

Learning from the Land:

Extending State-and-Transition Models for Adaptive Management of Wildlife Habitat on Western Rangelands

State-and-transition Model (STM) Workshop

Purpose

- 1) **Create a revised state-and-transition model** by incorporating **local, expert, and context-specific knowledge**.
- 2) **Identify key uncertainties** in the state-and-transition model about how states and communities change over time and recover from disturbances. For example, **how long does it take for sagebrush to re-establish in burned areas?**

Why participate? Provide and access knowledge and expertise **otherwise unavailable or undocumented** and help **identify areas of consensus, disagreement, and knowledge gaps** about the states, communities and transitions in the draft model (i.e. key uncertainties) to target in sampling. Help ground truth state-and-transition models using your experience and knowledge.

Who is involved? The state-and-transition model workshop involves landowners, ranchers, agency staff (e.g. NRCS, Forest Service, BLM), Extension, researchers, anyone with expert or local knowledge.

Where does it take place? In a meeting room. **Time frame:** about 3-5 hours

What do we do?

1. Go over basic terminology and components of a state-and-transition model (if needed).
2. Participants comment on several draft models already created using existing science, monitoring or expert knowledge. Work in small groups and move around the room so each participant has the opportunity to look at each draft model, make comments, and answer questions such as: does this model reflect your knowledge and experience? What's not included? What do you agree with or disagree with?
3. Come back together as a group to discuss and revise an existing model or create a new model based on participants' experience, knowledge, and level of agreement or disagreement with the draft models. Levels of agreement about the final model components (states, communities and transitions) are documented and key remaining questions identified.



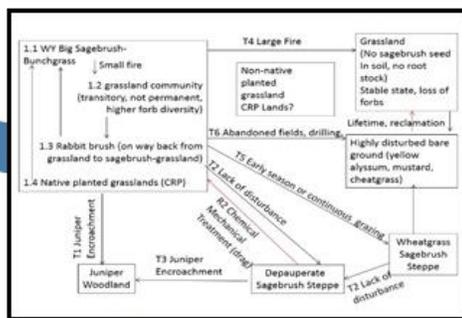
Example (below) from Moffat County, CO. We assembled a group of local experts, together drafted a state-and-transition model based on local and expert knowledge, then targeted sampling to address uncertainties.



Drafting a STM during a modeling workshop.



Summer sampling 2013: Used uncertainties identified in model to inform sampling design.



Generalized STM model developed during workshop for Sandy Land and Rolling Loam ecological sites.

4. The research team then uses the state-and-transition model created or revised at the workshop to answer relevant questions and address uncertainties through wildlife and vegetation sampling. Eventually, we will integrate collected data and meet again with a group of local experts to reflect on what we learned. Did the field data improve our understanding of transitions? Did it support the hypothesized states and communities in the model? **Local knowledge provides information not available through science and helps ground-truth models based on long-term experience of people on the land.**

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