

Water Management

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V(A). Planned Program (Summary)

1. Name of the Planned Program

Water Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	50%		50%	
112	Watershed Protection and Management	50%		50%	
Total		100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	27.1	0.0	16.0	0.0
Actual	19.3	0.0	18.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c 257746	1890 Extension	Hatch 313811	Evans-Allen 0
1862 Matching 257746	1890 Matching 0	1862 Matching 1945267	1890 Matching 0
1862 All Other 1566504	1890 All Other 0	1862 All Other 3481454	1890 All Other 0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Published research findings generated through evaluation of best management practices to efficiently manage available water resources, to limit off-site contaminant transport from production, processing, and landscaping systems, to utilize alternative water sources and to remove contaminants from impaired/alternative water sources.

Developed and conduct research and educational programs utilizing direct and indirect educational methods to support efficient utilization and conservation of water resources, to develop alternative water supplies, to implement best management practices on agricultural production and landscapes to protect water resources from contaminants, to promote proper management of surface and ground water resources, to enhance rainwater harvesting, and to remove contaminants from impaired water supplies.

Continued development of educational resources such as articles, fact sheets, bulletins, curriculum materials, short course manuals and other teaching materials.

The work of the AgriLife Research and AgriLife Extension is conducted jointly where research-based information is generated and then transferred to clientele.

2. Brief description of the target audience

Programs focusing on the issue of water addresses target audiences including but not limited to, producers, homeowners, landscape managers, industry practitioners, water resource managers, and others who identify themselves with this issue.

Research and education programs target specific issues and audiences to ensure a relevant and timely response. Water is an issue that crosses all boundaries between rural and urban audiences. Our programming addresses a broad range of water issues including water use efficiency, water quality protection and water resource management for all the audiences needed to secure success. The long-term issue of having a sufficient water supply will be addressed through an integrated approach.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	7500	42000	4500	0
2007	113851	61601	7583	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007:	4

Patents listed

Sorghum aluminum tolerance gene, Sbmate, Serial number 11804164

Use of a microbinding (coating) technique to enhance utilization of feed supplements for aquatic animals.

Carotenoid premix for production of sea urchin gonad

US patent (20040108274) Removal of biological pathogens using surfactant-modified zeolites (SMZ)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	124	124

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

The number of group educational sessions conducted on water issues.

Year	Target	Actual
2007	350	553

Output #2

Output Measure

research-related publications.

Year	Target	Actual
2007	165	124

Output #3

Output Measure

research-related projects.

Year	Target	Actual
2007	53	57

V(G). State Defined Outcomes

O No.	Outcome Name
1	% of participants who report an increased knowledge of best management practices related to water mangement.
2	% of participants who report the plan to or have adopted best management practices related to water management.

Outcome #1

1. Outcome Measures

Not reporting on this Outcome for this Annual Report

2. Associated Institution Types

3a. Outcome Type:

3b. Quantitative Outcome

Year	Quantitative Target	Actual
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3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
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V(H). Planned Program (External Factors)

External factors which affected outcomes

Natural Disasters (drought, weather extremes, etc.)

Economy

Appropriations changes

Public Policy changes

Other (Other Program Areas)

Brief Explanation

In general, educational programs were well received by the clientele. The implementation of the TMDL program is leading to greater interest in developing a local knowledge base for conducting environmental education.

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The water conservation and water quality educational programs were very successful this past year. A major flooding event occurred in Central Texas during late summer. Many landowners had their private water wells inundated by the flood water. An intense effort was conducted to assist land owners in screening their wells for contamination. Approximately, 800 wells were screened and the landowners were provided information on proper well head protection to limit the risk of contamination.

Financial resources remain limited for conducting educational programs and research. Grants and contracts are being sought and secured to deliver educational programs.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

Retrospective (post program)

Case Study

Other (Anecdotal)

Evaluation Results

A case study is presented highlighting the Rainwater Harvesting information distributed through Master Gardenersto demonstrate the percent of participants reporting knowledge gained.

AgriLife Extension is utilizing the members of the Master Gardener Associations around the state to educate Texans about using rainwater harvesting as an innovative way to control storm water in urban and rural settings. As a part of the requirements for being trained as a specialist in rainwater harvesting, each person trained is required to volunteer at least 12 hours of their own time to teach others in their area about rainwater harvesting. These volunteers assist in reaching a greater number of Texans with information about the protection and efficient use of our water resources. Evaluation results from the retrospective(post program) evaluation indicate an increase in knowledge in the following areas: •Understanding of how rainwater addresses water quality and quantity issues – 80 %. •Understanding of stormwater and its impact on the environment – 80 %. •Understanding of rangeland watersheds – 77 %. •Understanding of collection and storage of harvested rainwater – 83 %. •Understanding of filtration and sanitation of harvested rainwater – 83 %. •Understanding of how landscaping affects water usage – 73 %. •Understanding of how a soil storage and infiltration system works – 77 %. •Understanding of how rainwater can be used to water wildlife – 83 %. •Understanding of how raingardens can be used to harvest rainwater – 83 %. •Understanding how to implement a youth education session – 83 %.

Program evaluations were overwhelmingly positive and requests have been pouring in for additional training events.

Key Items of Evaluation

A variety of educational programs were implemented to deliver information on sustainability and maintaining agriculture production systems. These production systems required chemical inputs for viability. These inputs are managed to minimize impact on ecosystems. Several watershed management programs are being implemented to raise awareness regarding the ecosystem and how all of the activities in an ecosystem are interrelated. Watershed protection plans are being developed for watersheds with impaired stream segments and their associated implementation plans will cooperate with the educational programs.

A variety of educational methods were utilized to deliver information on sustaining and protecting the quantity and quality of surface water and ground water supplies. North Central Texas includes rapidly-urbanizing watersheds with growing water demands. To meet these demands, educational programming focused on educating residents about best management practices to conserve water, including efficient irrigation devices and management strategies to save water on agricultural crops and in the home. Proper landscape management is needed to protect the water resources from contamination and efficiently utilize water. A program addressing athletic fields was utilized to improve turf conditions and reduce water use.

Several Extension programs provide extensive training to participants as a requirement of state-mandated programs for licensing and continuing education, including efforts in on-site wastewater treatment and landscape irrigation management. On-site wastewater treatment systems provide the wastewater infrastructure for rural and suburban Texans. The performance of routine operation and maintenance activities facilitates continued system function. A multi-state effort was implemented to develop new training materials describing the installation process. These materials are critical to facilitate long-term system function. Irrigation professionals facilitate the efficient use of water resources. Two additional training courses were developed to assist in raising knowledge.

Groundwater remains an issue of concern. Educational material describing water rights is being developed to assist in reaching landowners, concerned citizens, and groundwater district managers. These groups need material that can help the public make informed decisions on how to best manage their local water resources. These educational materials provide the base knowledge about Texas water law and issues landowners should consider before marketing water from their property. A priority groundwater management area is being designated for Central Texas due to the growing demand for water resulting from the growing population. Groundwater management educational programs were implemented during 2007 to reach the affected landowners.