



Extension Education in Cameron County

Making a Difference

2015

Making a Difference

Cameron County

2015

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The Texas A&M AgriLife Extension Service and its partners have long been dedicated to educating Texans. Extension education evolved nationwide under the 1914 federal Smith-Lever Act, which sought to extend university knowledge and agricultural research findings directly to the people. Ever since, Extension programs have addressed the emerging issues of the day, reaching diverse rural and urban populations.

In Texas, all 254 counties are served by a well-organized network of professional Extension educators and some 100,000 trained volunteers. Extension expertise and educational outreach pertain to the food and fiber industry, natural resources, family and consumer sciences, nutrition and health, and community economic development. Among

EXTENDING KNOWLEDGE *Providing Solutions*

those served are hundreds of thousands of young people who benefit annually from Extension's 4-H and youth development programs.

Texans turn to Extension education for solutions. Extension agents and specialists respond not only with answers, but also with resources and services that result in significant returns on the public's investment. Extension programs are custom-designed for each region of the state, with residents providing input and help with program delivery. Here are just a few highlights of Extension impacts on this county and its people.

Cameron County – Summary of 2015 Educational Contact

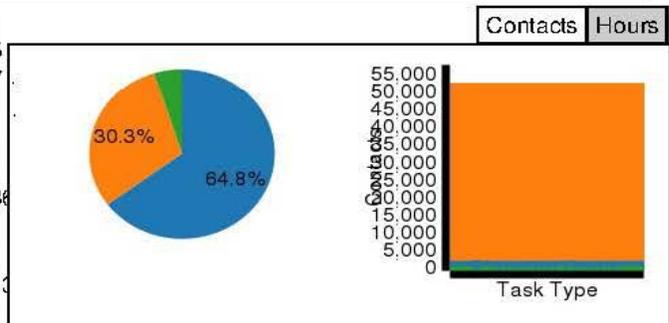
Texas Reporting Retrieval - Summary - Cameron

Total Contacts	76,007
Educational Events	52,989
Other Contacts	23,018

Educational Events

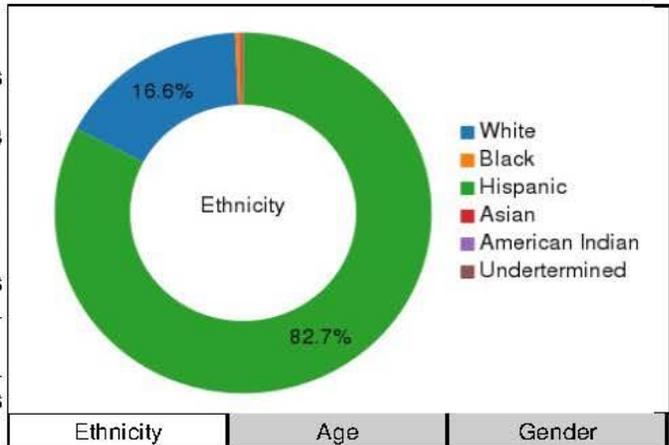
	Contacts	Hours
All Session Contacts	52,989	124,485.80

Plan Level	Contacts	Hours
In-Depth	34,349	48,332.35
Outreach	16,060	66,322.07
Organizational Support	2,580	9,831.38
Task Type	Contacts	Hours
Planning Group	1,811	4,945.44
Educational Method	49,981	114,801.36
Interpretation	1,197	4,739.00
Delivery Method	Contacts	Hours
Face-to-Face	52,911	124,391.10
Technology Assisted	78	94.67



Demographics

Ethnicity	Contacts	Hours
White	8,794	36,012.66
Black	235	443.79
Hispanic	43,892	87,735.38
Asian	91	342.96
American Indian	35	125.00
Undetermined	0	0.00
Age	Contacts	Hours
Adult	18,926	56,458.86
Youth	34,114	68,183.94
Gender	Contacts	Hours
Male	24,434	58,866.04
Female	28,611	65,782.76



2015 Cameron County Crop Production Program

Developed by: Dr. Enrique Perez, County Extension Agent- Agriculture

Relevance: Each year approximately 400,000 acres of grain sorghum are grown in the Rio Grande Valley. The Sugarcane Aphid, a potentially damaging insect was identified for the first time in 2013. The Hidalgo and Cameron County Crops Committees determined that educational efforts should be initiated to address this damaging insect. The Cotton & Grain Producers Association of the Lower Rio Grande Valley supported continued educational efforts going into 2015 to insure that growers would be ready to save their crop from severe damage if insect populations threatened to cause economic damage.

Nutrient management is an important economic and environmental issue that affects water quality, soil quality and crop productivity. The Arroyo Colorado Watershed Partnership and The Texas Water Resources Institute determined a continued need to stress soil testing as a best management practice. Producers continue to need locally produced information on the performance of crop varieties. Also, new and underutilized crops, such as soybeans and sesame, need to continue to be investigated. County Crops committees and the Cotton & Grain Producers Association of the Lower Rio Grande Valley continue to support the need for crops result demonstrations.

Response: Conducted 9 educational group methods resulted in a total of 2452 contact hours of education. Ag producers were educated on the sugarcane aphid, fertility management, variety performance data and a host of other timely topics. Educational events included the Annual Cotton & Grain Pre-Plant Conference, sunflower producer meetings, field days, Sugarcane Aphid Meeting and the Spring Crop Options Meeting. Other tools utilized included: publications, use of print and broadcast media, information posted to the County Extension Office web site, close communications with crops committee members, input from members of the board of directors of the Cotton & Grain Producers Association of the Lower Rio Grande Valley and involvement of Extension Specialists. A three county soil testing program was conducted for the 15th consecutive year in 2015. This year, a total of 191 soil samples representing 4976 acres of agriculture production fields were submitted to the soil testing laboratory in College Station for analysis. Fertilizer recommendations were provided to the growers for the specific crop to be grown. Over the past 15 years, 5864 samples have been submitted by local producers from a total of 219,404 acres.

Research demonstrations conducted on producer farms were used to produce an unbiased source of performance data that are used by growers to help determine the most profitable varieties to select for this area. Ongoing efforts to increase producer profits also included rating grain sorghum variety trials for differences among varieties in their tolerance to the sugarcane aphid and its damage.

V A L U E	
Crop and Forage Production Education	
	<p>Extension programs in crop production promote best practices that lead to reduced irrigation, safer pest management, and improved profitability of agricultural enterprises. This benefits Texas as a whole by contributing to the quality and quantity of water resources and enhancing both agricultural competitiveness and rural economies.</p>

Agriculture and Natural Resources

Results: Educational efforts by Texas A&M AgriLife Extension to battle the sugarcane aphid credited with a net savings to grain sorghum producers of \$66 million in 2014. Although the aphid did not cause widespread damage in 2015, producers were ready due to ongoing educational outreach by Extension. A survey of the Spring Crop Options meeting indicated that 83 percent of respondents anticipated an economic benefit as a direct result of what they learned and 91 percent of respondents said that the information and programs provided by Extension were quite or extremely valuable to them.

The economic impact of the RGV Nutrient Management Education Program was measured in terms of potential fertilizer savings that have resulted from increased adoption of soil testing. Reduction in fertilizer application rates translates into an average cost savings of \$25 per acre, depending on crop and management history. This is a potential savings of \$124,400 in 2014. The total potential economic benefits to producers since the program began in 2001 are estimated at \$5.5 million. This analysis does not include the value of environmental benefits. Local water bodies, including the Arroyo Colorado benefit from producer efforts to match the application of fertilizers to crop fertility requirements through scientific soil testing. A survey documented that 91 percent of participants plan to follow the recommended fertilizer rates and 93 percent of participants felt that the test results are accurate. Performance data from four result demonstrations conducted to evaluate grain sorghum, cotton and sunflower variety performance under local commercial conditions were shared with producers to assist them in making more economical choices for their next crop season. Of special significance this season was the county sunflower hybrid trial and the Soil & Crop Sciences Department small plot hybrid trial. Both trials provided important documentation concerning issues with seed set in this year's sunflower crop and are being studied closely by many involved in the production of sunflowers including growers, seed companies, Extension specialists, marketing companies and buyers.



Important collaborators included: Dr. Josh McGinty, Dr. Gaylon Morgan, Dr. Mark McFarland, Dr. Calvin Trostle, Dr. Tom Isakeit, Dr. John Robinson, Dr. Ronnie Schnell, Dr. Mark Welch, Dr. Paul Baumann, Dr. Luis Ribera, Dr. Roy Parker, Dr. Raul Villanueva, Dr. Femi Alabi, Danielle Sekula, Victor Gutierrez, Dr. Samuel Zapata, Rio Farms, Inc., Cotton and Grain Producers Association of the Lower Rio Grande Valley, Texas Farm Bureau, Texas Grain Sorghum Association, National Cotton Council, Texas Water Resources Institute, the Texas Boll Weevil Eradication Foundation and numerous local ag industry company representatives.

Future Plans: Continue to keep producers up-to-date with new information on the sugarcane aphid and its management. Continue the soil testing campaign contingent upon funding. Continue important hybrid trials for the major crops in cooperation with local producers, seed companies and Extension Specialists. Continue monitoring the local agriculture arena for emerging issues.



Agriculture and Natural Resources

Cameron
 Estimated Value of Basic Agriculture
 Production and Related Items

Commodity	2011	2012	2013	2014	11-14 AVG	PROJ. 2015	% 4yr Tot.
(Thousands of Dollars)							
Crops:							
Rice	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Rye	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Wheat	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Food Grains Total	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Barley	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Feed Corn	4,352.00	7,574.00	7,928.00	8,400.00	7,063.50	7,000.00	3.1%
Ensilage	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Hay	2,880.00	1,050.00	630.00	1,824.00	1,596.00	3,040.00	0.7%
Oats	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Sorghum	31,169.00	44,015.00	27,709.00	35,913.00	34,701.50	18,675.00	15.1%
Feed Crops Total	38,401.00	52,639.00	36,267.00	46,137.00	43,361.00	28,715.00	18.9%
Cotton Lint	82,092.00	51,354.00	38,322.00	35,309.00	51,769.25	31,876.00	22.5%
Cottonseed	11,200.00	8,680.00	7,200.00	7,800.00	8,720.00	7,100.00	3.8%
Cotton Total	93,292.00	60,034.00	45,522.00	43,109.00	60,489.25	38,976.00	26.3%
Flaxseed	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Peanuts	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Sesame	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Soybeans	370.00	374.00	0.00	0.00	186.00	0.00	0.1%
Sunflowers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Oil Crops Total	370.00	374.00	0.00	0.00	186.00	0.00	0.1%
Food Corn	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Melons	600.00	0.00	328.00	420.00	337.00	700.00	0.1%
Vegetables	8,126.00	7,667.00	3,645.00	5,262.00	6,175.00	4,525.00	2.7%
Watermelon	1,260.00	288.00	1,500.00	420.00	867.00	350.00	0.4%
Vegetable Crops Total	9,986.00	7,955.00	5,473.00	6,102.00	7,379.00	5,575.00	3.2%
Grapefruit	8,307.00	6,982.00	10,608.00	11,424.00	9,330.25	9,792.00	4.1%
Oranges	4,480.00	512.00	1,080.00	1,296.00	1,842.00	864.00	0.8%
Other Fruit	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Peaches	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Pecans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Plums	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Blackberries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Blueberries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Grapes	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Fruits & Nuts Total	12,787.00	7,494.00	11,688.00	12,720.00	11,172.25	10,656.00	4.9%
Alfalfa	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Castors	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Cloverseed	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Cowpeas	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Guar	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Nursery	80,000.00	50,000.00	20,000.00	18,000.00	42,000.00	18,000.00	18.3%
Other Crop	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Sugar Cane	10,304.00	12,186.00	14,565.00	8,451.00	11,376.50	19,407.00	4.9%
Sugarbeets	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Vetch Seed	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Misc. Crop Total	90,304.00	62,186.00	34,565.00	26,451.00	53,376.50	37,407.00	23.2%
ALL CROPS TOTAL	245,140.00	190,682.00	133,515.00	134,519.00	175,964.00	121,329.00	76.6%

Source: Cash value projections prepared by County Extension Program Councils in January of 2015 and are subject to price changes and growing and harvesting conditions. Government payments not included.

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Texas A&M AgriLife/Texas A&M University System does not support the use of these data for tax assessment valuation.

2015 Rio Grande Valley Beef Development Program

Developed by Dr. Enrique Perez, County Extension Agent- Agriculture, Cameron County

Relevance: Beef producers can improve their herd or the herds of their customers through more rigid sire selection. Replacement heifers will perform to higher levels when in optimum body condition. Beef producers want to increase the value of bulls by collecting feedlot performance data and carcass characteristics. The Rio Grande Valley Beef Improvement Association identified the need to conduct a bull gain test and heifer development program to support the beef cattle industry.

Response: Texas A&M Agrilife Extension conducted an official 112 day bull gain test and a 126 day heifer development program. Numerous data are collected on all animals including: initial and final weights, average daily gain, body condition score, scrotal circumference, sheath score, reproductive tract score, pelvic area measurements, hip height and ultra-sound measurement of backfat thickness and ribeye area. All data is provided to consignors.

Results: A total of 7 group methods were conducted. A bull gain test and heifer development program has been conducted each year from 1998 through 2015. Participants indicate a positive economic benefit to their beef cattle operations as a result of their participation.

A total of 1247 bulls, 996 heifers and 142 steers have been entered in the 18 years the program has been conducted. Currently, 77 bulls and 22 heifers are entered in the program by cattlemen participating from throughout south and central Texas.

Recognition events are conducted during the Rio Grande Valley Livestock Show in order to recognize the award winners in front of their beef cattle producer peers. The Santa Gertrudis breed awards were presented during the Open Santa Gertrudis Show and the Simbrah breed awards were presented during the Open Simbrah Show at the Livestock Show. A feeder pen of steers is also offered and adds a different dimension to the program.

Important collaborators were: Dr. Joe Paschal, Extension Livestock Specialist, Rio Beef Feed Yard management and personnel, Rio Grande Valley Livestock Show officials & volunteers and the members of the Rio Grande Valley Beef Improvement Association.

Future Plans: In cooperation with the Rio Grande Valley Beef Improvement Association, plans are to continue the program and perhaps consider marketing alternatives for participants. Another future possibility will be to offer an artificial insemination program for heifers.



2015 Cameron County Pesticide Safety Program

Developed by Dr. Enrique Perez, County Extension Agent- Agriculture, Cameron County

Relevance: Agriculture producers have a statutory requirement to obtain and maintain a pesticide license issued by Texas Department of Agriculture in order to use some crop protection chemicals. These are important tools for agricultural producers and Extension is relied upon to provide the education needed in this process. In addition, many school district, city, county, state and federal employees need to have a pesticide license for their work. Local training is provided for those needing to obtain a pesticide license and continuing education is provided to local license holders in order for them to be knowledgeable in the safe and efficient use of crop protection chemicals and to be able to meet the requirements to renew their license.

Response: Educational training events were planned and conducted to meet statutory requirements for producers to be able to obtain a license. Continuing education units were also provided to all participants at educational events conducted which contained applicable subject matter. A listing of continuing education opportunities was kept on the Extension Office web page as a tool for local producers to learn of these meetings. Also, an extensive email list of local license holders is maintained to use as a primary communication tool to inform license holders of continuing education opportunities. In addition, this agent generated and maintains an extensive list of cell phone numbers of license holders which is used to send text messages to remind license holders of upcoming meetings.

Results: 642 persons attended 24 group methods which resulted in a total of 1922 hours of continuing education contact hours. The economic value of the CEU's earned is estimated to be over \$48,000. In addition, four Pesticide Safety Training meetings were conducted in 2015. A total of 61 persons attended the five hour course which is required in order to obtain a private pesticide license issued by Texas Department of Agriculture. This resulted in a total of 305 contact hours of classroom instruction.

Aerial applicators have specific requirements for continuing education and those needs were met by conducting an educational training meeting specifically for them. This allowed them to obtain their required training without traveling outside of the local area. The aerial applicators are very appreciative of being able to obtain the training from Extension.

The 24 group method events were each reported to TDA by submitting the required documents to the state regulators.



2015 Sustainable Agriculture Program

Developed by Enrique Perez, County Extension Agent-Agriculture

Relevance: Sustainable Agriculture in the Rio Grande Valley is a major interest among small acreage agriculture. The dramatic population increase and the continuation of the South Texas drought and the need for water conservation in the Rio Grande Valley created an interest on sustainable agriculture. Today, with limited resource small acreage landowners are interested in ways for making land usage optimal. Land owners interested in agriculture continue to lack knowledge of agriculture programs and management for production. The need to implement a variety of educational agriculture programs is important in order to sustain the future of agriculture.

Response: Cameron Tip of Texas Producers, owners of small scale acreage agriculture producers under the support of the Texas A&M Agrilife Extension Service, USDA-Natural Resource Conservation, and USDA-Farm Service Agency partnered to conduct various educational programs; EQIP, organic farming, alternative crops (cane juice), USDA Programs on loans and grants for small acreage farming/ranching and TDA registration as Texas Producer.

Results: The Cameron County Tip of Texas Producers consists of 43 small scale acreage agriculture producers in the county. This group meets once per month at the county Extension meeting room. Again this year the group was interested in organizing into a special goal. Their goal was to select a variety of cane for the production of cane juice in the organic market. As a result this year 2015 they are conducting various on farm site studies with various varieties of cane to produce cane juice for the organic market. They have currently organized into the Tip of Texas Agriculture Producers Association for the production of cane juice in the organic market. They have also formed an Agriculture Cooperative for marketing of agriculture commodities. As an Agriculture Cooperative they have been very successful in accessing federal and state programs and grants.

The group met 12 times in 2015 resulting with 1375 contacts and with 3200 plus volunteer hours in education. The Texas A&M Agrilife Extension Service continues to provides leadership to the group with subject matter expertise and Extension Specialist.

Other partners include Texas Mexico Border Coalition, University of Texas-Pan Am, USDA Farm Service Agency, Natural Resource Conservation Service, Agriculture Industries and Cameron County.

Future Plans: The Sustainable Agriculture Producers continue to meet once a month at the Extension meeting room. Plans continue to develop as the newly formed association increases knowledge and skill in agriculture production by participation in seminars, workshops and tours.

2015 Cameron County Emergency Management

Developed by Enrique Perez, County Extension Agent-Agriculture, Lillian Mezquida, Family Consumer Science Agent, Marco Ponce, 4-H and Youth Development Agent, Tony Risienger, Coastal Marine Science Agent, Jennifer Herrera, Horticulture Agent

Relevance: Texas is subject to numerous disasters, whether they are natural, accidental or intentional. These hazards are somewhat unpredictable. During 2005, Texas experienced the effects of two hurricanes, drought, and numerous wildfires. County Emergency Management in Cameron County was organized to analysis, plan, make decisions, and assignment of available resources to prepare for, mitigate, respond to and recover from the effects of all hazards.

Response: The Cameron County Emergency Management Plan/County Animal Issues Plan supports all efforts to mitigate, respond to and recover from the effects of all hazards. With cooperation from different entities, such as Cameron County, Texas A&M AgriLIFE Extension, USDA, County Health, Animal Health Commission, etc. the local emergency management plan was developed and provide guidance for the employment of emergency resources under a local incident commander. Local emergency management plans include specific provisions for requesting and employing state resources to aid in managing and resolving situations for which local resources are inadequate.

Results: The Cameron County Emergency Management Plan is in place with the County Emergency Management office. The Texas A&M AgriLife Extension staff provided various teaching method in reaching out to Cameron County residents. Individual, group methods and educational exhibits were teaching methods conducted for outreach education to families, communities, businesses, and producers to better understand respond and recovery from the effects of all hazards. This year 2015 these teaching methods resulted in a total of 1000 contact hours of education. Also this year the Extension staff provided an educational exhibit from May through October. More than 2500 Extension publications were distributed.

Future Plans: The Cameron County Emergency Management and Texas A&M Agrilife Extension will continue support and partner in educating all residents in Cameron County.

The goal will be to coordinate and be well prepared to respond to emergency situations with the best method of teaching in the communities in emergency situation. Continuation of educational programs will be implemented throughout the county.

2015 Master Gardener Volunteer Training Program in Cameron County Developed by Jennifer Herrera, County Extension Agent-Horticulture, Cameron County

Relevance: Horticulture education continues to be a major interest among county homeowners. The Cameron County Master Gardener Program began in 2001 as an official Texas Master Gardener Association. The major programmatic goal of the Master Gardener Training is to increase knowledge and skills of homeowners, landscapers, city employees, county employees and home gardeners a series of educational activities supported through demonstrations and evaluation of research based programs that measure economic and knowledge gain of environmental stewardship. Through the Master Gardener program participants increase their gardening knowledge to support and assist Texas A&M AgriLife Extension Service by providing the community with information and guidance on good gardening practices through personal contact, newspaper articles, clinics, presentations at garden clubs, schools and other community groups. Master Gardener Interns are encouraged to find beautification projects throughout their community and establish new gardens.

Response: Due to the interest by Cameron County residents in horticulture education Texas A&M AgriLife Extension Service began implementing horticulture education through Master Gardener classes, programs, tours and special events. This year 10 Master Gardener Interns graduated and became certified Texas Master Gardeners. The Master Gardener course consisted of 75 hours of instructional training and education and a minimum on 50 volunteer service hours in Cameron County. In Cameron County, the Master Gardener Interns and Master Gardener's volunteers contributed 3255 service hours equating to \$ 75092.85 savings to the county in volunteer service in horticulture programming.

Horticulture Education interest continues to grow significantly among Cameron County residents. Texas A&M AgriLife Extension Service began implementing horticulture education through Master Gardener classes, programs, tours and special events. Master Gardener classes are held annually, starting in February and ending in May. Master Gardener Interns volunteer on various horticulture related community service projects and extend horticulture education out in the communities.

Master Gardener classes are held annually, starting in January and ending in October. Classes are held only once per year in which Master Gardener projects are assigned to participants in which they in turn serve as community service hours and extend horticulture education out in the communities.

Evaluation Strategy: A retrospective post survey was administered via Qualtrics to all Master Gardener Interns at the end of the Master Gardener Program on Earth-Kind practices, Vegetable Gardening, Herb Garden, Tree Management, and Home Fruit Tree Care.

Results: The results of the retrospect post survey clearly indicated that respondents' level of knowledge and understanding on horticulture practices and topics increased upon completion of the Master Gardener Training Program.

- 100% of respondents were mostly or completely satisfied with the overall Master Gardener Program
- 90% of respondents indicated that they definitely will or have already adopted Earth-Kind Horticulture practice learned from the Master Gardener Training Program.

Agriculture and Natural Resources

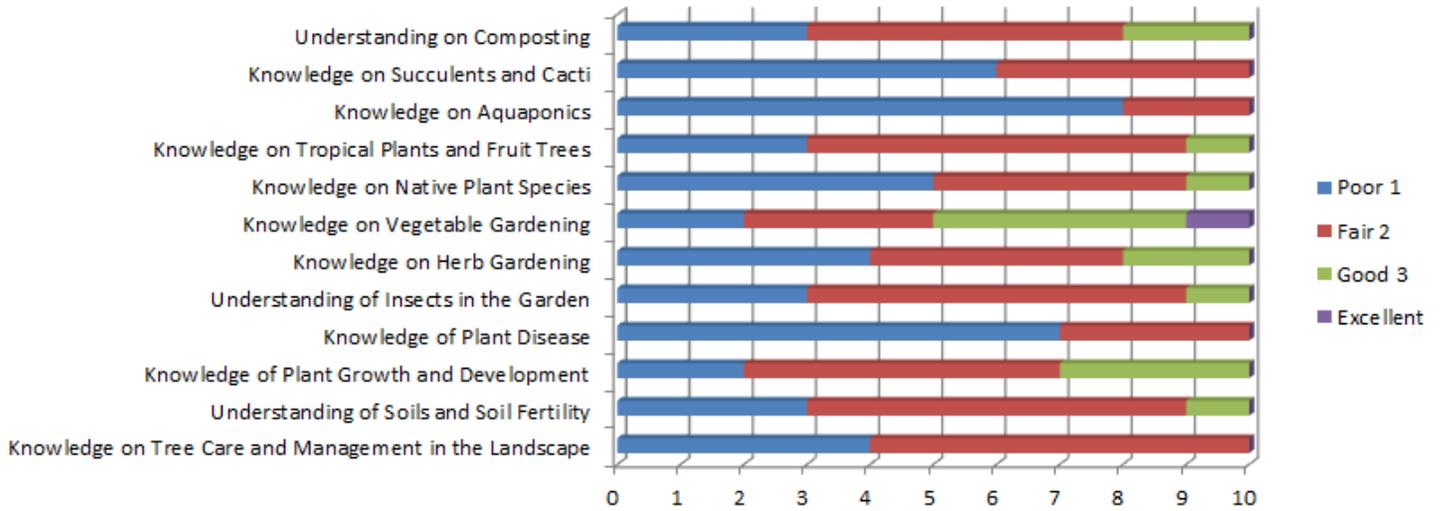


Figure 1: Illustrates the results of respondent’s level of knowledge and understanding of varies horticulture topics **before** the Master Gardener Training Program

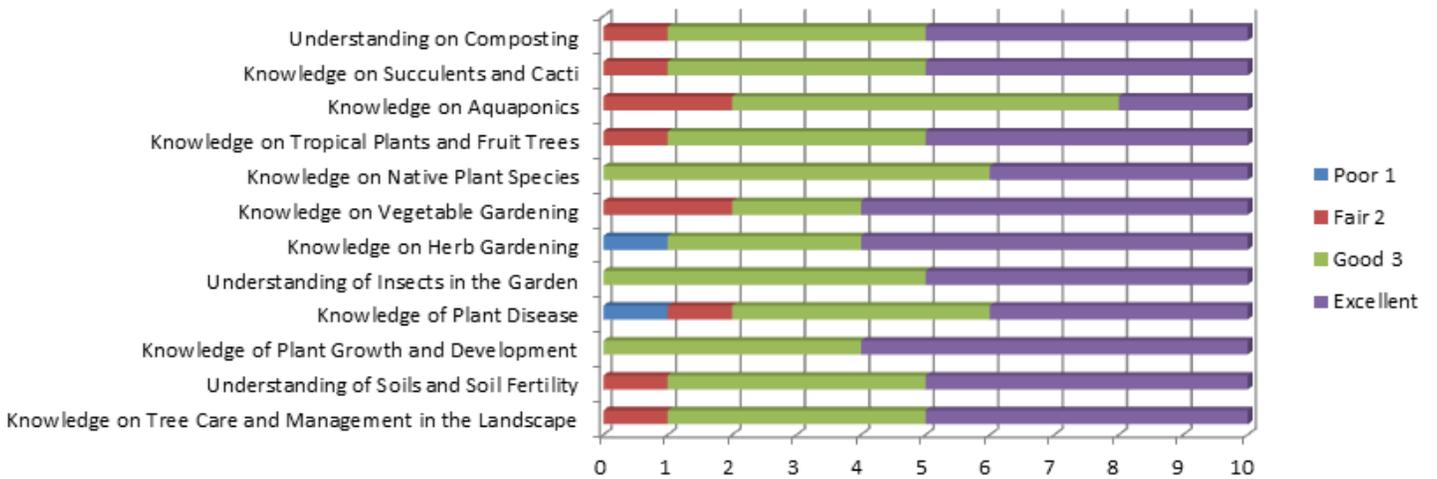


Figure 2: Illustrates the results of respondent’s level of knowledge and understanding of varies horticulture topics **after** the Master Gardener Training Program

Agriculture and Natural Resources

Future Plans: In 2016, the Cameron County Master Gardener Association will implement, plan and evaluate the 2016 Master Gardener Intern Class. The Master Gardener Interns will continue to find projects throughout Cameron County and continue to share horticultural Earth-Kind practices.



Growing and Nourishing Healthy Communities in Cameron County

Developed by Jennifer Herrera, County Extension Agent-Horticulture, Cameron County

Relevance: In Cameron County, an estimated **123,538 individuals** receive benefits from the Supplemental Nutrition Assistance Program (SNAP), historically known as food stamps. Studies have shown individuals who live in poverty (including SNAP recipients) have dietary intakes that are not in agreement with current recommendations especially when it comes to consuming vegetables and fruits. In addition, low-income families often live in neighborhoods with limited access to healthy foods (i.e. food deserts), compounding the challenge of eating a healthy diet.

Response: Growing and Nourishing Healthy Communities

The Growing and Nourishing Healthy Communities (GNHC) program is a cooperative endeavor among Texas A&M AgriLife Extension Service, Texas Health and Human Services Commission (HHSC), and the Food and Nutrition Services (FNS) of USDA. A component of the Supplemental Nutrition Assistance Program (SNAP), GNHC works with local partners to establish community gardens in communities identified as a food desert. Targeted towards SNAP recipients (and those eligible for benefits), the program's goal is to improve availability and accessibility of vegetables and fruit in the home by teaching participants (1) how to build gardens and (2) the skills needed to successfully grow and harvest fresh produce. The community gardens also serve as an outdoor classroom for participants who want to apply their knowledge at home (i.e. backyard garden). The program also includes nutrition education from Extension Better Living for Texans (BLT) educators to help participants learn how to incorporate their fresh produce in healthy and budget-friendly recipes. The program is evaluated by assessing the amount of produce harvested and participant feedback via a pre and post survey.

During 2015, **150 Cameron County adults completed the GNHC program**; 73 participants completed the pre and post surveys.

Results:

Participant Characteristics

Participants were primarily female (74%) and Hispanic (90%). More than 34% of the participants (n=25) had not completed high school; 26% (n=19) had completed high school and 30% (n=21) had completed some college or a college degree. Average household size of the participants was 3.7 and the average age of participants was 43.

Thirty-one of the 73 participants (43%) received SNAP benefits while 35 (48%) reported having children living in the household who received free or reduced price meals at school. Participation in other programs such as WIC, Head Start, TANF or food pantries was less than 10%. More than 71% (n=52) reported they had not grown vegetables or fruits before and more than half of the participants (n=41; 56%) identified the GNHC program as the first Extension program they had attended.

Agriculture and Natural Resources

Gardens

A total of 8 community gardens have been established in Cameron County through the GNHC program, with 7 of them yielding more than 1200 pounds in 2015 (Table 1). Cucumbers, Eggplant, Squash, Tomatoes, and Watermelon were the vegetables and fruits grown most often.

Table 1. Pounds of Produce Harvested, by Garden Location

<i>Gardens</i>	Los Indios	Santa Rosa	Port Isabel	San Pedro	Rio Hondo	San Benito	Combes	<i>Total</i>
<i>Fruits/Vegetables</i>								
Beans	5	5	2	4	5	3	7	31
Beets	7	5	7	15	15	5	13	67
Broccoli			20	17				37
Carrots	10		7	17				34
Cilantro	3		3	7			5	18
Corn			12	15				27
Cucumbers	25	15	29	50	7	20	35	181
Eggplant	27	10	35	45	12	15	25	169
Kale			7	22				29
Lettuce				18				18
Mustard Greens				30				30
Okra	30	5	20	17		5		77
Onion				5				5
Parsley					3			3
Peas	4							4
Pepper	5	3	10	35	7	5		65
Spinach				15				15
Squash	27	15	45	13	10	25	15	150
Tomato	13	7	25	45	10	7	40	147
Watermelon	75	6	15	7	12	5	2	122
Totals	231	71	237	377	81	90	142	1229



Impact of the Gardens on Availability and Accessibility of Vegetables and Fruits in the Home

Compared to when the program ended, there was statistical increase in the frequency of having vegetables as a snack in the home and also having cut-up vegetables in the refrigerator for the participants and their families to eat (Table 2). There was also a trend in having more vegetables served as meals. These results are encouraging and demonstrate that the gardens are playing a role in improving the availability and accessibility of fresh produce (particularly vegetables) in the home of the GNHC participants.

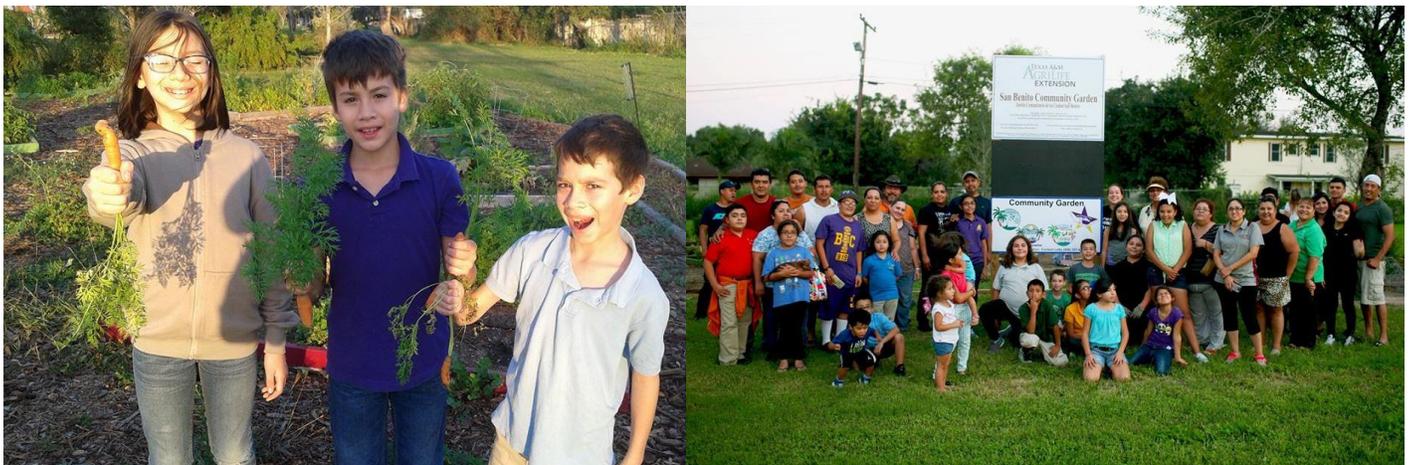
Table 2. Availability and Accessibility of Vegetables and Fruits in the Home

Question	Average Response* Pre	Average Response Post	Significance
We have fruits and vegetables in my home.	3.3	3.3	NS**
In my home vegetables are served at meals.	3.2	3.4	NS
In my home, fruit is served for dessert.	2.7	2.8	NS
In my home, there are vegetables available to have as a snack.	2.8	3.1	.017
In my home, there is fruit available to have as a snack.	3.1	3.3	NS
In my home, there are cut-up vegetables in the fridge for me and my family to eat.	2.4	2.7	.040
In my home, there is fresh fruit on the counter, table or somewhere else where I and my family can easily get them.	3.2	3.2	NS

*Based on a 4-part Likert scale: 1=hardly ever; 2=sometimes; 3=often; 4=almost always. **NS means no change from a statistical standpoint although an upward trend is always encouraging.

Summary

These results suggest that the GNHC program is playing an important role in improving the availability and accessibility of fresh produce (particularly vegetables) in the home of the GNHC participants. Although not shown, participants who had gardened before reported a significant increase in self-perceived knowledge/skills related to gardening. Overall, More than 80% of the participants (n=59) rating their gardening knowledge and skills as either “good” or “very good” at the end of the program.



2015 Earth-Kind Education in Cameron County

Developed by Jennifer Herrera, County Extension Agent-Horticulture, Cameron County

Relevance: In 2011, during our Cameron County Critical Issues Forum two critical issues that were identified were Environmental Stewardship and Water Conservation. Nursery production in the county is a million dollar industry next to agriculture production. Cameron County homeowners, landscapers, and home gardeners lack the knowledge and skills to effectively make horticulture management decisions and maintain environmental friendly practices. “Earth-Kind Landscaping is a research-proven technique to provide maximum garden and landscape enjoyment while preserving and protecting the environment. The objective of Earth-Kind Landscaping is to combine the best of organic and traditional gardening and landscaping principles to create a horticultural management system based on real world effectiveness and environmental responsibility”(aggie-horticulture.tamu.edu).

Response: The Horticulture committee and Cameron County Master Gardeners implemented a series of educational programs. Target audience included local homeowners, landscapers, home gardeners, owners and employees within the landscaping and nursery industry. The Earth-Kind educational programs provide leadership and guidance to offer programs to assist homeowners, landscapers, home gardeners, owners and employees within the landscaping and nursery industry in making sound, economical decisions. The Master Gardener program goal is address needs and concerns in horticulture and update on new management tools.

- Earth-Kind Landscaping & Water Conservation Workshop (August 2015)
- Series of Small Acreage Production Educational Programs- Cameron County
 - Soil Solarization/Cover Crops (April 2015)
 - Plasticulture (June 2015)
 - Cottage Farm Industry (July2015)
 - Irrigation (August 2015)
 - Soil & Water Analyses (September 2015)
 - Hydroponics (October 2015)
 - Strategies for Training Field Workers, Small Producers and Pick-Your-Own Guest on Food Safety Techniques (November 2015)
 - Beekeeping (December 2015)
- Emerging Issue
 - Citrus Greening (September 2015 & Ocother 2015)
- Junior Master Gardener School Gardens (14 total)
- Community Gardens (12 Total)
- Master Gardener Horticulture Weekly News Articles, (Approximately 150,400 residents 18+ read the Valley Morning Star each Sunday)
- Horticulture Education Snippet KMBH Radio (weekly)
- Self-Guided Garden Tours (monthly)
- Arboretum and Composting Demonstration Garden (monthly)

Evaluation Strategy: A retrospective post survey was administered face to face to all program participants at the Earth-Kind Landscaping & Water Conservation Program.

Results:

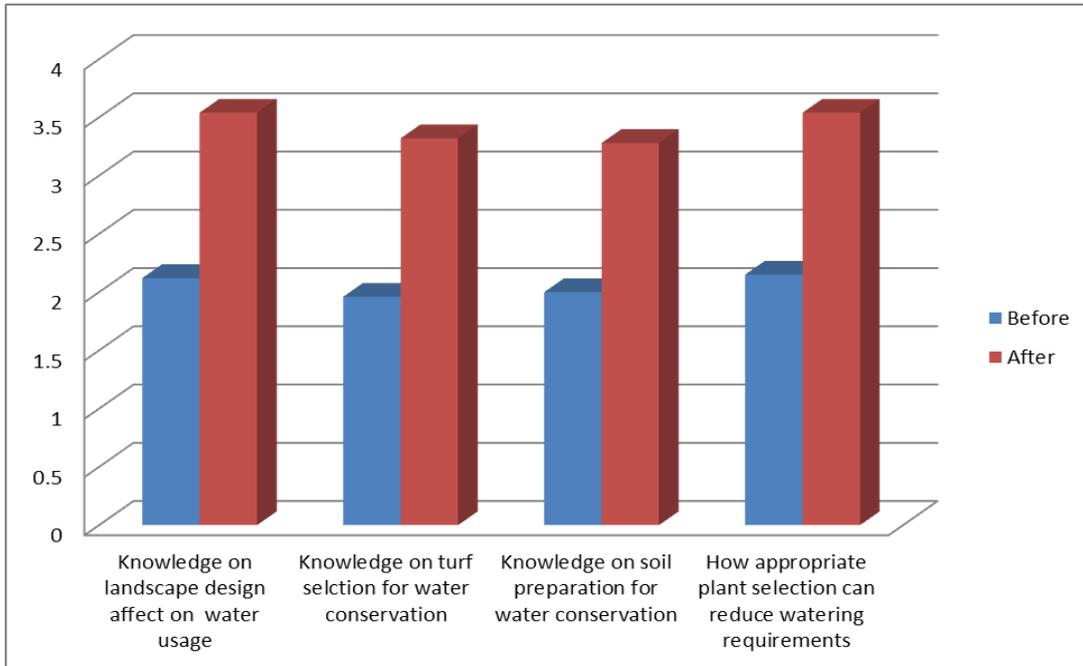


Figure 1: Illustrates the results of respondent’s level of knowledge of Grafting before and after the Earth-Kind Landscaping & Water Conservation Workshop

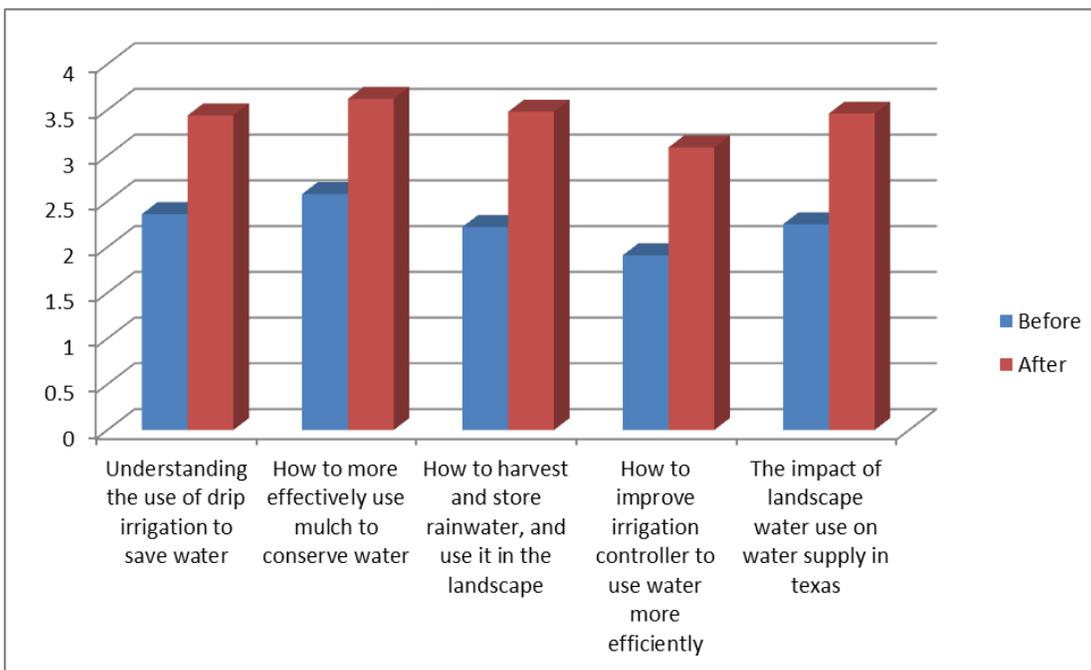


Figure 2: Illustrates the results of respondent’s level of knowledge of Grafting before and after the Earth-Kind Landscaping & Water Conservation Workshop.

Agriculture and Natural Resources



VALUE

Earth-Kind® Landscaping



The Earth-Kind® program teaches participants how to care for gardens and landscapes with environmentally friendly, research-proven techniques. Instructional topics include water conservation, responsible fertilizer application, and non-chemical options for controlling pests. Use of Earth-Kind® practices benefits Texas by saving water and protecting surface and groundwater resources from potential contaminants.

2015 Learn, Grow, Eat & Go! Teacher Training

Developed by Jennifer Herrera, Cameron County Extension Agent - Horticulture

The Learn, Grow, Eat & GO curriculum is a research and evidence-based school enrichment project of the International Junior Master Gardener Program. This multifaceted garden, nutrition, and physical activity curriculum is not only novel & academically-rich, it's also shown to increase student vegetable preference, physical activity, family gardening, family meal time and decrease student BMI. Learn, Grow, Eat & GO curriculum provides ten (10) concepts of instruction that emphasize Science, Math, Language Arts/Reading, Writing, Social Studies, Physical Education, Health, Horticulture, and Nutrition all with a solid correlation to the Texas Essential Knowledge and Skills (TEKS) standards.

Relevance: Research shows providing children with vegetable gardening opportunities, coupled with the implementation of the Jr. Master Gardener (JMG) curriculum and the Learn, Grow, Eat & Go curricula, improves nutritional knowledge and motivation to eat fruits and vegetables. Vegetable gardening improves math and science scores, increases vocabulary, and improves overall student attendance. As our area is consistently high in childhood obesity rates and Type 2 diabetes and schools suffer high drop-out rates, it is important to the health and welfare of our community to support teachers in developing JMG health and nutrition programs. Incorporating classroom activity breaks and increased physical activity can improve school performance and the overall health and wellness of children.

Response: A multi-county, multi-discipline workshop to improve the horticultural skills and nutritional knowledge of school educators is provided annually. Additional support is given to classrooms during the school year by AgriLife Extension Master Gardener volunteers.

The **Regional Learn, Grow, Eat & Go Training** attracted **84** Educators, AgriLife Extension Master Volunteers, and AgriLife Extension staff from Hidalgo, Starr, Willacy, Webb and Cameron County schools for a day-long workshop with outdoor horticultural demonstrations and classroom activities based on the LGEG curriculum. This workshop was held May 8, 2015 at Palmer Elementary in Pharr, Texas.

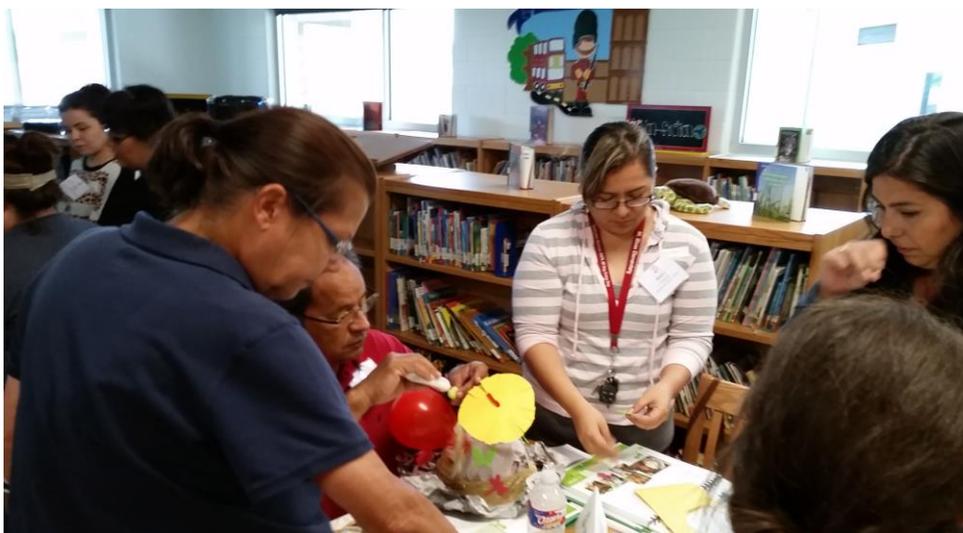
Results:

- 79% participants of the Regional LGEG Teacher Training were completely satisfied with the program overall
- 68% of the participants increased their knowledge of plant parts and plant need
- 68% of the participants increased their knowledge of how to integrate science with other subjects such as math, language arts, and social studies
- 73% of the participants increased their knowledge of how to use garden or landscape as an outdoor classroom
- 91% of participants agreed to definitely adopt the Junior Master Gardener curricula. 3% of the participants have already adopted the curricula
- 97% of participants agreed to definitely utilize the curricula activities learned at the teacher training
- 91% of participants agreed to definitely integrate science with language arts, math, social studies and other subject. 2% of the participants have already adopted this practice.
- 81% of participants agree to definitely build a vegetable garden at their school and 7% of the participants already have a vegetable school garden.

Agriculture and Natural Resources

Collaborations/Partnerships: The Regional Learn, Grow, Eat & Go training was a partnership with Hidalgo County horticulturist, Ashely Gregory, Junior Master Gardener Program Specialist, Randy Seagraves and Caren Walton and was supported by the Hidalgo County Master Gardener volunteers.

Future Plans: The Teacher Training will continue as an annual event and Master Gardener volunteers will continue to assist with workshops and teacher support. Plans are in the works to hold two trainings in 2016 one in Cameron County and in Hidalgo County.



Parenting Connections In-Depth Summary – Cameron County Report, 2015
 Developed by Lilian Mezquida, County Extension Agent- Family & Consumer Sciences

Relevance: Although children are influenced by many different elements in their environment, parents are the primary influence in the lives of their children. Parents’ contributions to their children’s development are unparalleled, especially during their early childhood years. Research indicates that children who grow up with actively involved and nurturing parents (as opposed to uninvolved parents) reap numerous benefits, including better school performance, increased self-esteem, healthier relationships with peers, healthier sex-role development, and greater access to financial resources. In addition, children who are raised in environments in which parents are fully involved are less likely to engage in behaviors that put them at risk for a variety of physical and mental health problems.

Research suggests that quality educational programs can assist parents in developing the skills they need to effectively raise their children. The qualities/skills that are common to effective parents (e.g., unwavering love, sensitivity to a child’s needs and feelings, clear and consistent limits geared toward a child’s stage of development, firm but not harsh discipline, encouragement of child’s emerging independence, parental involvement in child’s education, being a positive role model) can be taught through a series of parenting education classes that allow parents the opportunity to discuss and practice the desired skills.

Response: In 2015, the Texas A&M AgriLife Extension Service conducted multiple parent education workshop series’ in Cameron County utilizing the *Parenting Connections* curriculum. Topics covered included guidance/discipline, parent-child communication, promoting a healthy self-esteem in children, and child development. Two hundred and thirty (**230**) single session parenting evaluations were completed by participants. Seventy-two (**72**) parents and/or other relatives completed the 4-week program (see Table 1 for outcomes).

Results:

Participant Characteristics

The average age of participants was 27 years. Parents who attended the classes had an average of 2.7 children. Sixty-nine percent of attendees who completed the demographic portion of the survey were female and 21% were male. Approximately 60% possessed a high school diploma and 10% some college.

Twenty-two percent did not possess a high school diploma. Eighty-nine percent of the participants identified themselves as Hispanic/Latino, and 11% Caucasian. Seventy-eight percent reported household incomes under \$20K, 10% between \$20-29K, and 7% over \$30K. Thirteen percent of participants were married (1st time), 8% divorced/separated, 3% remarried, and 69% single. Eighty-three percent identified themselves as the child’s custodial parent, 3% as the non-custodial parent, and 13% as a relative/other.

Parent/Child Behaviors

Participants were evaluated after completing the parent education series using a retrospective evaluation tool. Results indicate that the program had a very positive effect on specific parenting practices.

Significant behavioral changes from pre to post occurred in the following areas: parent-child communication, parental self-confidence, and parental use of positive disciplinary practices. In addition, parents reported a significant improvement in their children’s behavior after participating in the program.

The following tables demonstrate the positive changes that occurred:

Table 1: Percent reporting “frequently” or “almost always” from pre to post (N = 72)

Parenting Behavior	Pre	Post
Compliment child	52.7%	84.8%
Encourage child	63.9%	84.8%
Listen carefully to child	57.0%	91.7%
Communicate clearly & directly	51.4%	84.7%
Confident in parenting skills	51.4%	86.1%
Set limits (rules) for child	48.6%	75.0%
Consistently enforce limits	47.2%	75.0%

Success Stories

“I really enjoyed this class. I got good information and learned new ideas about communication”.

“Discipline is about structure not only Punishment”

“Communicating with my partner and control is very important. How to be a better parent to my children”



Friend to Friend In-Depth Cameron County, 2015

Developed by Lilian Mezquida, County Extension Agent- Family & Consumer Sciences and Rosa I. Guel, Extension Program Specialist

The *Friend to Friend* program's purpose is to encourage women to get regular mammograms and Pap tests for the early detection of breast and cervical cancer, when the disease is most curable.

Relevance:

- Regular screening significantly increases the likelihood of finding cancer early, when treatment is more often successful.
- Women living in rural areas of Texas are less likely than their urban counterparts to have had a mammogram or Pap test within the past two years.
- Mortality is higher for rural women because of later diagnosis.

Response:

- This project's goal is to decrease breast and cervical cancer morbidity and mortality for women living in rural Texas counties by improving screening rates and early detection of cancer.
- Funding was applied for and awarded by the Cancer Prevention and Research Institute of Texas (CPRIT) to fund screenings and transportation to uninsured and underserved women in need of screening services.
- The county Extension agent, regional cancer prevention specialist, and patient navigators plan and implement a *Friend to Friend* event. Women attending are given the opportunity to sign a commitment card to obtain a mammogram and/or Pap test within the next year and the option to complete a help request form for assistance in obtaining screening services.

Impact of the Program:

- *Friend to Friend* was implemented in 40 Texas counties in 2015.
- **185** women attended the *Friend to Friend* events on May 9, 2015 at Bertha Cabaza Middle School Cafeteria in the city of San Benito, Texas.

Demographics of women who attended the events:

- Median age was: 45.
- Ethnic breakdown:
 - African American: 0%
 - American Indian/Native American: 0%
 - Asian/Pacific Islander: 0%
 - Latina/Hispanic: 92.2%
 - White: 1.8%
 - Multiple Race/Ethnicity: 1.8%
 - Other/Missing: 3.6%
- 20 total volunteers assisted at party/events.

Family and Consumer Sciences

- A Breast Cancer Survivor & other Health Care Professional urged women to obtain a mammogram/pap screening at the event
- At the end of the event 94.7% of women, aged 40 or over, correctly identified the need for a mammogram screening every year.
- 165 women requested help to navigate screening and diagnostic services
- 38 clinical sites are contracted statewide for screenings, diagnostics, radiologists and lab services.
- 20 mammogram screenings and diagnostics were paid for through CPRIT funds
- 20 Pap screenings and diagnostics were paid for through CPRIT funds
- Women were referred to other available sources for Breast and Cervical screenings and diagnostics such as Su Clinica Familiar in Harlingen and Brownsville, Texas.

Success Stories:

“Through programs like this we can learn that there are ways to obtain a mammogram/pap screenings even when we don’t have money for these services. Thank you so much for your help.”

“I did like the vent because I was able to get answers and help to get my mammogram. Thank you.”



Cancer Survivor



Friend to Friend Event



Pre & Post Survey



Health Information

Better Living for Texans In-Depth Cameron County 2015

Developed by Lilian Mezquida, County Extension Agent- Family & Consumer Sciences

Relevance:

Health disparities among low income populations are well documented. Obesity, heart disease and hypertension are conditions which are more prevalent in low income populations. These health conditions can be improved through consumption of a healthy eating plan as affirmed in the Dietary Guidelines for Americans. However, dietary behavior change can be difficult and requires knowledge, skills, motivation and an environment conducive to change.

Identify target audience: The primary BLT audience is comprised of SNAP recipients and SNAP program eligible. In addition, families participating in the Head Start program, Women Infants and Children (WIC), individuals receiving Temporary Assistance for Needy Families (TANF), SSI recipients, Individuals receiving food from food pantries or soup kitchens, and others qualify

Response:

- From October 2014 to October 2015 the Better Living for Texans Assistants conducted multiple education workshop series' in Cameron County utilizing: **1. *Three Easy Bites***, The curriculum promoted diet related best practice behaviors related to breakfast, snacking and dinner, and **2. *Choose MyPlate***, The series addressed positive food choices consistent with the Dietary Guidelines for Americans. The curriculum delivered subject matter content by incorporating facilitated interactive modalities and promoted daily physical activity and **3. *Back to Basics series***. This program focuses on meal planning, stretching food dollars, and adopting selected behaviors that can reduce the risk of foodborne illness.

Three Easy Bites – Results:

The curriculum promoted diet related best practice behaviors related to breakfast, snacking and dinner. Participants could opt out of the survey evaluation process if desired. Nonetheless, **79** pre/post/follow-up survey sets were received from Cameron County.

- Self-reported behavior improvements were noted during the time *Three Easy Bites* was taught. Percentage of *Three Easy Bites* participants who answered always or almost always: pre/post/follow-up data sets (n=79). From 18% to 75% **total behavior changed 57%**
- Best practice behaviors with the greatest participant improvement were:
- Using the Nutrition Facts label to determine portion size of snacks
- Planning dinner ahead of time
- Eating enough fruits/vegetables to cover half of the dinner plate
- Planning breakfast ahead of time

Choose MyPlate- Promoting Healthful Food Choices

A five lesson series on the USDA Food Guidance System – *Choose MyPlate* was developed by the Texas A&M AgriLife Extension Service nutrition specialists. The series addressed positive food choice consistent with the Dietary Guidelines for Americans. Session titles and goals were as follows:

- **Add more vegetables to your day:** Participants will increase knowledge of vegetable varieties and tips on how to add vegetables to their eating plan.
- **Focus on fruits:** Participants will increase knowledge of fruit health benefits as well as tips on purchasing and consuming fruit.
- **Make half your grains whole:** Participants will increase knowledge of whole grain food products and how to identify these foods using a Nutrition Facts label.
- **With protein foods, variety is key:** Participants will increase knowledge of Protein Foods and how to create a meal based on limited ingredients.
- **Get you calcium-rich foods:** Participants will increase knowledge of the differences between low-fat or fat-free milk and whole milk by using the Nutrition Facts label.

MyPlate participants could opt out of the evaluation process if desired. Nonetheless, **66** pre/post survey sets were received and analyzed.

Results:

Participant behavior improvements, in rank order, were:

1. Drinking only fruit drinks that are 100% juice
2. Eating more than two vegetables daily
3. Switching to lower fat milk
4. Eating 100% whole wheat or 100% whole grain bread

These data suggest clients improved their behaviors associated with enhanced diet quality. Poor diet quality is a risk factor for obesity and overall declining health. Consistent improvements in diet quality can help clients achieve and maintain healthier weight, reduce their risk for obesity, and improve overall quality of life.

Back to Basics-

135 Cameron County adults completed the BLT *Back to Basics* series. This program focuses on meal planning, stretching food dollars, and adopting selected behaviors that can reduce the risk of foodborne illness. One hundred and twenty-two (**122**) of the **135** participants completed the pre, post, and 30-day follow-up survey. This report reflects the data from those **122** participants. Immediately after the program ended, 105 (86%) of the 122 participants reported that they felt they would be able to spend less money at the grocery store. More than 36% (n=44) of the participants felt they could stretch their food resources to last the entire month “always.” The percentage of participants who reported “never” running out of food before the end of the month rose from 18% (n=22) to 39% (n=47). The number of participants who “always” ran out of food decreased as well from 35 (pre) to 17 (follow-up).

- **Average monthly out-of-pocket food expenses reported by participants**:**
 - Before BLT: **\$ 169.99**
 - After BLT: **\$ 152.44**
 - Estimated monthly savings: **\$17.55**
- **89** of the participants rated the BLT program as “excellent” while **20** rated the program as “good.”

V A L U E	
Obesity Prevention and Reduction	
	<p>The Texas A&M AgriLife Extension Service engages children and adults in programs that teach them how to eat nutritious foods and engage in regular physical activity to promote health and reduce their risk for obesity. The Texas public benefits through a healthier population, reduced health care costs, and increased productivity.</p>

Family Consumer Sciences Outreach Summary – Cameron County Report, 2015
 Developed by Lilian Mezquida, County Extension Agent- Family & Consumer Sciences

Relevance: The Texas A&M AgriLife Extension offers practical information for families: raising children, housing and environment, eating well, managing money, and staying healthy. The goal for this plan is to address any emerging issue or unplanned program.

Response: In 2015, the Texas A&M AgriLife Extension Service conducted multiple programs in Cameron County utilizing different programs such as the Women’s prescription, Budgeting, Diabetes. For Youth the programs were When Sean Speaks and Alcohol Awareness program

Results: Of all the programs there is one that I am very proud of and it is **WATCH UR BACK Alcohol Awareness Program**. The first event Implemented was “When Sean Speaks”, the goal is to spread the word that alcohol, automobiles and asphalt don’t mix. Sean and his Mom, Jenny, have taken their message to tens of thousands of young people to help prevent drunk driving and to make people aware of the consequences of their choices. For this event we had around **700** students. In October we implanted the second event “The Alcohol and Drug Awareness” Event was implemented in 5 schools. Dr. Abraham P. Cano freshman Academy **600** students, San Benito HS **300**, Veterans Memorial **875**, Miller Jordan **820**, and Riverside **664** students. The San Benito Police Department also presented and provided information about the consequences of using drugs. Students wore the special goggles to simulate different levels of intoxication from a 0.12 blood alcohol level to 2.5. They tried riding the long pedal cars, walking a straight line and driving a simulator. **Total 3,959 students**

Partnership: Janet Sandera, Program Coordinator and Colton Kilpatrick, Program Assistant, San Benito Police Department, San Benito CISD, Harlingen CISD and Harlingen Police Department



Junior Master Gardeners Outcome Summary - Cameron County, 2015

Developed by: Marco Ponce, County Extension Agent – 4-H & Youth Development

Relevance: 4-H youth who are at the elementary and middle school grade level are increasingly unaware of how fruits, vegetables, and ornamentals are produced. Many are unfamiliar with the processes involved in producing fruits and vegetables. They are unaware of basic of gardening techniques such as site selection, planting, watering, and fertilization. It is important that youth be aware of how important the preservation of the environment is in relation to producing these products. Youth must also be made aware that fruits and vegetables grown at home are tastier and healthier as they are free of chemicals and preservatives that can be harmful to one's health. Students need to understand the nutritional requirements needed for them to maintain a healthy lifestyle.

Response: Agent planned and implemented a Gardening and Horticulture program for 4-H youth who are members of the Santa Rosa 4-H club. Topics of discussion were planting seeds, basic gardening and management, nutrition, and harvesting. Students also did an activity which taught them the different parts of a plant and which parts were edible. 4-H members also expressed interest in creating a vegetable garden for the 4-H club and some members expressed interest in competing in the horticulture division at the Rio Grande Valley Livestock Show.

Results: Students learned about the importance being good stewards of the land while also learning about establishing a vegetable garden. Students were administered a pre-program questionnaire in which they had an average of -3.0 or 20% of the questions wrong. Students were then given an identical post program questionnaire at the conclusion of programming. In the post-program questionnaire, students averaged -1.0 or 6% of the questions wrong. In addition, in the pre-program questionnaire, no one student answered all the questions correctly. In the post-program questionnaire, one student answered all the questions correctly and two students only missed one question.

Future Plans: The future plans for this program in to interpret the results to our key stakeholders and county leaders. We also have plans to continue this program with the Santa Rosa 4-H club and with other community centers in the county.

Youth Higher Education Awareness Outcome Summary, Cameron County - 2015 **Developed by Marco Ponce, County Extension Agent – 4-H & Youth Development**

Relevance: There are many at-risk and underprivileged youth in Cameron County who are unaware of the many higher education opportunities available to them here in South Texas. They are also unaware of the finances needed and the funding that is available to them in order to acquire a higher education degree. These groups of students are often overlooked by school counselors and are not given the individual attention they need by instructors. Thus many fail to graduate high school and in most cases fail to attend an institution of higher education. They are then often relegated to mostly low paying jobs that have little or no opportunity for career advancement.

Response: Educational lessons were conducted at the Darrel B. Hester Juvenile Justice Center (Boot Camp) and with members of the Santa Rosa 4-H club. We utilized lessons from the College for Texans curriculum and other higher education resources. Lessons were delivered using power point technology as well as handouts that were given to the audience in order to take notes and follow along. Some individual instruction was also conducted with students who needed special attention in order to fully understand the topic. Educational lessons included local higher education institutions, financial aid 101, financial impact of college degrees, careers in demand, and possible degree programs and related careers. Students were informed about the expected salaries that they should expect to earn related to their level of education obtained. They were also informed about the many expenses that can be expected to be incurred once they are living on their own and having to pay for all of their own expenses. This made them realize that trying to live comfortably on a salary of a high school drop-out would be extremely challenging if not impossible.

Results: Students gained a greater understanding of the many opportunities available to them that would support them in their path to obtaining a higher education degree. Students specifically gained a greater knowledge in financial aid, careers, and salary differences as related to their responses in a pre and post program questionnaire. At the Boot Camp, students missed an average of -6.5 or 54% of the questions on the pre - program questionnaire. On the post – program questionnaire, students missed an average of -1.7 or 14% of the questions. Six students answered every one of the questions correctly and all students said they were not planning on going to college, as opposed to two in the pre-program questionnaire. The Santa Rosa 4-H Club students missed an average of -5.6 or 47% of the questions on the pre-program questionnaire. On the post program questionnaire, students missed an average of -3.8 or 31% of the questions. All students in the Santa Rosa 4-H club said they planned on going to college. The Boot Camp group seemed to improve significantly on the post-test as opposed to the Santa Rosa group. The results were similar for both groups in the pre-test. However, in the post-test, the Boot Camp students missed only 14% of the questions whereas the Santa Rosa students missed a higher 31% of the questions.

Future Plans: The future plans for this program in to interpret the results to our key stakeholders and county leaders. We also have plans to continue this program at the Darrel B. Hester Juvenile Justice Center and other after school centers in the county.



4-H YOUTH DEVELOPMENT

Making a Difference in **Cameron County 2015**

Annual 4-H Program Summary

County 4-H Youth Involvement

- 17 Chartered Community Clubs
- 371 Members Enrolled in 4-H Clubs
- 6,152 Youth Reached through Community-based Programs
- 6,459 Youth Reached through School-Based Enrichment Curriculum

County 4-H Leadership, Advisory, and Support Organizations

- 10 Youth Board Members attended 2 Meetings
- 145 County 4-H Council Members attended 10 Meetings
- 85 Adult Leaders & Parents Organization Members attended 10 Mtgs

Total Youth Reached

12,982



of Youth Attending

**Participation in
County 4-H Events**

Cameron 4-H Awards Banquet	120
County 4-H Roundup	44
County 4-H Record Book Judging	40
4-H One Day Tree Planting	32
Thanksgiving and Christmas Service	56

**County Participation in
District Events**

D12 Livestock Judging Contest	24
D12 4-H Roundup	33
D12 4-H Record Books	25
D12 4-H Food Show / Challenge	23
D12 4-H Leadership Lab	18

**County Participation in
State/National Events**

San Antonio Stock Show & Rodeo	48
Texas 4-H Roundup	22
Texas 4-H Record Book Judging	4
Houston Livestock Show & Rodeo	16
State Rifle & Archery Postal League	13

Most Popular Club Projects in the County

Photography	88
Swine	71
Shooting Sports	66
Goats	55
Food and Nutrition	54

Most Popular Curriculum in the County

Junior Master Gardener	5,102
Food and Nutrition	3,896
Science of Agriculture	2,001
Aquatic Science	905
Healthy Lifestyles	305

County 4-H Volunteer Support

- 171 Registered & Screened Volunteers Supporting Clubs
- 84 Club Managers, Co-Managers, and Project Leaders
- 13,345 Hours Contributed by Volunteers in Support of Clubs

Livestock Show Premium Sale Proceeds*

\$246,500

Includes all projects (4-H and FFA)

Value of Volunteer Time Supporting 4-H

\$307,869



County 4-H Leadership & Personal Development Programs

- 22 Attended State-level Leadership & Personal Development educational or competitive events
- 123 Attended District-level Leadership & Personal Development educational or competitive events
- 18 Attended District Leadership Lab
- 19 Received 4-H Scholarships valued at a total of **\$41,500**

Local Training Opportunities for Youth and Adults

- 21 County 4-H Record Book Training
- 19 4-H Veterinary Science Training
- 16 4-H Archery Project Training
- 34 4-H Horticulture Project Training

Significant Leadership & Personal Development accomplishments from county Events & Activities

Cameron County 4-H had a 4-H member who received the Houston Livestock Show and Rodeo scholarship in the amount of \$18,500. This scholarship was given out by the Texas 4-H Foundation scholarship program. Several other 4-H members received scholarship awards from areas stock shows and other organizations based on their 4-H achievements.

County 4-H Agriculture & Natural Resource Programs

- 312 Livestock Projects (all species)
- 285 Participated in County Livestock Shows
- 51 Attended State-level Livestock Shows
- 41 Attended District-level Agriculture & Natural Resources educational or competitive events
- 44 Youth Trained through "Quality Counts" Program

Local Training Opportunities for Youth and Adults

- 67 4-H Livestock Judging Trainings
- 17 4-H Rabbit Project Training
- 21 4-H Record Book Training
- 13 4-H Meat Goat Training

Significant Agriculture & Natural Resource accomplishments from county Events & Activities

Several Cameron County 4-H members earned Grand Champion, Reserve Champion, and Breed Champion honors at the Cameron County Fair, Rio Grande Valley Livestock Show, and San Antonio Stock Show. Cameron County 4-H also had the 7th place livestock judging team and High Point Individual at the State Livestock Judging Contest at State 4-H Roundup.

County 4-H Family & Consumer Science Programs

- 8 Attended State-level educational or competitive events
- 33 Attended District-level educational or competitive events
- 30 Attended County-level educational or competitive events

Local Training Opportunities for Youth and Adults

- 18 County 4-H Food Show and Nutrition Training
- 18 County 4-H Food Challenge Training
- 13 CEP 4-H Healthy Ambassador Training

Significant Family & Consumer Science accomplishments from county Events & Activities

Cameron County 4-H Food Show and Food Challenge participants had a great year. We had three Food Challenge teams and many 4-H members competing in the Food Show at the District 12 4-H contest. Our senior Food Challenge team placed 4th and advanced to the State 4-H Food Challenge contest. We also had two Top Chef award winners at the Food Show.



Cameron County 4-H members plant a bur oak tree as part of their 4-H One Day community service project.



4-H members participate in a Archery project training in preparation for the District 12 4-H Archery Contest



Highland Hustlers 4-H members compete in the Cameron County 4-H Food Challenge Contest



Cameron County 4-H members participate in our Thanksgiving Holiday Help Community service project in which they donated 15 turkeys and food items to families in need in Harlingen & Rio Hondo



Cameron County 4-H members participate in our Christmas Holiday Help Community Service project in which they donated gifts and clothes to area teenagers.



4-H Teen Volunteers training to be Healthy Ambassadors & learning how to do cooking demonstrations

4-H and Youth Development

2015 Heroes 4-Health Program

Developed by: Guadalupe Castro- 4-H & Youth Development Extension Agent (CEP)

Relevance: In Cameron County, an estimated 127,803 individuals receive benefits from the Supplemental Nutrition Assistance Program (SNAP), historically known as the food stamp program. Studies have shown individuals who live in poverty (including SNAP recipients) have dietary intakes that are not congruent with current recommendations (i.e. Dietary Guidelines or MyPlate).

Response: The goals of the Youth Voice: Youth Choice 4-H Healthy Living grants provided by Wal-Mart are to mobilize underserved youth to take action around nutritional deficiencies, healthy food choices, and physical activity.

The goal for the county is to reach minimum of 400 underserved youth and their families in rural, suburban, and urban communities through direct program participation in Youth Voice: Youth Choice high-quality positive youth development activities with the help of trained Teen Health Ambassadors.

The curriculum that is being used is the Choose Health: Food, Fun and Fitness Program which is a comprehensive nutrition and fitness curriculum composed of six hands-on lessons:

- Lesson 1 Drink Low-Fat Milk and Water Instead of Sweetened Drinks
- Lesson 2 Color Your Plate: Eat More Vegetables and Fruits
- Lesson 3 Read It Before You Eat It! The Nutrition Facts Label
- Lesson 4 Make Half Your Grains Whole! Eat More Whole Grains
- Lesson 5 Healthier Foods – Fast: Eat Fewer High-Fat, High-Sugar Foods
- Lesson 6 Power Up Your Day: Eat Breakfast!

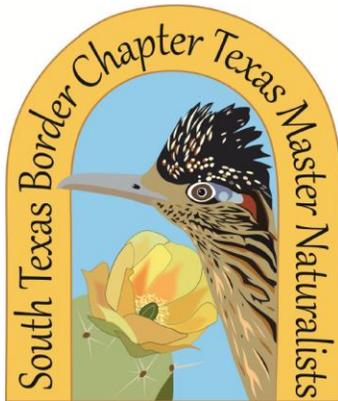
Results: This program runs from September 1, 2015 to August 1, 2016. Currently 10 youth volunteers and 3 adult volunteers have been trained in the Healthy Ambassador program and have begun to conduct lesson in Cameron County Housing Authority. This program is still in progress into next year where it will be able to report fully the amount of youth impacted.



Making a Difference

Introduction

Our Cameron County Marine Extension Program is guided by our Coastal Issues Committee, two Texas Master Naturalist Boards of Directors, the Brownsville – Port Isabel Shrimp Producers Association Board, the Texas A&M AgriLife Extension Service and Texas Sea Grant Program, all contributing to our annual plan of work of which a few of the many successes are highlighted below. We are indebted to these partners for making our programming efforts fly! We are grateful for their guidance in 2015 and look forward to another productive year, 2016.



STBCTMN Logo



Live Bird Feeder Cam
 with 2 green jays



RGVCTMN Logo

**Cameron County Texas Master Naturalists:
 Rio Grande Valley Chapter & South Texas Border Chapter
 Tony Reisinger, County Extension Agent – Coastal & Marine Resources**

Relevance: Growth and urbanization will be the preeminent issues facing the Texas coast for the next several decades. Past and present urbanization has led to habitat degradation and loss, which affects water quality, critical habitat, endangered species and contribute to harmful algal blooms.

Response: To keep pace with coastal population growth on the Texas coast, Extension has responded by founding two Texas Master Naturalist chapters in the Rio Grande Valley, the Rio Grande Valley Chapter Texas Master Naturalists (RGVCTMN) founded in 2002 and the South Texas Border Chapter (STBCTMN), chartered in 2015. These chapters provide a volunteer program that has become an integral part of Texas A&M AgriLife Extension and Texas Sea Grant’s efforts as a base program with the Texas Parks & Wildlife Division. A Master Naturalist is a formally trained volunteer who must complete an initial minimum of 48 hours of instruction, and 40 hours of volunteer service annually, designed to provide them with the knowledge, “how to” skills and tools needed to provide service dedicated to the beneficial management of natural resources and natural areas within their communities. They are also required to attend 8 hours of advanced training every year.

We maintain a website for each chapter: RGVCTMN <<http://rgvctmn.org/>> and STBCTMN <<http://southtexasborder.wix.com/txmn>>. The RGVCTMN site hosts information pertinent to classes and volunteer opportunities and a quarterly chapter newsletter “The Chachalaca” which we have published for 11 years and serves as an excellent outreach tool for marketing. The STBC hosts a website providing information on volunteer activities available to naturalists and classes, events and field trips.

Making a Difference

Both chapters share Cameron and Hidalgo Counties. The STBCTMN extends west to Starr County and the RGVCTMN north into Willacy County.

The chapters together trained 59 Texas Master Naturalist interns comprising two classes, one with 22 interns in Hidalgo County and one with 37 in Cameron County. The Master Naturalist curriculum for both classes included 32 presentations on different natural history subjects, 12 field trips to various ecosystems of the Rio Grande Valley.

Results: Our South Texas Border Chapter and Rio Grande Valley Chapter Texas Master Naturalists are currently comprised of 218 members, 76 and 142 members respectively. The chapters conduct at least one board and one general meeting monthly and an educational presentation is given during general meetings. Our planning groups are boards of directors composed of 25 members and 13 members.

In addition to our monthly educational meetings, our chapter members conducted 111 outreach/education events reaching 24,777 people in 2015. Chapter land restoration projects impacted 678.5 acres of wetlands, uplands, sand dunes, and rookery islands in the Laguna Madre. In 2015 chapter members contributed 24,333 volunteer hours to our community valued at \$561,362. Texas Master Naturalist evaluations were conducted for 32 educational presentations (either 1.5 or 3 hours) and 9 field trips. Each activity was evaluated by the interns on a scale of 1 to 5 and 39 responses were assessed.

Master Naturalist Results: Field Trips Average Score 4.7 out of possible 5
 Classes Average Score 4.4 out of possible 5

All evaluations were conducted by educational committee members, with classes and field trips conducted by volunteers from local universities or experts in their fields of knowledge. Class results from pre and post-tests indicated a 26% increase in knowledge for the interns. The post-test results indicated: an 83% attitude change, 89% increase in skills.

Our live bird feeder camera at Sabal Palm Sanctuary has 547 followers and has had 515,059 visitors! The STBCMN and RGVCTMN Facebook sites have 60 and 32 members respectively.

I serve as an advisor to the STBCTMN and agreed to assist until the Hidalgo Extension's replacement becomes oriented to the chapter workings. This group has a board of 13 members and a committed membership of 76 Master Naturalists. Classes are conducted at Bentson Rio Grande Valley State Park and 31 signed up for the 2016 classes with the help of Ag Communications specialist Rod Santa Ana who wrote articles and radio spots for recruiting.

Recap: Ten weeks of 24 classes and 23 field trips taught by expert volunteers in two separate locations trained Mission and San Benito trained 59 Master Naturalist interns in 2015.

In 2015, chapter members conducted 111 outreach/education events reaching 24,777 people. Chapter land restoration projects impacted 678 acres and 39.5 miles of trails. Members of the two chapters contributed 24,777 volunteer hours to our community valued at \$561,362 in 2015.

Making a Difference



Juvenile Dolphin Saved by Texas Coastal Naturalist



Logo

Texas Coastal Naturalist Program

Tony Reisinger, County Extension Agent – Coastal & Marine Resources

Coastal Naturalists Help Marine Mammals (Impact)

Relevance: The Texas Coastal Naturalist is a Texas Sea Grant sponsored program consisting of a cadre of 258 trained first responders for: sea turtle cold stun events, harmful algal blooms, marine mammal strandings, and oiled bird events. Coastal Naturalists fill an essential role reacting quickly, assisting state and federal agencies overwhelmed in such emergencies by lack personnel for timely and efficient responses to these events.

Response: One hundred and ten Texas Coastal Naturalists, trained specifically for marine mammal strandings through the Texas Marine Mammal Stranding Network, responded to three live dolphin strandings on Boca Chica Beach in south Texas in 2015. The dolphins were transported to a holding facility on South Padre Island and cared for around the clock by the Naturalists.

Results: Coastal Naturalists dedicated 657 hours caring for the three dolphins stranded in March, June and September 2015. Value of their volunteer time was \$15,157. One young dolphin survived and is now being cared for at the Texas Marine Mammal Stranding Network facility in Galveston, Texas. Necropsies performed on the two mortalities provided diagnoses and valuable life history information on two different species of dolphins.

Recap: A cadre of specially trained Texas Sea Grant volunteers, the Texas Coastal Naturalists, attended natural resource training for coastal events. They in turn provided informed first response to three dolphin strandings in accordance to the Marine Mammal Protection Act.

Program Partners: Rio Grande Valley Chapter Texas Master Naturalist, Texas A&M University AgriLife Extension Service, Texas Marine Mammal Stranding Network, University of Texas Rio Grande Valley Coastal Studies Laboratory

Making a Difference



Red Tide response to irritating aerosol



Texas Red Tide Rangers Logo

Texas Red Tide Rangers Respond to Health Hazard in the Gulf of Mexico

Relevance: Red tide is a term used for the rapid and widespread bloom of toxic algae that can cause difficulty breathing in humans and negatively impact commercially and recreationally important shellfish and finfish. Red tide blooms typically occur at the end of the summer and have been increasing in frequency in the past several years in Texas.

Response: Extension provides training and organizational support to the Red Tide Rangers, a volunteer group founded in 1990 and associated with the Coastal Naturalists that monitors Texas coastal waters for red tide and other harmful algal blooms. Fish kills, NOAA Harmful Algal Bloom (HAB) forecasts, the presence of increased cell counts or blooms in surrounding areas prompt the Rangers to collect and analyze samples from Gulf waters, monitor harmful aerosols produced by algae, following up on any news of large populations of fish that have unexpectedly been found dead, and sharing knowledge and resources with local, state and federal agencies who monitor and respond to red tide events. The group ground-truths NOAA HAB satellite forecasts and reaches out to communities and businesses in the affected area to make them aware of the presence of red tide and steps they can take to reduce the impact on human health, pets and business. Texas Sea Grant arranged for red tide bloom unmanned aerial vehicle (UAV) over-flights by UTRGV and TAMUCC to determine the feasibility of monitoring bloom location and concentration, a new technology with potential to track and predict red tide movement via drones.

Program Partners: Rio Grande Valley Chapter Texas Master Naturalist, Texas A&M University AgriLife Research and Extension Service, Texas A&M University Department of Oceanography, Texas A&M University Corpus Christi Center for Coastal Excellence and Lone Star UAS Center of Excellence & Innovation, University of Texas Rio Grande Valley (UTRGV) Coastal Studies Laboratory and School of Multidisciplinary Sciences, Texas Parks & Wildlife Department, Texas Coastal Naturalist Program, Cameron County Department of Health, National Oceanic and Atmospheric Administration Harmful Algal Bloom Operational Forecast System, City of Port Isabel, and City of South Padre Island

Making a Difference

Results: Training was conducted in 2015 for the Red Tide Rangers. The group was mobilized in September and October 2015 due to red tide bloom detected in the area causing extensive fish kills and irritating aerosols along beaches and bay shores. We provided critical info on how to reduce respiratory impacts by wearing dust masks to filter the aerosol. We trained 3 Cameron County emergency managers to collect, identify and count red tide cells, and determine strength of the aerosol. A new technological tool, UAV was introduced to enhance red tide monitoring capabilities. UAV technology may have the future ability to assess fish kills resulting from red tide. This could reduce valuable man-hours spent by the state to determine the impact of red tide on fish populations.

Recap: Extension and the Red Tide Rangers continued to train volunteers, responded to and monitored a red tide event in South Texas, provided critical info on how to reduce respiratory impacts, and introduced a potential new tool (UAV) to monitor red tide blooms in 2015.



UAV Red Tide Monitoring Flight

Unmanned Aerial Vehicle Class and Demonstrations

Relevance: Unmanned aerial vehicles (UAVs) are an emerging technological tool showing potential applications in monitoring harmful algal blooms, crops and wildlife.

Response: We conducted three UAV demonstrations in 2015 to economically determine the feasibility of detecting a harmful algal bloom, bloom impacts on fish populations, and demonstrate applications for crop and wildlife population monitoring.

Results: The UAV demonstrations showed applications for detecting high concentrations of the harmful algal bloom red tide and the ability to assess fish kills associated with the blooms. The capability to track a bloom and warn the public of health impacts depends on satellite monitoring which is not always possible due to cloud cover blocking the view from space. UAVs are able operate under cloud cover and have potential to track blooms in a more advantageous and timely manner. UAVs can detect fish kills and possibly be used in the future to determine individual species impacts, saving inordinant time now devoted to assessment by Texas Parks & Wildlife biologists. Crop production and disease monitoring were demonstrated in a class for South Texas county agents and ranch managers. A result, one manager of large ranch is planning to employ UAVs for fence reconnaissance and determination of wildlife populations.

Making a Difference

Program Partners: Texas A&M Corpus Christi Lone Star UAS Center of Excellence & Innovation, University of Texas Rio Grande Valley School of Multidisciplinary Sciences, Texas A&M University AgriLife Research and Extension Service, Port Mansfield, Texas Chamber of Commerce, Port Mansfield / Willacy County Navigation District, Camber Corporation, Modern Technology Solutions, Inc., G4 Spatial Technologies

Recap: AgriLife Extension and Sea Grant demonstrated the applicability of UAVs to economically monitor red tide blooms, associated fish kills, crop production and disease, and have potential to assess impacts on fish populations caused by red tides.



Shark attacks on Shrimp Nets are increasing



Larger invasive Tiger vs. Native brown shrimp

2015 Cameron County Shrimp Industry Best Management Practices Outreach

Tony Reisinger, County Extension Agent – Coastal & Marine Resources & Andrew Ropicki Ph.D., Marine Economics Specialist and Assistant Professor

Relevance: Cameron County has a 180 vessel shrimp fleet which costs vessels an average \$1.70 /gallon for diesel fuel in 2015, significantly down from the 2014 average cost of \$3.09 / gallon. Shrimp nets deployed by the fleet are now almost 100% comprised of fuel saving super-fibers or advanced webbing (initially introduced by Texas Sea Grant Extension) with 85% of the fleet (152 boats) using Sapphire webbing, a high density polyethylene fiber. Another 20 vessels in Brownsville use knotted Spectra and 6 use knotless Dyneema (both ultra-high molecular weight polyethylene). Each vessel in our fleet (baseline – no fuel saving technology) uses 66,101 gallons of fuel per year. Super-fiber webbing decreases fuel usage 5%. Texas Sea grant research has who determined fuel savings from fishing super-fiber nets combined with cambered doors results in a 25% savings in diesel consumption. Twenty percent (20%) of the 25% fuel savings from the combined system (cambered doors and super-fibers) was due to the use of super-fiber netting, which presents less twine area (drag) and is a lighter hydrophobic material. The median fuel savings from the combined system was 25% ($24\% \times .2 = 5\%$), and with a 27% use cambered doors (50 boats) in the Brownsville / Port Isabel fleet. This information was determined in a survey by Reisinger in December 2015 of vessels at the Port of Brownsville

Making a Difference

and Port Isabel. Vessels employing cambered doors and advanced webbing (~100% of the fleet now uses advanced webbing) showed Cambered door usage cuts fuel (after accounting for super-fibers) an additional 20.2%, yielding a 25% reduction for the combined system.

The shrimp fleet is required to deploy bycatch reduction devices (BRDs) TEDs (turtle excluder devices) on all their shrimp nets and the annual change of crews requires education to new crews on the requirements. Any severe violation of the Endangered Species Act, which requires TEDs, can result in shrimp fishing area closures in the Gulf of Mexico. Additionally all shrimp vessels will be required to install automatic location devices (AIS) by March 1, 2016.

A recent exotic species introduction, Asian tiger shrimp are now being captured more frequently off Texas and is becoming more of a concern by our fishermen. Juvenile tiger shrimp have also been reported caught in the upper bays of the Texas coast. In previous years the tigers were concentrated more offshore of Louisiana.

With increased protection from fishing regulations, the coastal shark population has increased and shark attacks on shrimp nets are resulting in lost catch.

Shrimp aquaculture in Cameron County is in decline due to import competition and pond owners have unique challenges for which we can provide assistance.

Results:

Advanced Webbing

-For the year 2015 Cameron County's 180 shrimp vessels now use advanced webbing saving an average of 3,173 gallons of fuel per vessel valued at \$5,394 in savings per vessel (Total Annual Savings of 571,113 gallons worth \$970,920 for the Cameron County fleet).

-255 vessels further up the Texas coast used advanced webbing saving an average of 3,173 gallons of fuel per vessel valued at \$5394 in savings per vessel.

Cambered Doors

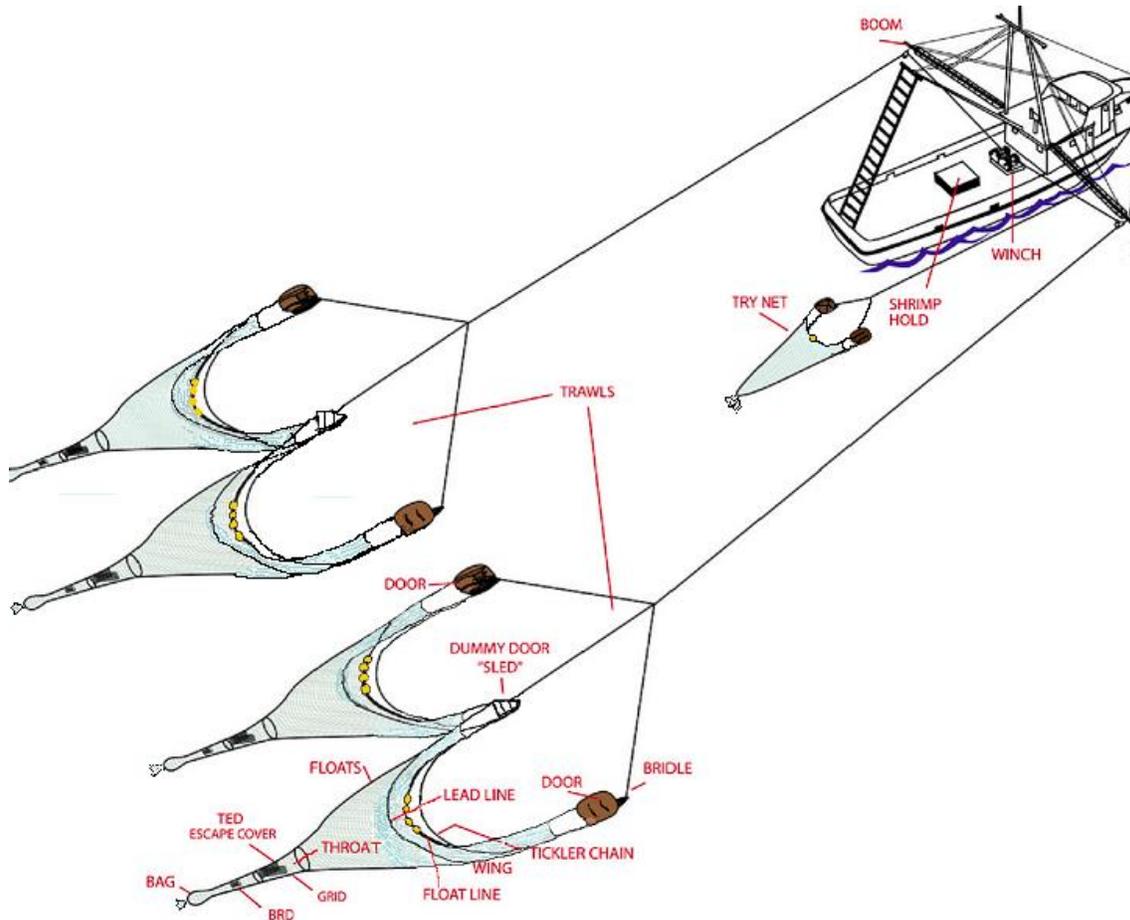
-In 2015 Cameron County, 50 of 180 shrimp vessels used cambered doors saving an average of 12,691 gallons of fuel per vessel valued at \$21,575 per vessel for a total annual savings of 1,078,750 gallons worth \$1,833,875 to the fleet employing the doors.

-7 additional vessels in two other Texas ports used cambered doors saving an average of 12,691 gallons of fuel per vessel valued at \$21,575 per vessel.

Use of doors has dropped precipitously due to a lack of supply, there is no longer a manufacturer/distributor in the area. The steel cambered-doors require frequent maintenance and the lack of replacements led many fishermen to go back to smaller traditional wooden doors.

Although use of the cambered doors has fallen, our work appears to have led many of the fishermen to evaluate and test other fuel saving technologies on their own. While Sapphire webbing is used extensively, some boats have adopted even more advanced webbing and almost the entire fleet uses some form of advanced webbing.

Making a Difference



Other Fuel Saving Efforts

Four vessels from the Zimco fleet out of Brownsville are now using smaller more advanced engines (Volvo Penta's D13), which have decreased fuel usage by 5+ gallons per hour or 20%! Volvo claims to reduce NOx and particulate emissions, which will meet the upcoming US EPA Tier 3 emission regulations for shrimp vessel engines. Two more engines are on order for repowering vessels in 2016.

Fuel prices have dropped significantly reducing fuel saving gear incentives. This phenomenon has exacerbated the move away from cambered door to the old style wooden doors, which now average 7' in length vs. the 9' doors used before the cambered conversion began. This regression to the smaller doors is indicative the fishermen realized if the cambered doors had less area, a smaller wooden door may work, which seems to be the case.

Making a Difference



Large Red Snapper are excluded by TEDs



D12 Agents in training demo at TED

Bycatch

One hundred and twelve vessel owners, captains and crew in Cameron County were trained this year on turtle excluder device, TED, compliance. These trainings helped reduce sea turtle fishing mortality, which is estimated at 3%. Over 400 bycatch reduction devices, BRDs, were checked and crew trainings conducted on proper installation and positioning. The majority inspected were fisheye BRDs. Less than 1% of our vessels use other devices. **Bycatch was reduced by 30% for fish and 97% for sea turtles through the use of BRDs and TEDs.**

Bycatch information for Asian tiger shrimp caught offshore of Texas by our Cameron County fleet was provided to Texas Parks and Wildlife for study of the impact of this invasive species.

We also have been advising shrimp fishermen on ways to reduce shark bites on net resulting in reduced catches. Magnets, red chaffing gear, and super-fiber cod ends were tested and super-fiber cod ends seemed to be the best deterrent.

Aquaculture

Cameron County produced 650,000 lb. of cultured shrimp, *Litopenaeus vannamei* in 281.5 acres of saltwater ponds. The crops value was \$1.8 million farm-gate. Assistance was provided to shrimp farmers during a red tide bloom in September and October. They were taught to identify and count red tide cells to prevent contamination of the crop. One major farm KAAPA has announced this was their last year of production.

Recap: In 2015 our effort to improve shrimp fishing energy efficiency resulted in fuel/cost savings for our fleet, due to the use of advanced webbing: 571,113 gallons worth \$970,920 for the Cameron County fleet, and due to Cambered Doors: 1,078,750 gallons worth \$1,833,875, resulting in a total Savings of: \$2.8 million. Bycatch was reduced by 30% for fish and 97% for sea turtles through the use of BRDs and TEDs. One hundred and twelve vessel owners, captains and crew were trained this year on turtle excluder device, TED, compliance. These trainings helped reduce sea turtle fishing mortality, which is estimated at 3%. Over 400 bycatch reduction devices, BRDs, were checked and crew trainings conducted on proper installation and positioning.

Making a Difference



Port Isabel Shrimp Vessel

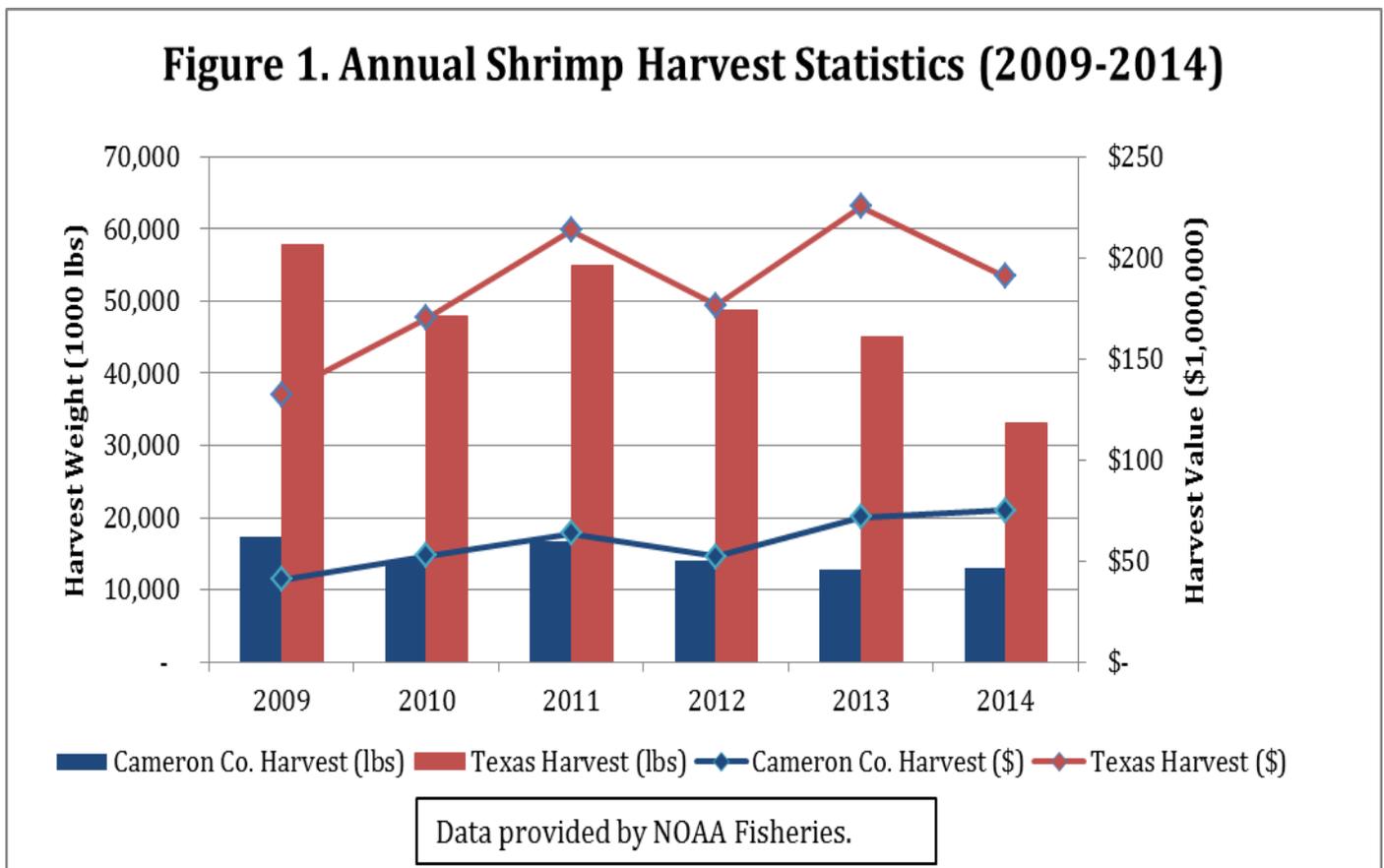


Checking TED Compliance aboard a Texas shrimp vessel

Making a Difference

Economic Impacts of the Cameron County Shrimp Industry Andrew Ropicki¹, Rebekka Dudensing², and Tony Reisinger³

The Cameron County shrimp industry is a vital part of both the Cameron County economy and the Texas shrimp industry. Between 2009 and 2014, Cameron County's shrimp harvest accounted for 31% of the total Texas shrimp harvest by weight and 33% of the total Texas shrimp harvest by value (Figure 1). In addition to the economic impacts associate with Cameron County shrimp fishing, shrimp processing operations in the county also positively impact the Cameron County and State of Texas economies.



¹ Assistant Professor and Extension Economist, Texas AgriLife Extension Service/Texas Sea Grant, Corpus Christi, TX

² Assistant Professor and Extension Economist, Texas AgriLife Extension Service, College Station, TX

³ Cameron County Marine Extension Agent, Texas Sea Grant, San Benito, TX

Making a Difference

Shrimp Harvesting Economic Impacts

The Cameron County shrimp harvesting sector's (shrimp fishing) economic impacts at both the county (Table 1) and state (Table 2) levels are shown below (estimates are in 2014 dollars). Based on data from 2009 to 2014, impacts were estimated for three different cases based on dockside revenues: 1) the best year (2014), 2) an average year (average of all years), and 3) the worst year (2009); different scenarios were analyzed to account for the wide variability in annual harvest revenues (see Figure 1). In addition to direct effects directly attributed to the shrimp harvesting sector, estimates of indirect and induced impacts are also included. Indirect effects are economic impacts due to purchases of goods and services by the shrimp harvesting sector from other local industries, and induced effects are due to expenditures of those benefiting from increased local business activity (individuals employed due to the industry and government). Four different types of impacts are estimated: employment (number of jobs due to the shrimp harvesting sector), labor income (combined income of those employed as a result of the shrimp harvesting sector), value added (the shrimp harvesting sector's contribution to GDP), and output (the effect of direct spending on overall economic activity). The indirect and induced impacts are larger for the State of Texas relative to Cameron County because some of these effects are realized in other counties in the State of Texas. As the estimates show, the shrimp harvesting sector's economic impacts vary greatly between years due to large shifts in shrimp harvest value; however it is worth noting that even in poor years the Cameron County shrimp harvesting sector still contributes approximately \$31 million dollars to the Cameron County economy and \$40 million to the Texas economy.

Table 1. Shrimp Harvesting Economic Impacts on Cameron

Best Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,756	\$22,686,815	\$31,122,136	\$74,758,017
Indirect Effect	215	\$7,046,840	\$9,643,037	\$24,660,203
Induced Effect	200	\$5,915,079	\$11,193,667	\$20,265,478
Total Effect	<u>2,171</u>	<u>\$35,648,734</u>	<u>\$51,958,840</u>	<u>\$119,683,698</u>
Average Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,448	\$18,699,747	\$25,652,612	\$61,619,754
Indirect Effect	177	\$5,808,401	\$7,948,332	\$20,326,323
Induced Effect	165	\$4,875,540	\$9,226,449	\$16,703,945
Total Effect	<u>1,789</u>	<u>\$29,383,688</u>	<u>\$42,827,392</u>	<u>\$98,650,022</u>
Poorest Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,058	\$13,665,075	\$18,745,968	\$45,029,409
Indirect Effect	129	\$4,244,562	\$5,808,343	\$14,853,716
Induced Effect	120	\$3,562,862	\$6,742,343	\$12,206,617
Total Effect	<u>1,308</u>	<u>\$21,472,499</u>	<u>\$31,296,655</u>	<u>\$72,089,742</u>
*Economic impact values are additive across effects (direct, indirect, and induced), but not across measures (employment, labor income, value added, and output).				

Making a Difference

Table 2. Shrimp Harvesting Economic Impacts on State of Texas

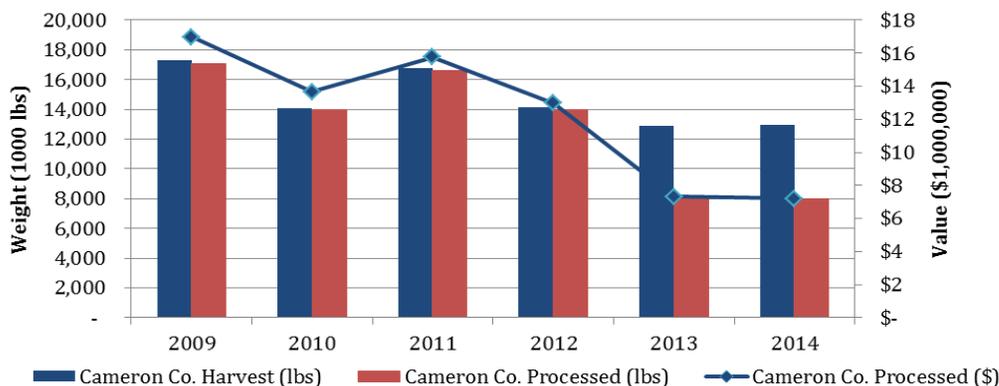
Best Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,756	\$22,701,318	\$31,133,798	\$74,758,017
Indirect Effect	165	\$11,743,737	\$17,571,124	\$41,330,343
Induced Effect	223	\$9,951,264	\$16,931,719	\$29,912,701
Total Effect	2,144	\$44,396,319	\$65,636,642	\$146,001,062
Average Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,447	\$18,711,701	\$25,662,224	\$61,619,754
Indirect Effect	136	\$9,679,847	\$14,483,107	\$34,066,789
Induced Effect	184	\$8,202,390	\$13,956,073	\$24,655,727
Total Effect	1,767	\$36,593,938	\$54,101,404	\$120,342,270
Poorest Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,058	\$13,673,811	\$18,752,993	\$45,029,409
Indirect Effect	100	\$7,073,670	\$10,583,712	\$24,894,734
Induced Effect	134	\$5,994,000	\$10,198,576	\$18,017,482
Total Effect	1,291	\$26,741,480	\$39,535,281	\$87,941,625

*Economic impact values are additive across effects (direct, indirect, and induced), **but not** across measures (employment, labor income, value added, and output).

Shrimp Processing Economic Impacts

Although the majority of the economic impacts associated with the Cameron County shrimp industry are due to shrimp harvesting, the processing sector (sorting, grading, packing, and shipping) also provides valuable economic benefits to Cameron County and the state of Texas. Shrimp processing employment numbers and estimated revenues were estimated using data provided by the Texas Shrimp Association and one of the local processing firms. The economic impacts of the Cameron County shrimp processing sector have declined in recent years as some local processors have gone out of business and more of the Cameron County shrimp harvest has been shipped to non-local processors (see Figure 2).

Figure 2. Annual Shrimp Processing Statistics (2009-2014)



Processing data provided by Texas Shrimp Association and local processors.

Making a Difference

Based on data from 2009 to 2014, the economic impacts of the Cameron County shrimp processing sector were calculated for three different scenarios: 2009 (best year), 2012 (median year), and 2014 (poorest year). The results are presented in Tables 3 and 4.

Table 3. Shrimp Processing Economic Impacts on Cameron

Best Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	511	\$2,106,072	\$2,212,305	\$16,978,292
Indirect Effect	68	\$1,595,501	\$2,854,136	\$6,467,676.60
Induced Effect	25	\$735,024	\$1,390,964	\$2,518,220.27
Total Effect	603	\$4,436,597	\$6,457,405	\$25,964,189
Average Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	418	\$1,609,097	\$1,690,262	\$12,971,878
Indirect Effect	52	\$1,219,006	\$2,180,638	\$4,941,481.24
Induced Effect	19	\$561,579	\$1,062,734	\$1,923,988.94
Total Effect	489	\$3,389,681	\$4,933,633	\$19,837,348
Poorest Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	239	\$893,124	\$938,174	\$7,200,000
Indirect Effect	29	\$676,606	\$1,210,356	\$2,742,753.60
Induced Effect	11	\$311,702	\$589,867	\$1,067,904
Total Effect	278	\$1,881,432	\$2,738,398	\$11,010,658

*Economic impact values are additive across effects (direct, indirect, and induced), **but not** across measures (employment, labor income, value added, and output).

Table 4. Shrimp Processing Economic Impacts on State of Texas

Best Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	511	\$2,127,380	\$2,233,460	\$16,978,292
Indirect Effect	68	\$2,469,560	\$3,821,525	\$7,200,595.51
Induced Effect	25	\$1,326,921	\$2,258,724	\$3,990,102.36
Total Effect	603	\$5,923,862	\$8,313,709	\$28,168,990
Average Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	418	\$1,625,376	\$1,706,425	\$12,971,878
Indirect Effect	52	\$1,886,812	\$2,919,749	\$5,501,451.27
Induced Effect	19	\$1,013,804	\$1,725,727	\$3,048,546.98
Total Effect	489	\$4,525,992	\$6,351,901	\$21,521,876
Poorest Year Impacts				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	239	\$902,160	\$947,146	\$7,200,000
Indirect Effect	29	\$1,047,269	\$1,620,598	\$3,053,563.20
Induced Effect	11	\$562,709	\$957,859	\$1,692,086.40
Total Effect	278	\$2,512,138	\$3,525,602	\$11,945,650

*Economic impact values are additive across effects (direct, indirect, and induced), **but not** across measures (employment, labor income, value added, and output).

Making a Difference

Analysis Notes

- Annual shrimp landings data (amount and value) were provided by NOAA Fisheries.
- Annual estimates of shrimp processing direct employment, shrimp processed in Cameron County (lbs), and shrimp processing revenues were generated based on input provided by the Texas Shrimp Association and personnel at Cameron County shrimp processing firms.
- Economic impacts were calculated using IMPLAN (Impact analysis for PLANning) a software program that calculates economic impacts using classic input-output analysis.
- Harvesting impacts were calculated using IMPLAN sector 17 (Commercial Fishing), processing impacts were calculated using IMPLAN sector 93 (Seafood Production, Preparation, and Packaging).

References

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Making a Difference

Expanded Food and Nutrition Education Program Developed by Oscar Zamora, Jr., Extension Agent - EFNEP

Supporting Texas Families with Greatest Need since 1969

The Expanded Food and Nutrition Education Program (EFNEP) help young families and youth with limited resources – those that are most at risk of suffering from hunger, food insecurity, and the inability to connect with available support systems. EFNEP offers practical lessons in basic nutrition, food preparation, food budget management and food safety in settings convenient for the participants. EFNEP also includes a walking program for adult participants. Program graduates reflect significant lasting improvement in eating behaviors and healthy food habits. Texas has a need for EFNEP – (2010-2014) data show that 17.2% of Texas families with children under the age of 18 were living below poverty level, compared to 14.8% of U.S. Families.

EFNEP REACHES DIVERSE AUDIENCES IN CAMERON COUNTY

In Cameron County ethnically diverse EFNEP nutrition assistants reach youth and adult groups whose principal language may be English or Spanish.

In 2014,

- 1,506 families enrolled in EFNEP.
- 4,971 youth contacts were made through the EFNEP youth program.
- 3% of EFNEP participants were pregnant and/or nursing.
- 64% of families were at or below 100% of federal poverty level.
- 70% of families enrolled in one or more food assistance programs at entry.
- 86% of EFNEP adult participants were Hispanic/Latino.



VOLUNTEER STRENGTHEN EFNEP

In 2015, adult volunteers donated a substantial number of hours worked to EFNEP in Cameron County. Volunteers make a difference in their own communities, and contribute to EFNEP's continued success.

Making a Difference

EFNEP MAKES A REAL DIFFERENCE

Adult Program:

Using “hands-on” experiences, EFNEP adult participants complete at least a six-lesson series on stretching food dollars, improving eating habits, and practicing food safety principles. As a result participation in EFNEP the following food and nutrition behaviors were achieved:

- 95% with positive change in any food group at exit. Specifically, EFNEP participants consumed 0.5 more cups of fruits and vegetables at completion compared to entry. Participants consumed the same cups of dairy at entry and completion.
- 83% improved in one or more food resource management practices such as using a list for grocery shopping.
- 89% improved in one or more nutrition practices such as using the “Nutrition Facts” on food labels to make food choices.
- 78% improved in one or more food safety practices such as thawing foods safely.
- 29% of program participants reported a positive change in physical activity.

Youth Program:

The EFNEP – youth program is directed toward low-income school-age youth. These students participate in a series of fun and educational lessons on good nutrition and food safety as part of summer programs, classroom and after-school activities. The following results show how youth participants’ food behaviors improved after attending EFNEP classes.

- 85% improved ability to choose foods according to the Dietary Guidelines.
- 47% improved their safe food handling practices more often.
- 46% improved physical activity practices.



Making a Difference



Texas A&M AgriLife Extension Cameron County

Staff

Dr. Enrique Perez
County Extension Agent – Agriculture

Lilian Mezquida
County Extension Agent – Family & Consumer Sciences

Marco Ponce
County Extension Agent – 4H & Youth Development

Guadalupe Castro
1890 Cooperative Extension Agent – 4-H & Youth Development

Tony Reisinger
County Extension Agent – Coastal & Marine Resources

Jennifer Herrera
County Extension Agent - Horticulture

Oscar Zamora
Extension Agent – Expanded Food and Nutrition Extension Program

Contact Us

Texas A&M Agrilife Extension Service
County Extension Office
1390 W. Expressway 83
San Benito, Texas 78586
Tel: 956-361-8236
Fax: 956-361-8289
E-mail: Cameron-tx@tamu.edu
Webpage: <http://Cameron.agrilife.org>