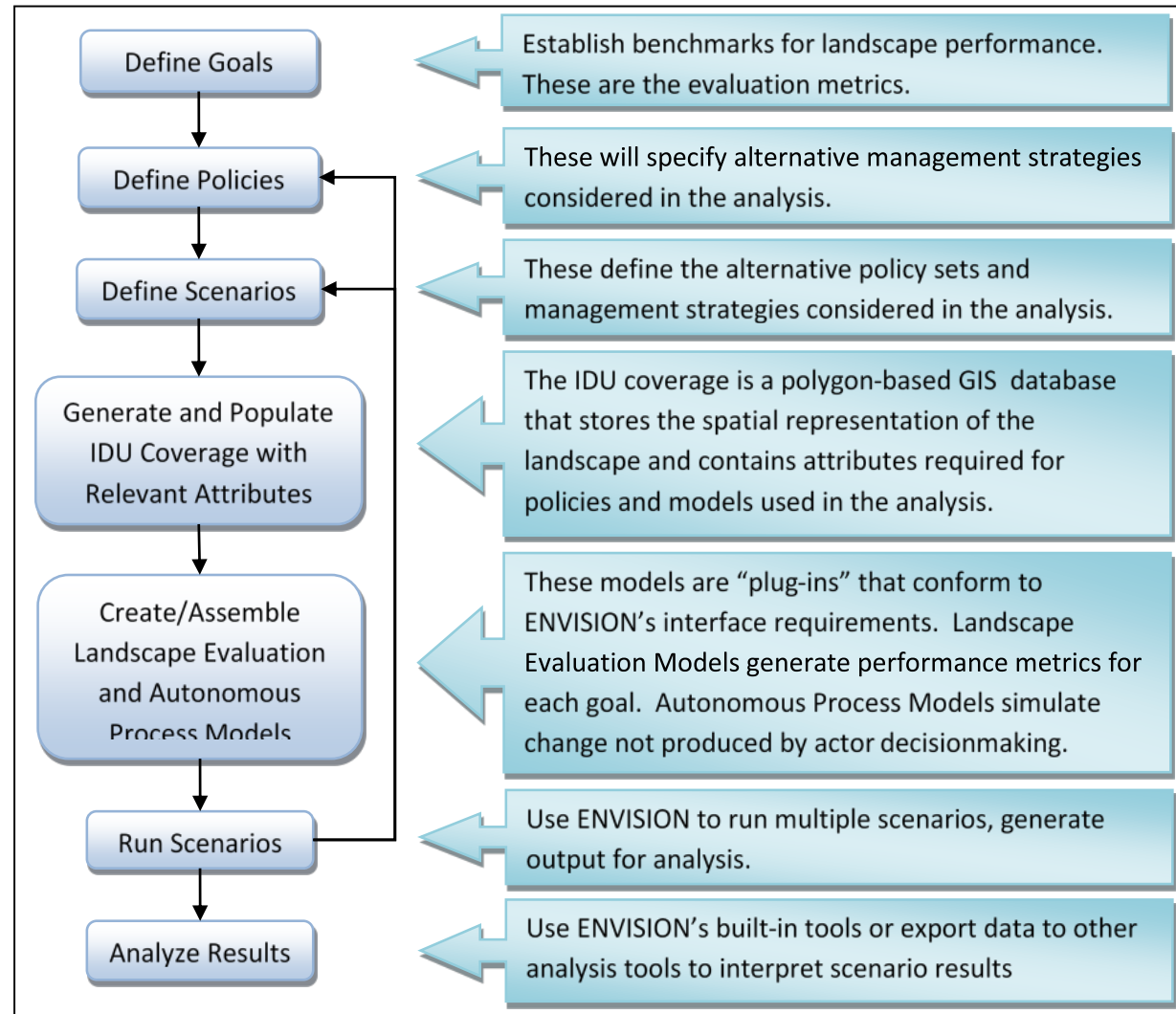


ENVISION Application Development



ENVISION – Typical Workflow

Define Goals

Define Goals

Establish benchmarks for landscape performance.
These are the evaluation metrics.

- Establish benchmarks for landscape performance
 - “Stuff people care about”
 - Vulnerability index (fire protection)
 - Travel time (fire hydrants, water tanks)
 - Buffer index (fuels cleared around houses)
 - Potential losses (lives, animals, \$)
 - Biomass removed
 - Removal cost
 - Human wellbeing metrics
 - Ecosystem services

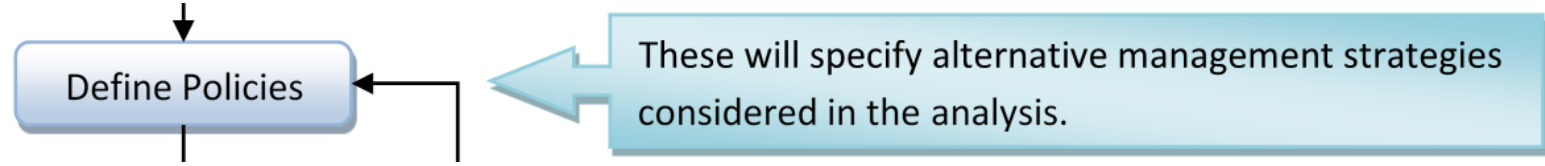
Define Goals

Define Goals

Establish benchmarks for landscape performance.
These are the evaluation metrics.

- **Datasets for description of baseline conditions?**
 - Location of fire hydrants/water tanks?
- **Specifics/units?**
 - New development, average distance to hydrants?
 - New hydrants based on GIS analysis?
- **Description of spatio-temporal dynamics?**
 - Where/when?
- Ecosystem services

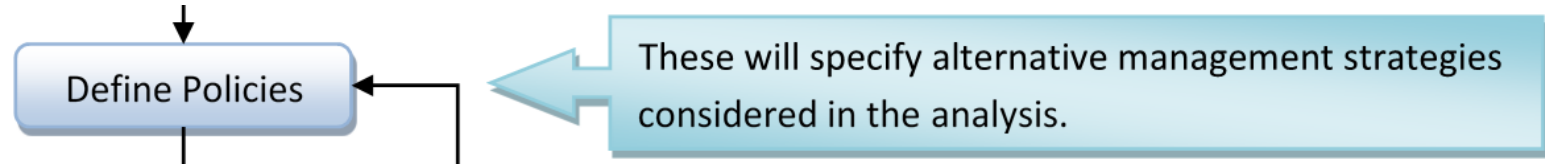
Actor Typology



- Municipal users
- Commercial land owners
- Homeowners
- Absentee landowners/
homeowners
- Agricultural landowners
- Oil operations

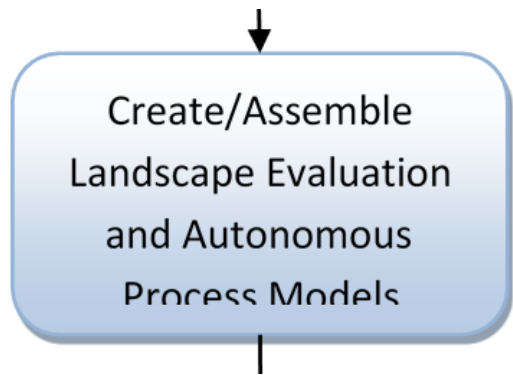
- Equipment subsidies for cedar removal
- Insurance incentives
- Prescribed burns
- Firewise behavior
- Biomass harvest
- Watering/irrigation rules

Actor Typology



- Description of baseline conditions?
 - Current irrigation rules
- Specifics/units?
 - X MCM
 - X hours
- Description of spatio-temporal dynamics?
 - Where/when?

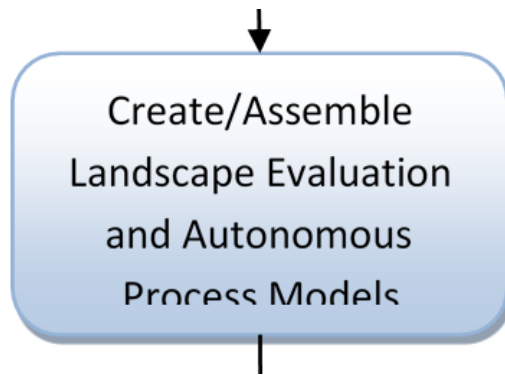
APs



These models are “plug-ins” that conform to ENVISION’s interface requirements. Landscape Evaluation Models generate performance metrics for each goal. Autonomous Process Models simulate change not produced by actor decisionmaking.

- Autonomous Processes
- Simple hydrology (ET, precip, soil moisture)
- Vegetation dynamics
- Woody encroachment
- Fire model
- Population growth/urban sprawl

APs



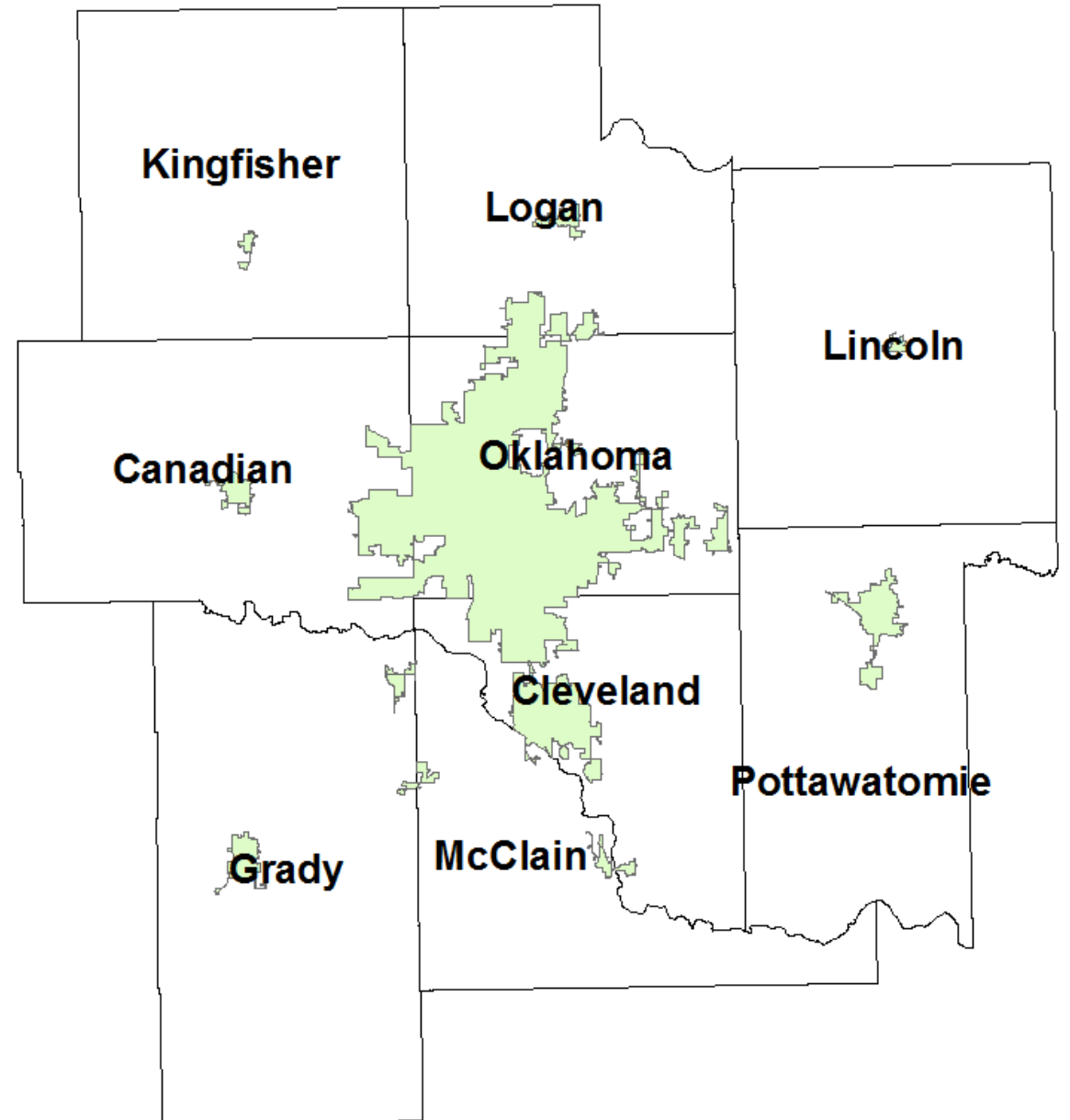
These models are “plug-ins” that conform to ENVISION’s interface requirements. Landscape Evaluation Models generate performance metrics for each goal. Autonomous Process Models simulate change not produced by actor decisionmaking.

- Autonomous Processes

- Datasets for description of baseline conditions?
 - Soil moisture, temp, precip, fuel loads → fire model?
 - Choice of model?
 - ENVISION Plug-in? EPSCoR partner?
 - Description of spatio-temporal dynamics?
 - Where/when?
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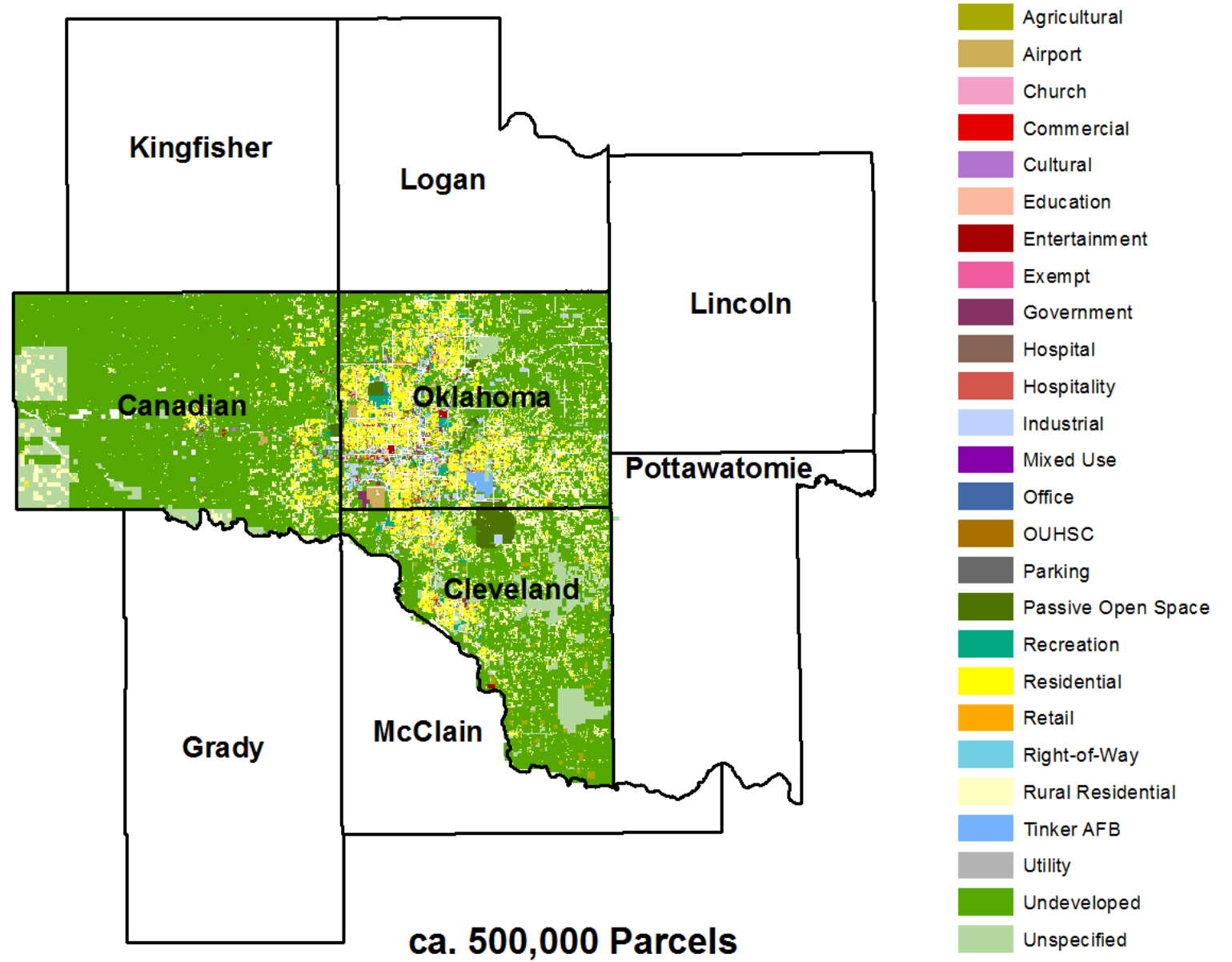
Study Area

- Spatial resolution:
 - 9 counties
 - Parcel-level IDUs
- Temporal resolution:
 - Monthly time steps
- Simulation period:
 - 10-15 years



IDUs

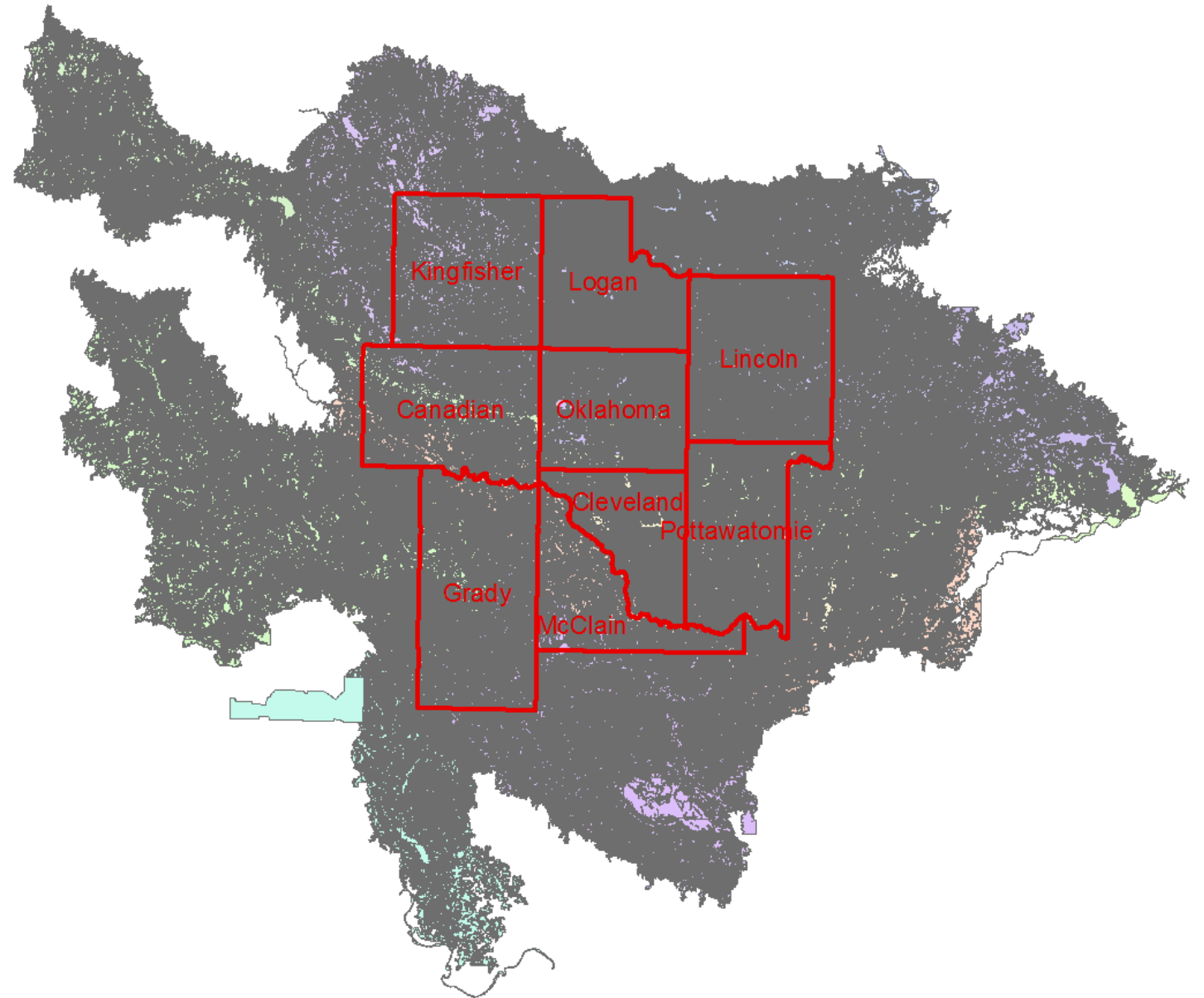
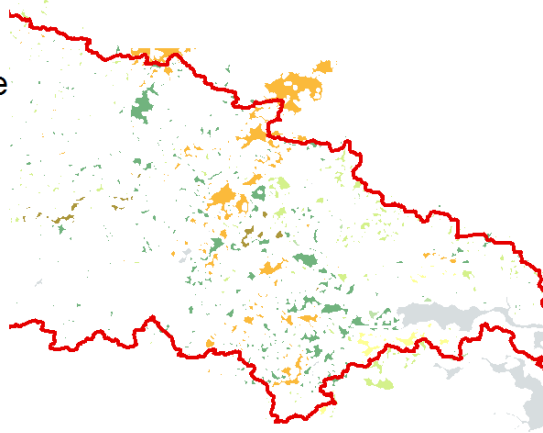
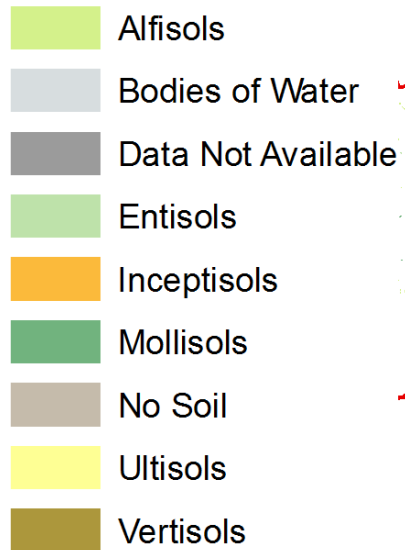
- Integrated Decision Units



SSURGO 2014

- Soil Data

Legend



Major Data Gaps

- Parcel data
- Red cedar cover