



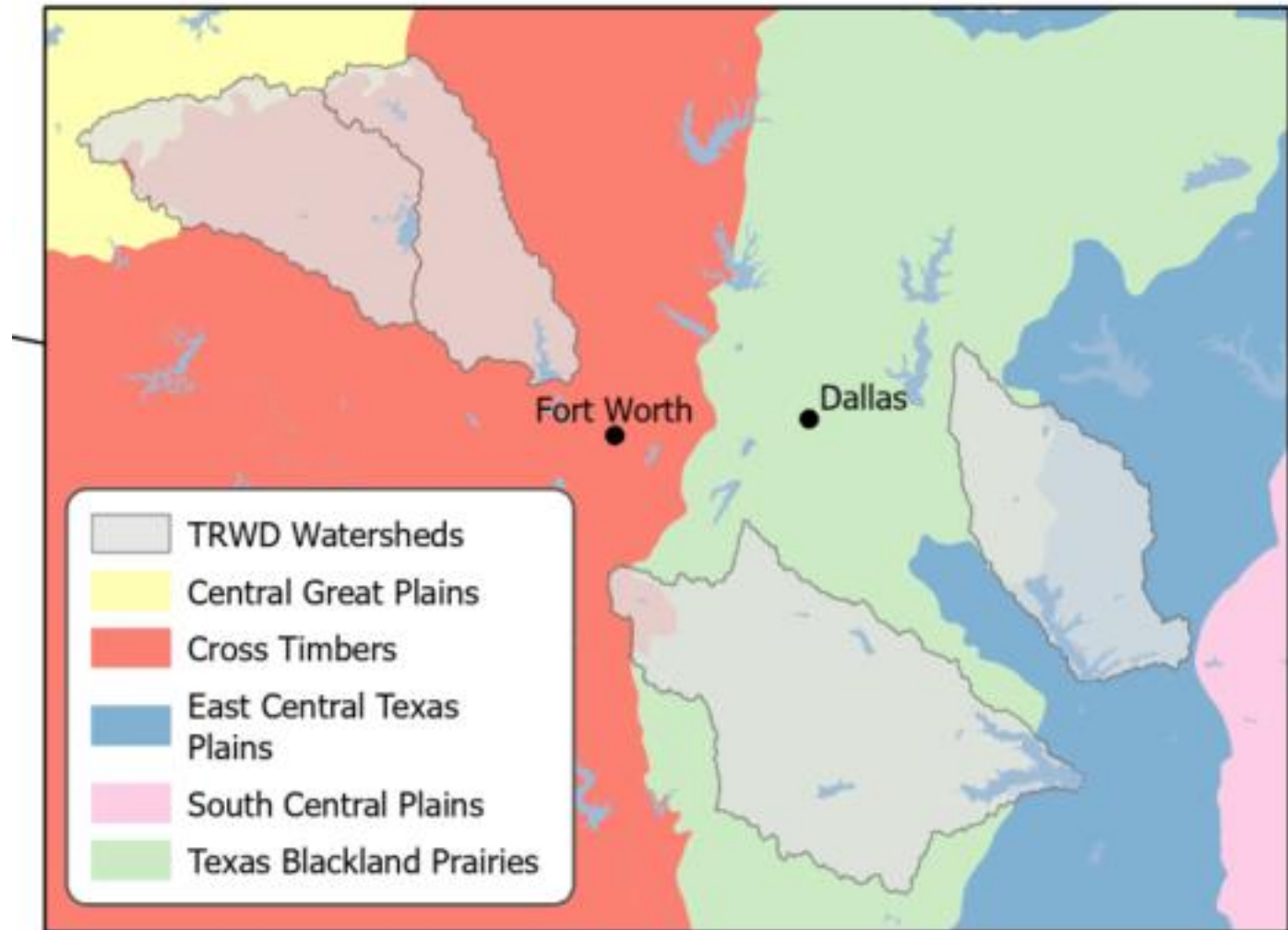
Updates from the solar field: a follow-up to 2023's solar FRODO

2025 Urban Riparian Symposium
Katie Myers, Rural Programs Supervisor

Solar Outlook: TRWD Watersheds



- ▶ Relatively flat and unforested landscapes
- ▶ Near major metroplex and transmission infrastructure



Costs and Benefits of Solar Development

- ▶ Long term income source for farmers and ranchers
- ▶ Temporary influx of jobs
- ▶ Kickbacks such as community improvement projects
- ▶ Prevents more intensive forms of development



Costs and Benefits of Solar Development

- ▶ Runoff and erosion concerns during construction and post-construction
- ▶ Use of chemical vegetation management methods necessary in some areas
- ▶ Potential for permanent loss of quality habitat, range, or farmland









What Water Pros Want to Know

2023 Texas Riparian Association Urban Riparian Symposium
discussion/survey highlights: commonly asked questions

What is the effect
on
hydrograph/runoff?

What BMPs are
working on site?

What are barriers
to BMP
implementation?

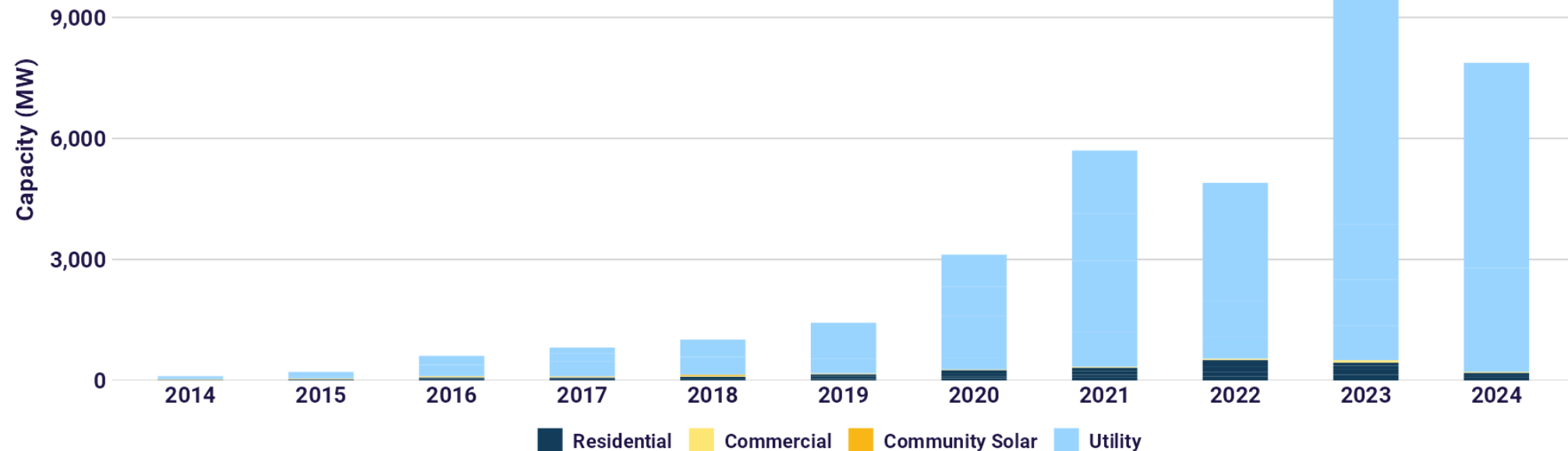
Solar panel designs
to reduce
hydrological
change?

Who can best
regulate/how to
involve different
levels of gov't?

Solar Outlook: Texas

- ▶ Texas is #2 in current solar and #1 in growth outlook over next 5 years
 - ▶ Large tracts of land, plentiful sunshine, and open energy market

Texas Annual Solar Installations

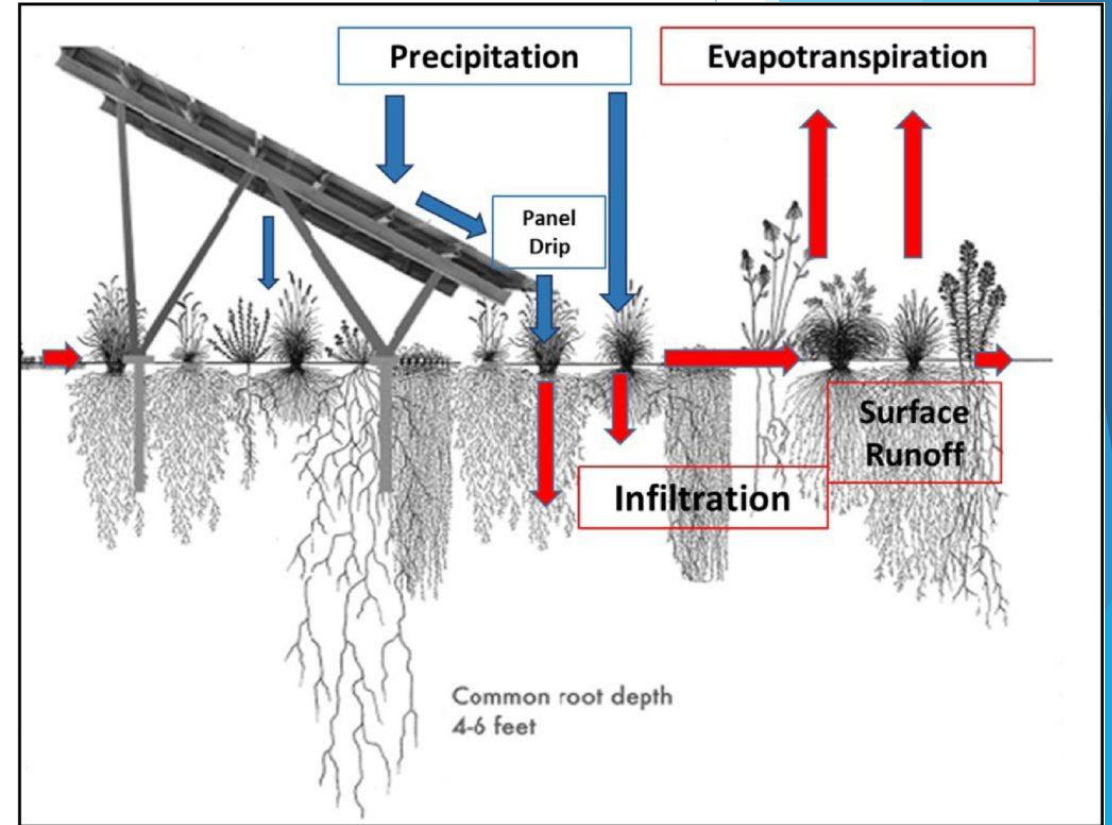


Current Regulatory and Research Landscape

- ▶ Measures used during construction, post-construction, and long-term maintenance are largely determined on a state basis
- ▶ Legislative and legal battles
 - ▶ Counties cannot outright ban wind or solar
 - ▶ Last session, attempted to pass a bill that would increase regulatory burden on solar
 - ▶ Pros (higher environmental impact assessment regs) vs cons (disincentive for growing renewables sector)
 - ▶ Biden 2030 energy goals vs Trump administration goals, TBD

Current Regulatory and Research Landscape

- ▶ Hydrological and ecological effects will vary
 - ▶ Soil types, climatic regimes, slopes, light-limited vs water-limited environments, etc.
 - ▶ Large variations in design of panels and fields and long-term management regimes



Current Regulatory and Research Landscape

- ▶ Current research efforts underway in Texas (recently completed or ongoing):
 - ▶ TAMU-Kingsville study on native seed mixes for revegetation under panels (Dr. Tony Falk laboratory)
 - ▶ TWRI (TAMU) water quality study above and below a new solar development (Dr. Lucas Gregory and team)
 - ▶ Baylor University runoff study above and below a few area solar developments (Dr. Ryan McManamay laboratory)

Current Regulatory and Research Landscape

- ▶ Resources for landowners
 - ▶ Increasing availability of resources for landowners and natural resource professionals to advocate for responsible solar
 - ▶ NRCS, American Farmland Trust
- ▶ ***End goal: have scientifically-backed, economically reasonable BMPs for landowners, developers, and natural resource professionals to reference to guide responsible growth of solar energy***

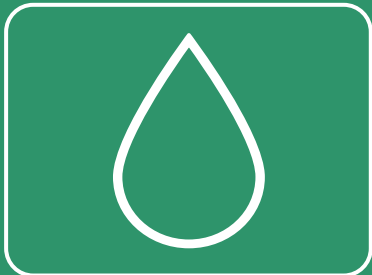
Primary Goals of Potential BMPs



Maintain ground cover



Soil health
management



Minimize hydrological
impact

Maintain Ground Cover

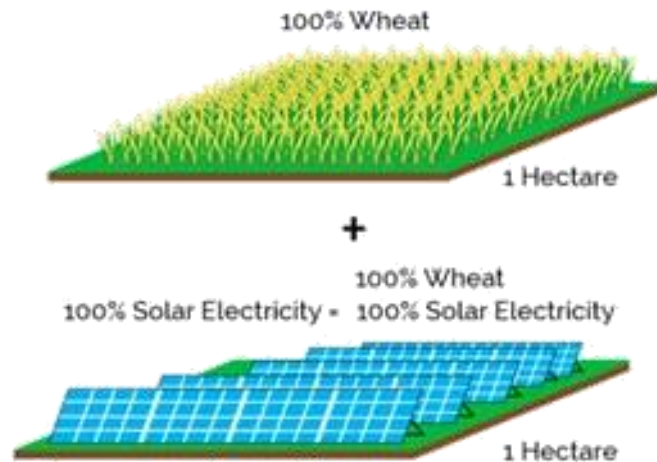
- ▶ Double seeding/pre-seeding
- ▶ Keep cover during construction
- ▶ Use natives where possible but be mindful of establishment times
- ▶ Prioritize native buffers around panel array areas



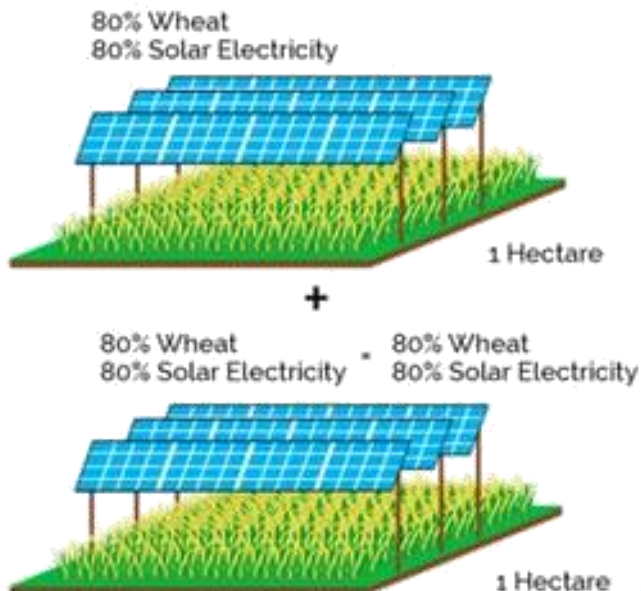
Soil Health Management

- ▶ Know your local soils
- ▶ Maintain long-term ag viability
- ▶ Maintain carefully managed ag use where appropriate (grazing, cropping)

Separate Land Use On 2 Hectare Cropland

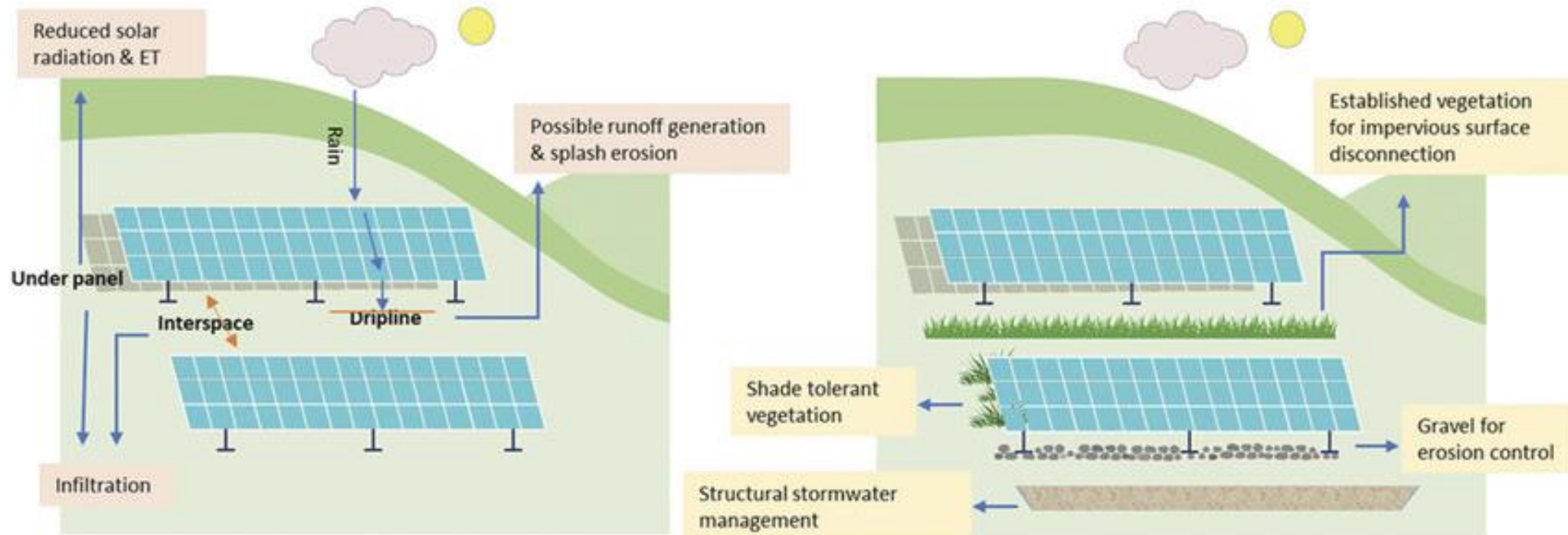


Combined Land Use On 2 Hectare Cropland:
Efficiency Increases Over 60%



Minimize Hydrological Impact

- ▶ Minimize grading during construction
- ▶ Generous riparian buffers/setbacks
- ▶ Appropriate stormwater infrastructure where needed
- ▶ Panel characteristics - tilt and spacing



Barriers to BMP Implementation

Making the case for cost-effectiveness

- 3 pathways:
 - “good actor” image
 - Policy incentives (punishment/reward)
 - Solid cost savings analysis

Need for empirical research on hydroecological effects

- Research is not keeping pace with development
- Responses of soil, vegetation, and hydrology to various methods can differ greatly between regions

Barriers to BMP Implementation

Failure to include local natural resources experts in planning and development stages

- Rigidity in project development and execution processes
- Need for greater education and empowerment of landowners and natural resource professionals considering solar leases

Cultivating a mindset of holistic environmental and community benefit

- Maximizing solar profit often means minimizing other productive uses
- Fold in other environmental services values

Resources



- ▶ [U.S. Energy Information Administration Dashboard](#)
- ▶ [ERCOT Interconnection Report](#)
- ▶ [Solar Energy Industries Association](#)
- ▶ [AgriSolar Clearinghouse by National Center for Appropriate Technology](#)