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EIGHT WATERSHED STUDIES SLATED FOR TEXAS

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COLLEGE STATION – In its last session, the Texas Legislature provided appropriations through the Texas State Soil and Water Conservation Board to study the effect of brush management on water yields in eight watersheds in the state.

All or part of the Canadian River, Wichita River, Upper Colorado River, Middle Concho River, Edwards Aquifer, Pedernales River, Frio River and Nueces River watersheds are involved in the feasibility studies.

This is a cooperative, ecosystem level project that involves the local river authorities, Texas Agricultural Experiment Station (TAES), Texas Agricultural Extension Service (TAEX), U.S. Department of Agriculture Natural Resource Conservation Service (NRCS), Texas State Soil and Water Conservation Board (TSSWCB) and the Texas Parks and Wildlife Department.

The goal of the project is to increase the stream flow of rivers into lakes or underground aquifers for municipal water use, according to Richard Conner, professor of agricultural economics at Texas A&M University.

The first stage of the project, now in progress, is a planning assessment and feasibility study in each area. The objectives of the studies are to:

- Estimate the potential change in stream flow of rivers and annual recharge to the local underground aquifer (if applicable) if large-scale brush control projects were conducted in the watershed;
- Prioritize areas within watersheds relative to their estimated contribution to stream flow and/or aquifer recharge.

“This is not a research project per se, but an application of existing technology to a current problem,” Conner said.

In addition to the technical aspects of this project, there will be an educational component that informs landowners and the general public about this study.

In the planning phase, a simulation model known as the Soil and Water Assessment Tool (SWAT) will be used to estimate the effect of brush control on surface runoff, percolation and groundwater flow. The modeling will be conducted by a team from the TAES, TAEX, TSSWCB and the NRCS.

Existing and new data will be used to set the parameters of each model. Soil type and digital elevation are currently available for each area, and satellite photography will be used to determine land use and cover classifications. NRCS personnel from each area, with cooperation from other agencies, will check the accuracy of the satellite photographs against the actual land use and ground cover.

A “prescription” will be developed for the areas identified as having a high potential – following brush control – to increase water yield. Cost/benefit estimates of additional water yields can then be made in terms of dollars per acre-foot of water.

A final ranking of sites for brush control will incorporate other variables that affect the net impact of brush control on the total ecosystem, such as livestock production, wildlife, aesthetics and land values.

Since this project involves private lands, public meetings will be conducted throughout this planning phase. Future meetings will inform landowners of the process that will be followed and address any questions or concerns they may have.

After the final plan is developed the results will be presented at public meetings in the fall of 2000.

Because the objective of the project is to increase the stream flow from rivers and/or aquifer recharge, all stakeholders (private landowners, state agencies, environmental groups, and city government) will be involved. Further information on local projects is available from county Extension offices.