How I Saved 72 Million Gallons of Water Annually

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There are rich teams, and there are poor teams. Then there's 50 feet of crap. And then there's us. – Billy Beane
Water Management Plan

- Water Conservation
- Developing a Conservation Ethic
- Water Efficiency Practices
- Irrigation Water Management
- Weather Station
- Irrigation System
Developing a Conservation Ethic

- Superintendent
- Turf Team
- General Manager
- Golf Professional
- Greens Committee
- Board
- Members
Kansas Soils: Exceptional Quality
Agriculture is largest industry
Wheat
Irrigation

- RainBird
- 1,870 Heads 2017
- 2,805 Heads 2000
Water Quality
Colbert Hills Irrigation Use Gallons

<table>
<thead>
<tr>
<th>Year</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>112,100,93,677,370,484,872,447,238,529,249,245,853,951,851,235,139,5</td>
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</tbody>
</table>
40 Native Grasses (Tallgrass Prairie)
- Zoysiagrass
- Bermudagrass
- Tall Fescue
- Fine Fescue
- Kentucky Bluegrass
- Perennial Ryegrass
- Creeping Bentgrass
- Colonial Bentgrass
Burning

- Removes old growth
- Controls invasive species
- Nutrient replenishment
- Improved wildlife
- Promotes prairie grass
- Finds Irrigation Heads
Great way to find irrigation heads to be removed
Summer of 2012

- Hottest on record
- Worst drought since the 50's
## Drought Conditions (Percent Area)

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
<th>D4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>96.43</td>
<td>66.93</td>
</tr>
<tr>
<td><strong>Last Week</strong></td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>89.84</td>
<td>63.30</td>
</tr>
<tr>
<td><strong>3 Months Ago</strong></td>
<td>15.30</td>
<td>84.70</td>
<td>13.27</td>
<td>2.36</td>
<td>0.03</td>
<td>0.00</td>
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<tr>
<td><strong>Start of Calendar Year</strong></td>
<td>42.48</td>
<td>57.52</td>
<td>47.15</td>
<td>23.21</td>
<td>12.79</td>
<td>0.22</td>
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<tr>
<td><strong>Start of Water Year</strong></td>
<td>16.39</td>
<td>83.61</td>
<td>66.03</td>
<td>48.78</td>
<td>28.54</td>
<td>17.63</td>
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<tr>
<td><strong>One Year Ago</strong></td>
<td>26.90</td>
<td>73.10</td>
<td>64.14</td>
<td>44.28</td>
<td>23.60</td>
<td>14.55</td>
</tr>
</tbody>
</table>

### Intensity:
- **D0** Abnormally Dry
- **D1** Drought - Moderate
- **D2** Drought - Severe
- **D3** Drought - Extreme
- **D4** Drought - Exceptional

Drought Monitor focuses on broad-scale conditions.
Drought in Kansas

- 18.64 inches of rain
- Purchase water
- 51 million gallons of additional water
- This would be enough water to cover the football field at Bill Snyder Stadium 119 feet tall costing $140,000
- 18 days to apply through irrigation.
May 18, 2012 Drought Conditions
Before & After
Irrigated Turf in 2000 - 144.2069 Acres
Irrigated Turf in 2017 – 76.0811 Acres
Thank You

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Colbert Hills Golf Course
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