

Economic Contributions of the Green Industry to the Texas Economy

Report to the Texas Nursery and Landscape Association
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by

Marco A. Palma and Charles R. Hall
Texas A&M AgriLife Extension Service
Texas A&M University System
2124 TAMU, College Station, TX. 77843-2124
mapalma@tamu.edu

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Introduction

After bouncing back recently from the great recession with significant increases in sales for all sectors, green industry sales remained relatively flat in 2015 with *a slight decrease in overall gross sales of less than 1% from the 2014 levels*. Retail sales were slightly down 1.8% in 2015, while landscaping sales increased 3.20%. The sales baseline for the nursery and greenhouse category was updated using the National Nursery Survey 2014 data conducted by the green industry research consortium (please see <http://greenindustryresearch.org> for the full report). The survey incorporates responses from all 50 states in the U.S. The state of Texas is the third largest green industry state in terms of sales, economic output, employment and GDP contributions behind California and Florida.

Total gross green industry sales are estimated at ***\$18.9 billion***. Following a big increase in 2013 to the highest peak in sales of \$2.1 billion, the *Production and Manufacturing* sector experienced a slight decrease in sales of 2.4% and 3.4% in 2014 and 2015 respectively, to a total of \$1.98 billion in 2015. Most of the decrease in the production and manufacturing sector came from the *Lawn and Garden Equipment Manufacturing* sector, which experienced a 34.1% decrease to \$420 million in 2015. The *Prefabricated Metal Buildings* sector was down 14.3% to a total of \$21.2 million. The grower *Nursery and Greenhouse* sector sales increased 23.8% from 1.39 billion in 2014 to the highest all time sales peak of \$1.54 billion in 2015.

The *Horticultural Services* sector sales increased 3.2% to an all-time record of \$4.76 billion. *Wholesale and Retail* had a slight decrease of 1.88% to a total of \$12.1 billion in 2015. The net margins attributed to the retail sector accounted for almost \$3.7 billion. Net margin represents the share of sales that can be attributed to the retail sector and not accounting for the portion of the sales that was included in the production and manufacturing sector. This study measures green industry sales in Texas by sector and then estimates economic contributions to the Texas Economy in terms of output, employment and value added.

Methodology

In order to estimate economic contributions of the Green Industry to the Texas economy sales by each green industry sector need to be measured. The North American Industry Classification System (NAICS) was used to gather data on *total green industry sales, including all sectors related to the green industry*. The data used in this report were provided by the State Comptrollers Office, baseline data from the Green Industry Research Consortium National Nursery Survey, and **includes industry sales through the end of fiscal year 2015**. Every business in the state and the country is now classified by North American Industry Classification System (NAICS), which replaced the old Standard Industrial Classification (SIC) system. NAICS was developed jointly by the United States, Canada and Mexico to provide new comparability in statistics about business activity across North America. Green industry firms fall within one of the NAICS codes in Table 1.

Green Industry Sales in Texas

When reporting sales to the State Comptroller's office, each firm must report all sales, including those sales in which sale taxes are collected and those that are not collected (wholesale). This reporting system has an area of potential slippage. For example, since wholesale growers do not collect any sales tax (for the state), some small and medium size growers are unaware of their reporting responsibilities. Not all of these firms realize that their services are subject to sale taxes. Therefore, unintended non-compliance has been a source of under reporting, which would underestimate green industry sales in Texas.

Table 1. NAICS Codes for Green Industry Sectors

Industry Sector	NAICS Code
Nursery & Greenhouse	1114
Lawn & Garden Equipment Mfg	333112
Greenhouse Manufacturing (Prefab. Metal Buildings)*	332311
Landscaping Services	561730
Landscape Architectural Services	541320
Flower, Nursery Stock And Florist Supplies Wholesalers	424930
Lawn & Garden Equipment & Supplies Stores	4442
Florists	4531
Building Material & Supplies Dealers*	4441
Food & Beverage Stores*	445
General Merchandise Stores*	452
Farm & Garden Machinery & Equipment Wholesalers*	423820

* Green industry represents a portion of overall business activity (Sectors not included in Previous Scope reports).

Because of this potential slippage problem, additional data were used to supplement this report's methodology. Table 2 shows Total Green Industry Gross Sales in 2015, and Table 3 shows sales from 2009-2015 for each green industry sector. Table 3 shows sales for the retail industry including gross sales, and also net sales. Net sales represent the margin sales that correspond to the retail sector only.

Table 2. Total Green Industry Gross Sales in 2015

Sector (NAICS code)	Sales	Establishments
Production/Manufacturing	1,983,586,654	776
Nursery & Greenhouse (1114) ^	1,541,737,025	676
Lawn & Garden Equipment Manufacturing (333112) ^	420,609,523	89
Prefabricated metal buildings (332311) (Greenhouses) ^*	21,240,107	11
Horticultural Services	4,764,483,805	146,983,558
Landscaping Services (561730)	4,455,234,684	14,009
Landscape Architectural Services (541320)	309,249,121	146,969,549
	12,135,946,293	20,129
Wholesale & Retail Trade Horticulture Products (Gross)		
Flower, Nursery Stock and Florist Supplies Wholesalers (424930)	733,872,337	448
Lawn & Garden Equipment & Supplies Stores (4442)	5,695,194,031	2,267
Florists (4531)	1,049,681,888	3,315
Building Material & Supplies Dealers (4441)*	1,742,450,764	1,854
Food & Beverage Stores (445)*	417,339,726	2,749
General Merchandise Stores (452)*	1,605,929,700	9,231
Farm & Garden Equipment Wholesalers (423820)*	891,477,847	265
Total All Sectors	18,884,016,753	147,004,463

^ Estimated from Baseline data from Economic Research Service and Texas Comptrollers Office Data

^ Estimated from baseline data from National Nursery Survey, and Texas Comptroller's Office Data.

* NAICS represents a portion of Total Green Industry Sales

Table 3. Total Green Industry Sales 2009-2015

	GROWER	LANDSCAPE	RETAIL (Gross)	RETAIL (Net)	TOTAL
2015	\$1,983,586,654	\$4,764,483,805	\$12,135,946,293	\$3,675,090,499	\$10,423,160,958
2014	\$2,051,121,448	\$4,612,211,522	\$12,363,568,401	\$3,744,020,587	\$10,407,353,556
2013	\$2,100,242,682	\$4,550,424,995	\$11,721,100,798	\$3,549,464,140	\$10,200,131,818
2012	\$1,804,926,582	\$4,054,303,568	\$10,857,786,292	\$3,288,029,320	\$9,147,259,470
2011	\$1,918,432,053	\$3,538,719,690	\$10,374,997,040	\$3,141,827,767	\$8,598,979,510
2010	\$1,537,061,928	\$3,390,016,982	\$9,351,749,314	\$2,831,960,872	\$7,759,039,782
2009	\$1,336,866,584	\$3,414,177,793	\$9,039,697,678	\$2,737,463,255	\$7,488,507,632

Total industry sales, including grower, landscaping and retailing sales had a very minor decrease of 0.76% in 2015 for a total of \$18.9 billion in gross sales. The grower sector experienced a slight decrease of 3.40% to a total of \$1.98 billion. The landscaping sector increased sales by 3.20% to a total of \$4.76 billion. Gross retail sales decreased slightly 1.88% to a total of \$12.1 billion in 2015. Figures 1, 2, 3 and 4 represent industry sales for growers, landscaping, retailing (gross) and total gross industry sales respectively broken down by subsectors.

Figure 1. Grower Sales 2006-2015

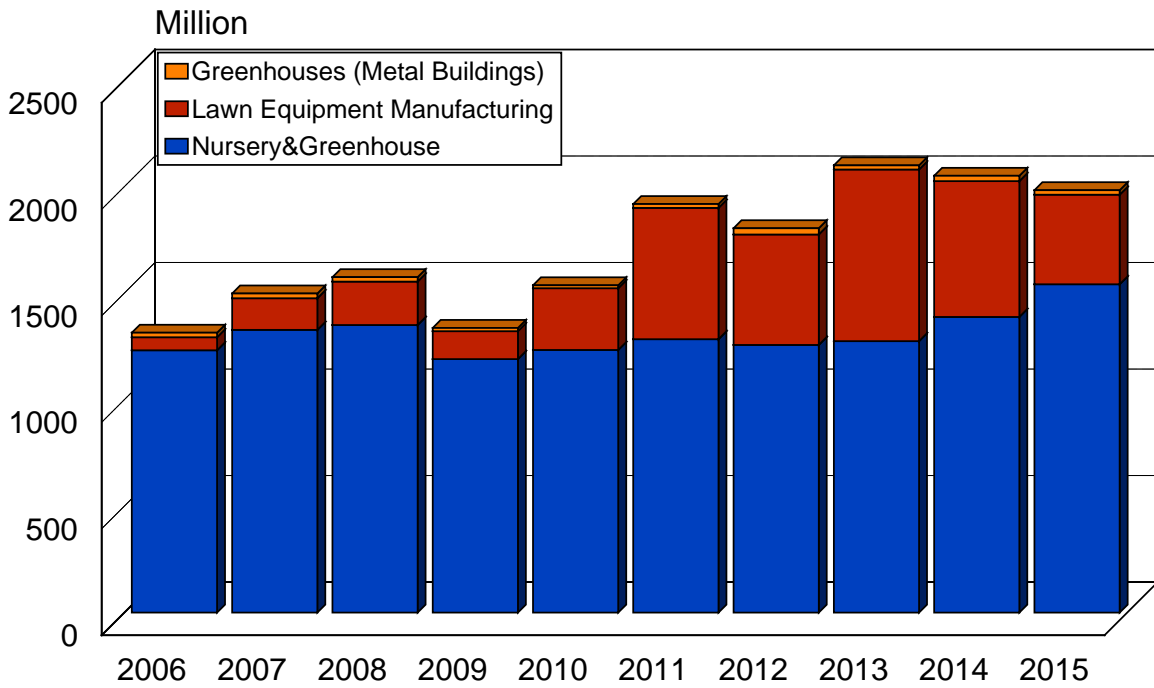


Figure 2. Landscaping Sales 2006-2015

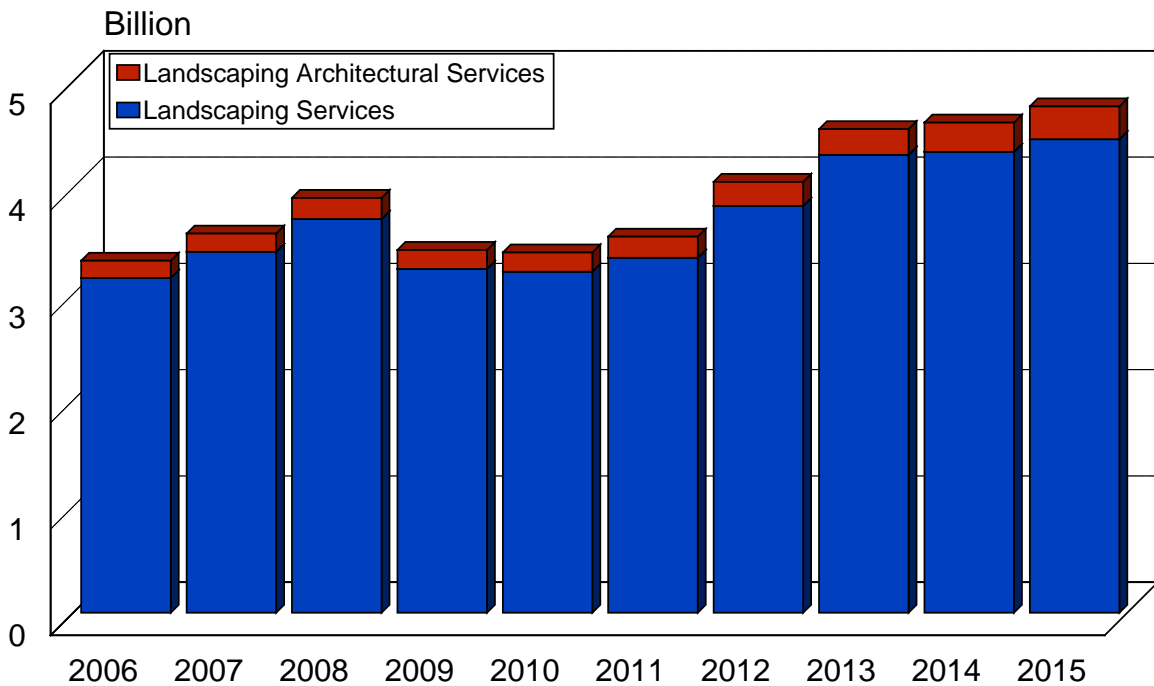


Figure 3. Retailing Sales 2006-2015

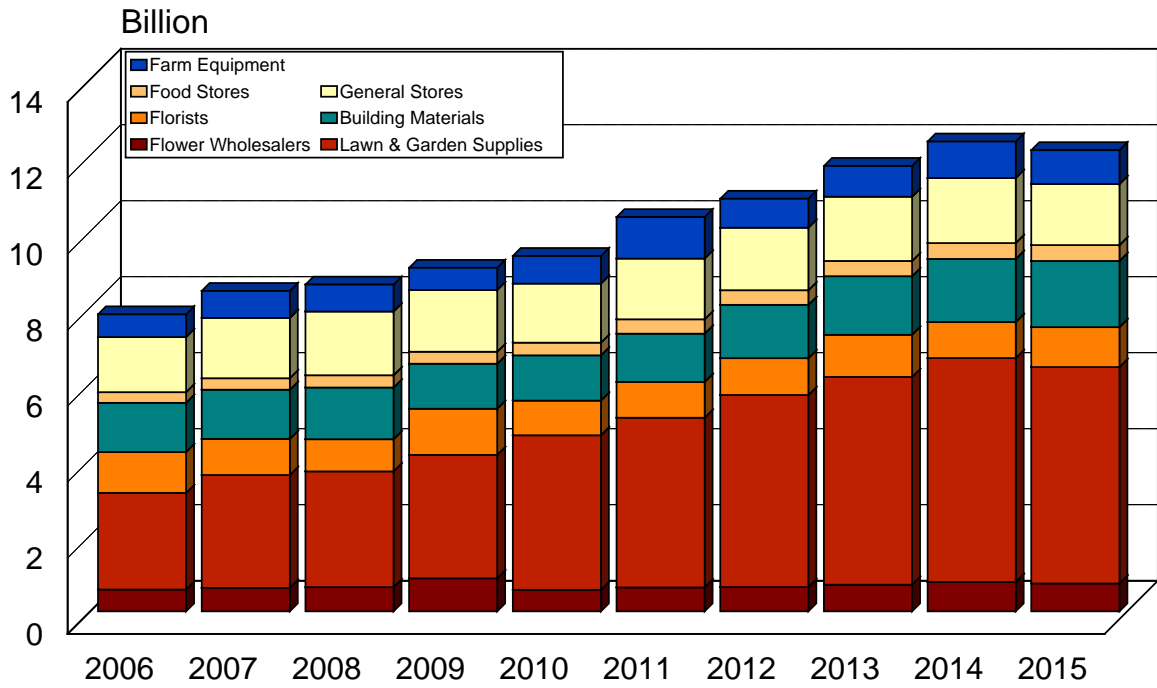


Figure 4. Total Industry Sales 2006-2015

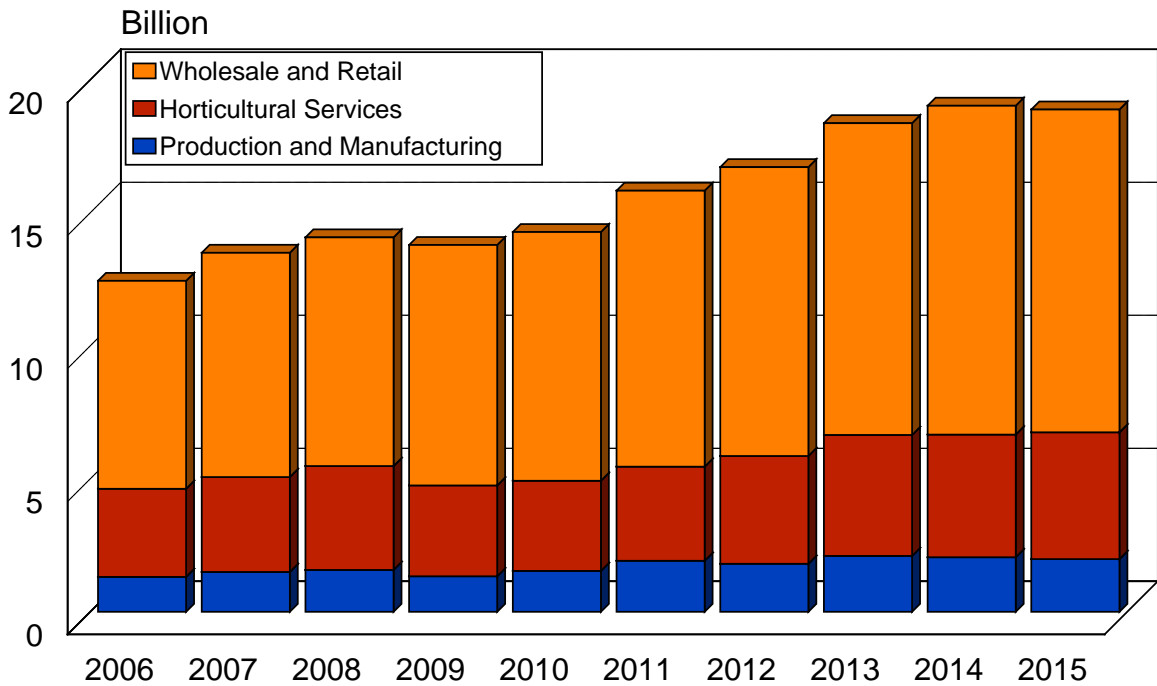


Table 4 presents green industry sales by sector and by major Metropolitan Statistical Area (MSA). There are 27 MSAs in Texas. The major MSAs are, Austin, Dallas, Ft. Worth, Houston, El Paso, and San Antonio. The economic scope reports sales in five of the major MSAs; together, the five major MSAs included in this report represent more than half of the total industry sales as shown in Figure 5. Houston and Dallas hold the largest share of green industry sales in 2015 with 19.03% and 16.49% respectively. Figure 6 is a graphical representation of grower, landscaping and retailing sales by MSA in Texas.

Table 4. Total Green Industry Sales by Metropolitan Statistical Area (MSA), 2015

MSA	GROWER	LANDSCAPE	RETAIL(Gross)	TOTAL	% OF TOTAL
Austin	79,788,455	611,345,884	762,883,223	1,454,017,561	7.70%
Dallas	156,853,767	1,148,627,061	1,808,066,784	3,113,547,612	16.49%
Ft Worth	127,069,286	343,899,553	852,626,870	1,323,595,710	7.01%
Houston	259,080,027	1,337,296,448	1,997,428,586	3,593,805,061	19.03%
San Antonio	78,761,784	369,253,369	967,439,783	1,415,454,936	7.50%
Other	1,282,033,336	954,061,490	5,747,501,047	7,983,595,872	42.28%
Total	1,983,586,654	4,764,483,805	12,135,946,293	18,884,016,753	100.00%

Figure 5. Total Green Industry Sales in Texas by MSA in 2015

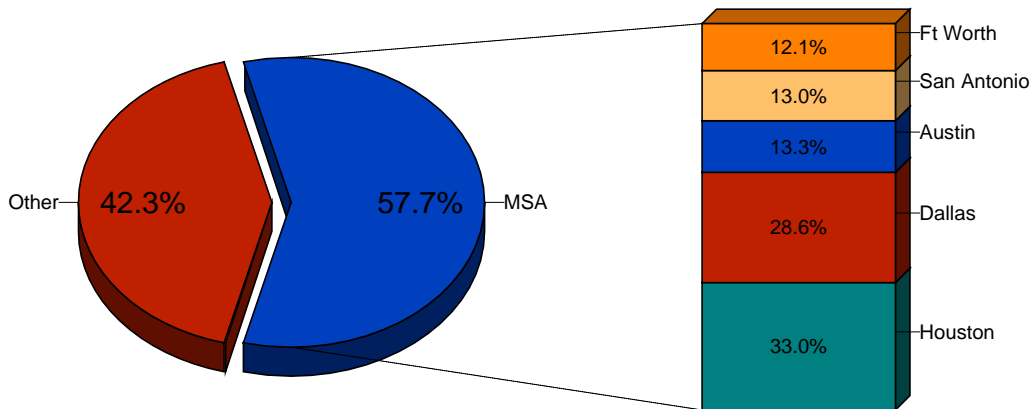
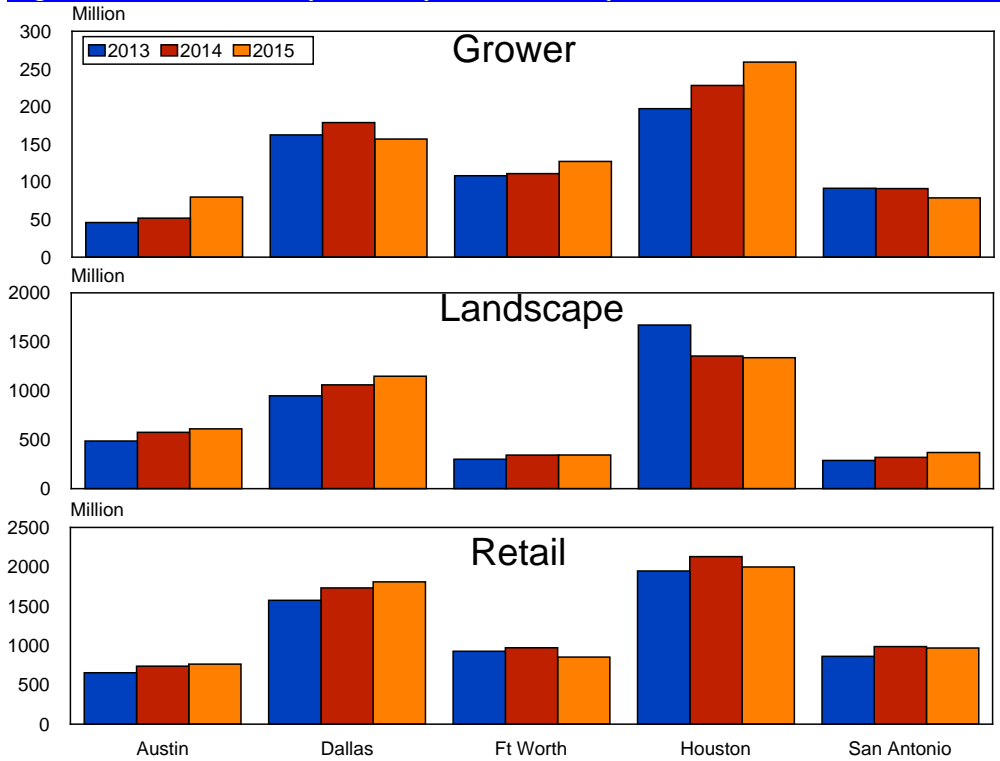


Figure 6. Green Industry Sales by Outlet and by MSA , 2013-2015



Economic Contributions of the Green Industry to the Texas Economy

The net sales data from the previous section were used to estimate total economic contributions of the Green Industry to the Texas Economy. To evaluate the economic impact contributions of the green industry to the Texas economy, economic models were developed using the Implan software system and associated Texas datasets (MIG, 2010). The Implan system includes more than 500 industries. Input-Output models represent the structure of a regional economy in terms of transactions, employees, households, and government institutions (Miller & Blair, 1985).

The economic multipliers derived from the Implan model were used to estimate the total economic activity generated in the state by sales (*output*) to final demand or exports. This includes the effects of intermediate purchases by green industry firms from other economic sectors (*indirect effects*) and the effects of green industry employee household consumer spending (*induced effects*), in addition to direct sales by industry firms. The wholesale and retail sectors use products from the production/manufacturing and horticultural services sectors; therefore, when calculating the impacts for the wholesale and retail trade horticulture products, output (retail sales) are reduced to reflect only the gross margin on sales to those sectors, otherwise we would be double counting the economic impact stemming from those products.

Economic impact multipliers vary based on data about actual relationships in the economy. The total economic contributions of the Green Industry in Texas were estimated at \$19.45 billion in output; 209,928 jobs, and \$11.9 billion in value added as shown in Table 5. For the production and manufacturing sectors, including nursery and

greenhouse, lawn and garden equipment manufacturing, and metal building manufacturers, total output impacts were \$3.1 billion; employment impacts were 24,430 jobs; and value added impacts were \$1.96 billion. For the horticultural services sectors, including landscaping services and landscape architecture services, total output impacts were \$9.06 billion; employment impacts were 117,313 jobs; and value added impacts were \$5.46 billion. For the wholesale and retail trade sectors, total output impacts were \$7.3 billion; employment impacts were 68,186 jobs; and value added impacts were \$4.55 billion. The largest economic impact contributions for individual sectors were landscaping services, lawn and garden stores and nursery and greenhouse.

Table 5. Economic Contributions of the Green Industry in Texas, 2015			
	Output	Employment	Value
	(\$Mn)	(jobs)	Added (\$Mn)
Production & Manufacturing	3,104	24,430	1,959
Nursery & Greenhouse	2,425	22,345	1,735
Lawn & Garden Equipment Manufacturing	640	1,909	208
Prefabricated Metal Buildings	39	176	16
Horticultural Services	9,060	117,313	5,456
Landscaping Services	8,387	112,896	5,058
Landscape Architecture Services	673	4,417	397
Wholesale & Retail Trade Horticulture Products	7,285	68,186	4,547
Flower, Nursery Stock & Florist Supplies Wholesalers	231	1,179	145
Lawn & Garden Equipment & Supplies Stores	3,672	30,762	2,287
Florists	986	15,290	612
Building Material & Supplies Dealers	1,124	9,412	700
Food & Beverage Stores	215	2,258	138
General Merchandise Stores	776	7,852	489
Farm & Garden Equipment Wholesalers	280	1,433	177
Total (All Sectors)	19,450	209,928	11,962
* Totals may not equal due to rounding			

Figure 7. Green Industry Economic Output Contributions to the Texas Economy in 2015

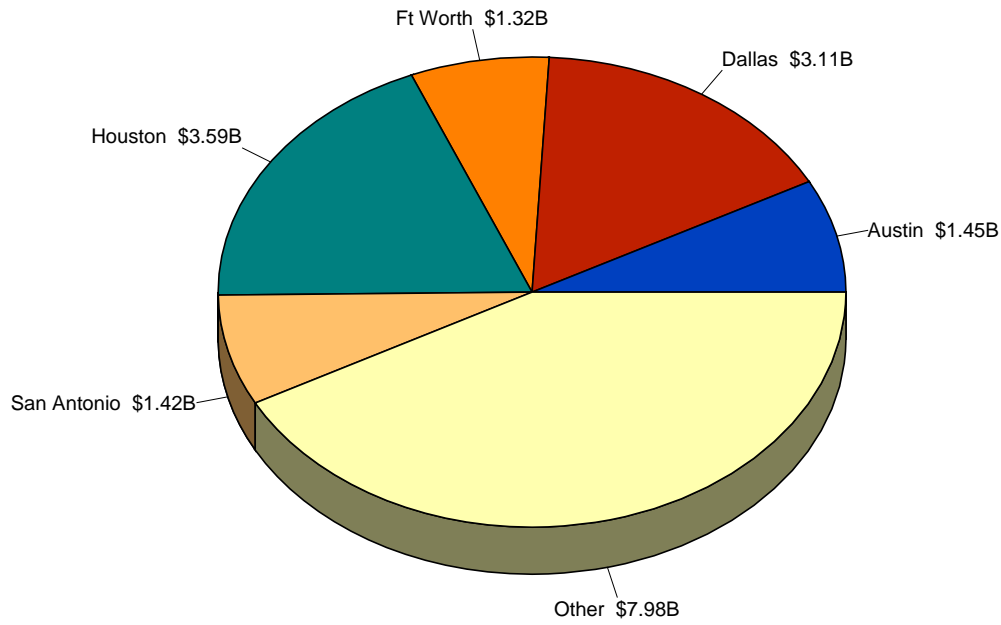
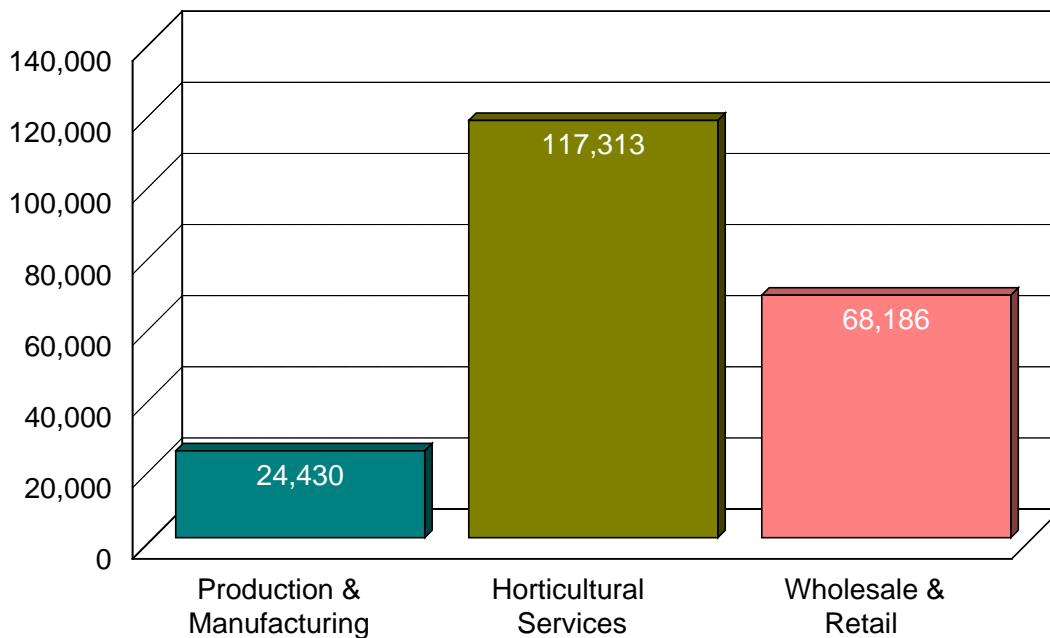


Figure 8. Employment Contributions by the Green Industry in Texas 2015



Economic impact results are also reported by major metropolitan statistical area (MSA) as summarized in Table 6. The MSAs with the greatest economic impact contributions to the State's economy are Houston and Dallas.

Table 6. Economic Impact Contributions of the Green Industry in Texas by MSA 2015

	Output	Employment	Value
	(\$Mn)	(jobs)	Added (\$Mn)
Austin	1,498	16,164	921
Dallas	3,207	34,612	1,972
Ft. Worth	1,363	14,714	838
Houston	3,701	39,951	2,276
San Antonio	1,458	15,735	897
Other	8,223	88,751	5,057
Total	19,450	209,928	11,962
* Totals may not equal due to rounding			

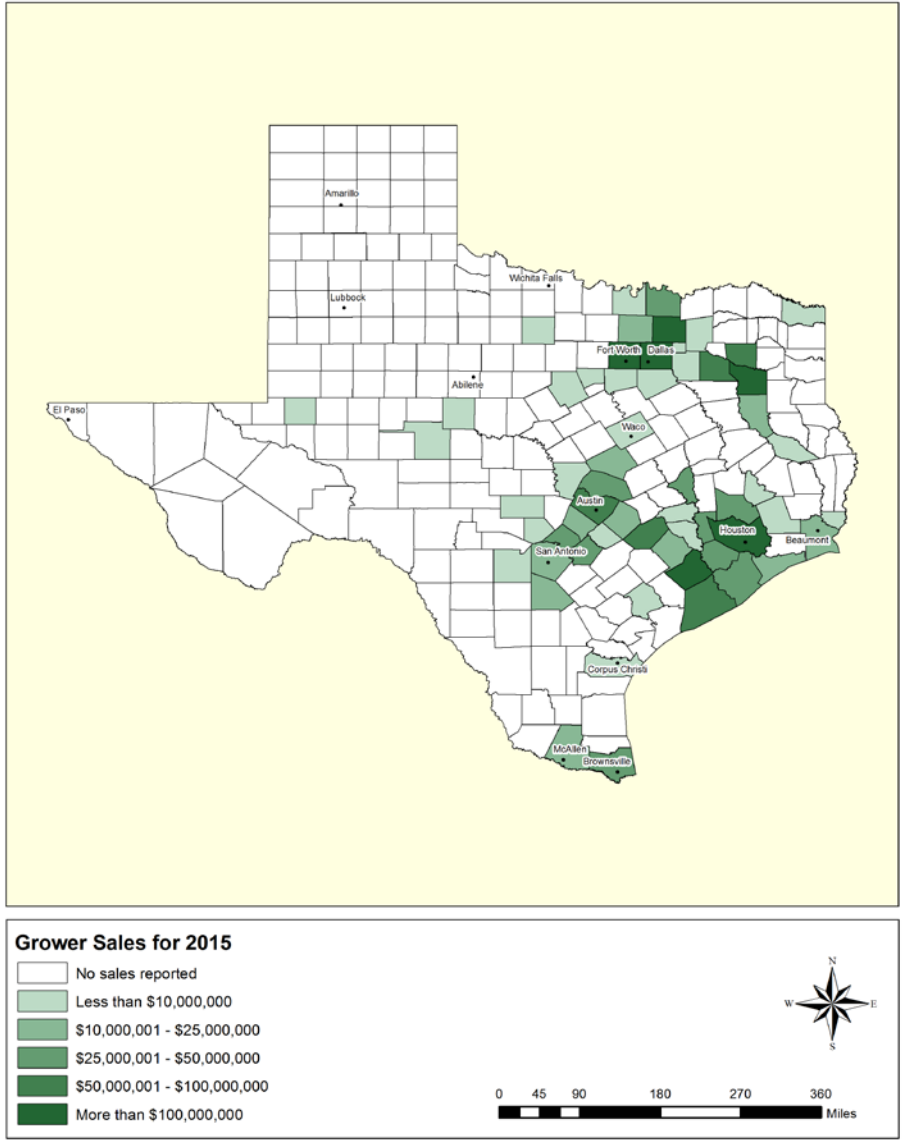
Measures of economic activity.

Sales or output is the dollar volume of a good or service produced or sold. **Final Demand** is sales to final consumers, including households, governments, and exports. **Intermediate sales** are sales to other industrial sectors. **Income** is the money earned within the region from production and sales. **Total income** includes personal income (wage and salary income, including income of sole proprietor's profits and rents). **Jobs or employment** is a measure of the number of jobs required to produce a given volume of sales/production, expressed as full time equivalents, or as the total number including part time and seasonal positions. **Value Added** is the sum of total income and indirect business taxes.

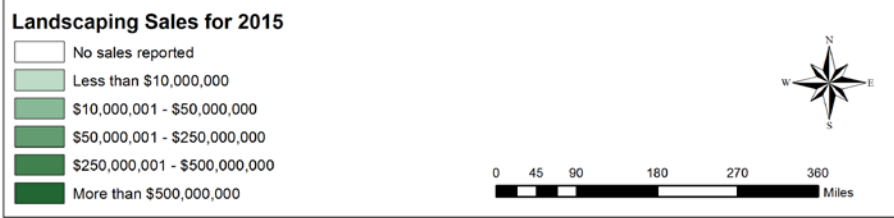
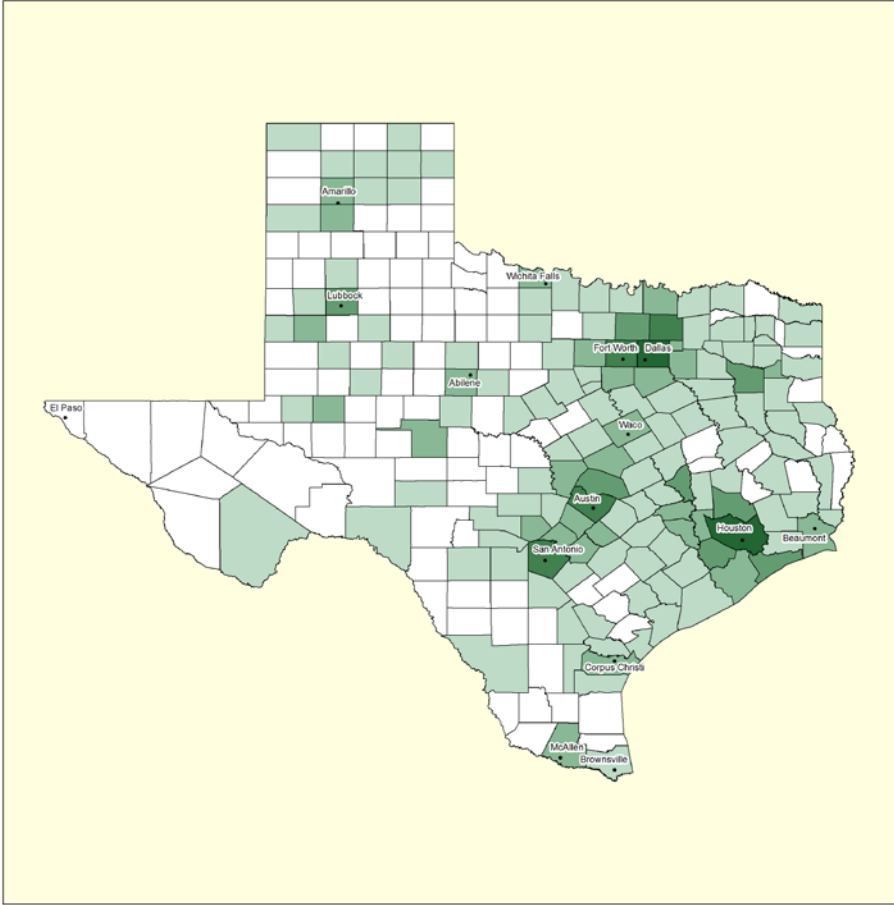
Appendix – Total Green Industry County Sales Estimates for 2015

County	Sales	County	Sales	County	Sales	County	Sales	County	Sales
Anderson	24,279,548	Deaf Smith	191,342,813	Hutchinson	3,562,652	Navarro	32,206,952	Val Verde	8,382,622
Andrews	2,331,721	Delta	-	Irion	-	Newton	251,357	Van Zandt	90,004,873
Angelina	50,919,361	Denton	507,020,834	Jack	187,930	Nolan	2,160,032	Victoria	101,134,097
Aransas	12,412,995	De Witt	-	Jackson	16,813,974	Nueces	246,537,554	Walker	24,192,655
Archer	5,211,872	Dickens	64,964	Jasper	20,559,010	Ochiltree	4,843,592	Waller	125,040,194
Armstrong	-	Dimmit	1,716,300	Jeff Davis	77,422	Oldham	-	Ward	667,141
Atascosa	42,650,371	Donley	165,684	Jefferson	148,097,721	Orange	31,637,700	Washington	52,711,264
Austin	71,153,362	Duval	191,409	Jim Hogg	228,980	Palo Pinto	14,813,665	Webb	92,368,798
Bailey	9,881,052	Eastland	13,795,941	Jim Wells	5,752,262	Panola	10,778,163	Wharton	197,508,106
Bandera	3,755,049	Ector	74,793,175	Johnson	105,490,162	Parker	81,313,287	Wheeler	240,392
Bastrop	56,594,362	Edwards	96,273	Jones	610,783	Parmer	126,921	Wichita	65,662,052
Baylor	7,333,375	Ellis	82,427,633	Karnes	1,867,649	Pecos	2,147,987	Wilbarger	1,330,813
Bee	18,633,426	El Paso	-	Kaufman	94,028,659	Polk	20,911,633	Willacy	1,110,246
Bell	153,778,202	Erath	43,019,987	Kendall	68,595,578	Potter	66,588,085	Williamson	436,001,616
Bexar	1,135,876,811	Falls	1,352,395	Kenedy	-	Presidio	561,533	Wilson	27,891,231
Blanco	1,426,754	Fannin	15,523,451	Kent	330	Rains	4,425,759	Winkler	366,188
Borden	-	Fayette	75,626,664	Kerr	37,849,955	Randall	88,586,999	Wise	38,786,032
Bosque	2,308,996	Fisher	30,913	Kimble	443,799	Reagan	63,770	Wood	77,600,347
Bowie	100,460,909	Floyd	271,147	King	-	Real	180,231	Yoakum	13,710,100
Brazoria	177,876,470	Foard	-	Kinney	0	Red River	287,977	Young	3,935,674
Brazos	262,038,274	Fort Bend	397,996,060	Kleberg	5,824,094	Reeves	1,724,798	Zapata	700,372
Brewster	1,502,535	Franklin	3,040,042	Knox	32,470	Refugio	177,465	Zavala	207,587
Briscoe	10,087	Freestone	14,058,610	Lamar	61,142,642	Roberts	82,901		
Brooks	415,619	Frio	1,467,624	Lamb	83,888,742	Robertson	1,177,063		
Brown	10,142,357	Gaines	42,660,085	Lampasas	13,406,725	Rockwall	50,321,669		
Burleson	29,519,144	Galveston	226,926,812	La Salle	-	Runnels	6,144,905		
Burnet	32,561,346	Garza	206,282	Lavaca	10,094,690	Rusk	15,585,933		
Caldwell	25,607,387	Gillespie	27,332,812	Lee	13,360,765	Sabine	388,624		
Calhoun	3,536,398	Glasscock	-	Leon	9,838,749	San Augustine	311,379		
Callahan	969,491	Goliad	83,509	Liberty	48,023,760	San Jacinto	1,265,494		
Cameron	130,652,077	Gonzales	16,506,307	Limestone	10,263,473	San Patricio	90,765,341		
Camp	1,432,630	Gray	17,924,824	Lipscomb	53,035	San Saba	128,439		
Carson	1,902,078	Grayson	109,047,383	Live Oak	2,224,908	Schleicher	51,116		
Cass	10,458,698	Gregg	151,325,801	Llano	4,162,796	Scurry	3,631,313		
Castro	25,448,003	Grimes	17,688,179	Loving	-	Shackelford	87,052		
Chambers	21,232,535	Guadalupe	118,947,274	Lubbock	201,479,670	Shelby	19,281,221		
Cherokee	45,681,357	Hale	86,451,089	Lynn	0	Sherman	0		
Childress	1,029,501	Hall	40,708	Madison	1,015,107	Smith	379,975,904		
Clay	473,944	Hamilton	595,628	Marion	538,061	Somervell	862,635		
Cochran	14,880	Hansford	11,032,539	Martin	259,037	Starr	10,310,308		
Coke	131,227	Hardeman	142,456	Mason	51,994	Stephens	3,802,641		
Coleman	1,114,250	Hardin	15,432,489	Matagorda	90,194,128	Sterling	-		
Collin	681,881,797	Harris	2,855,998,248	Maverick	16,485,363	Stonewall	14,593		
Collingsworth	92,833	Harrison	61,158,652	McCulloch	8,419,020	Sutton	218,091		
Colorado	38,258,549	Hartley	-	McLennan	253,858,313	Swisher	125,890		
Comal	133,291,473	Haskell	889,128	McMullen	-	Tarrant	1,323,806,145		
Comanche	13,500,487	Hays	114,612,561	Medina	46,237,588	Taylor	103,535,680		
Concho	-	Hemphill	846,571	Menard	115,667	Terrell	-		
Cooke	69,104,022	Henderson	44,131,332	Midland	95,716,557	Terry	47,667,340		
Coryell	17,805,082	Hidalgo	301,127,045	Milam	6,838,613	Throckmorton	16,312		
Cottle	-	Hill	29,011,175	Mills	656,614	Titus	19,401,537		
Crane	-	Hockley	34,882,501	Mitchell	208,700	Tom Green	77,427,279		
Crockett	-	Hood	20,155,250	Montague	10,989,640	Travis	1,055,919,216		
Crosby	110,658	Hopkins	63,791,763	Montgomery	337,528,677	Trinity	1,193,407		
Culberson	39,571	Houston	19,128,994	Moore	237,366,404	Tyler	2,456,416		
Dallam	50,770,748	Howard	28,502,224	Morris	3,222,746	Upshur	10,403,205		
Dallas	2,181,088,707	Hudspeth	48,501	Motley	-	Upton	40,758		
Dawson	2,166,706	Hunt	50,266,630	Nacogdoches	42,708,946	Uvalde	5,598,769		

Grower Sales

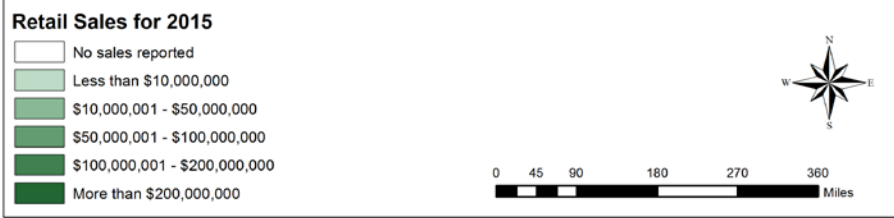
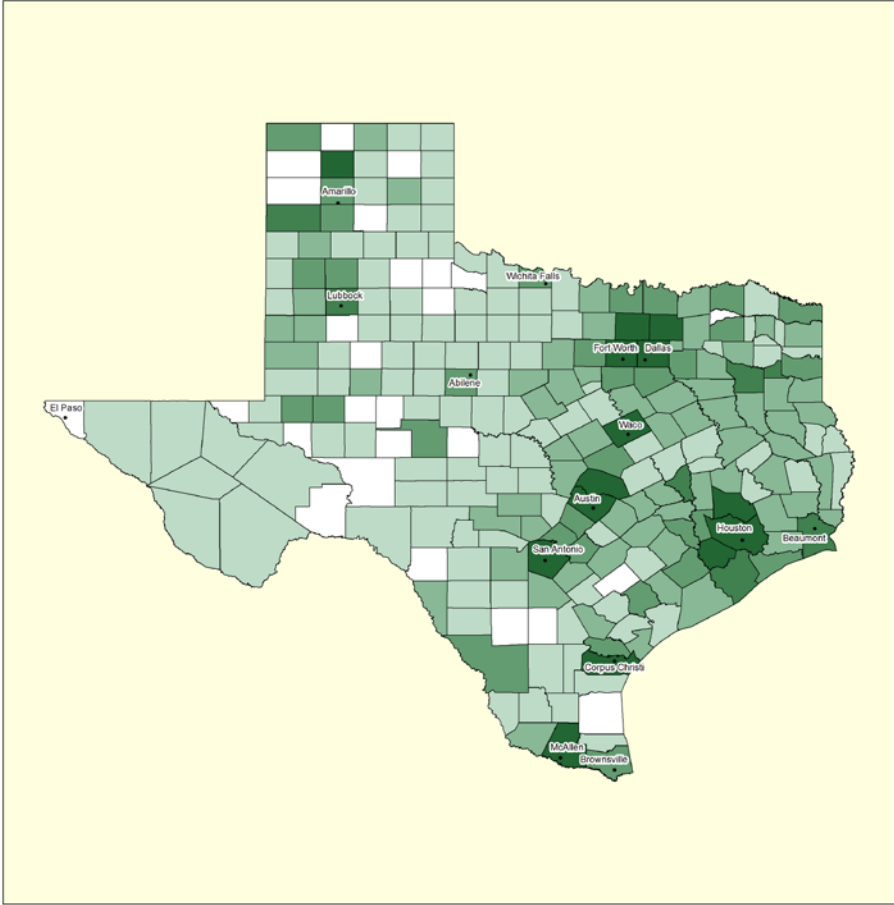


Landscaping Sales



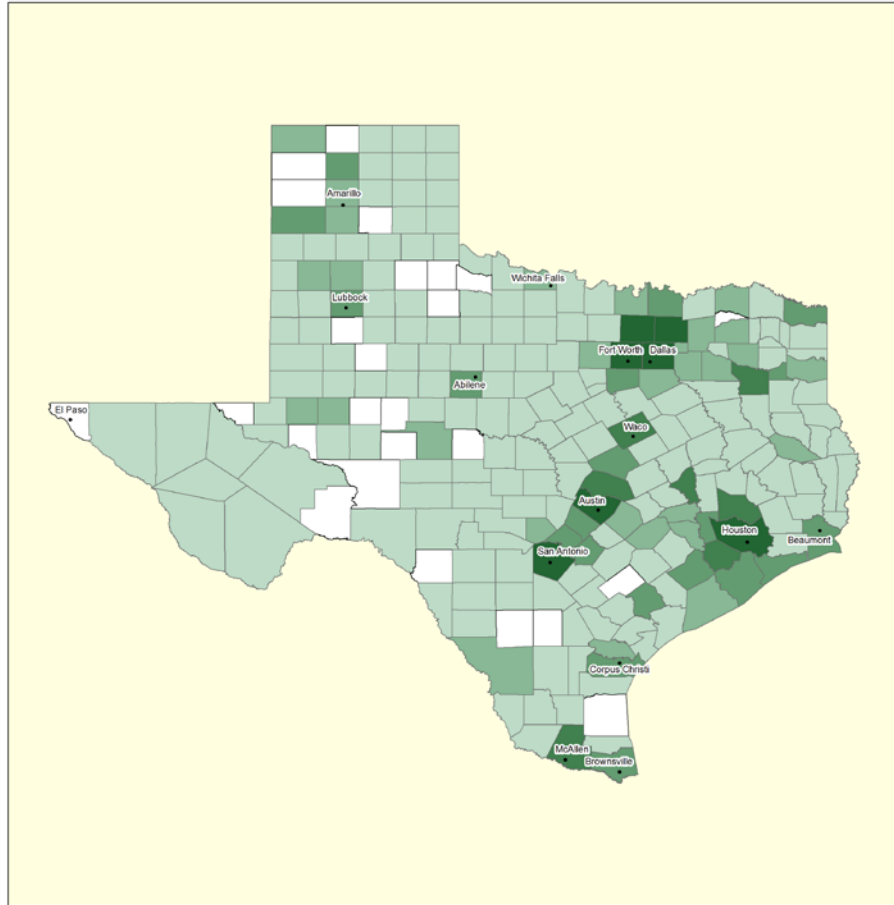
Developed by Daniel Hanselka, Texas A&M AgriLife Extension Service

Retail Sales









Developed by Daniel Hanselka, Texas A&M AgriLife Extension Service

Total Sales



Total Sales for 2015

-  No sales reported
-  Less than \$50,000,000
-  \$50,000,001 - \$100,000,000
-  \$100,000,001 - \$250,000,000
-  \$250,000,001 - \$500,000,000
-  More than \$500,000,000



Developed by Daniel Hanselka, Texas A&M AgriLife Extension Service