

HOW TO FIND THE ‘BEST AVAILABLE SCIENCE’

SUMMARY

The integration of best available scientific information (BASI) into planning and decision-making processes for land and wildfire management is increasingly sought after by agencies. BASI can inform more effective management, reduce uncertainty, and enable more efficient allocation of resources. However, application of BASI is often limited by inconsistencies surrounding its definition coupled with barriers to access and use of BASI. Communication and collaboration between scientists and managers is critical for improving the integration of BASI in wildfire management.

What is best available science?

One of the most widely accepted definitions of BASI is presented in the US Forest Service’s 2012 Planning Rule :

“[T]he responsible official shall determine what information is the most accurate, reliable, and relevant to the issues being considered. The responsible official shall document how the best available scientific information was used to inform the assessment, the plan decision, and the monitoring program”
(Planning Rule USDA Forest Service, 219.3, 2012).

Who is responsible for accessing the best available science?

Although the use of BASI is often required by policy and agency mandate, the responsibility for determining and integrating appropriate BASI for a given project is the responsibility of land managers.



Photo of a prescribed burn. Conversations with colleagues are important for sharing knowledge, but not always the best available science. Credit: Northern Arizona University Widen Collective

KEY MESSAGES

- Many natural resource management agencies and policies now encourage or require the use of BASI by managers in planning and decision making.
- Inconsistencies exist across agencies and positions regarding the characterization and use of BASI.
- BASI is typically identified as having four characteristics: (1) up-to-date information, (2) high accuracy, (3) high reliability, and (4) high relevancy to the decisions at hand.
- Wildfire professionals can access BASI through a range of sources – including academic, specialized, personal, and organizational.

Research has identified best practices for accessing BASI, including but not limited to engaging in two-way communication between scientists and managers and seeking out resources that present emerging BASI.

How can I find the best available science?

There are four kinds of sources for accessing BASI: academic, specialized, personal, and organizational (see table below). There can be multiple barriers to finding and implementing BASI, including: difficulty keeping up with emerging science, conflict surrounding what constitutes BASI, BASI being hidden behind paywalls, and an absence of relevant BASI for a specific project. To maximize your success at accessing BASI, consider:

- Building and engaging in **communication and working relationships** between managers and scientists to determine relevant research priorities.
- Engage with **JFSP science exchanges** who disseminate regionally relevant information.
- Seek out **resources** that can inform you about emergent BASI (e.g., newsletters highlighting recently published research, webinars and field trips.) Examples include USFS Research Stations, the Nature Conservancy’s Fire Learning Network and regional networks, among others (see the Southwest Fire Science Consortium website for complete listing of resources).
- Seek out or share BASI on open access platforms such as ResearchGate or email the authors of materials you cannot access to request a copy.

TABLE: EXAMPLES OF WHERE TO ACCESS BEST AVAILABLE SCIENCE

Source	Examples
Academic	<ul style="list-style-type: none">• Scholarly search engines (e.g., Google Scholar, science.gov, Refseek, Web of Science)• University library search engines and websites
Specialized	<ul style="list-style-type: none">• Firescience.gov and the Southwest Fire Science Consortium website• US Forest Service Treesearch Database• Fire Effects Information System• Fire Research and Management Exchange System• Wildland Fire Library
Personal	<ul style="list-style-type: none">• Workplace colleagues• Colleagues from partner organizations/agencies/institutions• Communication with JFSP science exchange staff
Organizational	<ul style="list-style-type: none">• Internal folders or databases• Local or regional collaborative groups• Regional fire science consortia or science exchange organizations

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*The **Southwest Fire Science Consortium (SWFSC)** is a regional organization that facilitates knowledge exchange and disseminates wildland fire research and information across agency, administrative, and state boundaries in the Southwest. The SWFSC is one of 15 Fire Science Exchange Networks funded by the Joint Fire Science Program.*



*The **Arizona Wildfire Initiative (AZWI)** at the Northern Arizona University’s School of Forestry supports Arizona’s wildland fire needs by enhancing workforce development and education, communicating science, and increasing resilience to Arizona’s communities. AZWI is funded by the state of Arizona.*

