theEARTH GENOME
REVEALING THE POSSIBLE

Water Data: Challenges and Opportunities

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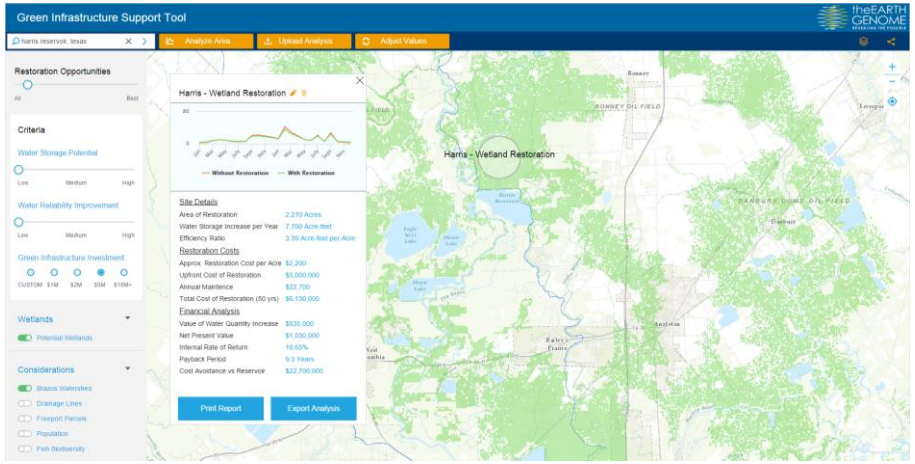
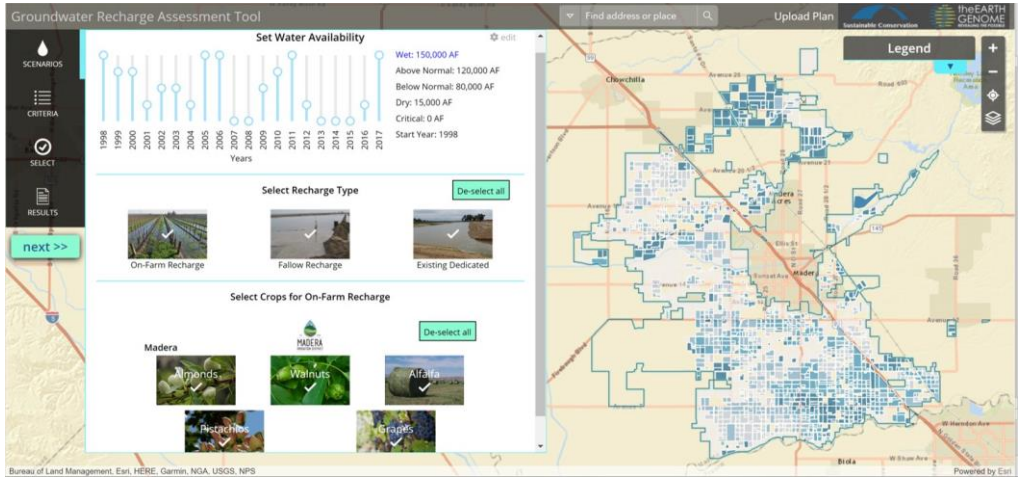
Focus on Water Data and Tools

Water Tools



GIST (Surface Water Tool) – Brazos River Basin, Texas



Groundwater Recharge Assessment Tool - California

…plus several new tools now under development in Texas and elsewhere

Water Data

CA Water Data Advisory Council

Advisory Council to Data Management Team

Texas Water Data Initiative

Challenges and Opportunities

What we've heard in talking with dozens of water agencies and authorities regarding water data…

Challenges	Opportunities	Opportunities

1. **Data is too costly** – Especially true in collecting data and metering
2. **Transparency issues** – Concern that if I make data more available, someone will misuse it
3. **My team is too small** – All this new data and technology feels really complicated
4. **Don't know where to start** – Don't have time to make sense of all the data. Oddly enough, sometimes I feel I don't have enough data… other times I'm drowning in it

1. Data is too costly
2. Transparency issues
3. My team is too small
4. Don't know where to start

1. Better decisions
2. Single place for data
3. Other useful data
4. Find new opportunities

1. **Better decisions** – Data could really help me make better planning and operational decisions
2. **Single place for data** – Would love to have all my data in one place for fast easy use
3. **Other useful data** – I know there is other data (from federal, state, county, etc.) that might be valuable but I don't know where it is and how to get it
4. **Find new opportunities** – I'm sure there are opportunities I'm missing. If we could understand the whole system, including how groundwater is trending across an entire aquifer and conjunctive GW-SW, I think we could all be better off

Water Data: Today's Primary Challenge

Costs ≤ Value

(actual financial costs, resources/time, perceived risks)

(better water outcomes, water availability, possible financial benefits)

How do we fix this equation so going forward the value for everyone is higher (and the costs are lower)?

National and State Efforts on Water Data

National Level

Internet of Water

Housed by the Nicholas Institute at Duke University

State Level

California

AB 1755: Open and Transparent Water Data Platform for California

Texas

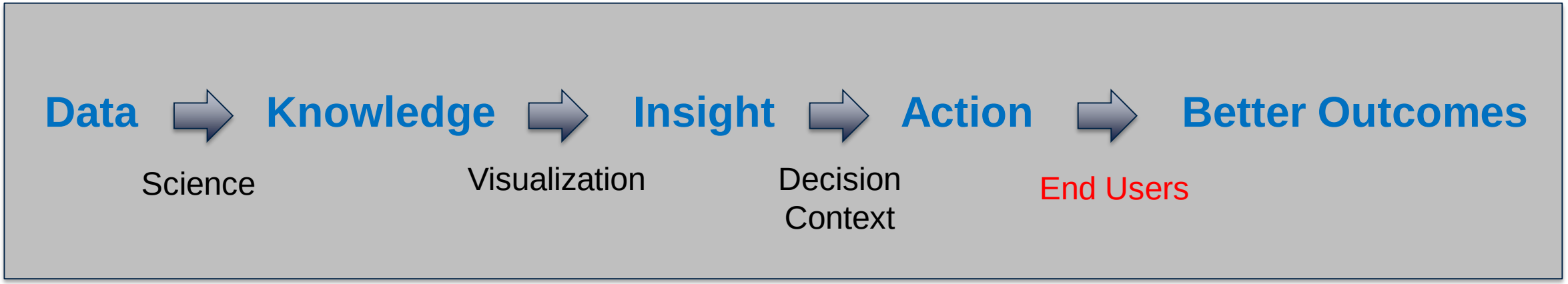
water data initiative

Five Things that Need to Shift
Water Data and Tools

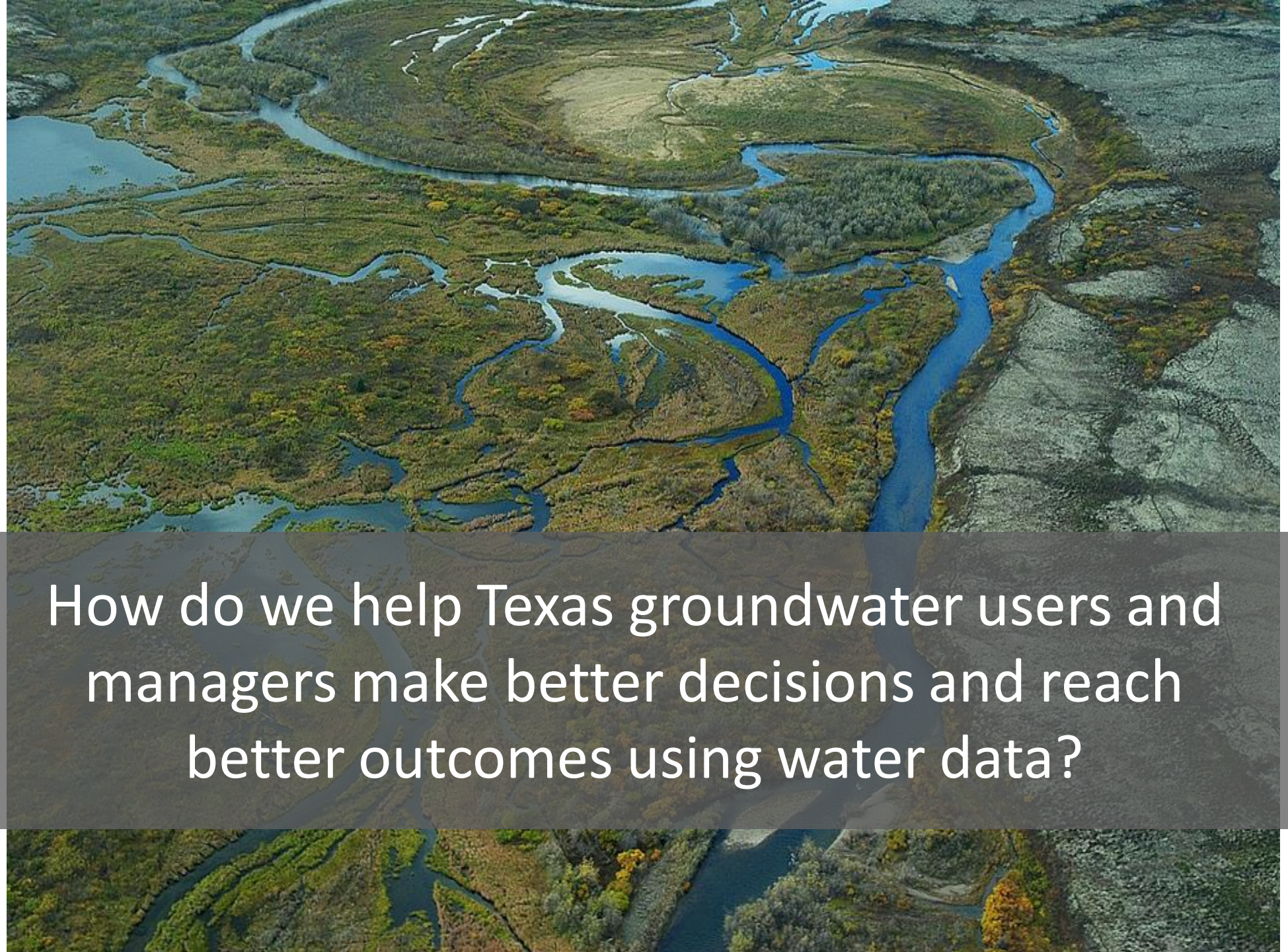
Past		Future
Risk	→	Solutions
Data Visualization	→	Decision Making
Isolated	→	Integrated
Single Benefit (hydrology only)	→	Multiple Benefit (including financials)
Win-Lose (zero sum)	→	Win-Win

→ Water is hyper local. Work directly with a key Texas stakeholder, such as GCDs, who needs to make better decisions regarding groundwater

Data → Better Outcomes



…and you start with the **end users** (decision makers)
and work back from there



How do we help Texas groundwater users and managers make better decisions and reach better outcomes using water data?