Co-producing knowledge on fire, fuels, and vegetation succession in Alaskan boreal forests

Jill Johnstone, Professor of Ecology, BNZ LTER
Randi Jandt, Fire Ecologist, AFSC IARC
Academia >>

<< Management
Management agencies driven by issues, often short term perspective

Researchers driven by Big Questions, often long term perspective
Management agencies mostly lack funding mechanisms and staff capacity for studies. But they have lots of practical first-hand experience in their areas of expertise and often are closely connected to the stakeholder public.
Mgmt agencies have internal pressures which may limit research objectivity as well.
Management agencies need guidance and science input for:

- Understanding environmental changes they have observed
- Adopting new technology and new ecological understanding
- Environmental analyses
- Long-term land management planning
- Scenarios and decision-making
- Communicating non-partisan science
Examples of knowledge co-production with LTER science

- Melvin et al.: Effects of fuel treatments
- Spellman & Mulder: Invasive plants
- Johnstone et al.: Successional trajectories
Examples of Challenges to Useful Co-production

- **Spatial fuels layers:**
  - Managers: LandFire (WFDSS)
  - Academics: Other vegetation layers

- **Language disconnects:**
  - English vs. metric units
  - Fire weather indices vs. temp, precip
  - Fuel types vs. vegetation composition
  - Experiential benchmarks vs. variability
Example of science communication from Chris Moore & Robert Ziel
Tools for knowledge co-production

- Attending each other’s meetings
- Involving managers in development
- Working with boundary organizations and boundary individuals
- Joint field site visits (including access to public lands)
- Delivery of information directly to managers
  - No substitute for face-to-face
  - Research briefs
  - Media & press releases
BNZ LTER Initiatives

- Fire effects on
  - Vegetation succession
  - Permafrost & subsurface responses
  - Carbon pools, balance
  - Hydrology
  - Habitat for wildlife, fisheries

- Landscape feedbacks to fire
  - Vegetation effects on fuel and flammability
  - Changing drainage and fuel moisture

- Long-term datasets to extend our understanding
Questions?