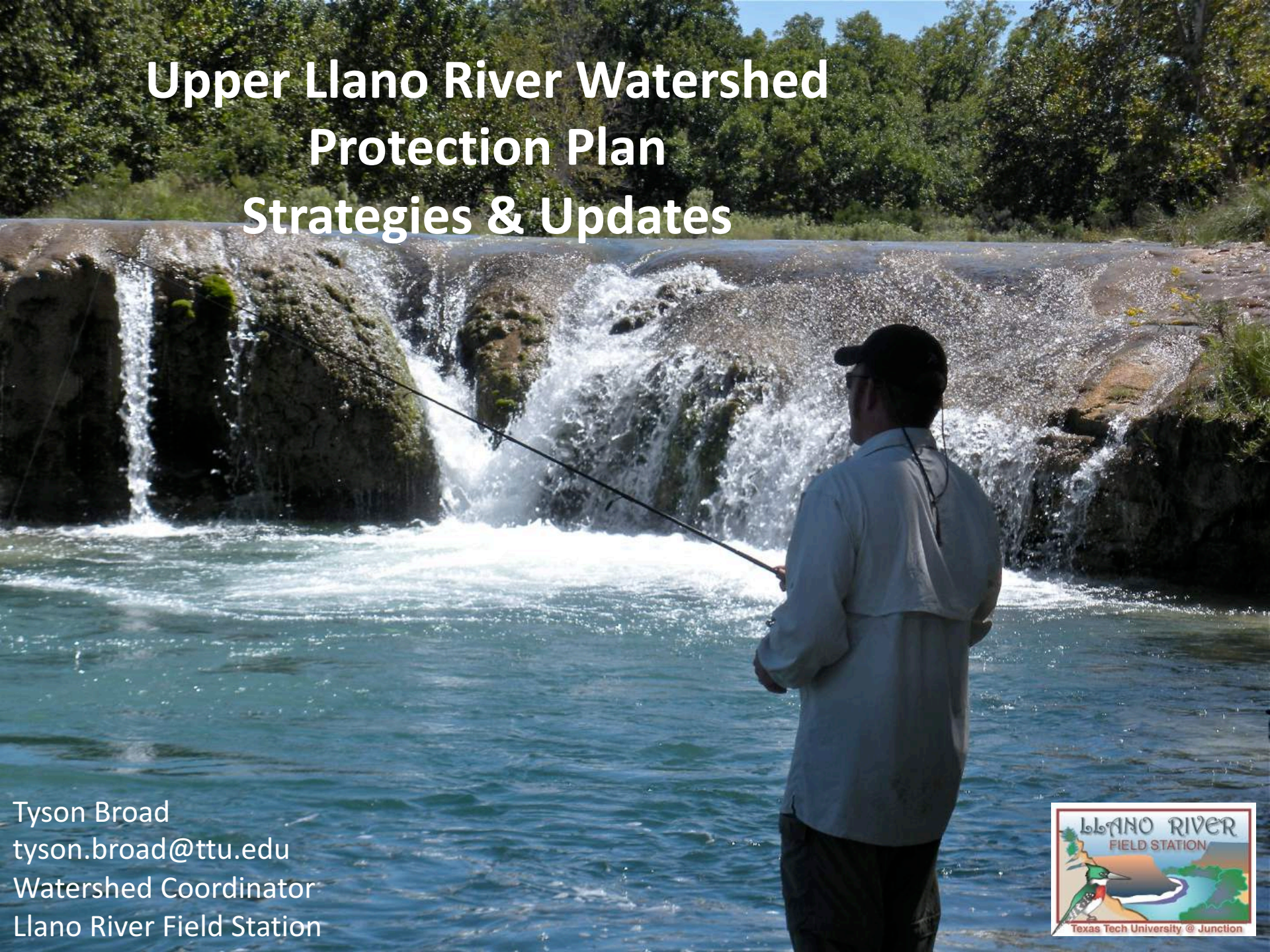
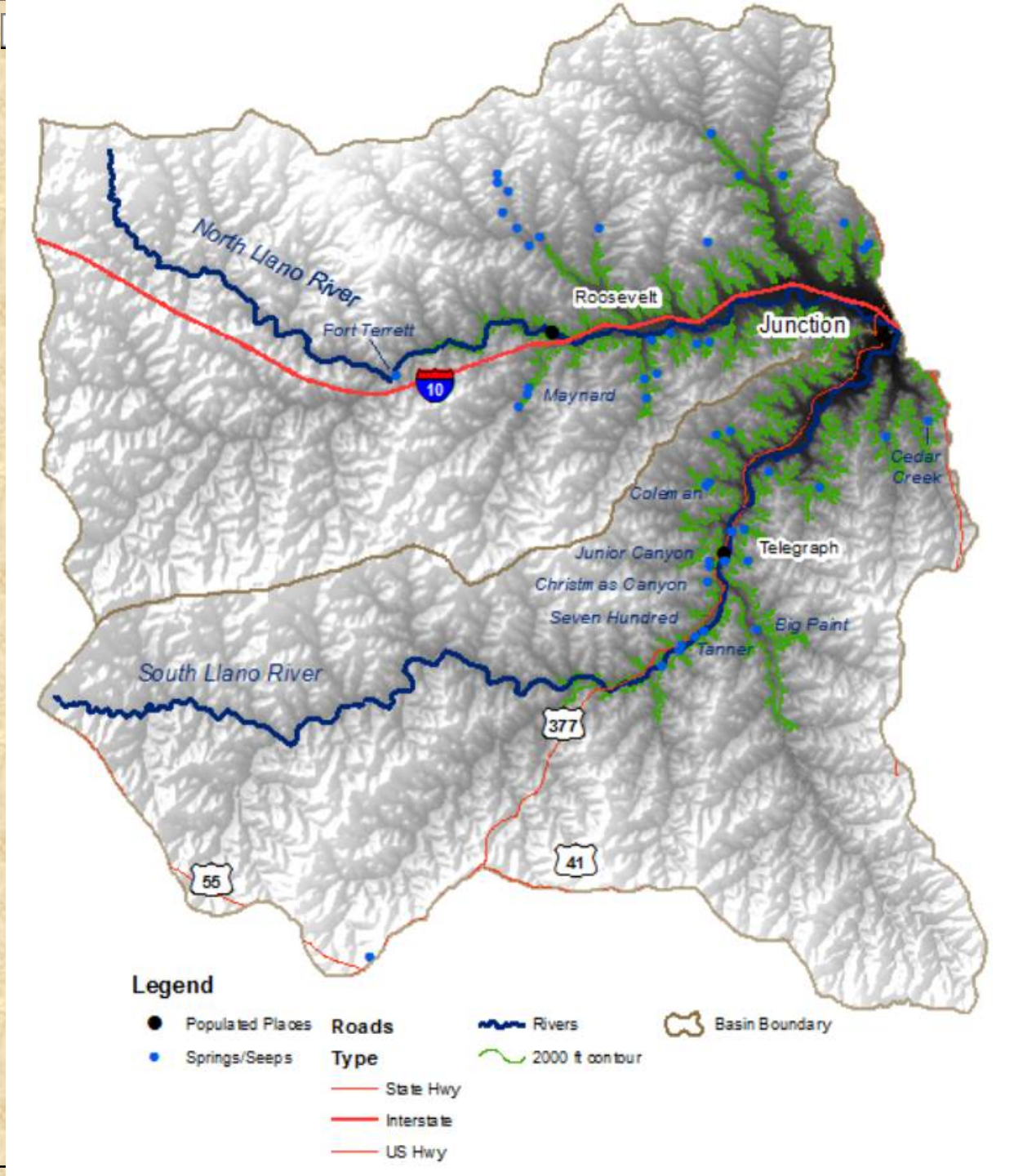
Upper Llano River Watershed Protection Plan Strategies & Updates



Tyson Broad
tyson.broad@ttu.edu
Watershed Coordinator
Llano River Field Station

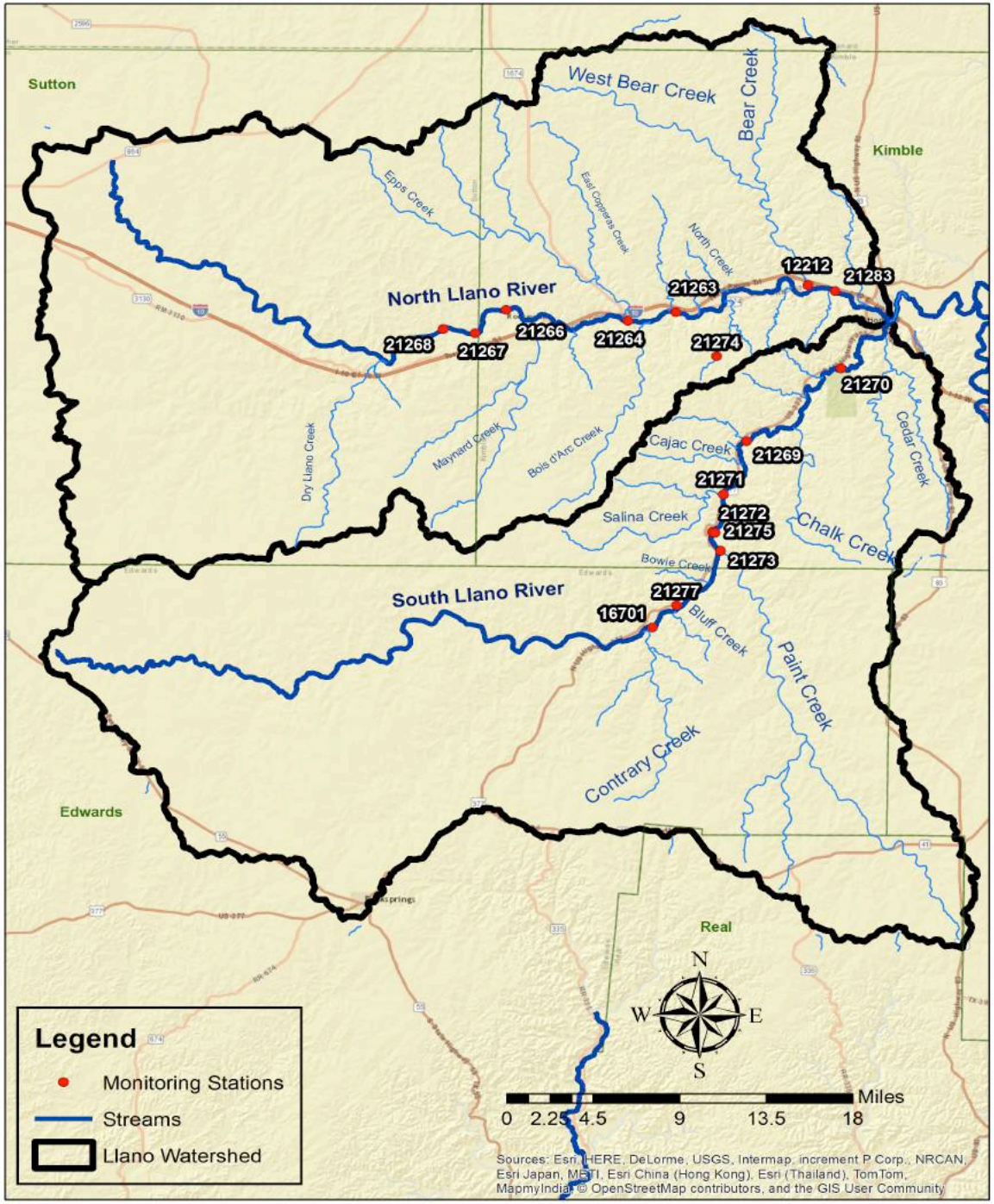
Upper Llano River Watershed



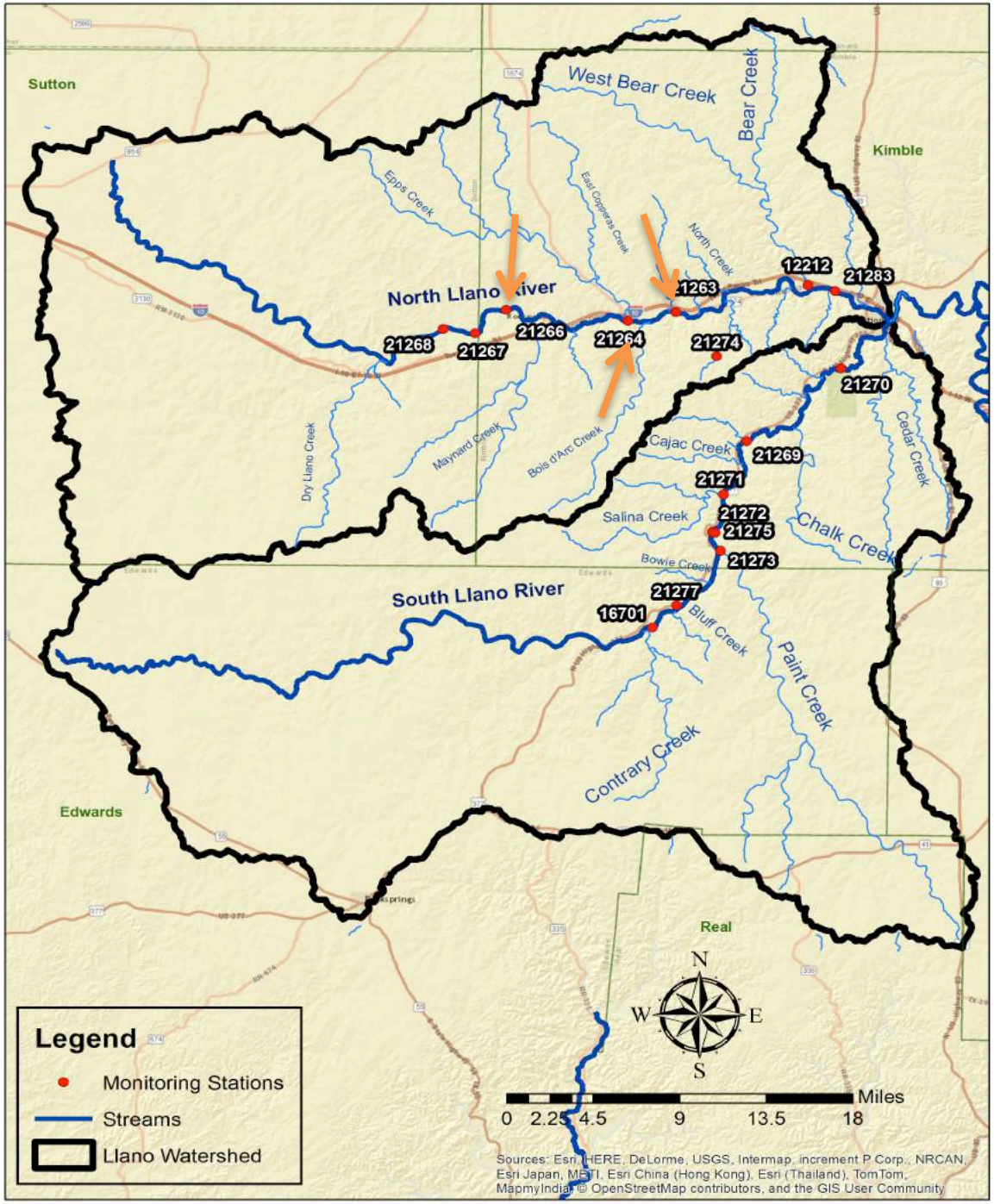
LLANO RIVER FIELD STATION
Texas Tech University @ Junction

Healthy Watershed Initiative


Locally Driven by Stakeholders



Water Quality Monitoring Sites

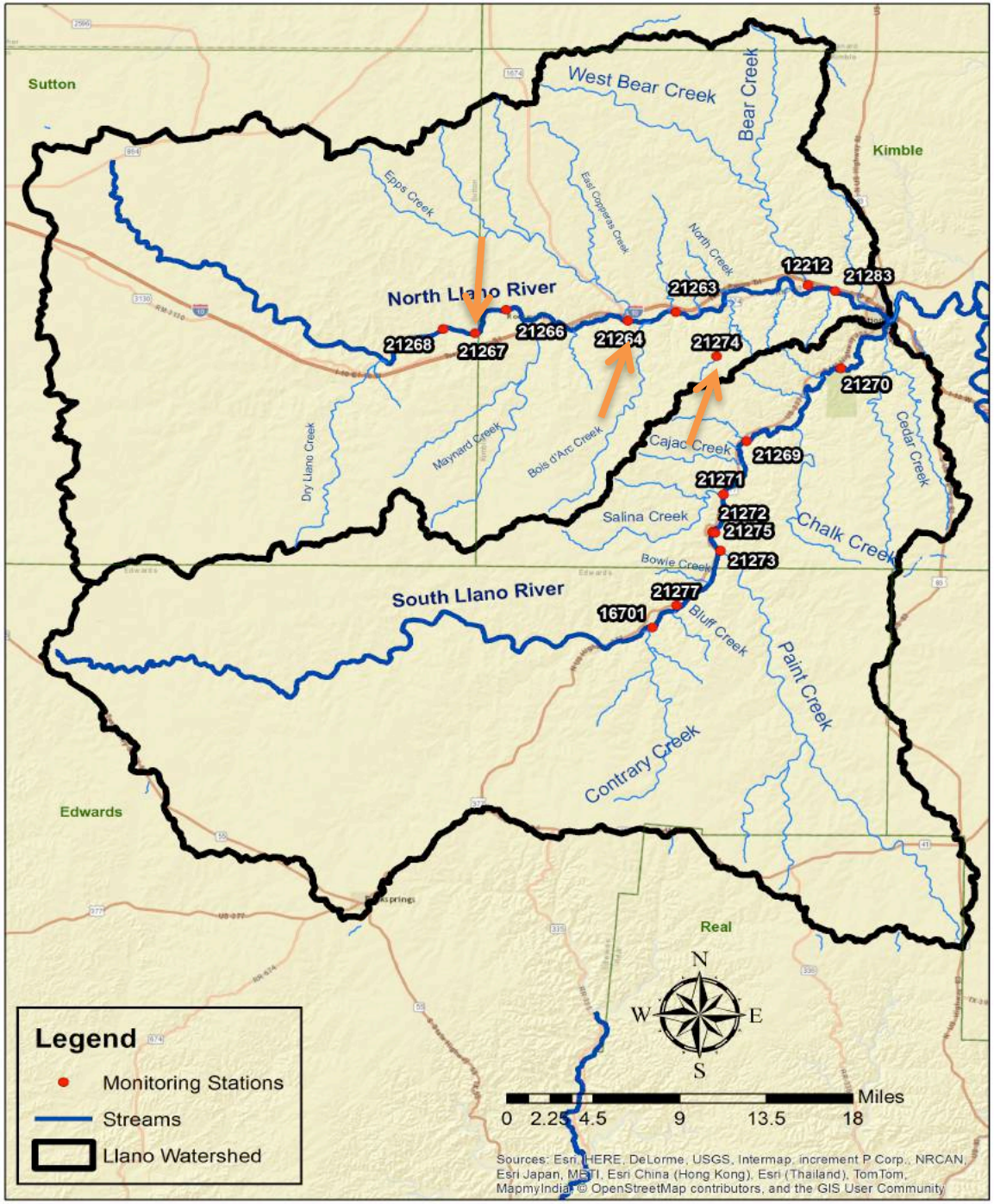


Water Quality Monitoring Sites

Dissolved Oxygen
<u>Less than 5 mg/L</u>

#21263 @ CR 274
#21264 @ CR 275
#21266 @ CR 260

All 3 in June of 2013
#21263 in Sept 2014



Water Quality Monitoring Sites

E-Coli

Geometric Mean

<u>> 126 cfu/100ml</u>

#21264 @ CR 275

#21267 @ Richardson

#21274 @ Bois D'Arc

Upper Llano River Watershed Protection Plan

Proactive Local Stakeholder Process
Address Water Quality and Water Quantity

Livestock & Wildlife	Land Management	Water Quality & Water Conservation
Grazing Management	Brush Control and Water Supply Enhancement	Septic Systems
Deer and Exotics	Prescribed Burning	Water Conservation
Feral Hogs	Stream Bank & Riparian Buffer Improvement	Urban Stormwater Management

Bacterial Pollution Feral Hogs

Feral Hog Taskforce

Share information and resources

Riparian Restoration

Unique Exclosure Research Opportunity and Conservation Demonstration Area

Land Management

Upland Land Management

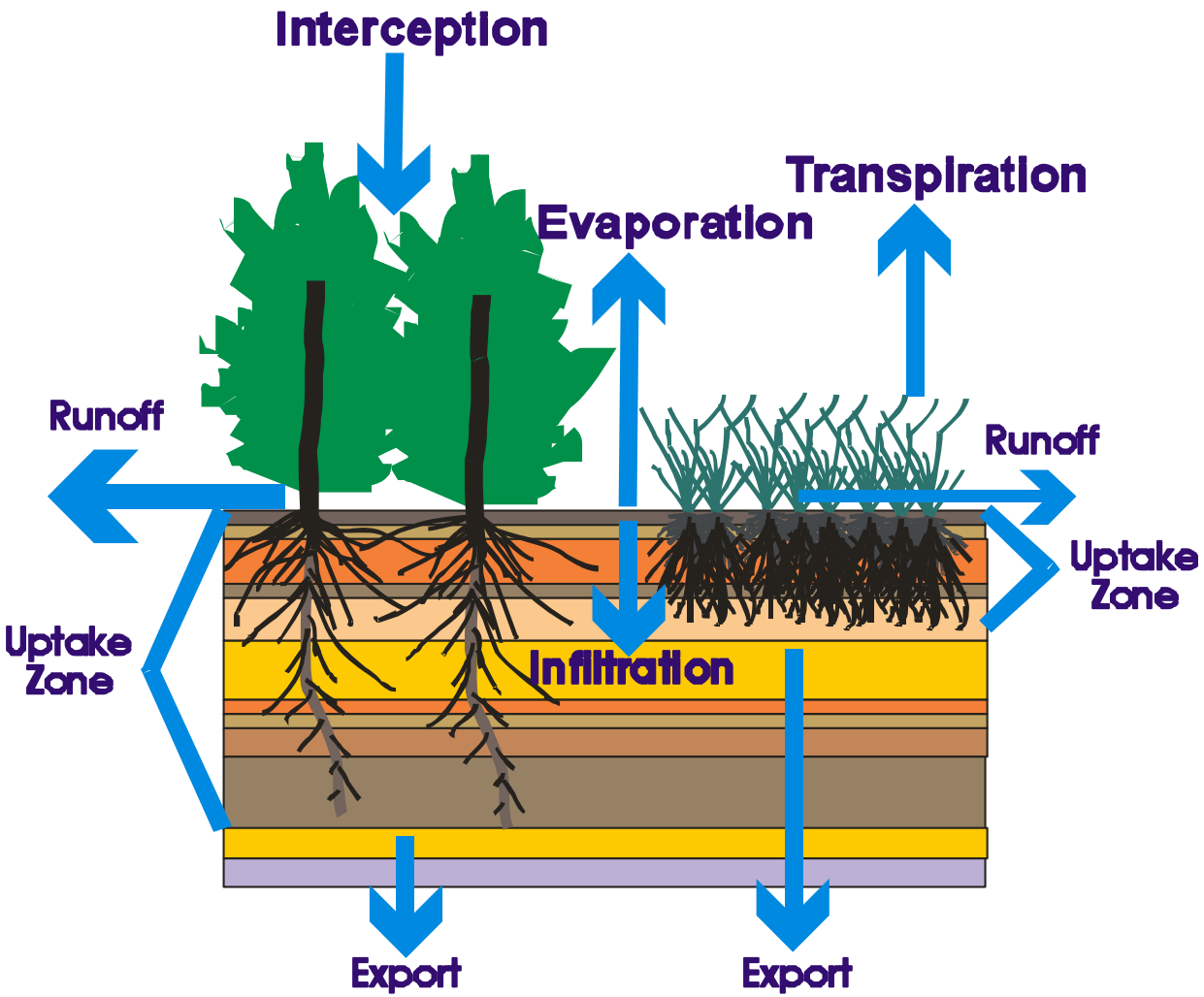
Over 500,000 ac. in watershed is in medium to high density brush

EDYS

Ecological Dynamics Simulation Model Output

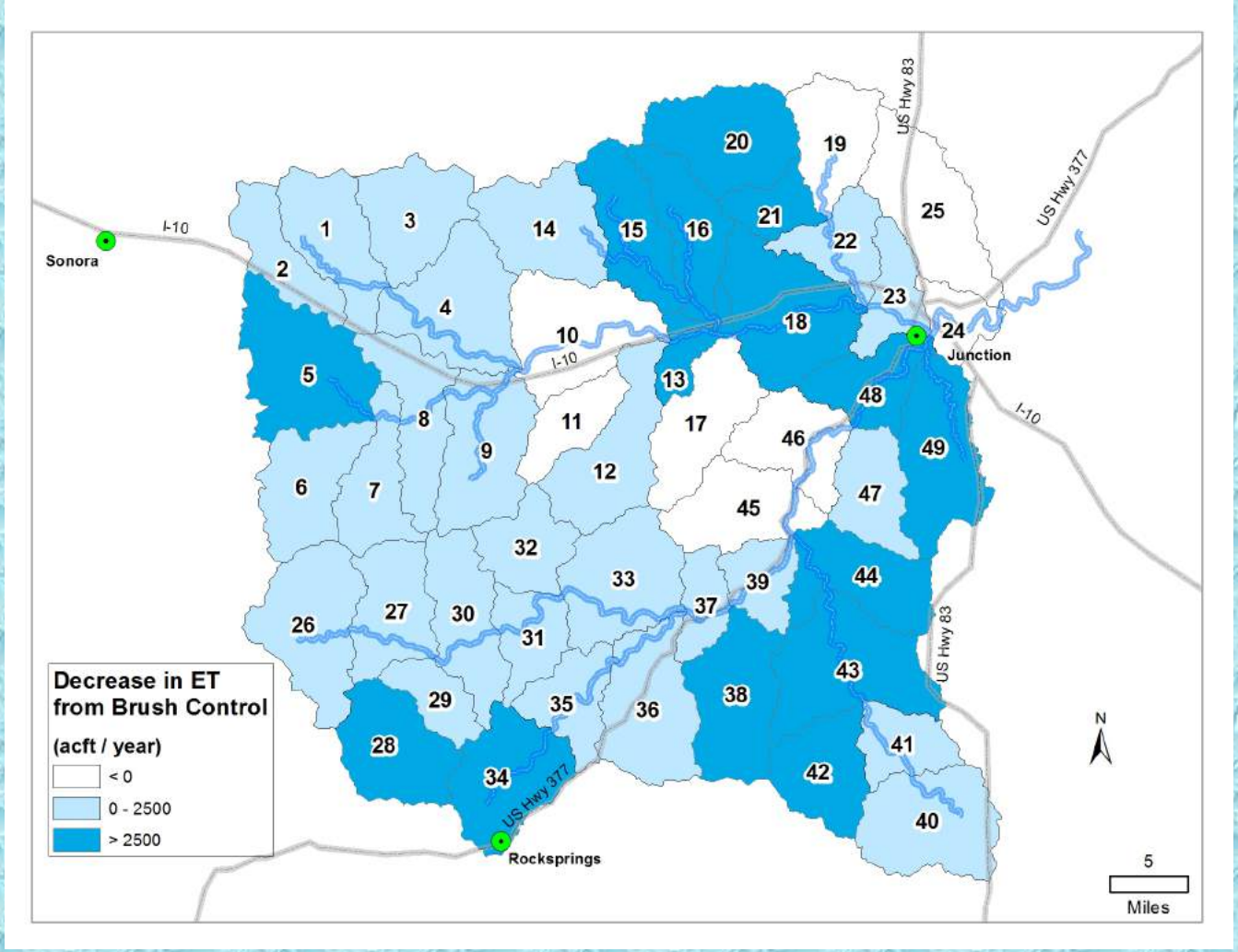
Upper Llano Rivers Watersheds

EDYS Plot-Level Hydrology

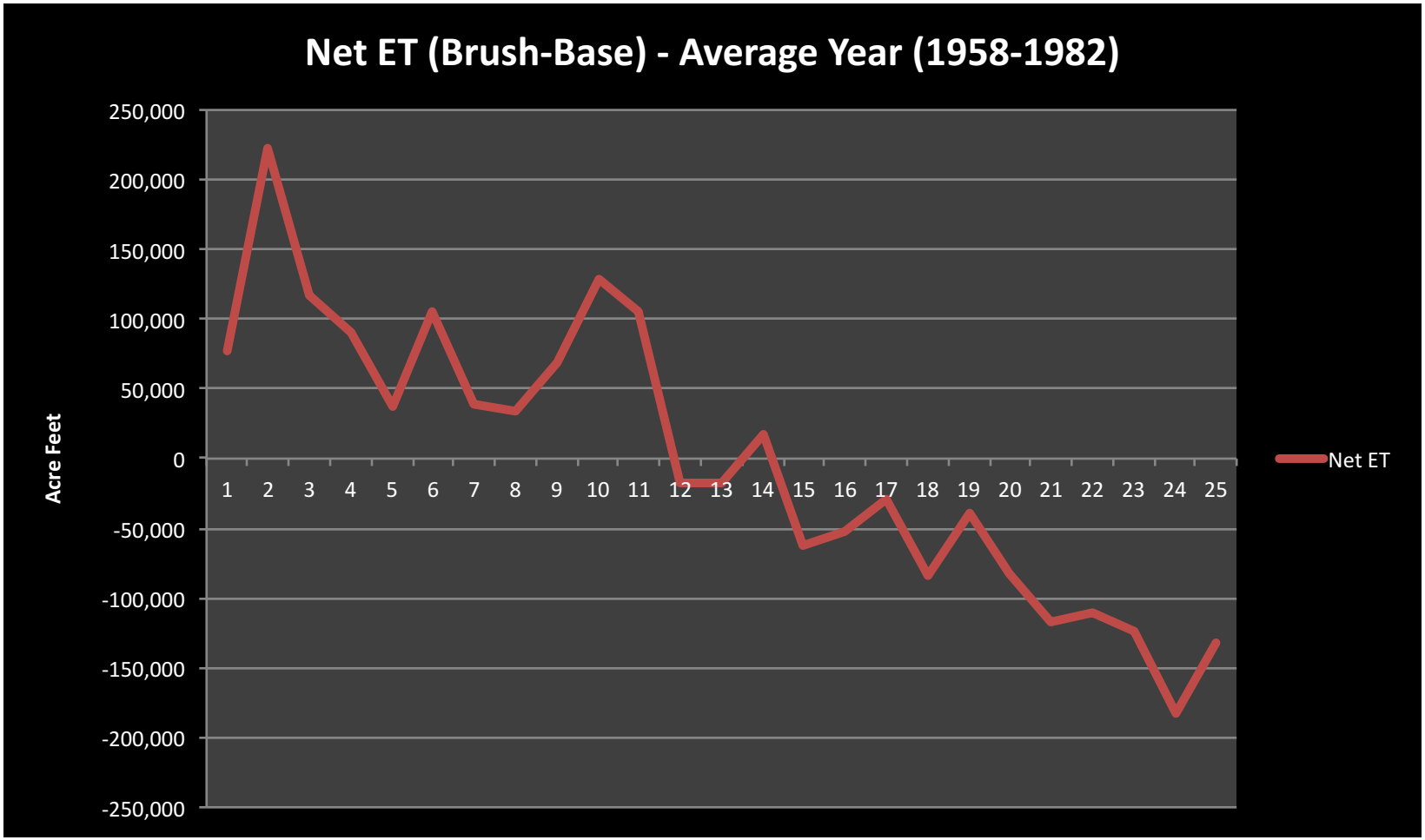


Brush Control to Enhance Water Supply

Model Output identifies areas with greatest potential for water yield from brush control



Model Output-Brush Removal



Model Output-Brush Removal

Annual removal of ~ 9,000 Acres of Medium-High Density Brush
on Slopes <12% for 25 years – Average Conditions

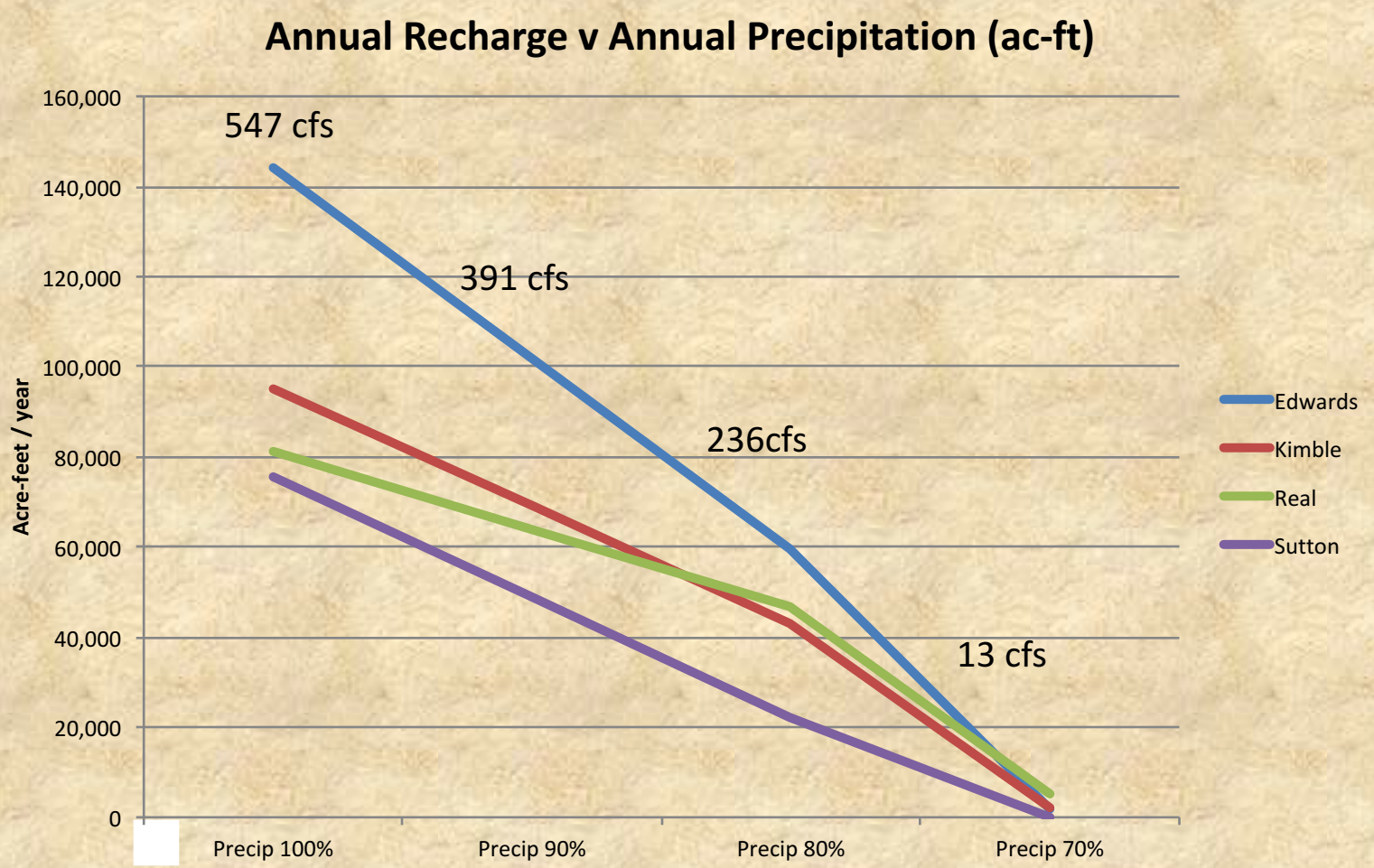
Ashe –Juniper and Mesquite Only

with Grazing Management

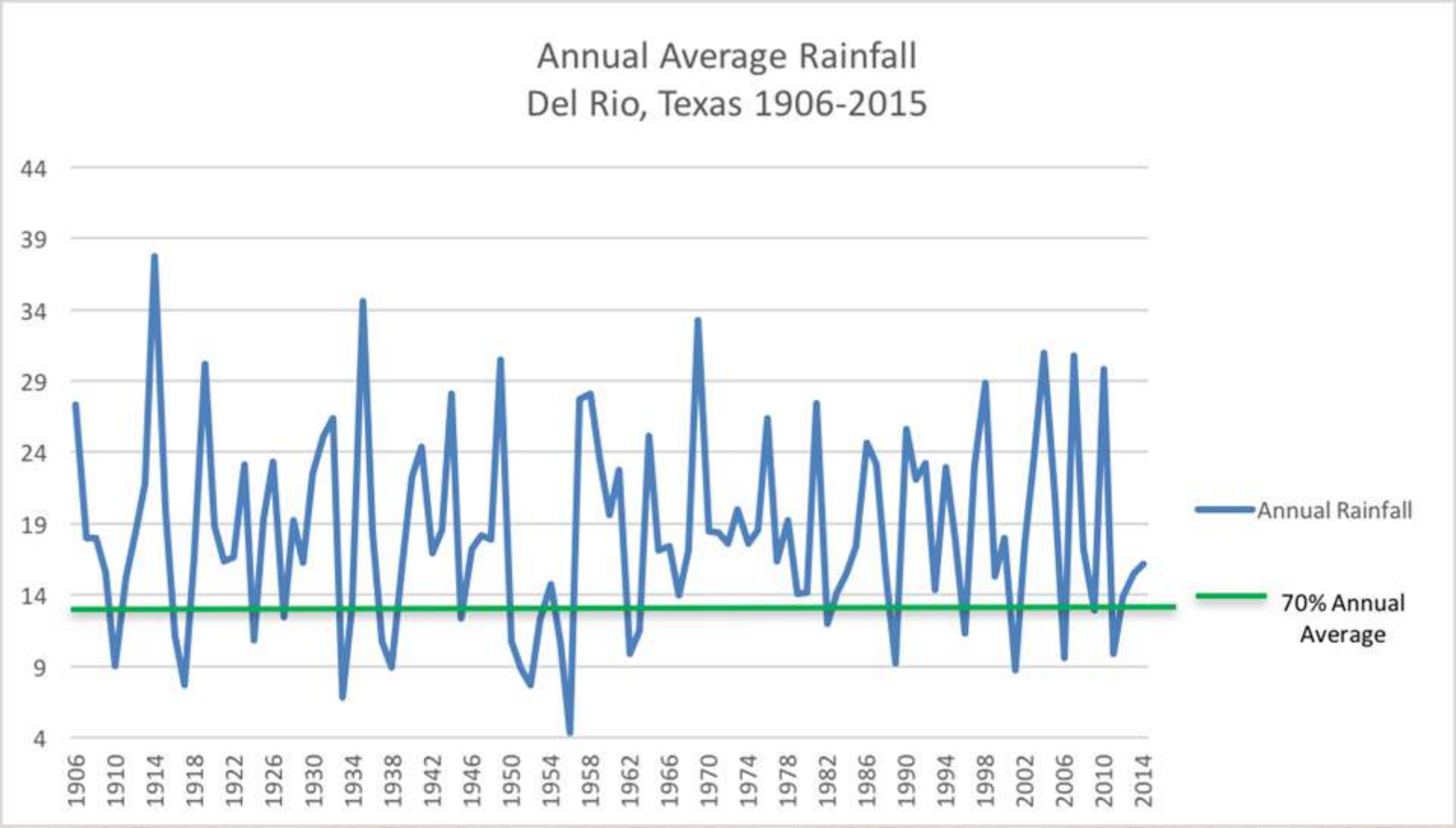
Follow up fire treatment every 6 years

RESULTS

- At first, Transpiration decreases but Evaporation Increases
  - After Year 12, ET decreases by 75,000 ac-ft
- Continues to be decreased with proper stewardship

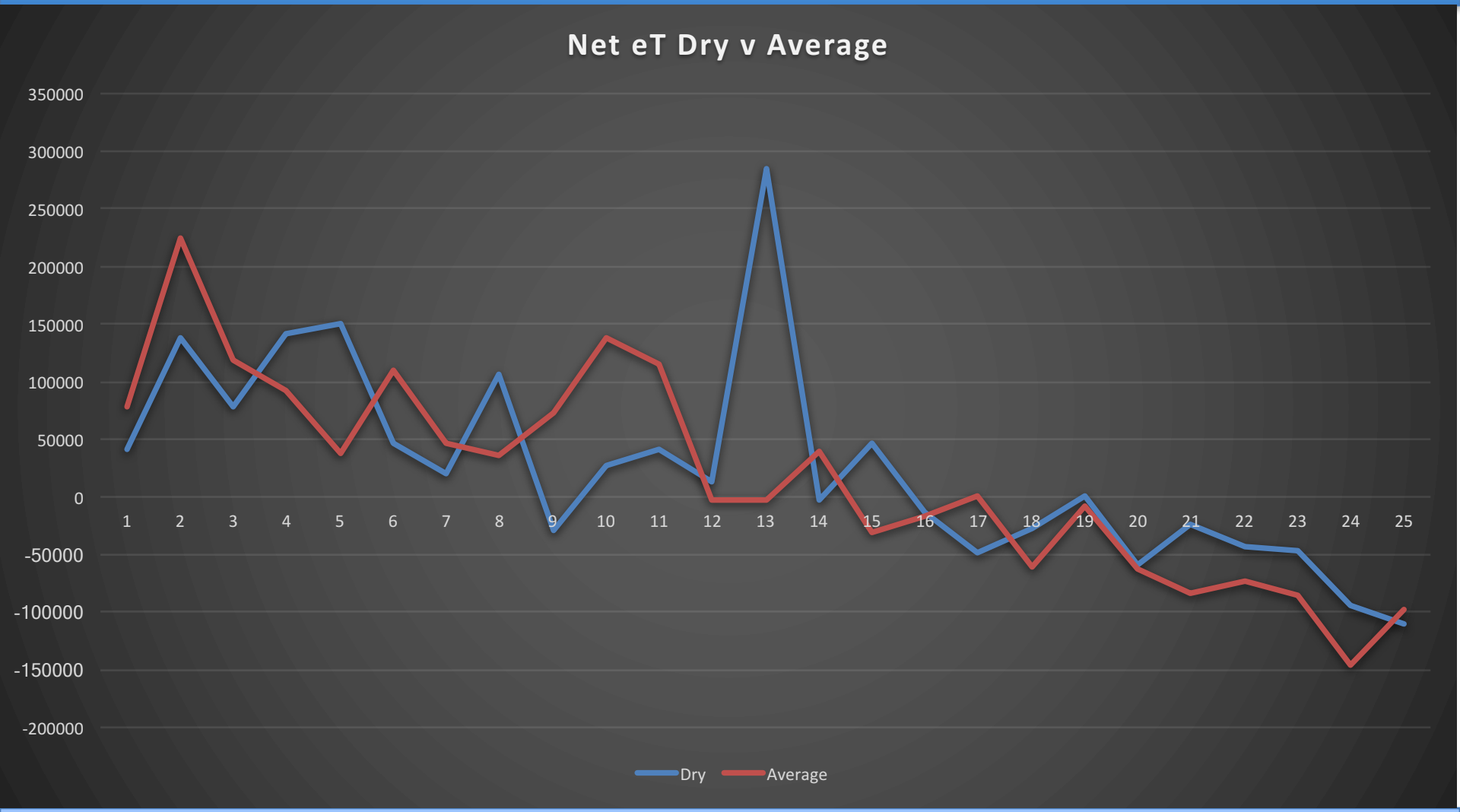


From Ron Green et al 2010

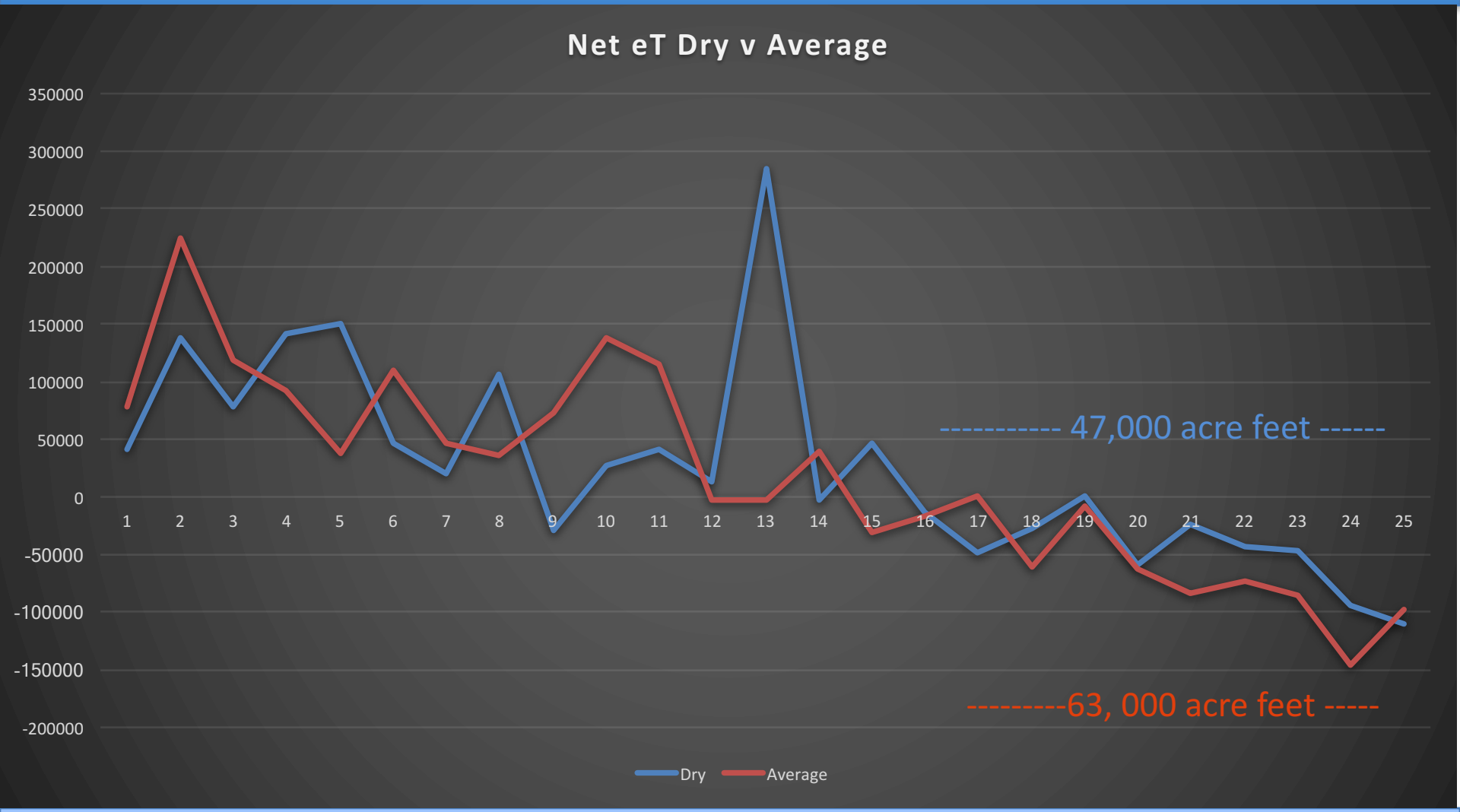


- 24 out 110 years (22%)
- 6 or 7 years during 50s
- 6 times since 1982
- Zero times 1963-1982

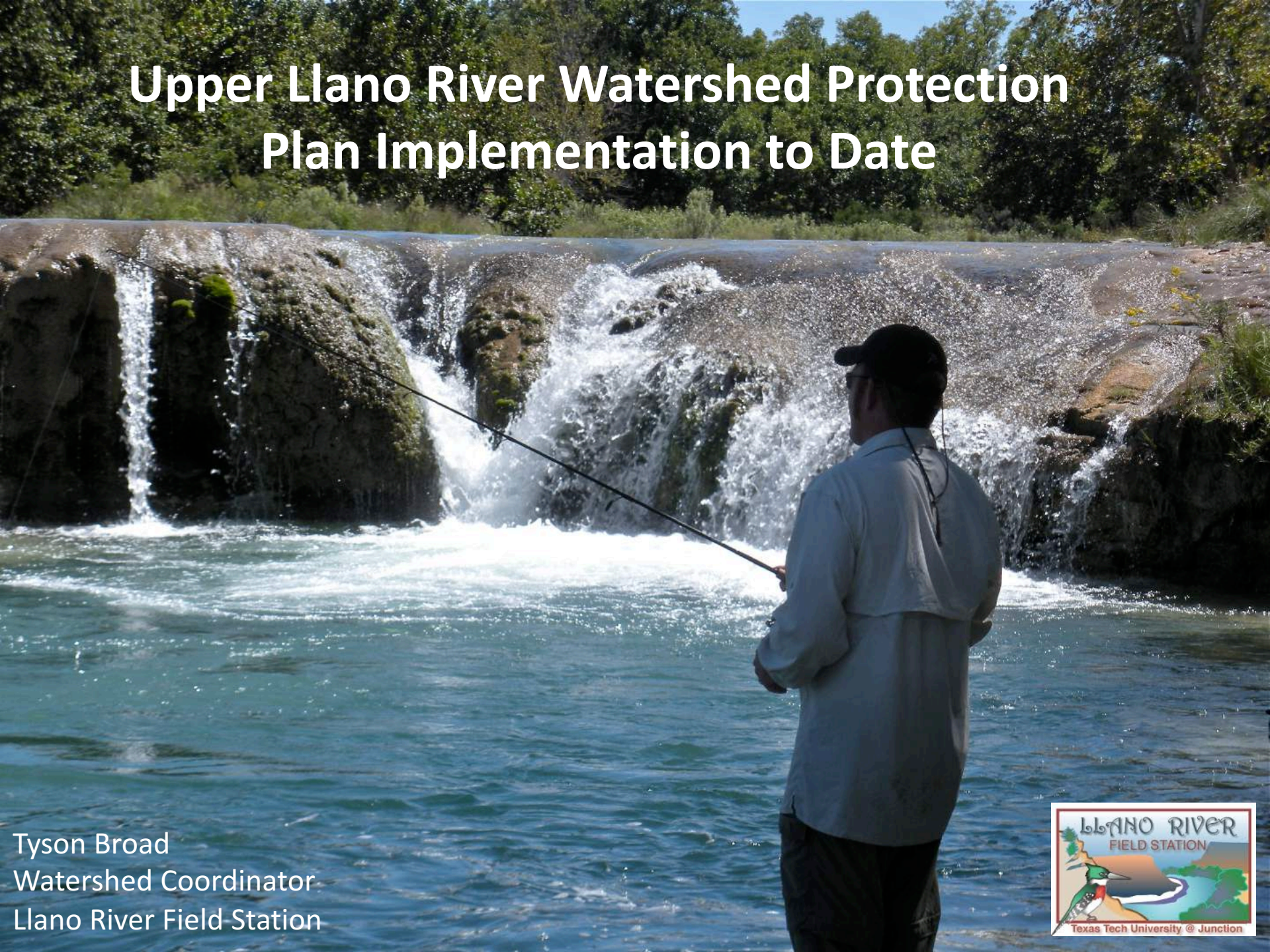
Model Output-Brush Removal



Model Output-Brush Removal



Upper Llano River Watershed Protection Plan Implementation to Date



Tyson Broad
Watershed Coordinator
Llano River Field Station

Riparian Restoration

RIPARIAN RESTORATION

RIPARIAN RESTORATION

June 2012

November 2012

RIPARIAN RESTORATION

Student Interns from Ecological Society of America

Ungulate Foraging Pressures on Riparian Zones Along the South Llano River

Maggie Yarnold

Summary

Riparian ecosystems are vital in stabilizing riverbanks and cut banks as well as providing shade cover to the water. Without healthy riparian zones, the Llano River will change flow patterns more quickly and the water's temperature will rise by as much as two degrees Celsius. An increase in temperature due to shade cover loss will alter the biodiversity within the river itself. Riparian deterioration leads to the overall deterioration of the river ecosystem with the loss of key species and class I macroinvertebrates (most favorable). This study will examine how ungulate herbivory affects riparian ecosystems' health. Due to foraging selectivity, it is expected that ungulates (specifically whitetail and axis deer) are altering the soil composition and species richness within riparian zones. The selected study site receives higher levels of disruption and has many areas with very few young saplings/seedlings outside of the exclosure. In order to determine the impact of

BRUSH CONTROL FOR WATER SUPPLY

BRUSH CONTROL FOR WATER SUPPLY

GENERAL SCIENCE

Dye-Tracing Study

WORKSHOPS


Texas A&M
AgriLife
Extension
Texas Watershed Steward
Texas Water
Resources Institute
make every drop count
About
Lone Star Healthy Streams Program

WORKSHOPS

November 14, 2017
8:30am-12:30pm

WORKSHOPS

Axis Stakeholder Meeting

WATER QUALITY MONITORING

Texas Stream Team

PRESS


Ahead of the curve
Hill Country stakeholders proactively create Upper Llano River Watershed Protection Plan
Texas Water Resources Institute
make every drop count
txH2O | Fall 2017

PRESS

Weekly Newsletter

GRANTS SUBMITTED

U.S. Endowment for Forestry and Communities

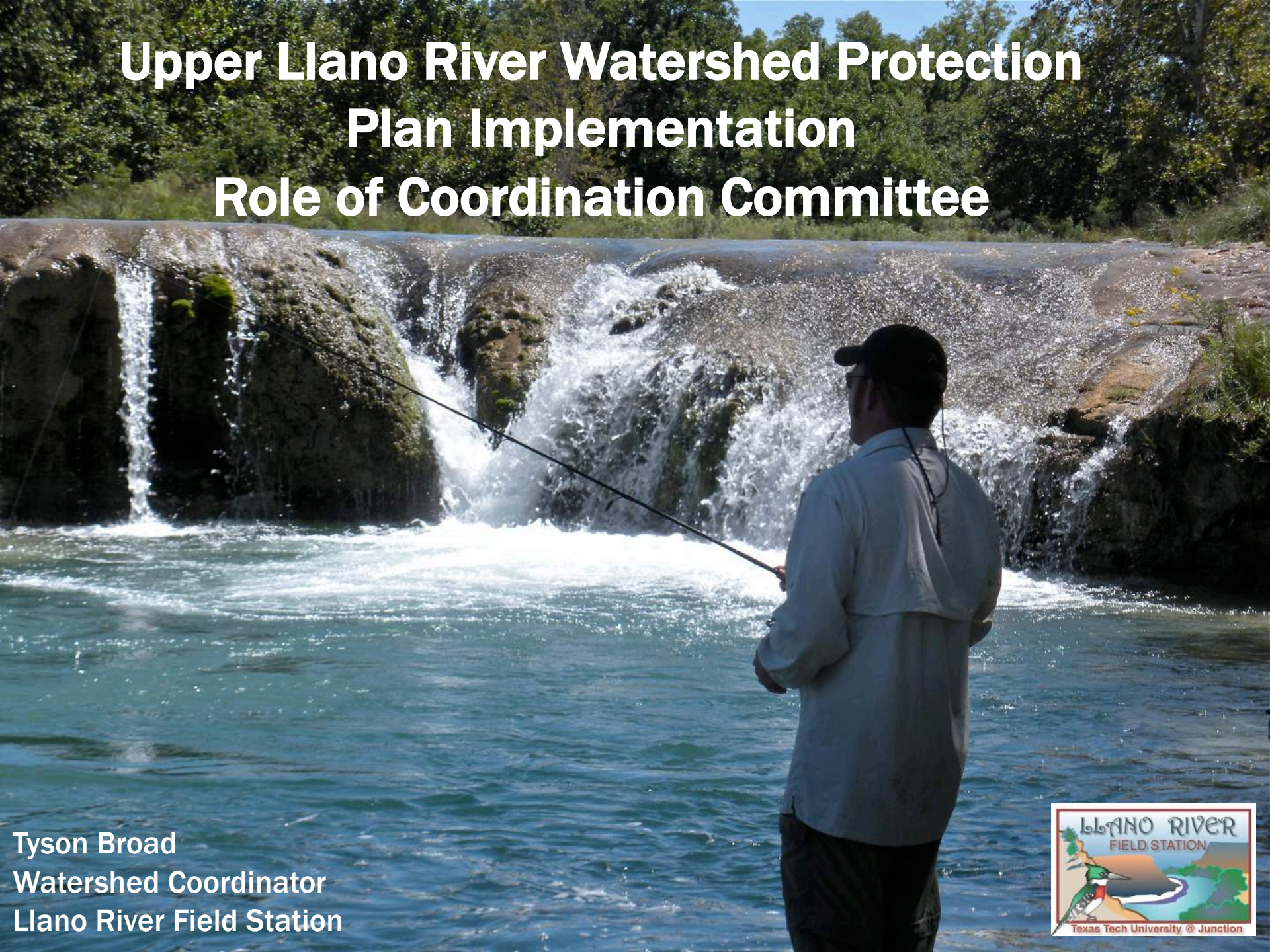
NEWS

HEALTHY WATERSHED CONSORTIUM GRANT PROGRAM GROWS

Natural Resources Conservation Service Partnership Expands Funding for 2017 Request for Proposals Released

GRANTS SUBMITTED

Upper Llano River Watershed Protection Plan Implementation
Role of Coordination Committee



Tyson Broad
Watershed Coordinator
Llano River Field Station

COORDINATION COMMITTEE

Members

Jerry Kirby - *Kimble GCD*
Andrew Burnard - *N Llano Landowner*
Dandy Kothmann - *Kimble Co NRCS*
Sam Jetton - *Burn Association*
Scott Whitener – *S Llano River St Pk*
Znobia Wootan – *LRWA*
Megan Bean - *TPWD*
Melissa Parker - *TPWD*
Marty Graham - *TSSWCB*
Bob Brockman – *Sutton Co Comm.*
Joe David Ross – *N Llano Landowner*
Delbert Roberts – *Kimble Co Judge*
Garry Merritt – *Real Co Judge*
James Crockett – *Edwards Co AgriLife*
Russell Hammonds –*City of Junction*
Sam Silvers – *Kimble Co AgriLife*
Jim Polonis – *Sutton Co GCD*
Charles Hagood – *First State Bank*
Lori Hazel – *Texas Forest Service*
Art Mudge – *N Llano Landowner*
Tom Vandivier – *S Llano Landowner*
Ruthie Russell – *S Llano Landowner*

COORDINATION COMMITTEE

Role:

- Coordination Committee serve as stakeholder representatives
- Decision-making body for WPP Implementation
- Prioritize Management Measures
- Aid in Implementation of WPP through local outreach

COORDINATION COMMITTEE

Questions for Coordination Committee

- Bylaws (see handout)

- Working Groups
  - Invasive Species-Aquatic & Terrestrial
  - Riparian Protection & Management
  - Water Quality, Conservation & Flow
  - Upland Management
  - Water Supply Enhancement

COORDINATION COMMITTEE

Bylaws

- Purpose
- Goals
- Powers
- Life of Steering Committee
- Membership
- Meetings
- Roles
- Decision-making Process
- Revisions

- *Process for Development of New Bylaws*

COORDINATION COMMITTEE

Previous Working Groups

- Invasive Species
- Riparian Protection & Management
- Water Quality, Conservation & Flow
- Upland Management
- Water Supply Enhancement

New Working Groups?

- Funding
- Implementation and Adaptive Management
- Outreach

Upper Llano River Watershed Protection Plan Implementation Future Funding Proposals

Tom Arsuffi
Director
Llano River Field Station