**Upper Llano River   
Watershed Protection Plan**

**Coordination Committee Meeting**

**July 9, 2015**

**Llano River Field Station**

**Texas Tech University**

**Junction, TX**

**Meeting Notes**

(A list of acronyms is provided at the bottom of these notes)

**Tom Arsuffi** provided welcome. Lots of modeling results are in that will be shared tonight. Within the month, will have draft of plan to look over and last Coordinating Committee meeting.

**Tyson Broad** provided summary of last meeting and presentation of some of the most EDYS modeling results related to brush control and water supply enhancement and sedimentation. (See EDYS Presentation Power Point). Tyson warned that the numbers from the model should not be considered absolute; rather models help to show us trends and provide guidance re where to implement efforts.

Major points of Model Presentation:

* EDYS models on the plot level: *Rainfall/Interception* by plants/*Evaporation and Transpiration* from plants and soil/*Runoff/Root Uptake*/*Infiltration.* Key point is that removing brush results in less interception, less evaporation and transpiration (eT), and less root uptake as grasses and forbs do not penetrate the root zone as deeply as juniper and mesquite.
* EDYS modeled the results of removing 16,500 acres of medium to high-density brush (Ashe-juniper and mesquite) on areas with less than a 12% slope. This activity was followed with fire treatment every 6 years.
* Model predicts that across the watershed, on an annual average basis over a 25 year period, **Runoff** will decrease 1% (from 87,500-86,700 acre-feet)/ **eT** will decrease 5% (from 2.01 million acre feet to 1.9 maf) and **Recharge** will increase by 30% (more than 100,000 acre-feet)
* Decrease in eT from Brush Control largest in lower reaches of North and South Llano and Paint Creek.
* Although runoff decreases for the watershed as a whole, model predicts some increases in runoff in Upper South Llano and Paint Creek. Decreases in runoff occur in the lower reaches of the South and North Llano.
* Groundwater use by vegetation decreases after brush removal primarily in the lower reaches of the North and South Llano.
* Annual Prescribed burning of areas with less than 10% or less cover of woody species has little effect on the water budget.
* There is an increase in Sediment loading following brush removal for areas of medium to heavy brush and on slopes less than 12%. This highlights the need to partner replanting and other BMPs as a follow up to brush treatments. Future model runs can tell us how much follow up needs to be done and where. How much do we have to do to see a certain result? The model provides a guideline.

**Kevin Wagner**

**Discuss & Finalize Management Measures & Implementation Goals**

Points to remember: What you want to do in the watershed? What do we want to include as management measures? This is a voluntary program that will be implemented through existing programs. It will not create any new programs or new regulations. Everything will be implemented through existing programs. Strategies are developed in the plan that will lead to future funding.

**Voluntary Land Stewardship**

**Funded through NRCS/TSSWCB/SWCD cost-share programs**

BRUSH CONTROL

Last month Kevin met with the Soil and Water Conservation Districts to get an idea of how much brush control had been done over the last 10 years to reach an average annual amount of brush control. Based on that, looking forward, how much do we want to do?

The District’s provided Kevin these numbers. Kimble County suggests 10k going forward. 48% of District is in watershed so arrived at 4,800. Did this for Sutton and Edwards as well and came up with treating 9,000 acres of heavy to medium brush annually over 10 years.

As part of modeling scenario, used 16,000 acres.

Group discussion if want to use 9,000 or 16,000 acres. Question was raised if there is still the same level of funding that there has previously been. The answer is no.

However, when we have plan finalized, start working to get additional grant funds for watershed via proposal submission to Soil Board Water Supply Enhancement, NRCS through regional conservation partnership program or statewide resource concerns.

Discussion about funding from TWDB as part of regional water program; these are a loan program.

There are projects ready to go, but waiting for funding. It may be easier to find participants the first few years. This area did get additional funds a few years ago as part of special project. Will have to get additional funds to keep progress at this level.

Is there a way folks could report how much they are doing outside of these programs?

Might be something to consider as part of the program.

Comment that brush species also need to include Redberry juniper.

***Adopted Management Goal for Brush Control and Water Supply Enhancement***

**The Coordinating Committee adopted a watershed goal of treating, at a minimum, 9,000 acres annually (for a period of 10 years) of medium to heavy brush on slopes less than 12%. Area shown by the model to have the greatest benefit to water supply from brush control will receive the highest priority, however, other areas with medium to high brush will not be excluded.**

***Methods of management***

* **Develop & implement conservation plans for mechanical, chemical, livestock, and prescribed burning controls of brush, along with complementary practices such as reseeding and buffer strips**
* **Education on brush control methods**

PRESCRIBED BURNING

270,000 acres of low-density brush in watershed according to land use classifications.

Original modeling scenarios were for prescribed burning on 2% of watershed, or about 5,400 acres during May/June.

In Kimble County, over last 5 years, Burn Association has averaged 5,300 acres of prescribed burns. If estimate the percentage of Kimble Co in the watershed (48%) and the percentage of the watershed composed of Kimble Co (about 1/3) an estimated goal could be 7,700 acres per year.

Discussion: group feels as if May/June should be taken out as may be too restrictive.

There is some burning that happens outside of Prescribed Burn Association, but also burning through cost-share contracts with NRCS.

Getting a grant that would cover liability insurance for landowners would be helpful.

Fire Science Coalitions have liability wavers.

Discussion at the end of the meeting mentioned the formation of a burn team via Forest Service or Parks and Wildlife. This team could conduct prescribed burns for folks who don’t have resources to burn. There have been discussion re teams to help state parks meet their goals. There is also a program with US Forest Service to train veterans to be firefighters. Possibility to train a team using veterans of Texas through the fire ecology school to house a team and train in prescribed fire. Believe that they would carry liability insurance via landowner waiver. Americorp used to have fire team.

***Adopted Management Goal for Prescribed Burning***

**The Coordinating Committee adopted a watershed goal of treating 5,400-7,700 acres of low-density brush annually over a 10-year period. (No month restriction). This would include both Prescribed Burns as well as Wildfires since there is still an ecological benefit.**

***Methods of management***

* **Prescribed Burn Associations**
* **Grants for liability insurance**
* **Education**

PRESCRIBED GRAZING

Acreages obtained via meetings with local Soil and Water Boards. Based on historical data, as well as adding an additional 10% as suggested by Board to grow program, there is about 61,000 acres of prescribed grazing in the 3 main counties in the watershed. Splitting this into the watershed using % of county in watershed, an existing goal of 23,000 of prescribed grazing could be implemented through existing programs w/ Soil Board, NRCS, TPWD. This includes grazing plans as well as complimentary practices such as range planting, livestock pipelines, wells, watering facilities, cross-fencing. A total of 230,000 acres would be under prescribed grazing plans over 10 years. This is about 20% of the watershed.

May be difficult to separate old plans that are renewed from new plans so goal may include some acres that are in existing plans.

***Adopted Management Goal for Prescribed Grazing***

**The Coordinating Committee adopted a watershed goal of having a minimum annual average of 25,000 acres in prescribed grazing plans for a total of 250,000 over 10 years.**

***Methods of management***

* **Develop & implement prescribed grazing plans & complimentary practices (ie brush management, prescribed burning, range planting, livestock (wildlife) pipeline, wells, watering facilities, cross fencing, etc)**
* **Education programs on grazing management**
* **Work with County Assessors to ensure appropriate stocking rate requirements for agricultural valuations.**

UPLAND WILDIFE HABITAT MANAGEMENT

Also part of NRCS/TSSWCB/SWCD cost-share programs. Currently about 10,500 acres/year are under improved wildlife habitat programs. Does not include Landowner Incentive Plans.

There may be a problem of double counting since some lands may be under an NRCS program and a LIP program and wildlife management plans and may be counted twice.

There was some discussion re combining grazing and wildlife goals. However, in regards to getting funding, may need to keep separate. Certain agencies may be more inclined to assist with wildlife than livestock.

Recognizing that there may be both on same acreage, the committee agreed to increase the number of acres.

***Adopted Management Goal for Upland Wildlife Habitat***

**The Coordinating Committee adopted a watershed goal of having a minimum annual average of 20,000 acres in wildlife habitat plans for a total of 200,000 over 10 years.**

***Methods of management***

* **Develop & implement upland wildlife habitat management plans**
* **Education programs on wildlife habitat management**

**Voluntary Land Stewardship**

**Funded through TPWD cost-share programs**

WILDLIFE MANAGEMENT (WHITE-TAIL DEER)

It is estimated that there are 117,000 white tail deer in the watershed, based on published literature showing 10.1 ac/deer or 2.1 acres/deer. The proposed goal will focus on increasing the number of acres or ranches participating in Wildlife Management Plants, Wildlife Management Associations, or Landowner Incentive Plans.

Llano River Field Station is awaiting info from TPWD re number of ranches/acres in watershed already in these programs. When these numbers are available, we will revisit this goal via email. Likely, the goal will be to increase the number by 10%.

***Adopted Management Goal for Management of White Tail Deer***

**The Coordinating Committee will focus its goal on increasing the amount of acres or number of ranches in Wildlife Management Plans, Wildlife Management Associations, and Landowner Incentive Programs. The goal will be set when data are received re the number of programs in the watershed.**

***Methods of management***

* **Encourage participation in Wildlife Management Plans, Coops, and Landowner Incentive Plans**
* **Educate citizens, hunters and landowners.**

**Invasive Species Management**

EXOTIC MANAGEMENT (Axis, aoudads, black buck etc)

Number of exotics is unknown. Assuming that these species would be worked into the Wildlife Management goals (above) with the inclusion of getting an inventory of the current numbers.

***Adopted Management Goal for Management of Exotics***

**Similar to the goals for management of white tail deer (above) the Coordinating Committee will focus its goal on increasing the amount of acres or number of ranches in Wildlife Management Plans, Wildlife Management Associations, and Landowner Incentive Programs. The goal will be set when data are received re the number of programs in the watershed.**

***Methods of management***

* **Encourage participation in Wildlife Management Plans, Coops, and Landowner Incentive Plans**
* **Educate citizens, hunters and landowners.**

FERAL HOG MANAGEMENT

Based on prior studies for other areas and recent Watershed Protection Plans, estimated that there are 30 acres/hog or 21.3 hogs/square mile.

Using these ratios, estimate about 40,000 hogs in watershed.

TPWD personnel checking with Kerr Wildlife Management Area re numbers.

Original discussion centered on removing 1,000 hogs per year.

Plum Creek Watershed Protection Plan has a goal of removing 66% of the hogs per year on a long-term basis in order to reach a stable hog population.

Need to focus on the sows. Have hunters shoot 3 sows before shoot boar.

Workshops at Kerr and Mason Mountain programs should be mentioned: effectiveness and cost/acre for different harvesting methods. Most efficient is catching big group via large pens w/ technology. Funding sources to provide landowners with App to help capture hogs in trap, or rotate equipment around ranches.

Suggestion to prepare chart for landowners re how many hogs/acre should be harvested, thus letting them know what their goals should be.

***Adopted Management Goal for Management of Feral Hogs***

**The Coordinating Committee adopted a pending watershed goal of harvesting 66% of the hog population over a 10-year period. This goal is pending based on obtaining additional information from Plum Creek. The goal will be finalized at the next meeting.**

***Methods of management***

* **Better inventory**
* **Hire additional trapper(s)**
* **Purchase hog control equipment (ie traps)**
* **Bounty program**
* **Coordinate aerial hunts**
* **Online tracking of sightings and kills**
* **Educate landowners re how many hogs/acre need to be reduced and via Mason Mountain and Kerr WMA demonstrations**

ARUNDO DONAX

***Adopted Management Goal for Management of Arundo donax***

**The Coordinating Committee adopted a goal of treating 100% of riverbank infested with Arundo donax.**

***Methods of management***

* **Chemical treatment**
* **Education**
* **Permission from landowners**

ELEPHANT EAR

May be more than 4 miles. There are also other invasives of concern including Mexican stipa and chinaberry. These will be mentioned in the plan.

***Adopted Management Goal for Management of Elephant Ear***

**The Coordinating Committee adopted a goal of treating 100% of stream bank infested with Elephant ear.**

***Methods of management***

* **Chemical treatment**
* **Education-workshop from Lady Bird Johnson Wildflower Center**
* **Permission from landowners**

**Management of Septic Systems**

SEPTIC SYSTEM REPAIR & REPLACEMENT

Also known as On-site Sewage Facilities (OSSF)

1990 Census was the last to collect information on septic systems. At that time there were an estimated 1491 systems in the watershed. Literature suggests that there is a 12% failure rate of systems in western region of Texas, thus an estimated179 systems are failing in the watershed.

It was suggested that there are probably at least 500 additional systems in the last 25 years.

Would work with counties to provide additional personnel to assist county sanitarian to locate and prioritize failing septics. Then provide funding to help replace.

There might be a possibility to connect systems nearby to Junction and Rocksprings to a centralized system.

Perhaps give a lead-time to identify systems first. Perhaps take us one year to get data and funding, then operate from a 9 year timeframe.

Perhaps focus on homes next to streams. Groundwater Districts have rules re location of septic next to wells.

A concern was raised re old dipping vats and lead and arsenic contamination from them. This could be mentioned somewhere in the text of the plan.

Question was raised if counties could set new requirements on new installations. The plan talks about working with the counties on this issue. It would be up to the counties to set new requirements rather than through the plan.

Failing systems are of main concern. Best approach might be to provide information re what failing system looks like. Landowner can inspect it themselves then seek funding to get it replaced. Doing actual inspections as part of the WPP be difficult.

***Adopted Management Goal for Septic Systems***

**The Coordinating Committee adopted a goal of repairing/replacing at least 10 failing OSSF per year or 100 over a 10 year period.**

***Methods of management***

* **Work with counties to investigate, locate & prioritize failing or noncompliant OSSFs**
* **Acquire funding sources to connect OSSFs to a centralized wastewater collection system where possible**
* **Provide technical assistance to landowners, contractors, inspectors, septage haulers and counties to improve all aspects of installation, repair, maintenance and inspection of existing and new OSSFs**

**Management of Riparian Areas**

STREAMBANK and RIPARIAN BUFFER RESTORATION

There are 14 miles of eroding stream bank along the North and South Llano. Actual restoration of stream banks can be expensive. South Llano State Park is planning to restore about 2000’ of stream banks in the next 7 years. The bridge at the Park will be replaced in 2017.

The fix of the bridge may be a keystone type of project where that fix may have positive contribution to other eroding banks downstream.

None of this will be completed in 10-years, so the key phrase her is ‘begin restoration’.

Riparian buffer restoration will involve exclosures. These will help provide seedbanks and re-establishment of trees providing a multiplier effect. Perhaps measure riparian restoration via densities.

Upland management also has impact on streambank erosion. Target acres along river for upland restoration which would help riparain. Ranchers who have cutbanks can participate in BMP workshop to help count towards restoration if do follow up of who implements practices.

***Adopted Management Goal for Stream Bank and Riparian Buffer Restoration***

**The Coordinating Committee adopted a goal of beginning restoration on 10% of the riparian buffer annually (about 1.4 miles) for a 10-year period and implementing one demonstration project of streambank restoration.**

***Methods of management***

* **Exclosures to support tree establishment**
* **Streambank structures**
* **Revegetation**
* **Educate landowners with eroding streambanks of treatment options**
* **Implement conservation plans via NRCS, TSSWCB, TPWD**

**Water Conservation**

URBAN WATER CONSERVATION

There are not specific goals in the WPP to address Water Conservation. However, it is important to mention certain opportunities to partner with the City of Junction and Rocksprings on water conservation efforts. These include purchasing water conservation appliances, outreach, and integration of MESONET weather station with lawn watering irrigation schedules. A MESONET is an automated weather station that measures a variety of climatological data, including soil moisture. There is a station located at the Llano River Field Station.

AGRICULTURAL WATER CONSERVATION

Most of the irrigators have high efficiency pivot systems. There might be an opportunity to tie MESONET information to irrigators as well.

***Adopted Management Goal for Water Conservation***

**The Coordinating Committee was running out of time to fully vet this goal; the goal will be revisited at the next meeting to see if any formal goals need to be adopted**

***Methods of management***

* **Partner with San Antonio Water System to purchase water conservation appliances at their wholesale rate**
* **Work with Junction and Rocksprings to improve their conservation efforts re water loss audits and upgrades in infrastructure**
* **Outreach efforts to the community re conservation and vanity ponds**
* **Integrate MESONET weather station with lawn watering outreach for both urban and agricultural irrigation (similar to Water My Yard program)**

**Urban Stormwater Management**

URBAN STORMWATER MANAGEMENT

There are about 8,000 acres of urban land use in the watershed. Again, need to work with communities to see where partner on educational programs, best management practices, infrastructure. Currently, there is nothing to structure city ordinances on.

Specific concerns were raised regarding urban runoff from the I-10 intersection. Previous discussions mentioned the possibility of engineering studies to determine cost of implementing BMPs to reduce stormwater runoff, especially along the I-10 intersection.

Follow up discussion after the meeting also mentioned the opportunity to address stormwater runoff through the creation and maintenance of healthy riparian areas that protect water supply.

***Adopted Management Goal Urban Stormwater Management***

**The Coordinating Committee was running out of time to fully vet this goal; the goal will be revisited at the next meeting to see if any formal goals need to be adopted**

***Methods of management***

* **Work with communities to improve urban runoff through implementing appropriate structures, practices, and codes**
* **Engineering studies to determine costs of implementing BMPs**
* **Creation and/or maintenance of riparian areas to capture runoff**
* **Educate homeowners**

**Final Notes**

The next and last meeting of the Coordinating Committee will be August 31st in Junction. The timeframe is for a draft to be submitted to Soil Board by August 10th. They have two weeks to review plan before delivery to Coordinating Committee one week prior to meeting (24th). The content of the plan will be 50-55 pages plus appendices.

ACRONYMS

EDYS-Ecological Dynamics Simulation

BMP-Best Management Practices

NRCS-Natural Resource Conservation Service

TSSWCB-Texas State Soil and Water Conservation Board

SWCD-Soil and Water Conservation Distructs

TPWD-Texas Parks Wildlife Department

LIP-Landowner Incentive Program

WMA-Wildlife Management Area

OSSF-On-site Sewage Facilities

WPP-Watershed Protection Plan