Modeling and Simulation of Water Management in the Rio Grande River Basin

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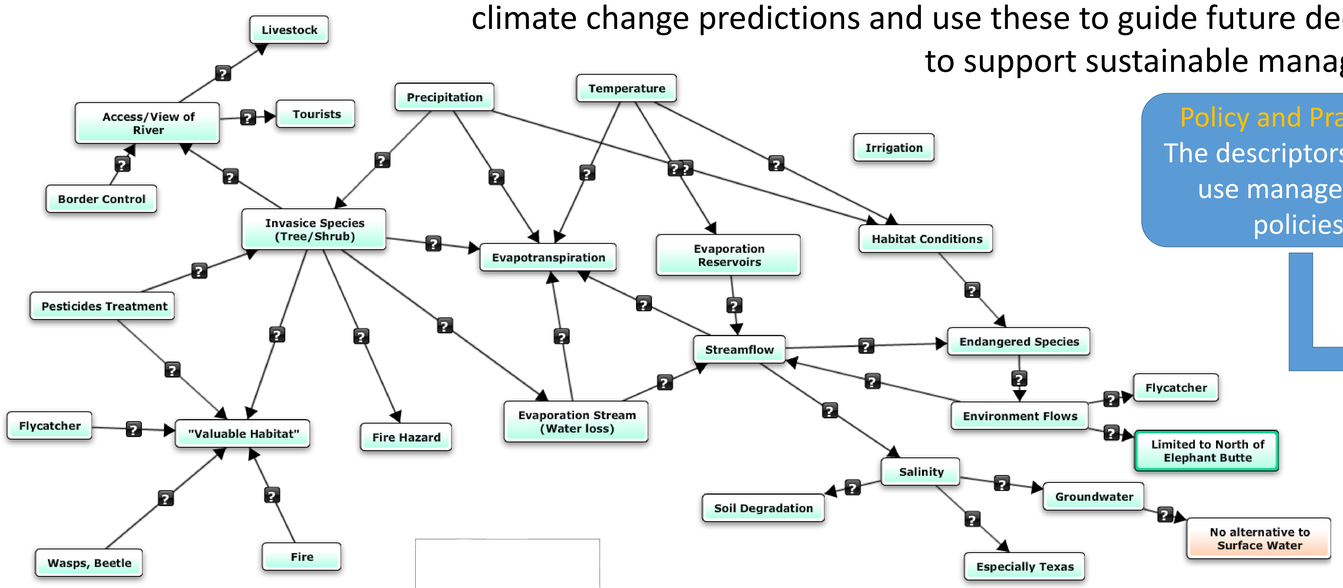
How are water resources allocated?

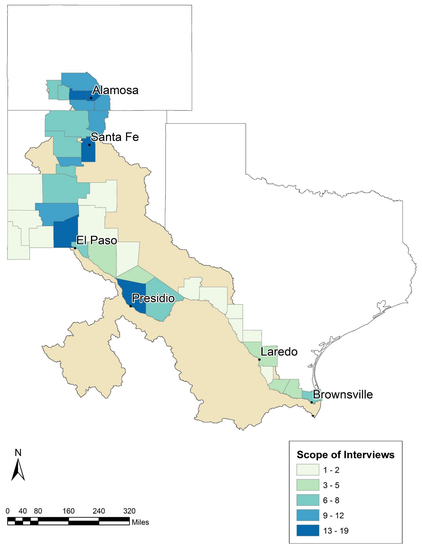
How is the Rio Grande River perceived by conservation managers?

How do the public and water managers value the Rio Grande River?

Envision has the ability to represent landscape characterizations, behaviors of decision-makers, and many other plug-ins that represent components of the Rio Grande River. With *Envision,* we will develop scenarios based on climate change predictions and use these to guide future decisions within the Rio Grande River basin in order to support sustainable management decisions.



Above: Example of a preliminary systems diagram of how stakeholders view conservation and habitat in the Rio Grande River Basin. These topics were interpreted through anthropologists during field work.



Right: The scope of the interviews that have been conducted in the field.

Right: A water diversion off of the Rio Grande River to supply water to Albuquerque NM. This diversion is the result of a policy enacted to ensure water for the Albuquerque area.

Photo Credit: Jack Friedman

Policy and Practices: The descriptors of land use management policies.

Actors: Decision-makers influencing landscape change by policy selection.

ENVISION

Integrated Modeling Platform (Bolte et al. 2007)

http://envision.bioe.orst.edu/

Landscape: Spatial units on which land use changes occur.

Landscape Evaluators: Metrics to evaluate the ecological, economic, or social indicators of landscape production.

Autonomous Change Processes: Non-anthropogenic landscape change.

Above: The Integrated Decision Unit shape file contains polygons that form the decision units that will be used in ENVISION.

Photo Credit: Stephanie Paladino

Above: Irrigated alfalfa fields in southern New Mexico.

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References:
Bolte, John P., David W. Hulse, Stanley V. Gregory, and Court Smith. "Modeling Biocomplexity – Actors, Landscapes and Alternative Futures." Environmental Modelling & Software 22.5 (2007): 570-79. Web. 18 Oct. 2016.

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