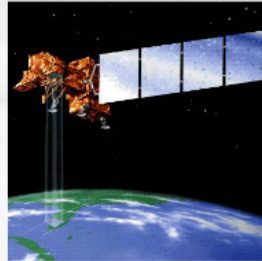


Utilizing Remotely Sensed Data (Landsat Imagery) for Consumptive Use Estimates

Landsat Background

- Began in 1972, thermal data LS4 (1982)
- LS 5 (1984) - failed November 2011
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- LS 8 - launched February 2013 (WSWC!)
- Currently have 8-day return cycle
- Current push for LS9



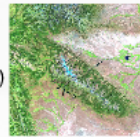
Current Status

- 5-year program utilizing remote sensing to assess consumptive use across the Green River Basin
- Two years will conduct full METRIC analysis (2011 - 2015)
- Looking at NDVI analysis in other years



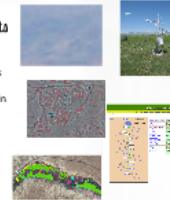
Importance of Landsat in Water Resource Management

- Scale - 30 meter pixels
- Thermal band
- Historic record (1972, 1982)
- Cost (free)

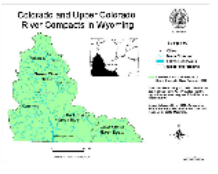


2007 - 2010 Efforts

- Remote sensing pilot study
 - Installation of new weather stations
 - Ground calibration instruments
 - Testing METRIC model in a sub-basin
- Additional instrumentation and data efforts
 - Hydrologic data collection network
 - Water rights mapping
 - Consumptive use model

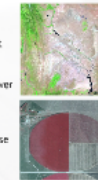


Using Landsat Imagery In Wyoming



In 2006, Wyoming

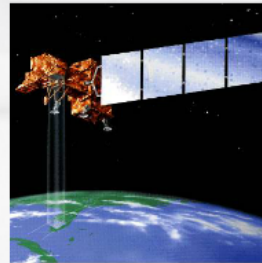
- Had a critical need for better accounting throughout the basin
- Legislative request stated new efforts would use "newer technologies" to the extent possible (rather than people)
- Wanted to have the ability to look at consumptive use at a basin scale as well as individual fields



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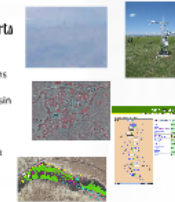
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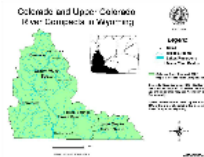


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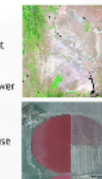


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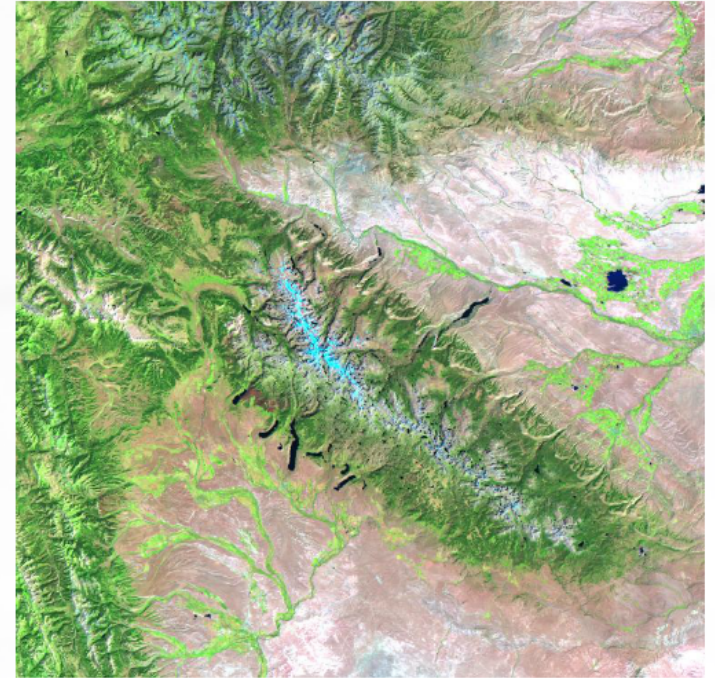


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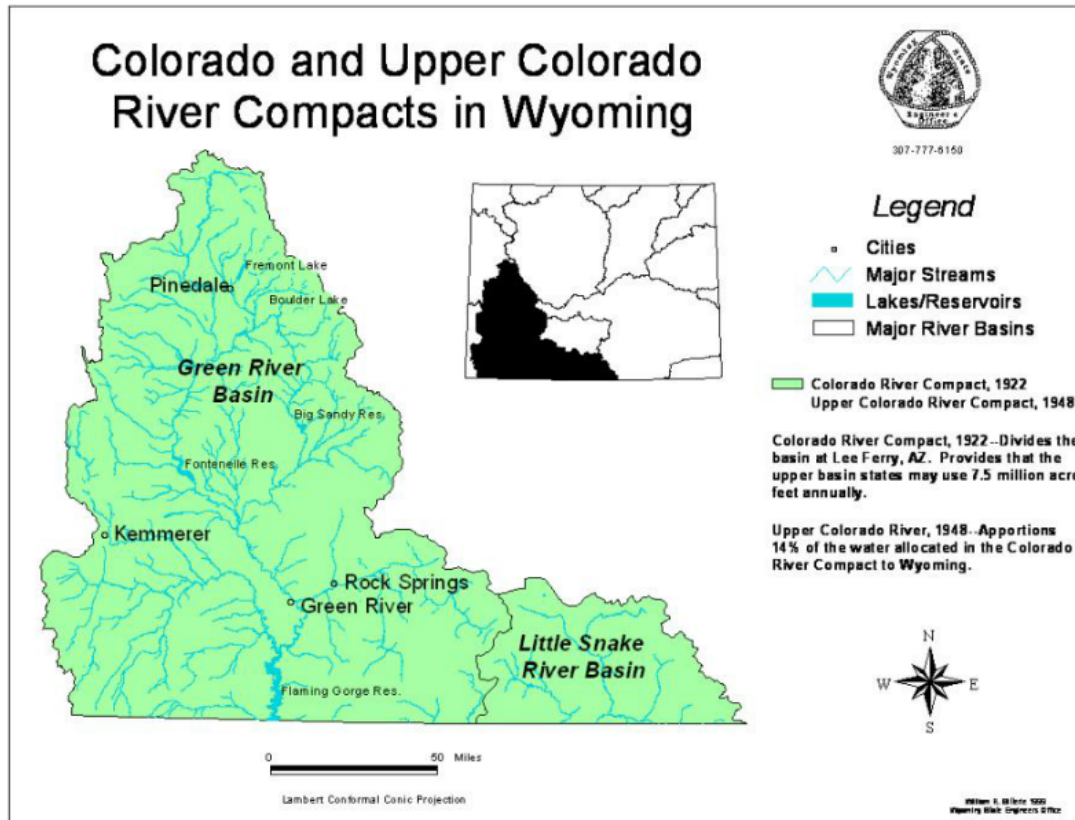
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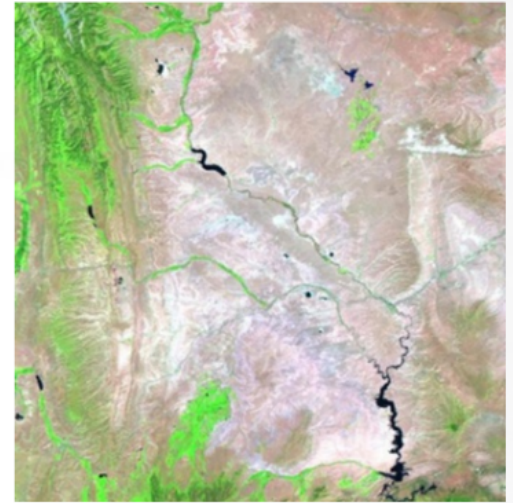


Using Landsat Imagery In Wyoming



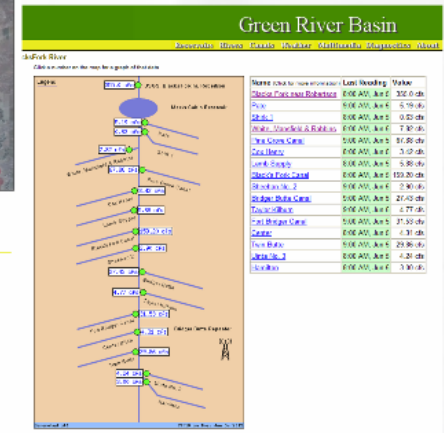
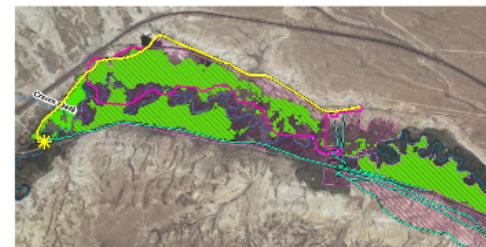
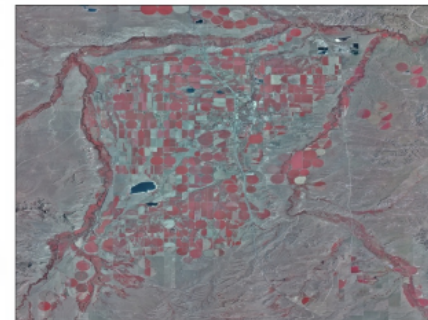
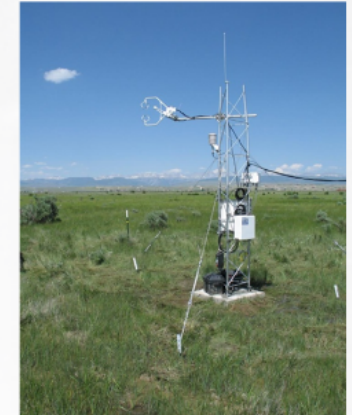
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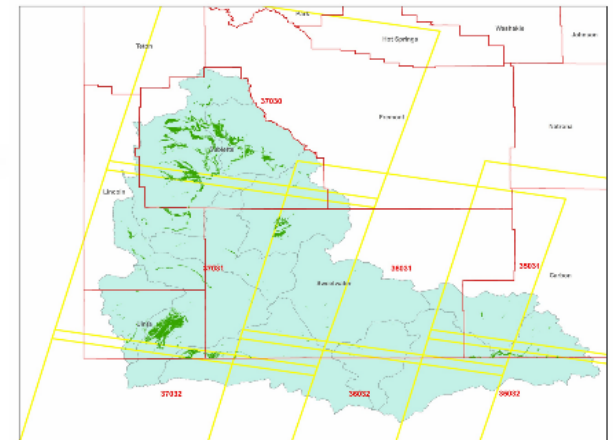
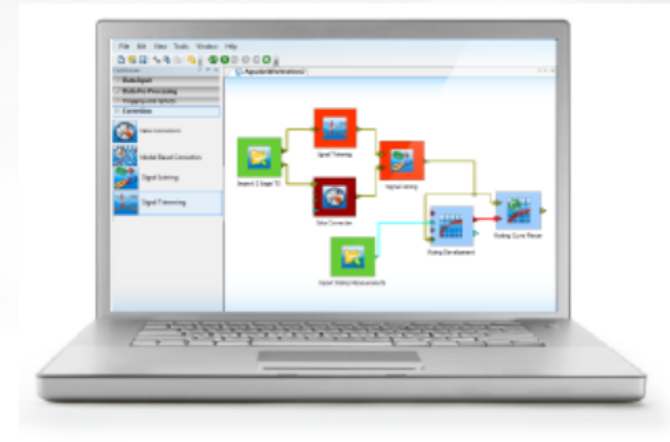
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Upper Colorado River Basin

- Study currently being conducted by the Upper Colorado River Basin Commission
- Reviewing current methodologies currently being used by the four states
- Evaluating potential application of remotely sensed data to assess consumptive use across entire upper basin



