Looking into Syntheses:

How can we improve relevance and usefulness for managers?

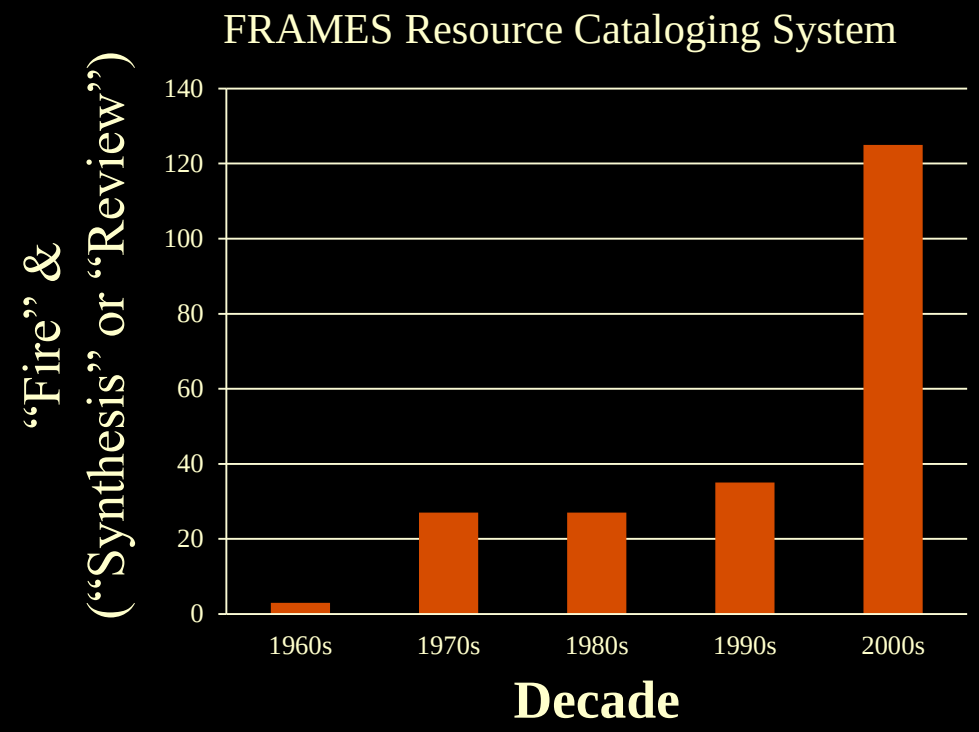
Jane Kapler Smith

Missoula Fire Sciences Laboratory

Syntheses:

Joint Fire Science Program: *~30 publications*

FRAMES Resource Cataloging System: *263*



Methods:

- *Literature*
- *Example syntheses*
- *Informal interviews*

1. *What is a synthesis?*
2. *What makes a synthesis scientifically sound?*
3. *What makes a synthesis useful to managers?*

1. What is a synthesis?

Syn=together + *thesis*=statement

Document that examines a body of information and offers a new understanding of its pattern or lack of pattern

1. *What is a synthesis?*
2. ***What makes a synthesis scientifically sound?***

Based on thorough search for information

Provides balanced, unbiased report

Provides framework for understanding

Tells what is known & not known

Explains level of certainty or uncertainty

Explains meaning, application to management

ISSUES IN ECOLOGY

TECHNICAL REPORT

Ecological Applications, 21(6), 2011, pp. 1902–1924
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A synthesis of current knowledge on forests and carbon storage in the United States

Forest Ecology and Management 260 (2010) 573–586

Contents lists available at ScienceDirect

Forest Ecology and Management

journal homepage: www.elsevier.com/locate/foreco

ELSEVIER

Review

Post-wi

An evid

Donna Pe

BIOLOGY, ECOLOGY, AND MANAGEMENT OF

WESTERN JUNIPER

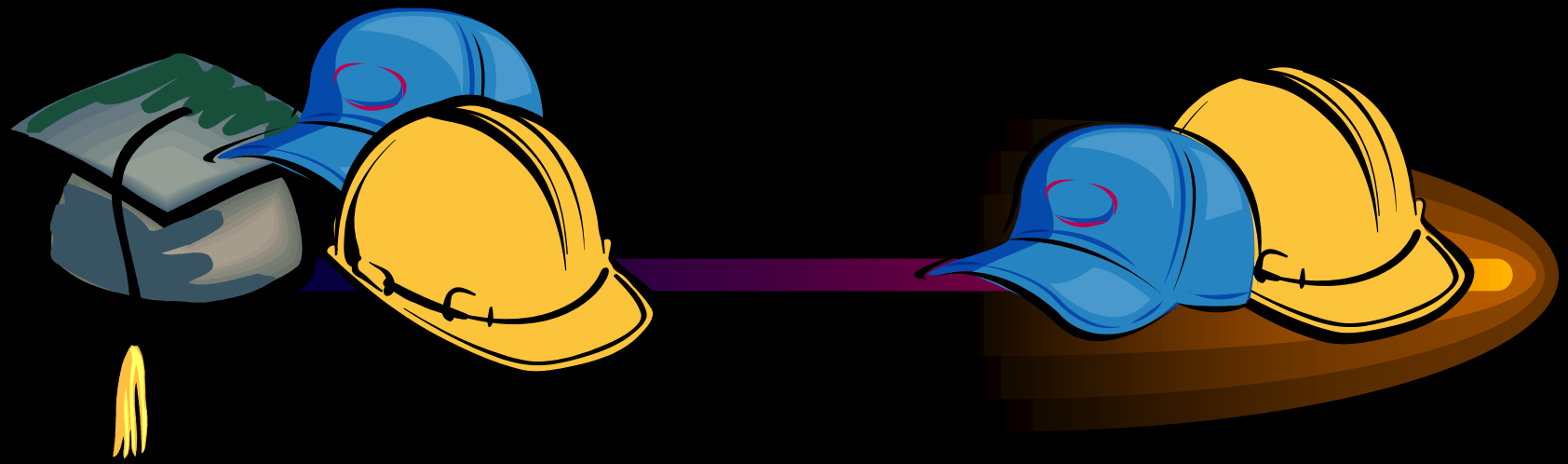
TECHNICAL BULLETIN 152 • JUNE 2005

Oregon State University | Agricultural Experiment Station

Literature revie

Systematic evic

Narrative synthesi



Literature review

Systematic evidence review

Meta-analysis

Narrative synthesis

Guidebook

Briefing paper

Fact sheet

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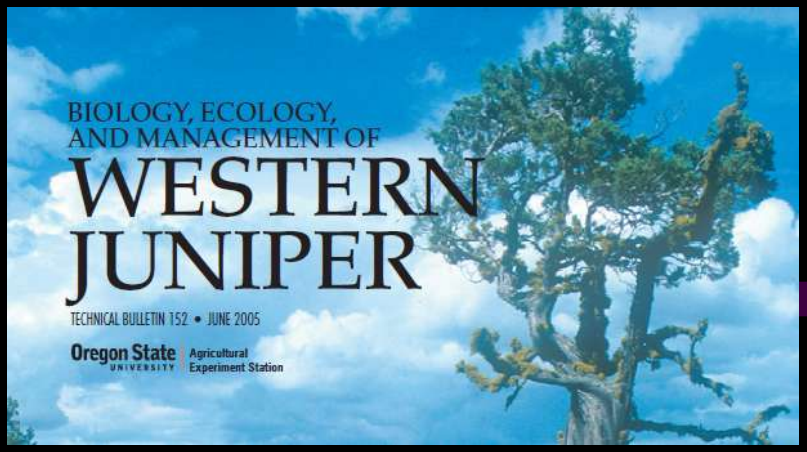
BIOLOGY, ECOLOGY,
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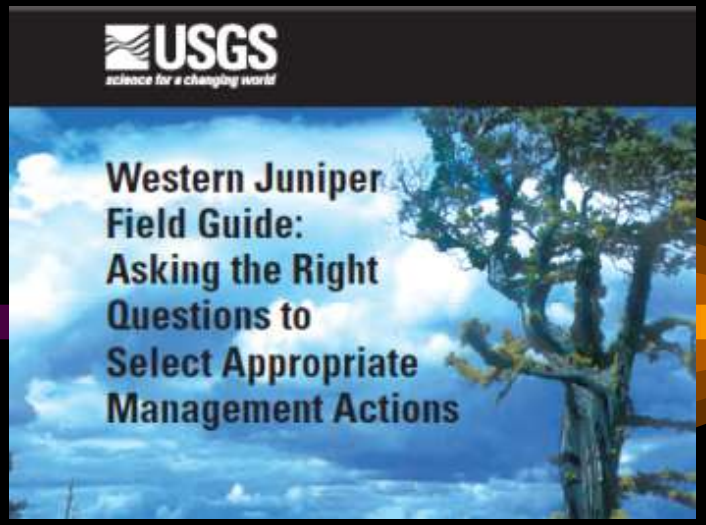
USGS
science for a changing world
Western Juniper
Field Guide:
Asking the Right
Questions to
Select Appropriate
Management Actions


ISSUES IN ECO
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James F. Morrison, Brian C. Murray, Diane E. Pataki, and Kenneth E. Sky
Spring 2010
Report Num
esa


Fire Science
Brief
RESEARCH SUPPORTING SOUND DECISIONS
Lodgepole pine regenerates among standing dead in Yellowstone National Park after the 1988 fires. Credit: Jim Peaco.
Sink or Source? Fire and the Forest Carbon Cycle
Summary
As the size and severity of fires in the western U.S. continue to increase, it has become ever more important to
understand carbon dynamics in response to fire. Many subalpine forests experience stand-replacing wildfires, and these
fires and subsequent recovery can change the amount of carbon released to the atmosphere because subalpine forests

?

What is the question?
Who has the information?
What should the product(s) be?

How can managers use this knowledge?

How can this knowledge be shared?

!

1. *What is a synthesis?*
2. *What makes a synthesis scientifically sound?*
3. ***What makes a synthesis useful to managers?***

Usefulness:

Interpret the research
Give practical applications– up front
Use bullets & lists
Explain the risks, chances of success
Be short, concise

Short & concise ≠ *Quick & cheap*

Whatcom Weeds

Whatcom County Noxious Weed Control Board 322 N. Commercial St. Bellingham WA 98225
(360) 715-7470 www.co.whatcom.wa.us/publicworks/weeds

GIANT REED

Arundo donax

THREAT: Giant reed, one of the largest grasses and native probably to eastern Asia, has been grown in parts of Asia, Europe and Africa for thousands of years. It is currently on the Washington State Noxious Weed Board's Monitor List (non-regulatory). It was introduced to North America in the early 1800s, and has been used as an ornamental and for erosion control. Giant reed is a terrestrial grass that g
water table is high, and tolerates periodical fl
withstand long periods of drought once past t
can tolerate brackish water. It is found along
where established stands have large amounts
vegetation. However, it does not survive in ar
prolonged and regular periods of freezing. In N
giant reed reproduces by rhizomes and by spr
fragments. Rhizome and plant fragments can b
water or in contaminated soil or equipment.

DESCRIPTION: Giant reed is a tall, erect peren
grows from 6 to 30 feet tall. It has thick, knott
allowing it to spread vegetatively. In establishe
reed, the roots and rhizomes can form mats u
covering several acres. The hollow stems can b
The blue-green leaves are flat, growing up to 3
arranged alternately and in a single plane on t
to purplish to brown. Giant reed usually flowe
populations of giant reed produce little, if any,

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Dead-er

Lodgepole pine regenerates among standing dead in Yellowstone National Park after the 198

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PNW

FIRE SCIENCE DIGEST *Research Supporting Sound Decisions*

ISSUE 14 SEPTEMBER 2012

Smoke Science Plan:

The Path Forward

Wildland fire managers face increasingly steep challenges to meet air quality standards while planning prescribed fire and its inevitable smoke emissions. The goals of sound fire management practices, including fuel reduction through prescribed burning, are often challenged by the need [illegible] and risks of controlled burning and their general emissions against potential wildfires and their generated emissions and must communicate those benefits and risks to the public. Moreover, research on and the modeling of smoke emissions from fire is a rapidly evolving field and often lies at the cutting edge of atmospheric sciences. The Joint Fire Science Program (JFSP) has supported research related to smoke management since its inception, but a recent analysis of past research and future needs suggests that better coordination of smoke science research could further advance the field and lead to development of better tools for managers. Smoke management and air quality have been identified as top priority areas of research for the JFSP, which has outlined a detailed path forward. The "Joint Fire Science Program Smoke Science Plan" presents a focused and integrated research agenda that is responsive to the needs of land resource managers and air quality regulators.

Ken Forbus, USFS

Smoke and haze created from an aerial ignition prescribed fire at Eglin Air Force Base, Florida.

Invitation to jump in

Dead-end document

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DESCRIPTION: Giant r... grows from 6 to 30 fee... allowing it to spread ve... reed, the roots and rhi... covering several acres. ... The blue-green leaves ... arranged alternately a... to purplish to brown. ... populations of giant re...

Link

Link

Link

Link

Management Implications

- The most valid means by which to manage forests for carbon sequestration are 1) keeping forests as forests, 2) reforesting areas where forests historically occurred, 3) using forest biomass to offset fossil fuel use, and 4) promoting long-lived forest products such as wood-framed buildings.
- Forests, especially older forests, generally store carbon better than forest products, so harvesting older forests for forest products is not an effective carbon conservation strategy.
- In forests having surface- and mixed-severity fire regimes, managing for maximum carbon storage will lead to an increase in stand density and thus the probability of more severe fires. On the other hand, thinning to reduce fuels and thus the probability of severe fires will reduce the carbon stored in the forest, and it will likely become a carbon source (unless thinnings are used as biomass fuel in place of fossil fuel).
- Focus post-disturbance management on regeneration.

Open-door document

Joint Fire Science Program

Fire Science Brief

RESEARCH SUPPORTING SOUND DECISIONS

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Published by the Ecological Society of America

A Synthesis of the Science on Forests and Carbon for U.S. Forests

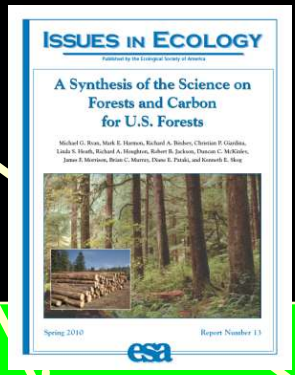
Michael G. Ryan, Mark E. Harmon, Richard A. Birdsey, Christian P. Giardina, Linda S. Heath, Richard A. Houghton, Robert B. Jackson, Duncan C. McKinley, James F. Morrison, Brian C. Murray, Diane E. Pataki, and Kenneth E. Skog

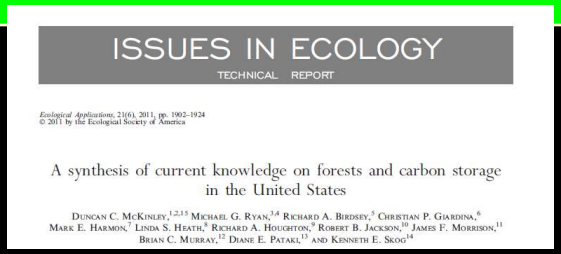
Spring 2010 Report Number 13

3. What makes a synthesis useful to managers?

Five things you should know…

1.
2.
3.…

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A synthesis of current knowledge on forests and carbon storage in the United States

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Eight Questions Answered: Social

Introduction

In 2009, the Joint Fire Science Program (JFSP) was asked by a group representing Partners in Fire Education (PIFE) to assess existing research to help formulate a public education campaign that would focus on fire's natural role in ecosystems, the benefits of fire management to ecosystems, and public health and safety.

Eight specific questions were addressed:

- What is the public's understanding of fire's role in the ecosystem?
- Who are trusted sources of information about fire?
- What are the public's views of fuel reduction methods, and how do those views vary depending on location in the wildland-urban interface (WUI) or elsewhere?
- What is the public understanding of smoke effects on human health, and what shapes public tolerance for smoke?
- What are homeowner views of their responsibilities for home and property protection and mitigation, e.g., defensible space measures?
- What role does human health and safety play in public perceptions of fire and fire management?

Much of the gathered inform
team of researchers has appli
information officers (PIOs) a
in prevention, education and
end of each of the eight sectio
the findings was written. Thi
the key statements from thos
a few sentences from the repo
summary of the summaries, i

Reading this document is des
interest, help you pick up a fe
be of immediate use, and mak
aware of the research synthes
a substitute for reading the la
which will be available in Oc
Research Station General Tec

McCaffrey, S., and C. Olsen. Research Perspectives on the Management: A Synthesis of Science on 8 Essential Questi Rep. NRS-XX. Newtown Squa Department of Agriculture, F Northern Research Station.

USDA

United States Department of Agriculture

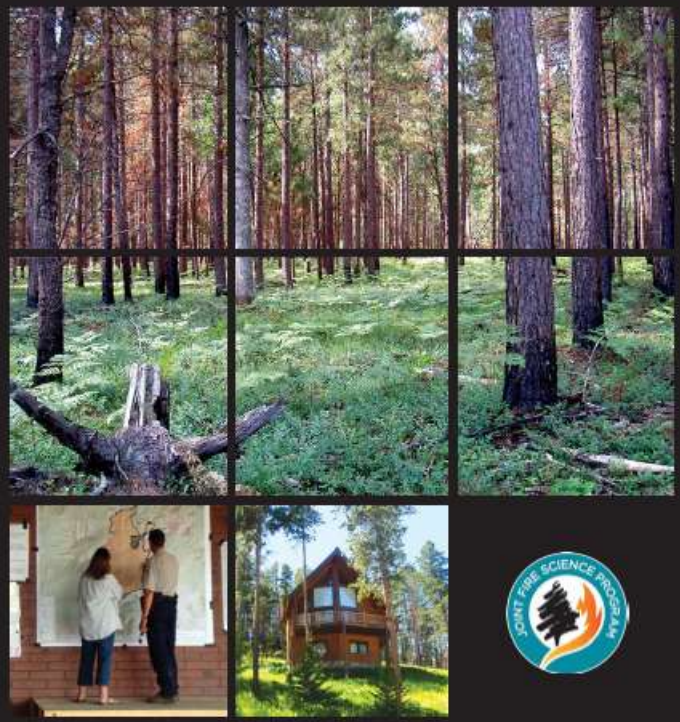
Forest Service

Northern Research Station

General Technical Report NRS-104

Research Perspectives on the Public and Fire Management: A Synthesis of Current Social Science on Eight Essential Questions

Sarah M. McCaffrey and Christine S. Olsen



Eight things you should know…

+ 1.

+ 2.

+ 3……

Eight things you should know…

+ 1.

- 2.

-

+ 3……

Eight Questions Answered: Social Science and Wildfire

Introduction

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- What role does human health and safety play in public perceptions of fire and fire management?

Much of the gathered information by the JFSP team of researchers has application to public information officers (PIOs) and people working in prevention, education and mitigation. At the end of each of the eight sections, a summary of the findings was written. This document contains the key statements from those summaries and a few sentences from the report itself – it's a summary of the summaries, in effect.

Reading this document is designed to catch your interest, help you pick up a few morsels that may be of immediate use, and make you generally aware of the research synthesis. It is not, though, a substitute for reading the larger document, which will be available in October as a Northern Research Station General Technical Report:

McCaffrey, S., and C. Olsen. In press. Research Perspectives on the Public and Fire Management: A Synthesis of Current Social Science on 8 Essential Questions. Gen. Tech. Rep. NRS-XX. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.

Question 1: What is the public's knowledge of fire's role in the ecosystem?

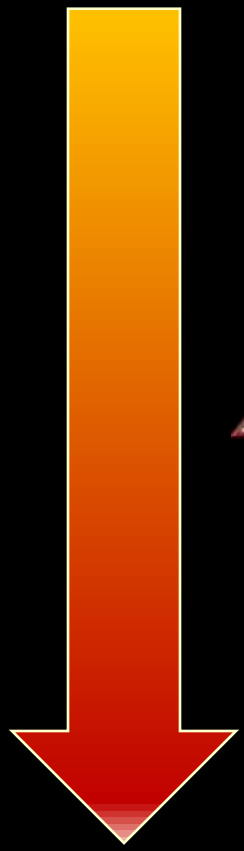
- "Overall, studies provide ample evidence that members of the public recognize fire's ecological role. Indeed, findings demonstrate that, particularly for those in high fire hazard areas, individuals often have a fairly sophisticated understanding of fire's ecological role."
- "Studies also suggest that even modest educational efforts can significantly raise both knowledge and (treatment) support levels."

Question 2: Who are trusted sources of information about fire?

- "… perhaps the most important characteristic in determining if an information source is trusted and useful is if it allows for interactive exchange."
- "Findings show that there is no single best information source; individuals generally access multiple sources of information on fire risk …"
- "… most trustworthy sources were often public agency sources …"
- "Overall, the research highlights that the fire information sources people turn to and find helpful are highly varied."

Looking into Syntheses:

How can we improve relevance and usefulness for managers?



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What is the question?

What are the applications?

!

How can the knowledge be share?

Thank you!


JOINT FIRE SCIENCE PROGRAM


Fire
Modeling
Institute
FireLab