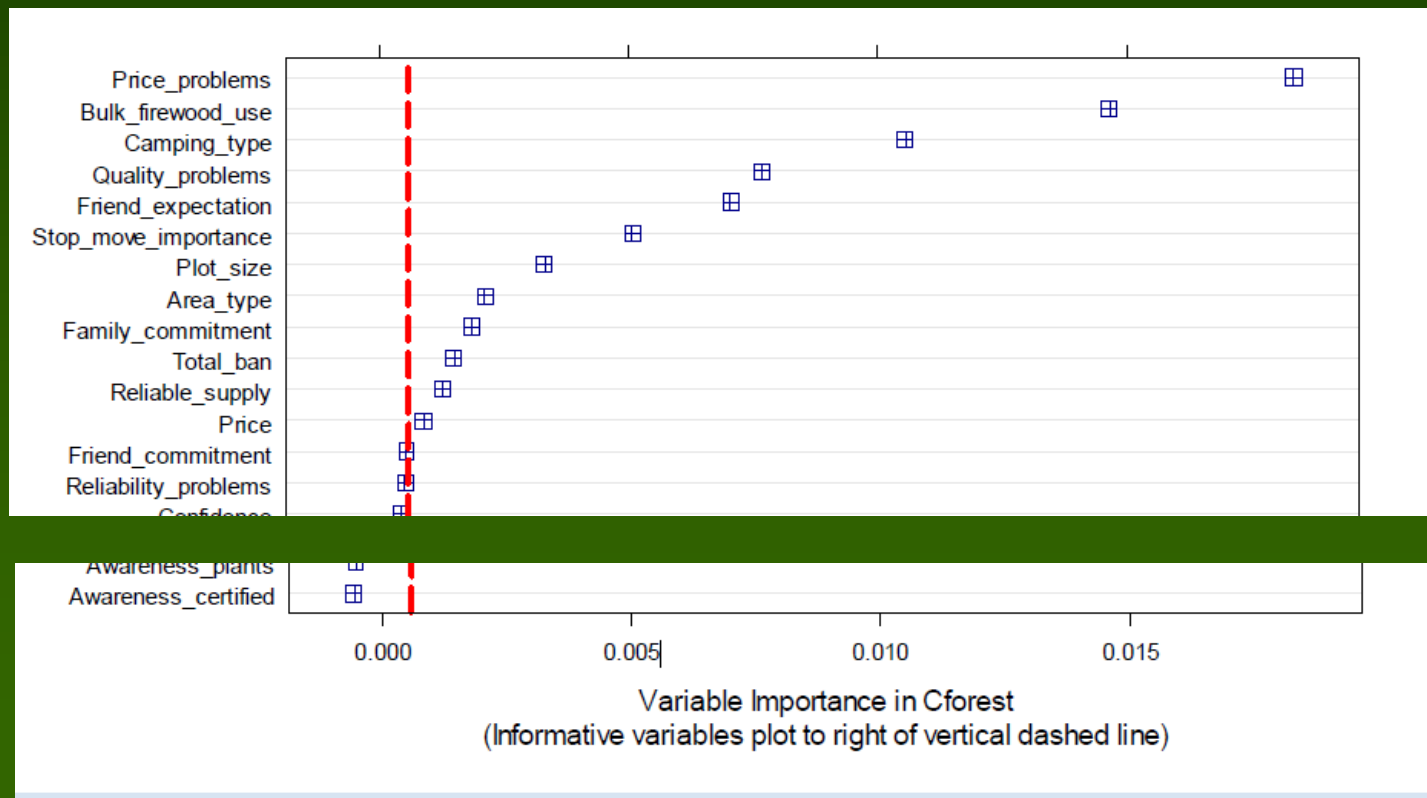
■ is it important to stop long distance movement of firewood?

▲ invasive forests pests & diseases are at least a moderate threat



# Analysis of factors important in the decision to comply

- 2012 data, analysis with recursive partitioning.



# Most important variables in decision to move firewood,

1. Opinion that prices at or near campground are too high.
2. Whether you have a lot of wood at home: bulk firewood use.
3. What type of camping you do: tent, travel trailer, motor home/RV, cabin



## next most important,

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4. Opinion that quality of firewood is low at or near the campground.
5. How strongly you think your friends want you to not move firewood.
6. How important you think it is to not move firewood.
7. How large your home property is:  
<1 acre, 1-10 acres, >10 acres



# somewhat important variables.

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8. Whether your home is in an urban-suburban, rural non-farming or rural farming area.
9. How strongly you think your family is committed to not moving firewood.
10. Do you think no firewood should be let into state properties?
11. Reliability of supply of firewood at state campgrounds.
12. The price of firewood.

# Group variables to clarify what action to take: firewood factors

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- Opinion that price is high #1
- Opinion that quality is low #4
- Reliability of supply # 11
- Price #12

- Ensure reliability of supply and let public know before they leave home.
- Marketing campaign may change minds
- Visible indications of quality, value
- Many aspects to quality

# Temptation of “free” firewood

- Bulk firewood at home #2
- Size of home properties # 7
- Urban/Rural home #8
- Type of camping #3



- ❑ Wood at home is a temptation
- ❑ Ease of transporting wood matters: people with mobile homes or trailers are more likely to bring wood and want to pay less than are those using tents.

# Social motivations

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- Friends expectations of you #5
  - How committed you think your family is to not moving wood #9
- Knowing the strength of social motivations and who they are linked to can help craft messages to encourage the behavior you want.



# Personal (normative) motivation



- How important you think it is to not move firewood #6
- Whether you support a ban on firewood #10

- Most campers have stopped moving wood! Emphasize normality of the desired behavior.



# Example of state lands: effect on private campgrounds

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- About half of WI campground owners participated in the survey (519).
- 66% regulate firewood that enters.
- 90% think stopping long distance movement of firewood is important.
- survey was also an outreach vehicle, owners could request educational materials for distribution at their campgrounds: 38,859 pieces were sent.

# Regulation coupled with education at state parks is a powerful tool

One we need to use given the variety of pests in firewood

