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Economic Impact of Conservation Dollars in Oklahoma

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Abstract

This report documents the potential economic impact generated from federal and state funding of conservation projects throughout Oklahoma. The analysis uses input-output techniques to estimate the multiplier effect of conservation funding by conservation practice. This information will help local and state conservation district administrators and other interested persons understand the economic significance of conservation projects in their locale.

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Introduction

This project originated at the request of the Oklahoma Conservation Commission and the Oklahoma Association of Conservation Districts, and its purpose is to emphasize the level of additional economic activity conservation projects generated throughout the state. In fiscal year 2008, \$22.5 million in federal and state government funds were spent on conservation practices throughout Oklahoma, with an additional \$28.1 million in direct payments to farmers through federal conservation programs and more than \$19.2 million spent on local conservation district administration. But that \$69.7 million buys materials from local cooperatives and retail stores and pays wages and salaries for contractors and conservation employees – purchases and wages that would not otherwise occur in Oklahoma communities without conservation programs. This report presents estimates of the amount of additional economic activity generated because of the conservation funding.

The report is organized in three sections to reflect the three types of conservation funding: project-based grants, direct payments to farmers/ranchers and program administration expenditures. In each section, an explanation of each funding type, the methodology¹ and the results are provided. Tables containing the analysis results can be found at the end of the document. Following the three sections of analysis, the report concludes with a summarization of the economic benefits associated with conservation funding and some observations for local officials to keep in mind when assessing the value of conservation in their communities.

A few general comments are warranted before turning to the analysis. First, this analysis does not include local cost-share amounts associated with several conservation programs. As a result, the results presented herein do not reflect total project cost; instead, they represent the impact of the flow of dollars into the local economy from state and federal sources. This is due to a lack of consistent data on cost-share amounts by conservation practices. It also reflects the reality that local funds will likely be spent, whether on conservation projects or something else. Therefore, these funds should be excluded from the analysis because they do not represent new or additional funds locally available.

Second, the regions defined for this analysis reflect economic, not ecological, regions. The goal of these regions is to be large enough to capture the normal economic relationships among communities (e.g., commuting and shopping patterns) and yet small enough to ensure that the communities in the region share common features. The regions, roughly defined by the intersection of Interstates 35 and 40, are presented in Figure 1.

Third, this report does not reflect a benefit-cost analysis. Specifically, it does not weigh the benefits from conservation against alternative uses of the funds expended on conservation programs or staff. This report does not attempt to justify

¹ The methodology used in this report is consistent with that prescribed by Natural Resources Conservation Service (NRCS). More detailed information about the methodology is accessible online at: <ftp://ftp-fc.sc.egov.usda.gov/Economics/implan/IMPLANstepByStep.doc>

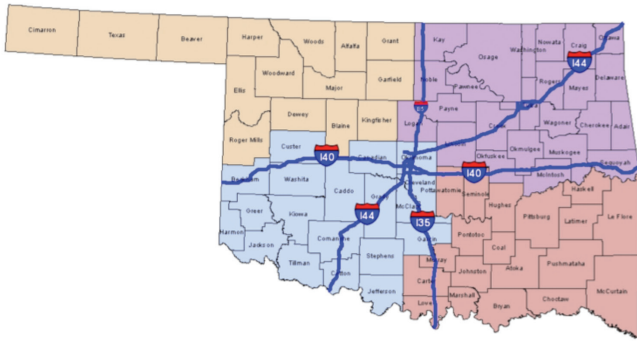


Figure 1. County Map of Oklahoma Designating Economic Regions.

conservation spending based upon the number of jobs such spending creates relative to other government activities. Additionally, this analysis does not account for all of the costs associated with conservation. For example, some conservation practices involve taking land out of production (e.g., leaving the land fallow or forming a field border). The methodology used in this report does not account for the value of lost production nor the decline in demand for seed and fertilizer associated with these practices. The estimated impacts in this report are limited to the economic activity generated by conservation funds being spent in a local community and the induced household spending associated with the conservation expenditures.

Lastly, IMPLAN² software was used to generate the appropriate multipliers used in this analysis. IMPLAN is a software and data package that facilitates the construction of local economic models that mimic the producer-supplier relationships within a region. Using these models, one is able to approximate how dollars spent in a region in a particular industry will impact supporting industries and household consumption in a stated region. These impacts on supporting industries and household consumption are summarized by a multiplier, a number that estimates the number of times a dollar spent in a local community gets spent again in that community. Multipliers are industry-specific, since industries differ in types and quantities of inputs that are bought to produce products. Some industries require few inputs to produce an output (e.g., service industries), and others require many inputs (e.g., manufacturing industries). Multipliers also are place-specific, since input suppliers for a given industry may or may not operate within the defined region. Inputs bought outside the region represent a leakage from the local economy. Thus, the number of inputs required, and the availability of input suppliers, to an industry determines the local multiplier for that industry. Multipliers have a minimum value of 1.0 but are not bounded by a maximum value theoretically. Larger values suggest more local economic activity will result from the initial expenditure, which is the desired outcome. As an example, consider a multiplier value of 1.5; this means that one dollar spent in the industry and locale appropriate for this value will generate an additional fifty cents of economic activity in the local economy. Social Accounting Matrix multipliers were

used in this study to capture the full effects of the conservation spending, including household and government spending that might be affected due to the conservation expenditures.

Project-based Grants

Project-based grants are those funds that are expended exclusively on the installation/construction/implementation of a conservation practice. For example, a farmer or rancher may receive funds to purchase and plant cover crops to prevent soil erosion, provide wildlife habitat or improve the nutrient content of the soil. The Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture (USDA), works with local conservation districts to develop state-specific standards for each practice. However, local districts determine which practices will be of highest priority within their boundaries and allocate federal and state funds accordingly. The project standards for Oklahoma are available via the Electronic Field Office Technical Guide (eFOTG) at: <http://www.nrcs.usda.gov/technical/efotg/>. Click on the state of Oklahoma in the map on the right side of the page.

The present analysis covers five federal and state conservation programs that fund conservation projects. Specifically, these programs are listed largest to smallest in terms of statewide funding³:

- Environmental Quality Incentive Program (EQIP 1996 and 2002) -- \$18.9 million
- Wetlands Reserve Program (WRP) -- \$1.24 million
- Priority Watershed Cost-Share Program and Clean Water Act (a.k.a., EPA 319) Funds (Water) -- \$1.17 million
- Locally-led Cost Share Program (LLCSP) -- \$0.82 million
- Wildlife Habitat Incentive Program (WHIP) -- \$0.37 million

While the Water and LLCSP programs are not USDA programs and, therefore, do not utilize the NRCS practice definitions, the practices used in these programs are very similar to those of the NRCS. Therefore, funds under these two programs were assigned to corresponding NRCS practices for aggregation purposes. Figures 2a and 2b present the distribution of these funds across the regions of analysis. (Because of the significantly higher level of funding associated with the EQIP program, it was graphed separately.)

NRCS has classified all conservation practices and labeled the categories with codes. These practice codes had to be matched to IMPLAN sectors, so that IMPLAN knew which industries were being directly impacted by the conservation expenditures. Table 1 presents the correspondence used in this analysis between NRCS conservation practices used in fiscal year 2008 and the IMPLAN sectors. NRCS provides national correspondence, "NRCS Practices and common cost items linked to 2007 IMPLAN sectors," though the correspondence must be localized based on environmental and agricultural production. For example, conservation cover in Oklahoma (Practice Code 327) entails the planting of legumes and grasses to prevent soil erosion and/or maintain soil nutrients.

² IMPLAN software used under license from the Minnesota IMPLAN Group, Inc. More information about IMPLAN is available online at www.implan.com.

³ Because of the way that the data is categorized, these statistics actually include about \$400,000 in direct payments. These amounts were appropriately classified when the analysis is performed by practices and payments rather than federal or state program.

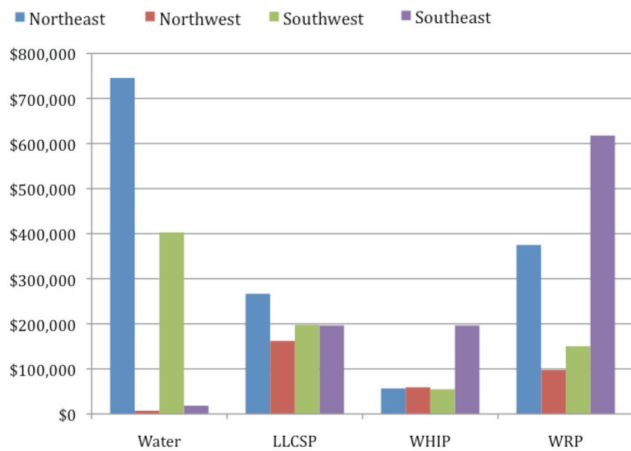


Figure 2a: Distribution of Conservation Funds (excluding EQIP) by Region of Oklahoma.

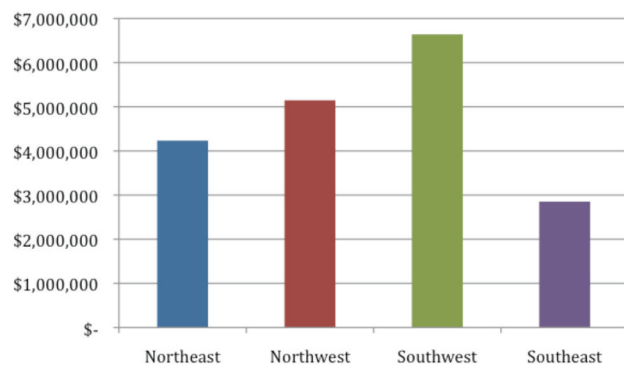


Figure 2b: Distribution of EQIP Funds by Region of Oklahoma.

The equipment and supplies needed to perform this practice correspond directly to those needed by a farmer raising hay. Therefore, this practice was classified as IMPLAN sector 10, all other crop farming, which includes hay production. Similarly, grassed waterway (Practice Code 412) involves primarily earthwork to construct the waterway. This practice was classified as sand and gravel mining, which is part of IMPLAN sector 26—sand, gravel, clay and ceramic minerals mining and quarrying—because the equipment and labor trained to mine sand and gravel are similar to that needed for the dirt work required for a grassed waterway.

Oklahoma Conservation Commission and the NRCS provided detailed conservation funding dollars by program, practice and local conservation district. These funding amounts were aggregated by region and practice to yield a total amount of grant funding for a given practice in each of the four regions. Multipliers for each industry associated with a conservation practice were generated in IMPLAN for each region. The total impact of the federal and state funding for each practice was computed by calculating the product of the region's total funding and the IMPLAN multiplier.

Table 2 contains the total impact for each practice used in Oklahoma during fiscal year 2008. One can see from Table 2 that project-based grants amounted to \$22.5 million injected into local economies. These funds generated an additional \$18.6 million of local economic activity throughout the state. In total, project-based grants generated \$41.1 million in the economic activity in Oklahoma. The five practices receiving

Table 1. NRCS Conservation Practices Mapped to IMPLAN Sectors.

Practice Code	Practice Description	2007 NAICS	IMPLAN Sector
100	Comprehensive Nutrient Mgt Plan	115	19
313	Waste Storage/Septic	238910	26
314	Brush Mgt	115	11
317	Composting Facility	1123	36
324	Deep Tillage	11194	10
327	Conservation Cover	11194	10
328	Conservation Crop Rotation	11194	10
329	Residue and Tillage Mgt, No Till	11191	2
338	Prescribed Burning	115	11
340	Cover Crop	11191	10
342	Critical Area Planting	11191	10
345	Residue and Tillage Mgt, Mulch Till	11119	2
346	Residue and Tillage Mgt, Ridge Till	11192	8
351	Well Decommissioning	237110	26
360	Closure of Waste Impoundments	2371	26
362	Diversion	237110	26
370	Atmospheric Resource Quality Mgt	115	19
378	Pond	237110	26
380	Wind-/Shelter-break	11191	6
382	Fence	115	11
386	Field Border	11191	2
390	Riparian Herb. Cover	11191	2
391	Riparian Forest Buffer	1132	6
393	Filter Strip	11191	2
394	Firebreak	115310	11
410	Grade Stabilization Structure	237990	26
412	Grassed waterway	11191	26
422	Hedgerow planting	1132	6
441	Irrigation system, microirrigation	237110	19
442	Irrigation system, sprinkler	237110	19
447	Irrigation system, tailwater recovery	237110	26
449	Irrigation water mgt	11191, 11192	19
468	Lined waterway	237990	29
472	Use exclusion	115	11
490	Tree/shrub site preparation	11194	10
500	Obstruction removal	238910	26
511	Forage harvest management	11194	10
512	Pasture and hay planting	111940	10
516	Pipeline	237110	201
528	Prescribed grazing	112111	11
533	Pumping plant	237110	33
550	Range planting	11194	10
561	Heavy use area mgt	115	26
571	Soil salinity mgt	11191	2
575	Animal trails	115, 11191	26
578	Stream crossing	237110	26
580	Streambank protection	115, 11191	26
587	Structure for water control	237110	26
590	Nutrient mgt	115112	2
595	Pest mgt*	115, 11191	East 11 West 2
600	Terrace	237990	26
612	Tree/shrub establishment	11191	6
614	Watering facility	115	11
633	Waste utilization*	115, 11191	East 11 West 2
634	Manure transfer	483	335
642	Water well	237110	33
643	Restoration of declining habitats	11191	10
644	Wetland wildlife habitat mgt	11191	10
645	Upland wildlife habitat mgt	11191	10
648	Wildlife watering facility	115	26
666	Forest stand improvement	1132	6
430DD	Irrigation Conveyance, High pressure, underground	237110	19
430EE	Irrigation Conveyance, Low pressure, underground	237110	33

*Practice is allocated to a different IMPLAN sector depending on the region of implementation.

Table 2. Economic Impact of State and Federal Conservation Dollars in Oklahoma, by Practice.

<i>Practice</i>	<i>Non-local Project Funds</i>	<i>Multiplier</i>	<i>Impact</i>
100	\$9,000	1.830	\$16,470
313	\$609,020	1.593	\$969,946
314	\$3,224,223	2.184	\$7,041,441
317	\$129,384	1.797	\$232,449
324	\$47,270	1.765	\$83,442
327	\$800	1.765	\$1,412
328	\$111,547	1.765	\$196,905
329	\$2,304,758	1.626	\$3,747,220
338	\$412,746	2.184	\$901,403
340	\$3,270	1.765	\$5,772
342	\$177,073	1.765	\$312,571
345	\$67,556	1.626	\$109,836
346	\$7,346	1.564	\$11,492
351	\$10,545	1.593	\$16,794
360	\$81,110	1.593	\$129,179
362	\$119,407	1.593	\$190,172
370	\$3,591	1.830	\$6,572
378	\$1,379,902	1.593	\$2,197,680
380	\$10,350	1.389	\$14,373
382	\$1,383,056	2.184	\$3,020,483
386	\$3,276	1.626	\$5,327
390	\$2,970	1.626	\$4,829
391	\$1,745	1.389	\$2,423
393	\$3,381	1.626	\$5,497
394	\$148,074	2.184	\$323,381
410	\$1,080,927	1.593	\$1,721,522
412	\$378,804	1.593	\$603,297
422	\$735	1.389	\$1,021
441	\$1,014,713	1.830	\$1,856,960
442	\$2,373,153	1.830	\$4,342,952
447	\$7,261	1.593	\$11,564
449	\$107,724	1.830	\$197,139
468	\$97,411	1.593	\$155,140
472	\$15,364	2.184	\$33,555
490	\$37,420	1.765	\$66,054
500	\$33,998	1.593	\$54,147
511	\$580	1.765	\$1,024
512	\$1,904,443	1.765	\$3,361,750
516	\$152,711	1.501	\$229,287
528	\$275,196	2.184	\$601,006
533	\$120,053	1.637	\$196,474
550	\$208,705	1.765	\$368,409
561	\$82,149	1.593	\$130,833
571	\$1,403	1.626	\$2,281
575	\$4,940	1.593	\$7,867
578	\$993	1.593	\$1,581
580	\$0	1.593	\$0
587	\$13,316	1.593	\$21,208
590	\$987,001	1.626	\$1,604,728
595	\$536,250	2.124	\$1,139,046
600	\$327,305	1.593	\$521,277
612	\$472,987	1.389	\$656,818
614	\$325,155	2.184	\$710,111
633	\$175,263	2.001	\$350,763
634	\$231,822	1.881	\$435,952
642	\$201,569	1.637	\$329,879
643	\$792,400	1.765	\$1,398,755
644	\$0	1.765	\$0
645	\$39,106	1.765	\$69,030
648	\$900	1.593	\$1,433
666	\$4,123	1.389	\$5,725
430DD	\$32,479	1.830	\$59,438
430EE	\$87,436	1.637	\$143,093
Closing Costs	\$91,600	1.406	\$128,813
Litter Transfer Payments	\$8,310	1.881	\$15,627
Total	\$22,477,105		\$41,082,629

the largest amounts of funding statewide, in order of largest to smallest, are: Brush Management (Practice 314), Sprinkler Irrigation System (Practice 442), Residue and Tillage Mgt. No Till (Practice 329), Pasture and Hay Planting (Practice 512), and Fence (Practice 382).

Table 3 presents similar information, but the data is disaggregated by region. One can see from Table 3 that the Southwest region had the highest level of project funding in the state, \$7.4 million. The levels of funding received in the other regions were, in descending order: \$5.7 million in the Northeast, \$5.5 million in the Northwest, and \$3.9 million in the Southeast. However, the funds expended in the Northeast region tended to generate higher local economic activity. Brush Management (Practice 314) was one of the top five funded practices in all four regions. Other highly funded practices include: Pasture and Hay Planting (Practice 512), Sprinkler Irrigation System (Practice 442), Fence (Practice 382), and Residue and Tillage Mgt. No Till (Practice 329). Practices 314, 338, 382, 394, 472, 528, 595, 614 and 633 had the highest multipliers across the four regions. The multipliers for these practices ranged from 1.913 to 2.178. This suggests that a dollar spent on these practices creates an additional \$0.91 to \$1.18 of economic activity within the region.

Table 3 also contains the total impact of the Litter Transfer Buyer Incentive Program, a state program. Unlike the previously discussed grant programs, this program provides direct payments to farmers that agree to use poultry litter instead of chemical fertilizers in their fields. The payments offset the transportation costs of getting the litter from the poultry growers to the participating farmers. Therefore, multipliers for truck transportation (IMPLAN sector 335) were used to determine the total impact of this program. The Northeast region boasts of the highest expenditure in this category and the highest impact on the region.

Direct Payments to Farmers/Ranchers

As the subtitle suggests, direct payments to farmers/ranchers are unrestricted payments to farmers/ranchers. Typically, these payments are reimbursements to the landowner for lost income due to implementing conservation practices. For example, the Conservation Reserve Program (CRP) and Conservation Security Program (CSP) reimburse farmers for income lost due to leaving land fallow. Similar payments for easements, riparian exclusion areas and Conservation Completion Incentive (second year; CCIB) also are included in this section. Table 4 illustrates the distribution of payments by programs statewide, while Table 5 presents the distribution of payments across the four regions in Oklahoma.

The analysis of direct payments is slightly different from that of project-based grants. Direct payments are income to the receiving farmer/rancher since they are intended to replace any income the farmer lost because of implementing a conservation practice. (Any money received by the farmer to help pay for the conservation practice would have been included under project-based grants.) Because the payments are income, the farmer/rancher is not restricted in how he spends (or saves) the money. While household spending patterns vary with income, no data is available on the income of direct payment recipients. Therefore, it was assumed that all direct payments in a region were spent according to the spending pattern of the household with average income in each region. Average household income in 2007, taken from IMPLAN data, for each region was \$81,663 in the northeast, \$74,400 in

Table 3: Economic Impact of State and Federal Conservation Dollars in Oklahoma, by Practice and Region.

Practice	Northeast			Northwest			Southwest			Southeast		
	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact
100	\$0	1.805	\$0	\$9,000	1.621	\$14,585	\$0	1.873	\$0	\$0	1.631	\$0
313	\$460,609	1.686	\$776,458	\$28,487	1.521	\$43,324	\$0	1.668	\$0	\$119,924	1.529	\$183,402
314	\$1,153,255	2.178	\$2,512,335	\$840,552	1.913	\$1,608,148	\$621,316	2.139	\$1,328,736	\$609,100	1.996	\$1,215,920
317	\$85,766	1.789	\$153,472	\$0	1.566	\$0	\$0	1.792	\$0	\$43,618	1.591	\$69,986
324	\$0	1.723	\$0	\$43,445	1.623	\$70,492	\$432	1.650	\$713	\$3,393	1.592	\$5,402
327	\$0	1.723	\$0	\$800	1.623	\$1,298	\$0	1.650	\$0	\$0	1.592	\$0
328	\$41,588	1.723	\$71,655	\$69,052	1.623	\$112,040	\$0	1.650	\$0	\$908	1.592	\$1,446
329	\$110,801	1.593	\$176,493	\$1,071,159	1.510	\$1,617,776	\$1,122,798	1.376	\$1,545,002	\$0	1.447	\$0
338	\$137,565	2.178	\$299,681	\$201,688	1.913	\$385,870	\$16,140	2.139	\$34,518	\$57,353	1.996	\$114,491
340	\$0	1.723	\$0	\$2,190	1.623	\$3,553	\$1,080	1.650	\$1,782	\$0	1.592	\$0
342	\$28,609	1.723	\$49,294	\$25,141	1.623	\$40,793	\$89,038	1.650	\$146,907	\$34,284	1.592	\$54,589
345	\$0	1.593	\$0	\$59,362	1.510	\$89,655	\$8,194	1.376	\$11,275	\$0	1.447	\$0
346	\$0	1.509	\$0	\$0	1.442	\$0	\$7,346	1.527	\$11,219	\$0	1.427	\$0
351	\$0	1.686	\$0	\$10,545	1.521	\$16,037	\$0	1.668	\$0	\$0	1.529	\$0
360	\$81,110	1.686	\$136,729	\$0	1.521	\$0	\$0	1.668	\$0	\$0	1.529	\$0
362	\$1,254	1.686	\$2,114	\$37,595	1.521	\$57,177	\$79,007	1.668	\$131,822	\$1,551	1.529	\$2,373
370	\$0	1.805	\$0	\$0	1.621	\$0	\$3,591	1.873	\$6,727	\$0	1.631	\$0
378	\$380,881	1.686	\$642,059	\$113,745	1.521	\$172,989	\$297,850	1.668	\$496,960	\$587,426	1.529	\$898,362
380	\$7,865	1.552	\$12,203	\$413	1.412	\$584	\$1,386	1.478	\$2,048	\$686	1.420	\$974
382	\$511,594	2.178	\$1,114,494	\$79,525	1.913	\$152,147	\$419,888	2.139	\$897,966	\$372,049	1.996	\$742,706
386	\$0	1.593	\$0	\$1,553	1.510	\$2,346	\$1,723	1.376	\$2,371	\$0	1.447	\$0
390	\$0	1.593	\$0	\$0	1.510	\$0	\$2,970	1.376	\$4,087	\$0	1.447	\$0
391	\$1,745	1.552	\$2,708	\$0	1.412	\$0	\$0	1.478	\$0	\$0	1.420	\$0
393	\$1,325	1.593	\$2,111	\$1,282	1.510	\$1,936	\$774	1.376	\$1,065	\$0	1.447	\$0
394	\$29,048	2.178	\$63,280	\$33,217	1.913	\$63,552	\$2,331	2.139	\$4,984	\$83,478	1.996	\$166,643
410	\$132,625	1.686	\$223,569	\$165,522	1.521	\$251,733	\$563,845	1.668	\$940,771	\$218,935	1.529	\$334,822
412	\$50,543	1.686	\$85,201	\$177,487	1.521	\$269,930	\$148,824	1.668	\$248,312	\$1,950	1.529	\$2,982
422	\$735	1.552	\$1,140	\$0	1.412	\$0	\$0	1.478	\$0	\$0	1.420	\$0
441	\$0	1.805	\$0	\$77,154	1.621	\$125,033	\$937,559	1.873	\$1,756,338	\$0	1.631	\$0
442	\$383,922	1.805	\$693,027	\$1,153,154	1.621	\$1,868,762	\$836,077	1.873	\$1,566,232	\$0	1.631	\$0
447	\$0	1.686	\$0	\$0	1.521	\$0	\$7,261	1.668	\$12,115	\$0	1.529	\$0
449	\$25,639	1.805	\$46,281	\$49,824	1.621	\$80,744	\$32,261	1.873	\$60,434	\$0	1.631	\$0
468	\$61,076	1.686	\$102,958	\$0	1.521	\$0	\$36,335	1.668	\$60,624	\$0	1.529	\$0
472	\$12,150	2.178	\$26,469	\$0	1.913	\$0	\$3,000	2.139	\$6,416	\$214	1.996	\$427
490	\$0	1.723	\$0	\$0	1.623	\$0	\$0	1.650	\$0	\$37,420	1.592	\$59,581
500	\$1,008	1.686	\$1,699	\$135	1.521	\$205	\$21,182	1.668	\$35,342	\$11,673	1.529	\$17,852
511	\$0	1.723	\$0	\$560	1.623	\$941	\$0	1.650	\$0	\$0	1.592	\$0
512	\$311,723	1.723	\$537,096	\$332,429	1.623	\$539,384	\$962,983	1.650	\$1,588,858	\$297,308	1.592	\$473,386
516	\$22,248	1.524	\$33,913	\$47,485	1.327	\$63,022	\$49,168	1.438	\$70,712	\$33,811	1.335	\$45,138

Table 3. Economic Impact of State and Federal Conservation Dollars in Oklahoma, by Practice and Region (cont'd.)

Practice	Northeast			Northwest			Southwest			Southeast		
	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact
528	\$35,688	2.178	\$77,746	\$150,143	1.913	\$287,255	\$29,515	2.139	\$63,119	\$59,850	1.996	\$119,476
533	\$0	1.637	\$0	\$11,065	1.466	\$16,222	\$108,989	1.623	\$176,856	\$0	1.517	\$0
550	\$18,927	1.723	\$32,611	\$121,958	1.623	\$197,883	\$56,863	1.650	\$93,821	\$10,956	1.592	\$17,445
561	\$75,848	1.686	\$127,858	\$0	1.521	\$0	\$0	1.668	\$0	\$6,301	1.529	\$9,636
571	\$0	1.593	\$0	\$0	1.510	\$0	\$1,403	1.376	\$1,931	\$0	1.447	\$0
575	\$3,275	1.686	\$5,521	\$0	1.521	\$0	\$0	1.668	\$0	\$1,665	1.529	\$2,546
578	\$0	1.686	\$0	\$0	1.521	\$0	\$993	1.668	\$1,657	\$0	1.529	\$0
580	\$0	1.686	\$0	\$0	1.521	\$0	\$0	1.668	\$0	\$0	1.529	\$0
587	\$0	1.686	\$0	\$8,042	1.521	\$12,230	\$0	1.668	\$0	\$5,275	1.529	\$8,067
590	\$193,208	1.593	\$307,757	\$117,698	1.510	\$177,760	\$376,337	1.376	\$517,850	\$299,758	1.447	\$433,608
595	\$490,551	2.178	\$1,068,652	\$10,281	1.510	\$15,528	\$25,535	1.376	\$35,137	\$9,883	1.996	\$19,729
600	\$15,904	1.686	\$26,809	\$53,790	1.521	\$81,806	\$255,332	1.668	\$426,020	\$2,279	1.529	\$3,485
612	\$124,687	1.552	\$193,462	\$3,661	1.412	\$5,169	\$81,014	1.478	\$119,723	\$263,626	1.420	\$374,254
614	\$120,579	2.178	\$262,678	\$118,979	1.913	\$227,631	\$75,081	2.139	\$160,566	\$10,516	1.996	\$20,993
633	\$4,909	2.178	\$10,694	\$0	1.510	\$0	\$0	1.376	\$0	\$170,354	1.996	\$340,070
634	\$131,431	1.878	\$246,833	\$0	1.654	\$0	\$0	1.850	\$0	\$100,390	1.751	\$175,782
642	\$73,984	1.637	\$121,090	\$64,817	1.466	\$95,028	\$46,220	1.623	\$75,001	\$16,548	1.517	\$25,100
643	\$246,269	1.723	\$424,319	\$97,433	1.623	\$158,090	\$71,937	1.650	\$118,691	\$376,761	1.592	\$599,895
644	\$0	1.723	\$0	\$0	1.623	\$0	\$0	1.650	\$0	\$0	1.592	\$0
645	\$1,152	1.723	\$1,984	\$35,443	1.623	\$57,508	\$0	1.650	\$0	\$2,511	1.592	\$3,998
648	\$0	1.686	\$0	\$0	1.521	\$0	\$900	1.668	\$1,502	\$0	1.529	\$0
666	\$0	1.552	\$0	\$0	1.412	\$0	\$0	1.478	\$0	\$4,123	1.420	\$5,652
430DD	\$0	1.805	\$0	\$1,692	1.621	\$2,742	\$25,584	1.873	\$47,928	\$5,203	1.631	\$8,486
430EE	\$37,070	1.637	\$60,672	\$38,211	1.466	\$56,021	\$12,155	1.623	\$19,724	\$0	1.517	\$0
Closing Costs	\$5,050	1.397	\$7,056	\$0	1.274	\$0	\$1,467	1.453	\$2,132	\$1,793	1.321	\$2,368
Litter Transfer Payments	\$64,056	1.878	\$120,299	\$7,362	1.654	\$12,177	\$1,626	1.850	\$3,009	\$18,556	1.751	\$32,491
Total	\$5,677,270		\$10,862,484	\$5,473,095		\$9,057,104	\$7,445,311		\$12,839,001	\$3,881,429		\$6,593,164

Table 4. Economic Impact of Direct Payment Conservation Programs in Oklahoma.

Practice	Non-local Project Funds	Multiplier	Impact
CCIB	\$564	1.459	\$822
Easement Payments	\$205,041	1.459	\$299,096
Riparian Exclusion Areas	\$2,030	1.459	\$2,961
CSP	\$3,606,706	1.459	\$5,261,152
CRP ¹	\$15,881,745	1.459	\$23,166,922
State Total	\$19,696,086		\$28,730,954

¹ Includes CRP payments that are not disclosed at the county level.

the northwest, \$84,509 in the southwest and \$65,206 in the southeast. Tables 4 and 5 contain the multipliers associated with these households in each region.

The payments received by farmers and ranchers are considered taxable income by the IRS. While \$28.1 million in direct payments were made to Oklahoma households, the impact values are reduced by 30 percent to account for the tax liability farmers and ranchers owe on these payments. Table 4 shows that \$19.7 million was distributed to farmers and ranchers as net of the tax obligation. For each dollar spent, \$0.46 of additional economic activity is generated statewide. Thus, direct payments had a total impact of \$28.7 million throughout the state of Oklahoma.

Table 5 presents some interesting details. Farmers and ranchers in the northwest received the most direct payments from CRP and CSP across the state, \$13.6 million, after accounting for taxes, though the multiplier associated with these dollars was the least of the four regions, 1.244. For every dollar in direct payment received by a northwest farmer or rancher, only \$0.24 of additional economic activity was created in the region. In the northeast, however, \$0.45 of additional economic activity was created in the region for every dollar of direct payment received, though farmers and ranchers in this region received the least amount of CRP and CSP payments, \$466,875 (after taxes). It also is interesting to note that farmers and ranchers in the western half of the state received nearly 88 percent of direct payments made in fiscal year 2008.

Program Administration Expenditures

Program administration expenditures include those costs associated with running a local conservation district or NRCS field office. Because the analysis is done on a regional basis, statewide administration costs were excluded from the analysis (e.g., costs associated with the Oklahoma Conservation Commission offices in Oklahoma City or NRCS' Technical Support offices throughout the state). Included in administration expenses are wages and salaries (including benefits), operation expenses and overhead costs. The data for this component of the analysis was provided by the NRCS state office and the Comptroller of the Oklahoma Conservation Commission.

Total administrative expenditures by region are presented in the first data column of Table 6. Multipliers associated with the administration of conservation programs were generated in IMPLAN using the institutional spending pattern of noneducational state and local governments, and these are

Table 5. Economic Impact of Direct Payment Conservation Programs in Oklahoma by Region.

Practice	Northeast			Northwest			Southwest			Southeast		
	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact	Non-local Project Funds	Multiplier	Impact
CCIB	\$0	1.454	\$0	\$0	1.244	\$0	\$564	1.436	\$809	\$0	1.283	\$0
Easement Payments	\$181,506	1.454	\$263,985	\$0	1.244	\$0	\$23,535	1.436	\$33,787	\$0	1.283	\$0
Riparian Exclusion Areas	\$2,030	1.454	\$2,952	\$0	1.244	\$0	\$0	1.436	\$0	\$0	1.283	\$0
CSP	\$171,515	1.454	\$249,454	\$847,186	1.244	\$1,053,573	\$858,226	1.436	\$1,232,069	\$1,729,778	1.283	\$2,219,437
CRP	\$295,360	1.454	\$429,576	\$12,717,999	1.244	\$15,816,288	\$2,790,957	1.436	\$4,006,697	\$77,429	1.283	\$99,348
Grand Total	\$650,411		\$945,967	\$13,565,185		\$16,869,861	\$3,673,282		\$5,273,362	\$1,807,208		\$2,318,785

presented in the second data column. The overall impact of these administration expenditures are presented in the last column of Table 6. One will notice that the northeast region had the highest level of expenditures in this category, followed by the southeast region. Also, the northeast and southwest regions realized the higher multipliers, and higher economic impact per dollar, for these expenditures.

Table 6. Economic Impact of Expenditures on Local (County & District) Administration of Conservation Programs.

<i>Region</i>	<i>Total Administrative Expenses</i>	<i>Multiplier</i>	<i>Total Impact</i>
Northeast	\$6,176,766	1.4931	\$9,222,604
Northwest	\$3,691,230	1.2359	\$4,561,849
Southwest	\$4,801,485	1.4328	\$6,879,330
Southeast	\$4,562,537	1.2445	\$5,677,989
State Total	\$19,232,018	1.4750	\$28,366,309

Summary and Conclusions

Almost \$70 million is spent annually on conservation in Oklahoma. Roughly \$22.5 million is spent on practice implementation through project-based grants from state and federal programs. Another \$28.1 million represents direct payments to farmers and ranchers to reimburse them for lost income because of implementing a conservation practice. The remaining \$19.2 million is spent on administrative costs for local conservation districts and NRCS field offices.

Because these dollars represent injections into regional economies across the state, they will generate additional local economic activity. For example, project-based grants generate an estimated \$18.6 million in additional economic activity across the state. Direct payment programs generate approximately \$9 million and administrative expenses create nearly \$10.4 million of additional economic activity locally. Thus, federal and state conservation programs have a total impact of more than \$107.8 million.⁴ Comparing the total impacts across the three categories of conservation expenditures at the state levels, funding of conservation implementation projects generally has the highest economic impact.

The results in this study are useful for state and local officials and conservation personnel for a number of applications. First, economic impact analysis such as those presented herein are useful in quantifying the impact of conservation projects for reporting and grant-writing purposes. Second, the numbers tell a story that links environmental conservation and the local economy. Though the results do not represent a benefit-cost analysis, they can be viewed as a first step toward understanding how conservation and the economy are connected. Such linkages are important to understand if communities want to seriously address sustainability, of both the environment and economy, in local places.

In addition to this report, a worksheet is being devised that will aid local conservation districts to generate practice-specific impact numbers for funds expended under their jurisdiction. For more information about these tools, and to gain access to them, contact the author.

⁴ These values were calculated using the statewide impact data presented in Tables 2, 4, and 6. Different numbers will be generated by aggregating across regions, but such an aggregation is incorrect due to the inability to account for cross-regional trade (e.g., import and export of goods and services) in the regional impact models. Only the statewide model can appropriately account for these flows.

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