

ECOHYDROLOGY: VEGETATION MANAGEMENT AND WATER RESOURCES

A McIntire-Stennis supported project



TEXAS A&M
UNIVERSITY

As the human population grows, our limited water resources are under increased demand, not only through direct consumption by agriculture, industry, and municipalities, but also, indirectly, by altering natural ecosystems. Land managers' actions (e.g., grazing, fire suppression, forest harvest, brush management) and other changes (e.g., species invasions) alter the distribution of vegetation across the landscape. This program's goal is to evaluate how vegetation management effects water resources and, in turn, how changes in water availability and drought effect vegetation structure and composition. Recent efforts address three major questions: A) How does drought impact East Texas forests, B) How do bottomland hardwood forests in East Texas respond to climate extremes? and C) How does conversion from forest to agricultural use affect water and carbon cycling in East Texas bottomlands and floodplains of the Brazos River watershed? The knowledge gained will help guide land managers towards sustainable land and water stewardship.



COLLABORATION

Texas Water Observatory
(TWO) Network

A growing network of 10+
advanced observatory sites



Hydrologic Variation

TWO uses advanced
observational platforms and
near real time sensors, this
observatory monitors high
frequency data of water
stores and fluxes.

About McIntire-Stennis

The McIntire-Stennis program, a unique federal-state partnership, cultivates and delivers forestry and natural resource innovations for a better future. By advancing research and education that increases the understanding of emerging challenges and fosters the development of relevant solutions, the McIntire-Stennis program has ensured healthy resilient forests and communities and an exceptional natural resources workforce since 1962.



IMPACT

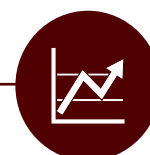
TWO is critical for
understanding and modeling
water resources and their
sustainability in the state of
Texas and Southern USA.



110-ft tall
new observatory tower
in bottomland hardwood
forest.



\$1.3 million
in support from Texas
A&M University.



3 colleges
Program leaders
span the College of
Agriculture, College of
Engineering, and College
of Geosciences