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Landscape conditions for adaptive management and adaptation in a rapidly changing landscape

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About Me

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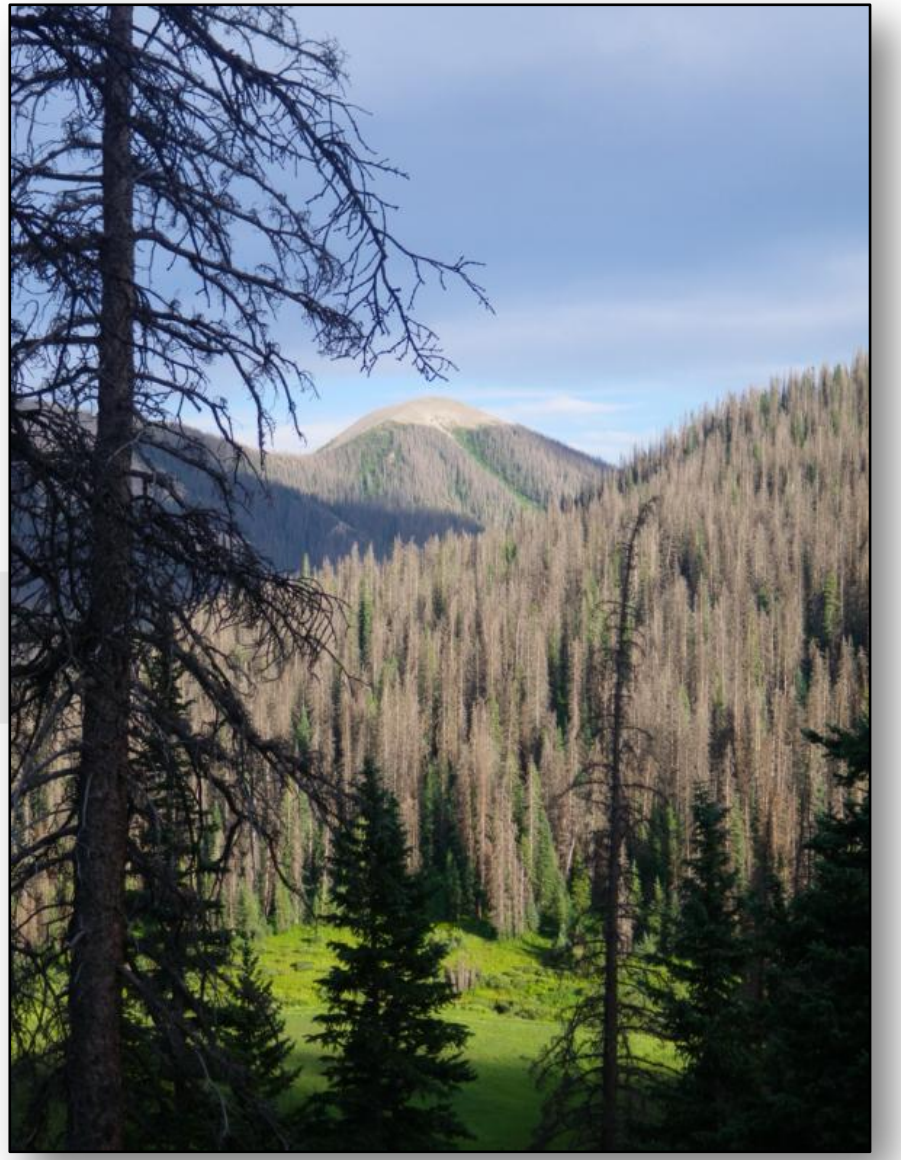
The ~~Idea~~ PROBLEM

- **Landscape conditions for adaptive management and adaptation in a rapidly changing landscape**
- **Scope of Idea: multi-scale**
  - **landscape (core problem)**
  - **regional (extent and application of methods)**
  - **national (application of experience/theory)**

The ~~Idea~~ PROBLEM

- Managing Western landscapes in an era of rapid change requires:
  - Adaptive, All-lands, Collaborative Approach
  - Up to date landscape-scale vegetation conditions
- Challenges:
  - Rapid change
  - Private lands
  - Cost of field sampling
  - Traditional methods are too slow to contribute to decision making
  - Traditional methods are sometime not accurate enough to guide decision making



Issues being addressed

- Forest health
- Vegetation/Habitat mapping

- **Need 1**: Accurate and up to date forest understory conditions are critical for habitat mapping, identifying ecological outcomes of treatments.
- Issues:
    - Challenging to map
    - Time/funding intensive
    - Rapid change

Issues being addressed

- Forest health
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- **Need 2**: Rapid and accurate information on spruce beetle spread and outbreak severity critical for managing timber production and forest regeneration.
- Issues: Current detection surveys:
  - too late
  - too fuzzy (location and severity)

What EO data does your idea utilize?

- Problem 1: Can we use LiDAR to establish baseline understory condition and frequently update those conditions?

- Problem 2: Can we use High spatial resolution R-G-B-NIR (?) to provide accurate and timely maps of spruce beetle spread (early detection) and outbreak severity?

The Idea

Earth Observation Tools

The Idea – Outcomes / Societal Benefits

- Problem 1: Mapping understory conditions at landscape scale:
  - Habitat/connectivity mapping (all-lands)
  - Where and how to respond to spruce beetle outbreak
- Problem 2: Mapping spruce beetle spread and severity:
  - Where and when to treat stands to maximize timber production and regeneration

- How does this idea benefit the Forest Service and other land management agencies?
  - Facilitates ability to transition to a rapid-adaptation framework for management and planning
  - Avoids conflict/decreases hurdles including potential legal issues with management

Thank You!