

Regional Induced Seismicity Collaborative (RISC): Integrating Research Approaches in the Southern Midcontinent

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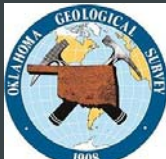
1- Bureau of Economic Geology, University of Texas at Austin

2- Oklahoma Geological Survey, University of Oklahoma

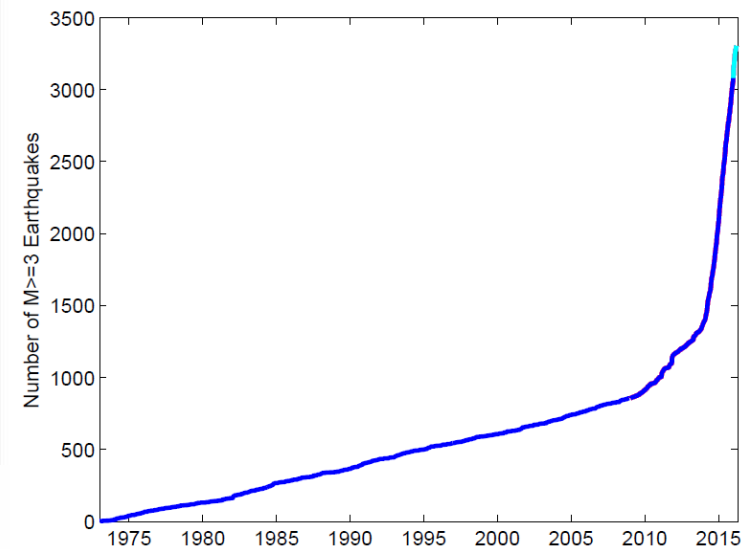
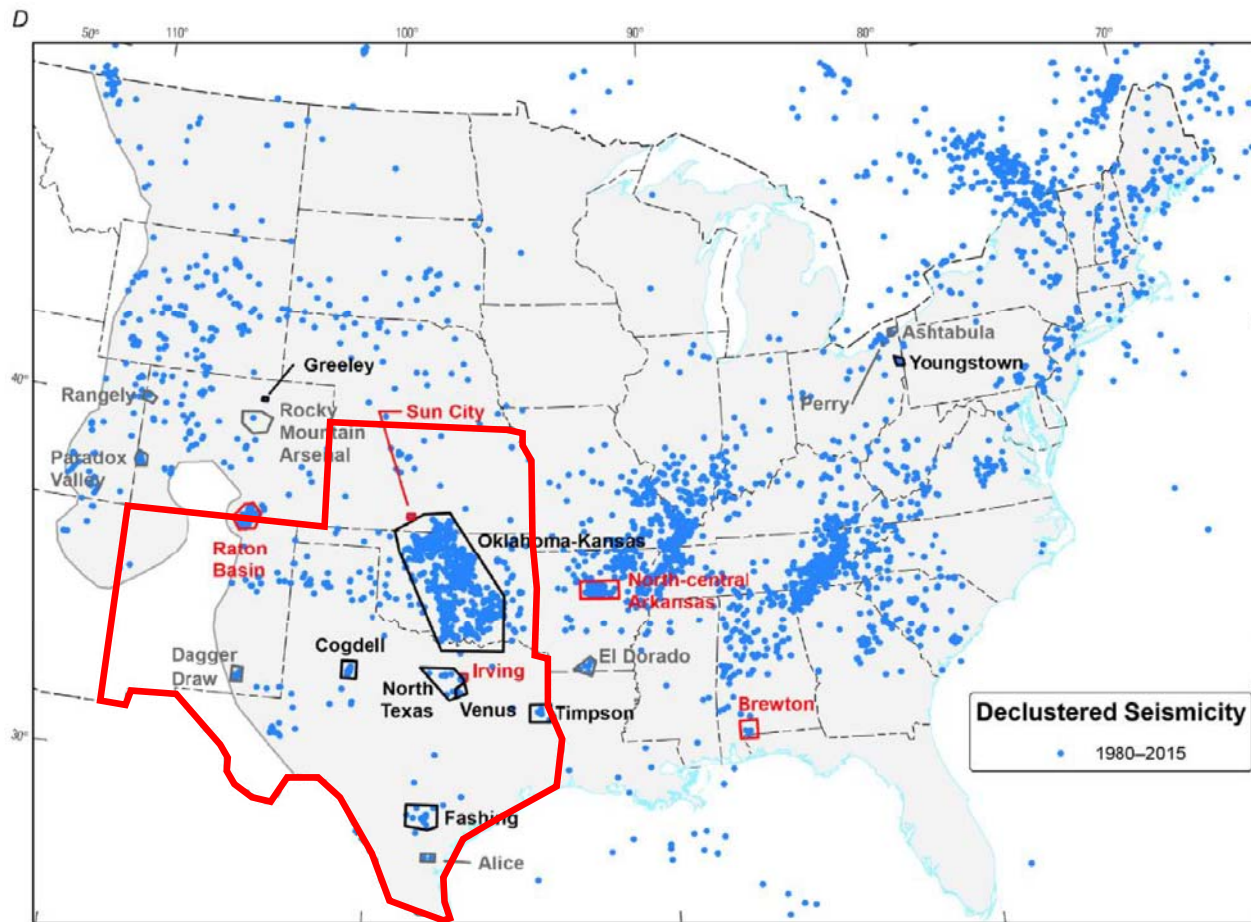
3- Kansas Geological Survey, University of Kansas

4- New Mexico Bureau of Geology and Mineral Resources, New Mexico Tech

September 29, 2017

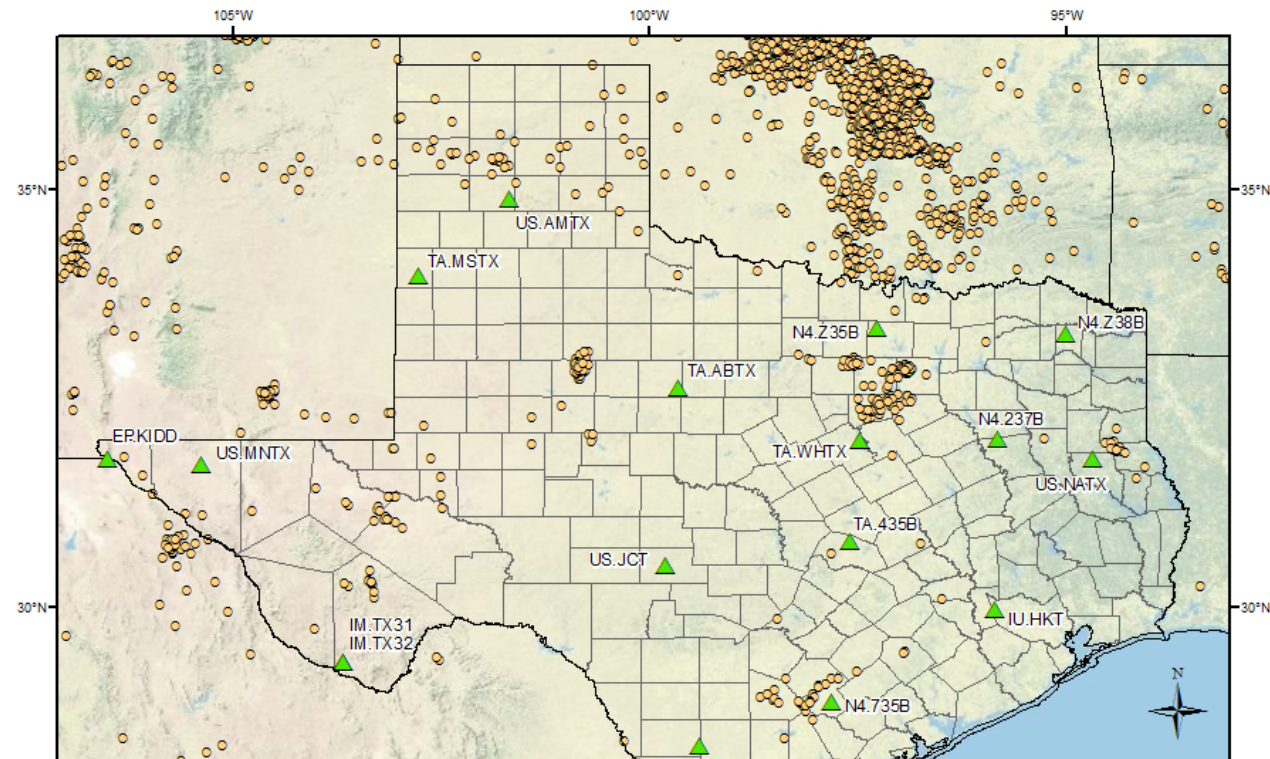
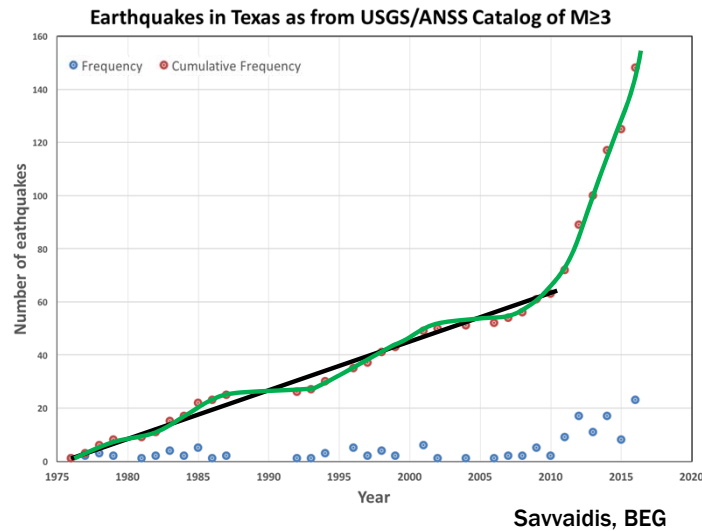


Seismic Activity in the Central and Eastern US

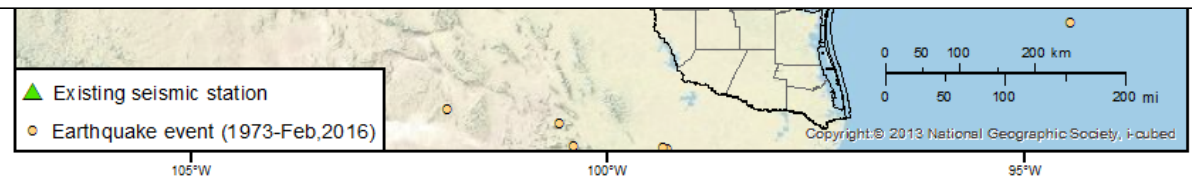


Bill Ellsworth, Stanford/USGS

Seismic Activity in Texas



All states in the southern midcontinent have similar experiences




Many Questions Span State Borders

- Is seismicity related to the volume or rate of water disposal, or both?
- Does the zone of injection (i.e., proximity to basement) influence the potential for seismicity?
- How can we better map faults and understand their relationship to seismicity?
- Can we estimate future water production and better manage this water to mitigate induced seismicity?
- Can we reduce water production with oil and gas?
- What is the impact of the seismicity on infrastructure?
- ...

Could a regional approach to these questions lead to more consistent and thorough management strategies?

Regional Collaboration Networks

Used by Many Other Groups to Address Regional Issues



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Regional Collaboration

NOAA's Regional Collaboration initiative is a network of NOAA country. Eight geographic regions are represented by Regional within regions and collaboration with external partners to resp

Regional Collaboration Teams:

ABOUT URBAN SCIENCE



THE URBAN SCIENCES RESEARCH COORDINATION NETWORK

Regional Research Collaborative in the Southern Midcontinent

Issues that Motivate RISC:

- Data availability, reporting, and analysis vary widely among states in the U.S. southern midcontinent
- Scientific community is missing an opportunity to leverage efforts and experience

RISC Goals:

- Efficient and effective approaches for addressing geologic issues that span state boundaries
- A visible pathway for important involvement of Federal agencies
- Increased potential for meaningful collaboration between universities and state and federal entities (e.g., geological surveys, regulators, environmental agencies)

RISC: Initial Description of Tasks and Deliverables

- Develop scientific theme-based framework for collaboration
- Organize workshops and meetings
- Facilitate inter-state scientific projects. Examples:
 - ✓ Create RISC data portal or retrofit existing portal
 - ✓ Unify seismological analyses
 - ✓ Improve how fluid flow is quantified and tracked in basins that span jurisdictions
 - ✓ Develop new numerical approaches to enhance causal understanding
 - ✓ Communicate more effectively to stakeholders and decision makers

RISC: Opportunities to Collaborate

- ✓ Other State geological surveys
- ✓ State agencies (Railroad Commission of Texas, Oklahoma Corp Commission, etc.)
- ✓ Researchers at Federal (DOE, USGS) laboratories
- ✓ Data vendors (IHS, FracFocus, DigitalH2O, etc.)
- ✓ US EIA

Schedule:
Initial start-up on October 1, 2017

Acknowledgements

