Public response to fire management across countries: More similarities than differences

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Fire is a Biophysical Process

Fire Management is a Social Process

Social Dynamics Determine

- What we value
- The decisions we make
- The actions we take, or don't take

Melbourne, April 12,2016

Fire Adapted Communities

National Cohesive Strategy requires federal agencies to collaborate with all stakeholders on:

- Restoring Resilient Landscapes
- Fire Adapted Communities
- Wildfire Response

Fire Adapted Community

- “Community leaders and residents have knowledge and skills and have adopted the tools and behaviours to prepare in advance for community's resilience in a wildfire prone environment.”
- Or as one homeowner defined it: *“Where communities have taken the needed action so that fire is just another weather event.”*

Fire Adapted Community

- Incorporates
  - People
  - Buildings
  - Businesses
  - Infrastructure
  - Cultural resources
  - Natural areas
- Activities Include
  - Coordination and collaboration across land tenure and organizations
  - Ignition resistant structures
  - Creation of fuel buffers
  - Evacuation routes
  - Internal neighbourhood safety zones
  - Maintenance
  - Codes and Ordinances

So what do we know about the social dynamics that encourage these actions?

2010 Synthesis of Fire Social Science Research

(articles published 2000-2010)

- **Limited and sporadic fire social science prior to 1998**
- **Since 1998 -- substantial research base developed**
- **Majority of research focus on pre-fire social dynamics *(defensible space, fuel treatments)***
- **90% of papers on research conducted in USA**

2015 Synthesis

Articles published 2011-2014

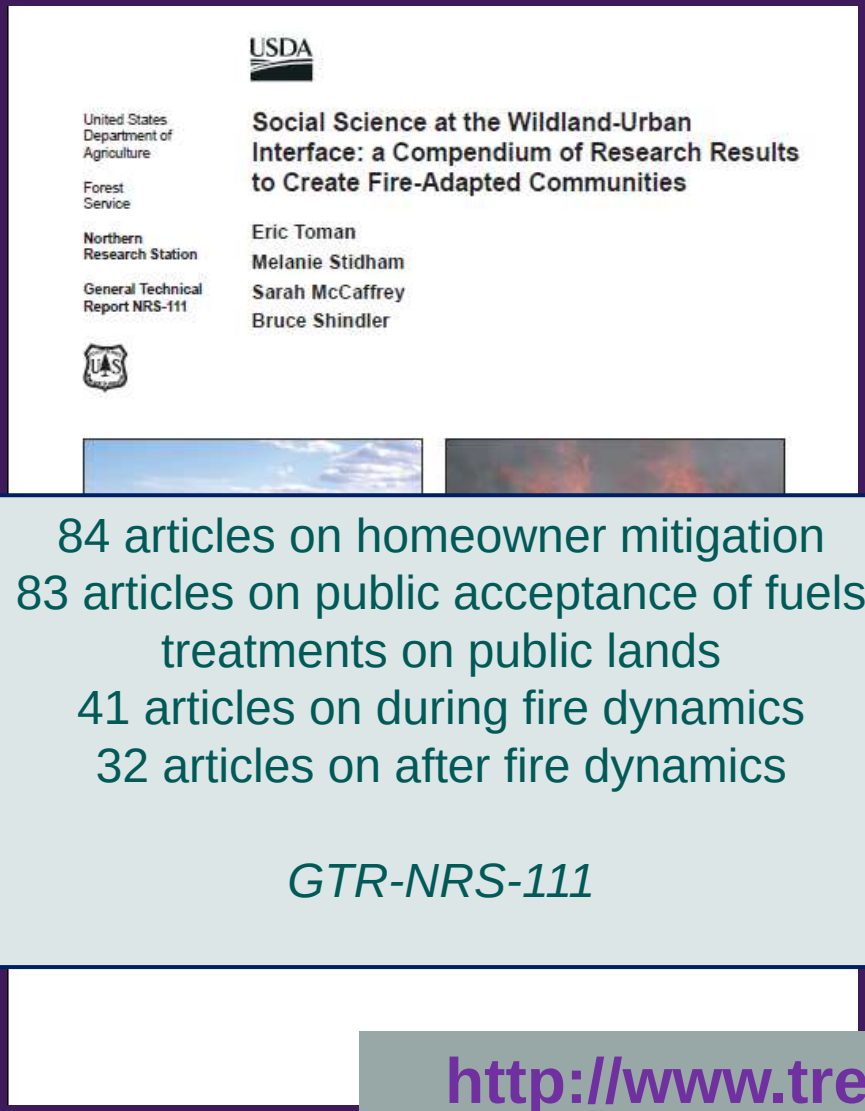
(McCaffrey 2015)

- Over 120 peer reviewed journal articles
- ½ of articles based on research conducted outside US *(primarily Australia)*
- Roughly ½ focus on social concerns during and after fire
  - *US studies continue to primarily focus on pre fire mitigation*

2015 Synthesis

- Re-enforce 2010 synthesis findings
- *Clear commonalities in key dynamics*
  - Same dynamics relevant across temporal gradient: before, during, and after a fire
  - Similar findings across countries on key dynamics influencing public response
  - *Differences appear to reflect different institutional structures/policies*

Key Findings from 2010 Syntheses



84 articles on homeowner mitigation
83 articles on public acceptance of fuels treatments on public lands
41 articles on during fire dynamics
32 articles on after fire dynamics

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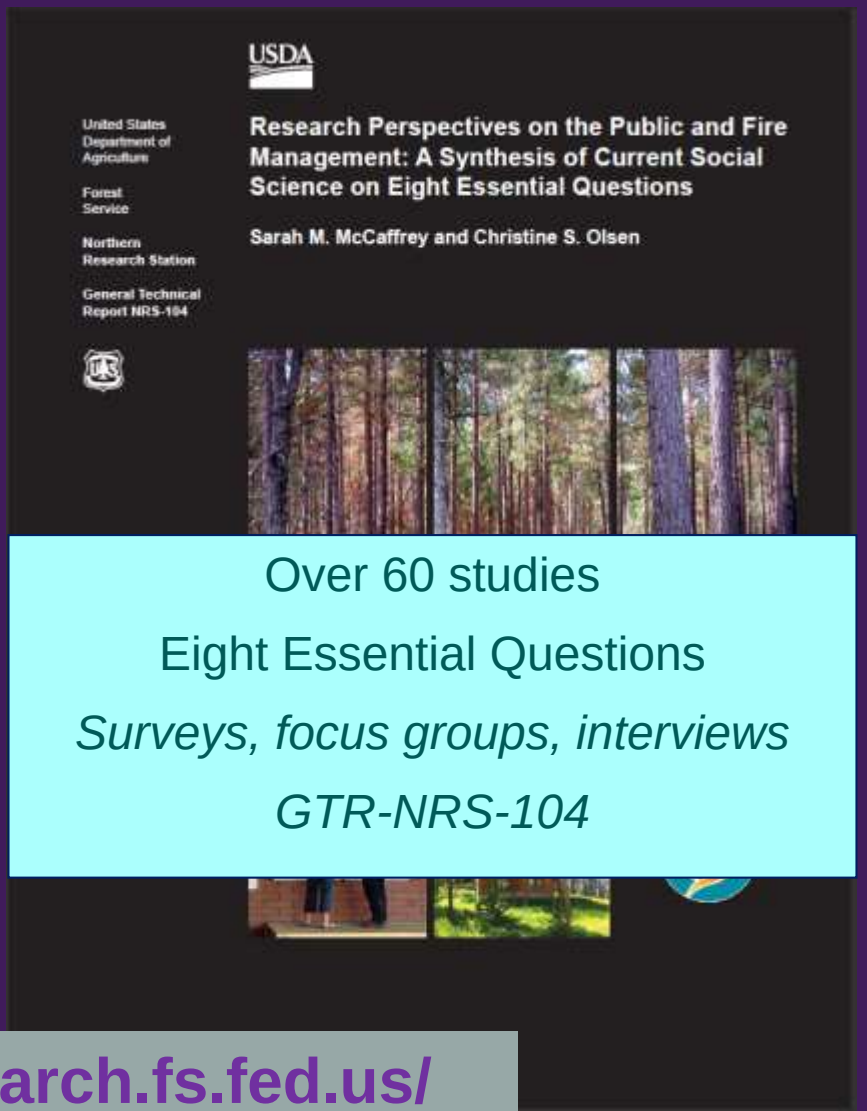

Over 60 studies

Eight Essential Questions

Surveys, focus groups, interviews

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Beware the 'imagined public'

Overall findings do not support many of the Conventional Wisdoms or Narratives about public response to fire management

- Sampling bias
- Confirmation bias

False Narrative #1 –
Individuals don't understand the fire risk

Reality – Vast majority of people know they live in high fire risk areas

But…..

- Risk is a complex and subjective concept
- Risk = Probability x consequences
  - Factors to consider – timeframe, spatial extent, type of damage

Risk Perception

Higher risk perception does not necessarily lead to action. It is a necessary but not sufficient condition

- Individuals will respond to the same risk differently
- Actual decision to mitigate/support a practice will depend on other factors such as:
  - Risk attitude (tolerance/aversion)
  - Trade-offs with benefits (nature, privacy, etc.)
  - Individual capacity

Support for use of prescribed burning to reduce fire risk (Altangerel and Kull 2013)

- Key influence - Voluntariness of risk exposure
- Less burning
  - choice to live in fire prone area = voluntary exposure,
  - exposure of plants and animals = involuntary
- More burning
  - those living in fire prone areas involuntarily exposed to bushfire risk
  - Dependent on gov conducted prescribed burns to reduce risk

False Narrative #2

"Smokey has taught the public to think all fire is bad"

Reality

- Consistent evidence public has a good (often quite sophisticated) understanding of fire ecology, including beneficial role of fire.

False Narrative #2

"Smokey has taught the public to think all fire is bad"

Reality

80% see prescribed fire and thinning as appropriate management tools

- Roughly 30% give strong approval and another 50% give qualified approval

False Narrative #3 –
People don't take responsibility

Reality - Strong sense of ***shared responsibility***

- **Property owners recognize their responsibilities** – expect to reduce risk on own property
  - Generally at least 2/3 have undertaken some type of mitigation
  - Recognize that risk is shared – concerned about actions on adjacent properties – particularly public lands

- **Expectations of government agencies** (local, fed, etc.)
  - Take care of their own land
  - Education: Help understanding risk (fire behavior) and specifics on how to mitigate
  - Maybe help with some larger scale obstacles (e.g. disposing of materials)

False Demographic *Narratives*
No consistent evidence that:

- *New residents* are less aware and/or active in relation to fire mitigation
  - Confirmation Bias - People who own their property for a long time likely have formed their notion of fire risk a long time ago and be less responsive to new information.
  - 60% of moves are within county

False Demographic *Narratives*
No consistent evidence that:

- *New residents* are less aware and/or active in relation to fire mitigation
- *Part-time residents* are less likely to understand fire risk than full-time residents *(main issue appears to be time)*
- *Experience* with fire will have a consistent effect
- *Basic demographic* characteristics (gender, income, education, etc.) have a meaningful effect.
- There are meaningful regional differences in U.S.

LOCAL CONTEXT MATTERS!

Three Influential Dynamics: *Knowledge*

- Greater knowledge of a practice associated with higher acceptance/action
  - **Ecological benefits particularly important**
  - **Concern about negative outcomes (smoke, escape) can influence…..but decrease with increased knowledge of practice**
    - Perceived benefits appear more influential than perceived negative consequences in approval

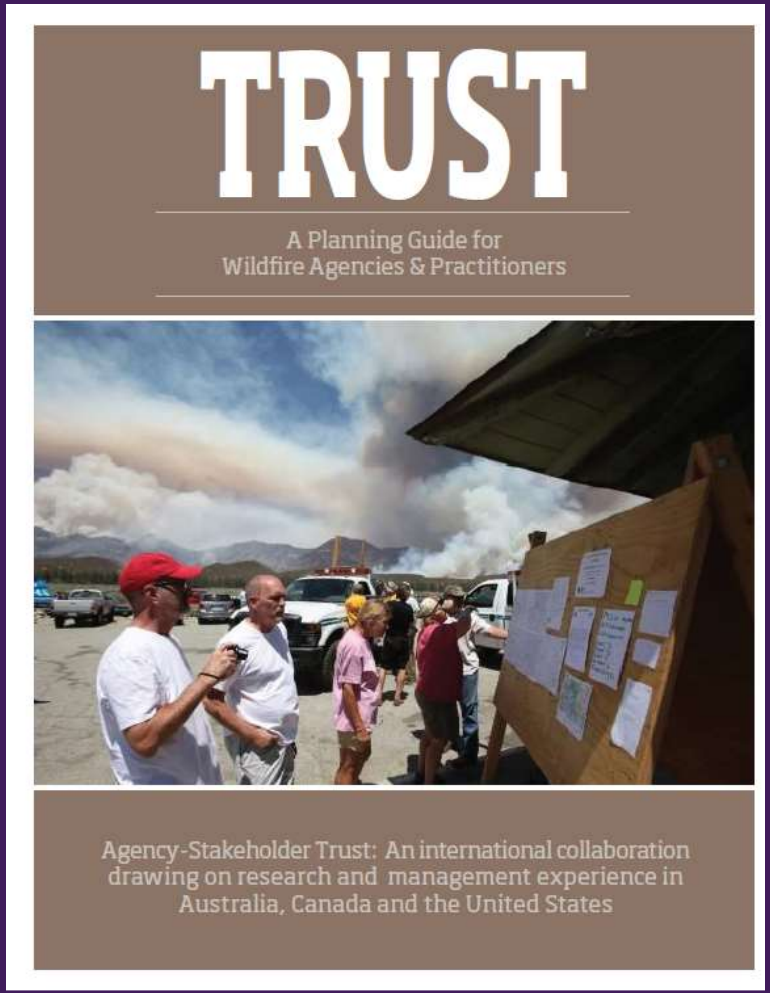
Three Influential Dynamics: *Trust*

Trust in treatment implementer or information provider predicts acceptance

- **Treatments generally acceptable ……. provided they are done by knowledgeable people, preferably locals familiar with the area**

- **In essence….**

people are willing to <u>respect</u> expertise but in return they want their point of view and <u>desire to be informed</u> to be respected.

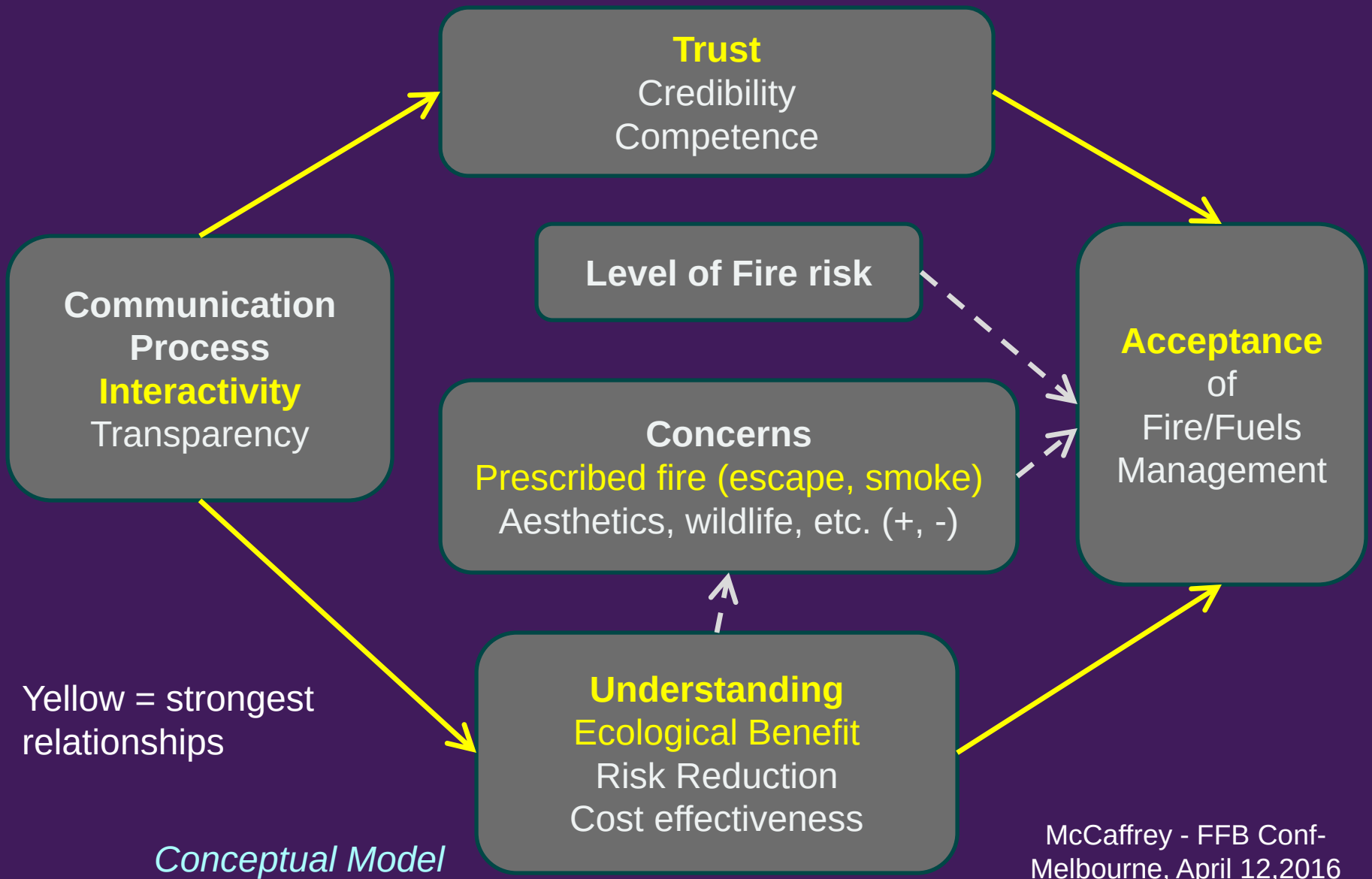


Three Influential Dynamics: *Interactive Communication*

- Most effective means of fostering changes in behavior or norms
- Important for complex topics – allows for questions, clarification
- Builds Trust
  - *Transparency is a heuristic for trust*

Fire/Fuels Management Public Acceptance Model

(Thinning, Prescribed Fire, WFU)



Yellow = strongest relationships

Conceptual Model
McCaffrey -Feb 2012

McCaffrey - FFB Conf-
Melbourne, April 12,2016

2015 Synthesis

Growing body of work

- Experiencing and Recovering from a Wildfire *(primarily Australia)*

- Outreach programs
  - Can help:
    - Build community capacity
    - Strengthen social networks
    - Increase information sharing and mitigation activities
  - *Programs that connect fire agency staff and community members especially helpful*

2015 Synthesis Additional Findings

Social interactions/ networks are key

- Facilitate learning and build community capacity
- One study demonstrates process:
  - program helped build social networks that led to development of shared goals and sense of community
  - this process in turn created sense of shared responsibility and motivation to prepare
  - authors concluded “that facilitating social network development was the most efficient way for agencies to encourage preparedness.” (Fairbrother et al. 2013)
- Networks/interactions can be focused or diffuse

2015 Synthesis Additional Findings

Local context (culture, history, ecology, etc.) matters

- Place attachment is important
- Whether or not local context and knowledge are taken into account can influence:
  - Views of fire management
  - Agency-community interactions
  - How people interpret and act on information
    - Seen as more trustworthy and relevant

2015 Synthesis Additional Findings

Local context (culture, history, ecology, etc.) matters

- Outreach Programs that take local context into account are more successful. More likely to:
  - foster preparedness,
  - engage part-time residents,
  - address specific local barriers.

Questions to explore

- Research to test narratives in Australia. Limited work specific to pre-fire beliefs:
  - Public understanding of fire ecology
  - Acceptance of fuel treatments
  - Whether demographic conventional wisdoms hold up better in Australia (tree changers) *(Eriksen)*

Observed differences- US/Australia

- Preparedness focus
  - US: Pre-Fire Mitigation (house survival/resilience)
  - Australia: Planned Property Owner Response (house and human survival)
  - Multiple types of preparedness (evacuation, home defense, home resilience, planning)
    - Influential variables may vary for each type *(McNeill et al. 2013)*
    - What does preparedness mean? Different interpretations *(Eriksen and Prior 2013)*

Observed differences- US/Australia

- Different policies/ institutional structures
  - Mass evacuation vs PAS
  - Federal vs. State focus
  - Paid vs. Volunteer
- Emergency Responder vs. Land Management
- Prescribed Burning – Biodiversity vs. Fire Regimes

Resilient Landscapes will require Resilient Communities

- Continually assess notion of 'imagined public' with empirical reality
  - Don't assume everyone is talking about the same thing (risk, preparedness)
- Communication is key to facilitating change – constant, transparent, and interactive
- Social networks and taking local context/place attachment into account is important
- Risk interdependence =>
  - *Shared (not shifting) responsibility and partnerships*

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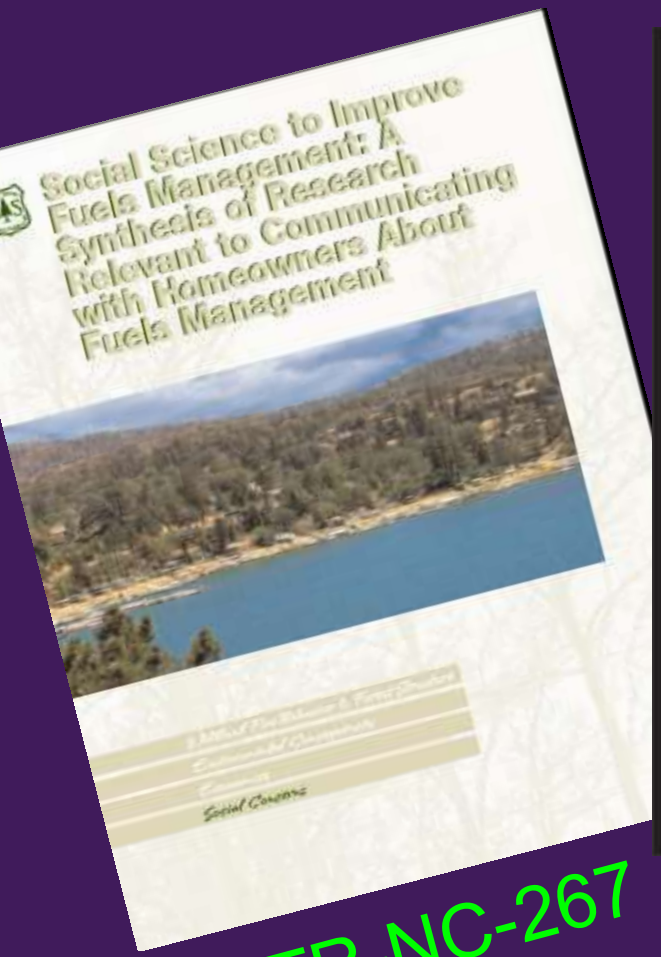

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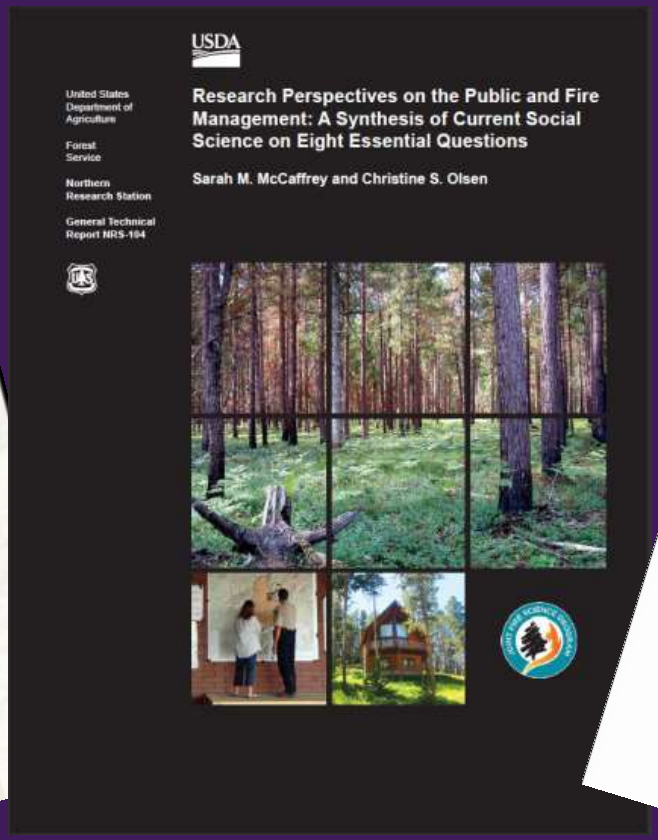

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