

Social learning and the role of science in Community Wildfire Protection Planning



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Presentation Overview

- Brief Wildfire Policy Intro
 - HFRA
 - CWPPs
- Research Project
 - JFSP
- Collaborative Planning
- Social learning concept
- Research Questions
- Methods
- Findings
- Conclusions



Source: R. Brummel

Research Context: HFRA and CWPPs



- 2003 Healthy Forest Restoration Act (HFRA)
 - Community Wildfire Protection Plans (CWPPs)
 - Collaborative process for “at-risk” communities
 - Fire Department
 - State Forestry Department
 - Local Government



- 15 case studies nationwide
 - Collaborative context, process, and outcomes



COMMUNITY WILDFIRE PROTECTION PLANS

Enhancing Collaboration & Building Community Capacity

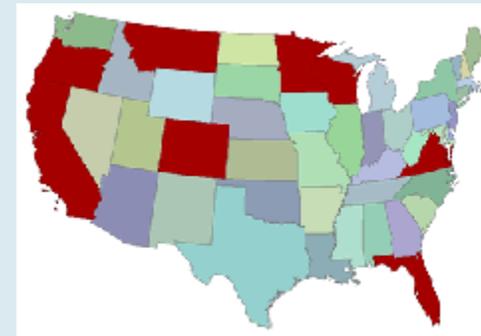
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- Ø Dan Williams, *USFS Rocky Mountain Research Station*



Partner Institutions and Investigators:

- Ø Kristen C. Nelson, *University of Minnesota*
- Ø Vicky Sturtevant, *Southern Oregon University*
- Ø Tony Cheng, *Colorado State University*
- Ø Sam Burns, *Fort Lewis College*



- Ø What's the outcome of federally-mandated collaboration?
- Ø How do context and process influence collaborative outcomes in wildfire planning?
- Ø How does the CWPP process impact social capacity?

Community Wildfire Protection Plans



Fuel Reduction

Required Partners

- Local Fire Dept
- State Forestry Dept
- Local Government



Restoration of Fire-Adapted Ecosystems



Private Property
Responsibility for Fuels



Fire Suppression

Collaborative Environmental Planning

Why plan collaboratively?

- Innovative solutions in complex contexts
- Create durable decisions
- Deal with uncertainty

Collaboration Quote



Source: S. Grayzeck and V. Sturtevant

Collaborative Planning: Challenges



- Addressing diverse interests
- Considering and evaluating relevant science
- Navigating multiple agency directives
- Coming to a shared understanding of the problem at hand

How can groups overcome these challenges?

One Option: Social Learning?

What is Social Learning?

“...learning that occurs when people engage one another, **sharing diverse perspectives** and experiences to develop a **common framework** of understanding and **basis for joint action**”
(Schusler et al. 2003).

Social learning as Process

Shared Understanding/Knowledge as Outcome

Action follows Collective Understanding





Shared Understanding

Basis for collaborative creation of CWPP,
Informs future management action

Social Learning

Navigating information sources,
differing perspectives,
wildfire management objectives.
Evaluating problems, causes, and effects.

CWPP Participants

Perspectives on and experiences with wildfire,
Information sources concerning wildfire
Representation of their agency

Collaboration, Science, & Social Learning

- CWPP partners come with different perspectives on wildfire and experience with fire ecology and technology

Science can...

- Be a common rallying point (Nerbonne and Nelson 2004)
- Help groups evaluate alternatives (McCool & Guthrie 2001)

And science can...

- Marginalize or exclude non-scientists (Fischer 2003)
- Act as a shield, become a political tool (Ozawa 1999)

Research Questions

How do shared understandings contribute to action and outcome?

Action/Outcome?

Shared Understanding

Is there a change in shared understanding as a result of the CWPP?

What shared understandings do CWPP groups come to?

Social Learning

What role does science play in the social learning process?

CWPP Participants

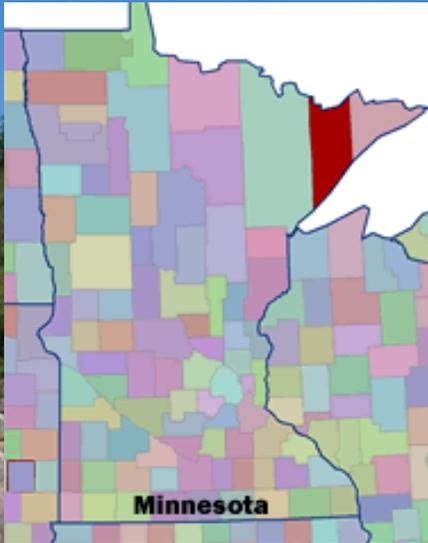
Methods



- **Multiple Case Study Design**
 - Minnesota, Wisconsin, Virginia, and Florida
- **Sampling**
 - Based on meeting attendance and agency/organization representation
 - Avg. \approx 85% of primary participants
- **Data Collection**
 - Semi-structured interviews (N = 57)

Lake County, MN

County-wide CWPP



- 1.34 million acres
- Fire History
- USFS, Superior
- MN DNR
- Lake County Government
 - County Commissioners
 - Sherriff/EM
 - Land Commissioner
- Volunteer Fire Departments
 - 8 VFDs

Photo: S. Grayzeck

Barnes & Drummond, WI

Two-Community CWPP

- 175,000 acres
- Fire History
- USFS, Chequamegon
- WI DNR
- NWRPC
- Bayfield County Forestry
- Drummond Town Board
- Barnes Town Board
- VFDs



High Knob, VA

Sub-division CWPP

- 400+ homes
- **Fire History**
- Virginia, DOF
- High Knob, HOA
- Linden Fire Department
- Community Members



Taylor, FL

Rural Community CWPP

1700 acres

Evacuated for Bugaboo Fires

Florida DOF

Baker County, EM

Taylor VFD

Local Church Pastor

USFS, Osceola



Findings

Is there a change in the group understanding of wildfire as a result of the CWPP process?

Findings: Change in Shared Understanding?



- **Change towards having the same shared understanding (MN, WI, VA)**

“I think everybody had a heightened sense of awareness on an issue that [before]...no one would even give much thought to.”

- Community Member, Virginia

- **Pre-existing common understanding, CWPP reinforced relationships (FL)**

“I think [the shared understanding] was probably already there. Because we’ve had so much experience in the past with it.”

– DOF Wildfire Mitigation Specialist, FL

Findings

What role does science play in CWPP planning and social learning?

- 1. Science Inputs**
- 2. Evaluation & Analysis Tools**

Findings: Science and Social Learning

- **Different types of science inputs across cases**
-

Agency-driven CWPPS (MN, WI, FL):

Science Inputs

Fuel Models

Vegetative Data

Infrastructural Data

Fire History/Occurrence

Public Land Boundaries

Aerial Photos

Role of Science

- Visualizing
- Reconfirming
- Prioritizing

Findings: Science and Social Learning

- Different types of science inputs across cases
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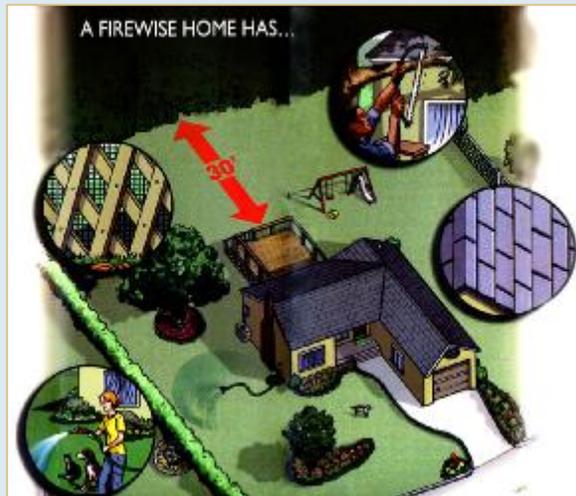
Agency-driven CWPPS (MN, WI, FL):

“When you take the road maps, that kind of put everybody in perspective of where everything is at. Then you put the residences. Then you put the fire history on it. Then you put the fuel types...everybody’s looking at this and...it was a lot easier to make the plan.” – County Forester, Wisconsin

Findings: Science and Social Learning

- Different types of science inputs across cases
-

Community-driven CWPP (VA): Firewise Materials



Role

Discovery

Persuasion

Interpretation

...When you show them a color photo of fully engulfed forest, and then you start talking about things you can do, right on the back - bam! This is the old one-two. I did not have to hard sell this at all to anybody. - Community Member/Road Captain, Virginia

Findings: Science and Social Learning

- **Risk assessments** as important in creating site-specific data
- Helped position planning within the local social and ecological context



“I think what really helped was...doing the assessment. Because then...we had a current history and we actually saw it – after learning how this process worked – now took this tool out to the field and say, well dad-gum! Look at this!”

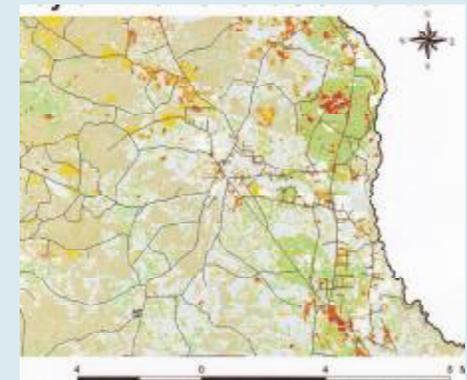
– County Fire Chief/ Emergency Management, Florida

Findings: Science and Social Learning

- **Mapping the landscape** as important in all cases

Role:

- creating a shared conception of the landscape
- visualizing “hazards” and landscape values
- basis for decision-making and future action



“There was a point where the light bulbs turned on, when you showed the final map and everybody looks at it and goes, well yeah...” – Planner/Facilitator, WI

Findings

**What shared understandings do
CWPP groups come to?**

Findings: Shared Understandings

- Two functional types emerge
 - **Substantive:** understandings on *what* to act and *why*
 - Ecological understanding of wildfire causes, consequences, and management
 - **Relational:** understandings of *how* to act
 - Social and institutional systems around wildfire



Findings: Substantive Understandings

- **Wildfire is a problem in the east**

“...it’s not a Western problem or a Southern problem it’s a nationwide [problem].” — DNR Forester, WI

“...We hear California’s on fire, Florida’s on fire. But, because it’s more isolated, we don’t understand the collective magnitude. But I think people are more aware of it.” – HOA Business Manager, VA



Findings: Substantive Understandings

- Understanding specific wildfire risks/hazards



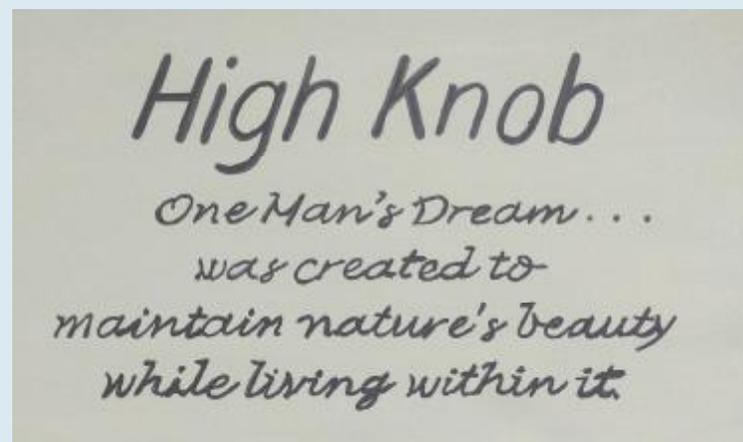
- Hazardous Fuels
- Human Causes
- Railroad Fires
 - Lightening
- Escaped Prescribed Fires

Findings: Substantive Understandings

- **Hazardous fuels create wildfire risk**
-

A social learning example from High Knob:

- Strong values related to “the natural”
 - Codified in community tree ordinance
- Working science with existing values
 - Navigated fuels reduction / “naturalness” tension
 - New safety and forest management values



*From a mural in
High Knob
community building*

Findings: Relational Understandings

- **Roles, limitations, and capabilities of other agencies**



“I think that in Lake County [the planning process] really helped the partners come together and understand what everybody’s role is as a whole. Looking at the big picture... ‘cause everybody was just working on their own before.” - USFS Fuels Planner, MN

“I think there’s a greater understanding now between the DNR and [the Forest Service] in their role. Just general operating and how we’re both limited by different stuff. Different policies, different ways of doing things legally.” — USFS Fuels Technician, WI

Findings: Relational Understandings

- Action should happen collaboratively



Within the CWPP...

“Well, the [understanding was that the] project was needed and cooperation was needed from all the government units in order for it to be a success.” - County Emergency Management Coordinator, WI

And Beyond the CWPP...

“My understanding of that whole process was, we have to work closer – and I already felt we worked close with the DNR – but I think we have to work closer yet now.”

– Volunteer Fire Chief, MN

Findings: Shared Understandings

- Participants brought knowledge back to home organizations

“...I had a much better understanding of [wildfire] after the process. And I tried to bring that back to the fire departments...and give them the information.” - Fire Chief, MN



“...[The Town Board Members] are going to bring that to their decision making process and they're going to be thinking about this when they are developing their comp[rehensive] plan.”

– Planner/Facilitator, WI

Findings

How does social learning contribute to action and outcome in CWPPs?

Findings: Action and Outcome

- Lake County, Minnesota
 - Group identified weakness in VFD coordination
 - Created political will to address the issue
 - Outcome:** Creation of a new fire coordinator position
- High Knob, Virginia
 - Tension between “naturalness” and fuels reduction
 - Community identified hazardous fuels as an issue
 - Outcome:** Community-wide fuel reduction project
- Taylor, Florida
 - CWPP group identified Taylor as at-risk
 - Created political will to collectively act
 - Outcome:** Fuel break put in around the community



Communities of Understanding

- Enhanced social and ecological understanding of wildfire
- Learning beyond the immediate CWPP group



Communities of Understanding

- persists beyond CWPP
- across agencies and scales
- fosters continued collaboration around wildfire and forest management

Conclusions

- CWPPs as a forum for social learning around wildfire
- Type of science varies
 - Scale, planning goals, participants
 - Collaborative mapping, assessments facilitate social learning
- Science is necessary, but not sufficient for social learning
 - Relational activities
 - Local/experiential knowledge
- Communities of understanding
 - At different organizational levels
 - Can bring concrete outcomes



Thanks!

JFSP CWPP Research Team

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Questions?

