

Calvin Finch

From: Dana Nichols
Sent: Wednesday, December 03, 2008 2:07 PM
To: Calvin Finch
Subject: FW: Comments on Appendix D 2011 Region L - Study 3 Report
Importance: High
Attachments: 2011 Region L - Study 3 Report.pdf

Calvin,

Here are Marks excellent and thoughtful comments (below) on the Brush stuff. Haven't seen Eddie yet-

Dana

From: Mark Peterson
Sent: Wednesday, November 26, 2008 2:48 PM
To: Dana Nichols
Cc: Karen Guz; Eddie Wilcut
Subject: Comments on Appendix D 2011 Region L - Study 3 Report

Dana:

Appendix D covers the potential of brush management over the various aquifers within Region L to enhance precipitation infiltration and overland flow into these aquifers. The authors correctly identify the ecological communities of the Edwards Plateau and South Texas Brushlands that are over the Edwards Recharge Zone and Carrizo-Wilcox Aquifer respectively as potentially providing the greatest amount of infiltration, with the Edwards as providing potentially more than the Carrizo-Wilcox. Their assertions match those of the Texas Agricultural Experiment Station Research Report 05-1, Texas A&M University System.

However, a review of the literature mentioned within the body of Appendix D indicates the authors have ignored some studies or marginalized the data in others. I must confess that I am not familiar with the one study on which they base their recommendation, Huang et al. (2006). This study estimated an increase in a spring fed catchment of 45 mm/yr from a 60% reduction of Ashe juniper around the catchment. Yet, conveniently forgotten by the authors within their Executive Summary is that there are no studies conducted within catchments without springs or at the landscape level which consistently demonstrate brush management provides any consistent water yield. The suggestion of 50 mm/yr, then, is based on two studies where 50 mm/yr was the extreme limit and is, therefore, optimistic at best. Even then, a .167 AF/year (54,000 gallons/acre/year) yield is not what I call impressive.

The authors do recognize that brush density must be maintained at 5% or less (although I would prefer more emphasis on this point) in perpetuity to maintain long term water yield. It is interesting to note that most recommendations/research do not mention or ignore the status of canopy trees such as oak and elm. The authors also provide adequate documentation and explanation of the Yield / Cost process, although I would have liked to see the formulae and assumptions they used to derive the Net Present Values. Also, the explanation of the 10 year costs/acre-foot was unclear.

What the authors admit finally at the end is the difficulties in meeting this 5% level of density, participation of landowners, sources of funding, and the amount of land specifically suited to this type of management. What they did not mention is the amount of money needed to compensate landowners for income lost in the transition from wildlife managers to water producers. They mention that brush

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management is compatible with ranching. Unfortunately, no one ranches any more when hunting leases provide substantially more income than agriculture. The ideal brush density for wildlife management is 40 – 60%; there is no significant water yield at this density.

Finally, the authors, and this may not have been within their purvey, failed to mention the ancillary benefits of brush, particularly Ashe juniper and mesquite. Aside from their many wildlife benefits, both are adept at absorbing and adsorbing air pollutants. This is important for San Antonio with respect to its current status of non compliance with the Clean Air Act. Ashe juniper moderates stormwater volume within the upper reaches of the area watersheds by reducing initial stream flow and moderating amount over a longer period. Of course, the most important benefit for this Department and SAWS is the fact that Ashe juniper and mesquite, and brush in general, never require supplemental watering.

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