Southern Great Plains CHAT: A Decision Support System for Lesser Prairie-Chicken
What is the CHAT?

- Crucial Habitat Assessment Tool for LEPC
  - Geospatial tool (map) that identifies LEPC habitat
  - Focus on guiding energy development
  - Meant as 1st step tool for developers to assess landscape
    - 2nd step to engage State Wildlife Agency
  - General conservation objective: identify crucial habitat
  - First time for a range-wide, consistent approach
Who developed the CHAT?

- Funded by Western Governors Association, State Wildlife Agencies
- Developed by 5 state wildlife agencies in LEPC range
  - ODWC and KDWPT lead agencies
  - USGS developed Maximum Entropy model
  - PLJV facilitated development team, conduct GIS Analysis
- Year 1 – LEPC Decision Support Tool (DSS)
  - version 2 likely in 12-18 months
- Year 2 – WGA product: multi-Species DSS
CHAT Maps Habitat by Categories

- **CHAT defines habitat into 4 categories**
  1. Irreplaceable
  2. Limiting
  3. Significant
  4. Significance Unknown

- **Categories are ‘fuzzy’**
  - Depend on multiple factors
    - Landcover, fragmentation, distance to leks, etc
    - Native rangeland can occur in categories 1, 2, or 3
Factors for Habitat Categories

Step 1: Develop & Integrate 4 Habitat Models

- Habitat Patches
- Corridors
- Lek Probability Gradient

Step 2: Develop & Integrate 3 Prioritization Zones

- 5-mile Buffer of Leks
- Estimated Occupied Range
- 5-mile Buffer of Estimated Occupied Range

Step 3: Apply Crucial Habitat Definitions

1 – Irreplaceable
2 – Limiting
3 – Significant
4 – Unknown
## Crucial Habitat Categories

<table>
<thead>
<tr>
<th>CHD Category</th>
<th>WGA CHD Category Desc</th>
<th>CHD Sub-category</th>
<th>CHD Sub-category Description</th>
<th>Core Patch or Buffer (0, 1, 2)</th>
<th>MaxEnt High Prob (0, 1)</th>
<th>Inside 5mi buff of leks (0,1)</th>
<th>Inside EOR (0,1)</th>
<th>Inside 5 mi buff of EOR (0,1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Irreplaceable</td>
<td>1a Core, maxent, in 5-mile lek buffer in EOR</td>
<td>1 1 1 1</td>
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<tr>
<td>1 Irreplaceable</td>
<td>1b Core, no maxent, in 5-mile lek buffer in EOR</td>
<td>1 0 1 1</td>
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<tr>
<td>2 Limiting</td>
<td>2a Core, maxent, in EOR (outside 5-mile lek buffer)</td>
<td>1 1 0 1</td>
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<td>2 Limiting</td>
<td>2b Core, no maxent, in EOR (outside 5-mile lek buffer)</td>
<td>1 0 0 1</td>
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<tr>
<td>2 Limiting</td>
<td>2c Core, maxent, in 5-mile lek buffer, out of EOR but in 5 miles of EOR</td>
<td>1 1 1 0</td>
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<tr>
<td>2 Limiting</td>
<td>2d Core, no maxent, in 5-mile lek buffer, out of EOR but in 5 miles of EOR</td>
<td>2 0 1 1</td>
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<tr>
<td>2 Limiting</td>
<td>2e Core buffer, maxent, in 5-mile lek buffer, in EOR</td>
<td>2 1 1 0</td>
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<tr>
<td>2 Limiting</td>
<td>2f Pseudo patch, in EOR (in or outside of 5-mile lek buffer)</td>
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<tr>
<td>3 Significant</td>
<td>3a Core, maxent, out of EOR but in 5 mile buffer</td>
<td>1 1 0 0</td>
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<tr>
<td>3 Significant</td>
<td>3b Core, no maxent, out of EOR but in 5 mile buffer</td>
<td>1 0 0 0</td>
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<tr>
<td>3 Significant</td>
<td>3c Core buffer, maxent, in EOR (outside 5-mile lek buffer)</td>
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<tr>
<td>3 Significant</td>
<td>3d Core buffer, maxent, in 5-mile lek buffer, out of EOR but in 5 miles of EOR</td>
<td>2 1 1 0</td>
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<tr>
<td>3 Significant</td>
<td>3e Corridor</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>4 Unknown</td>
<td>4a Core, maxent, out of EOR and out of 5 mile buffer</td>
<td>1 1 0 0</td>
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<td>4 Unknown</td>
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<tr>
<td>4 Unknown</td>
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<tr>
<td>5 Common</td>
<td>5 No maxent, no core, no core buffer, no lek, no corridor</td>
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</table>

0 = none, 1 = patch, 2 = buffer, 0 = low, 1 = high, 0 = outside, 1 = inside
http://www.kars.ku.edu/maps/sgpchat/
CHAT & NRCS LEPC Conservation Initiative

- CHAT used by NRCS to develop LCPI screening tool for applications:
  - High Priority
    - Irreplaceable or Limiting habitat in LEPC range
  - Medium Priority
    - Irreplaceable or Limiting habitat outside LEPC range
    - Significant habitat in LEPC range
    - Presence of LEPC
NRCS LPCI Screening Tool & CHAT

Lesser Prairie-Chicken Priority Areas 2012

Priority
- High
- Medium

Southern Great Plains CHAT

Lesser Prairie-Chicken
- Current Range
- Crucial Habitat Category
  - 1 - Irreplaceable
  - 2 - Limiting
  - 3 - Significant
  - 4 - Unknown Value
Questions?