Kentucky Green River Conservation Reserve Enhancement Program

Annual Program Accomplishment Report (CEP-68R)

Federal Fiscal Year 2012

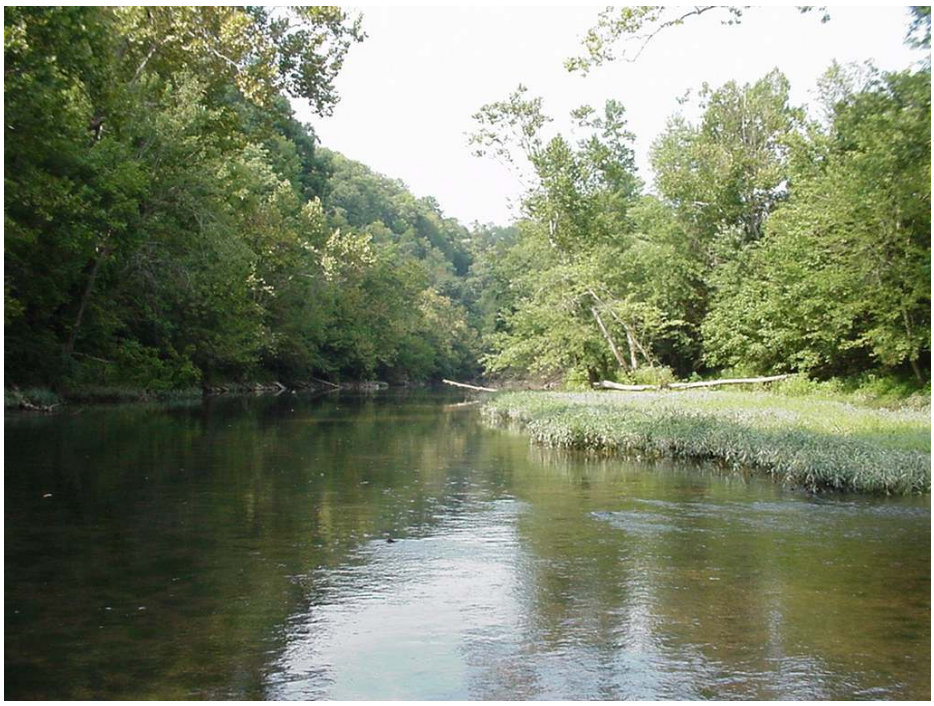
November 26, 2012

I. Executive Summary

The Green River is the most biologically diverse and rich branch of the Ohio River system. The greatest aquatic diversity occurs in a 100-mile section of unhindered river that flows from the Green River Reservoir dam through Mammoth Cave National Park (the world's longest and most diverse cave system) in south central Kentucky. This section of the Green River watershed includes 917,197 acres in the counties of Adair, Barren, Edmonson, Green, Hart, Metcalfe, Russell, and Taylor. Data indicate that agricultural runoff contributes high levels of sediment, nutrients, pesticides, and pathogens to the Green River and Mammoth Cave systems. There are currently seven species listed as endangered by the U.S. Fish and Wildlife Service in the Green River system. In addition, the project area also includes several ecosystems recognized as Endangered Ecosystems of the United States, including native prairies, hardwood savannahs, canebrakes, and old-growth deciduous forest.

On August 29, 2001, the U.S. Department of Agriculture (USDA) and the Commonwealth of Kentucky agreed to implement a Conservation Reserve Enhancement Program (CREP) on the section of the Green River referenced above to restore up to 100,000 acres. The Kentucky Chapter of The Nature Conservancy (TNC) is one contributor, offering permanent easements to landowners in addition to CREP contracts and offering public relations and best management plan (BMP) implementation assistance. The Kentucky Department of Fish and Wildlife Resources (KDFWR) is a contributor, offering wildlife biologists and cost-shared positions with the Natural Resources Conservation Service (NRCS) to assist landowners and promote the program to enhance participation in CREP. The Kentucky Division of Conservation, designated as the state administrative contact agency for Green River CREP, distributes state cost share and incentive payments to landowners. Western Kentucky University implements the water quality and biological monitoring for the program. Mammoth Cave National Park is also involved in the monitoring of the Green River and groundwater in the karst areas of the Green River CREP.

In late 2006, a proposal for an amendment to the Green River CREP was submitted to USDA. This proposal sought to expand the CREP region approximately 30 river miles down the Green River. This would include environmentally significant watersheds that are downstream of the original project area, in addition to utilizing the community-based approach of this program to more effectively protect locally unique resources and provide better service to the local landowners.



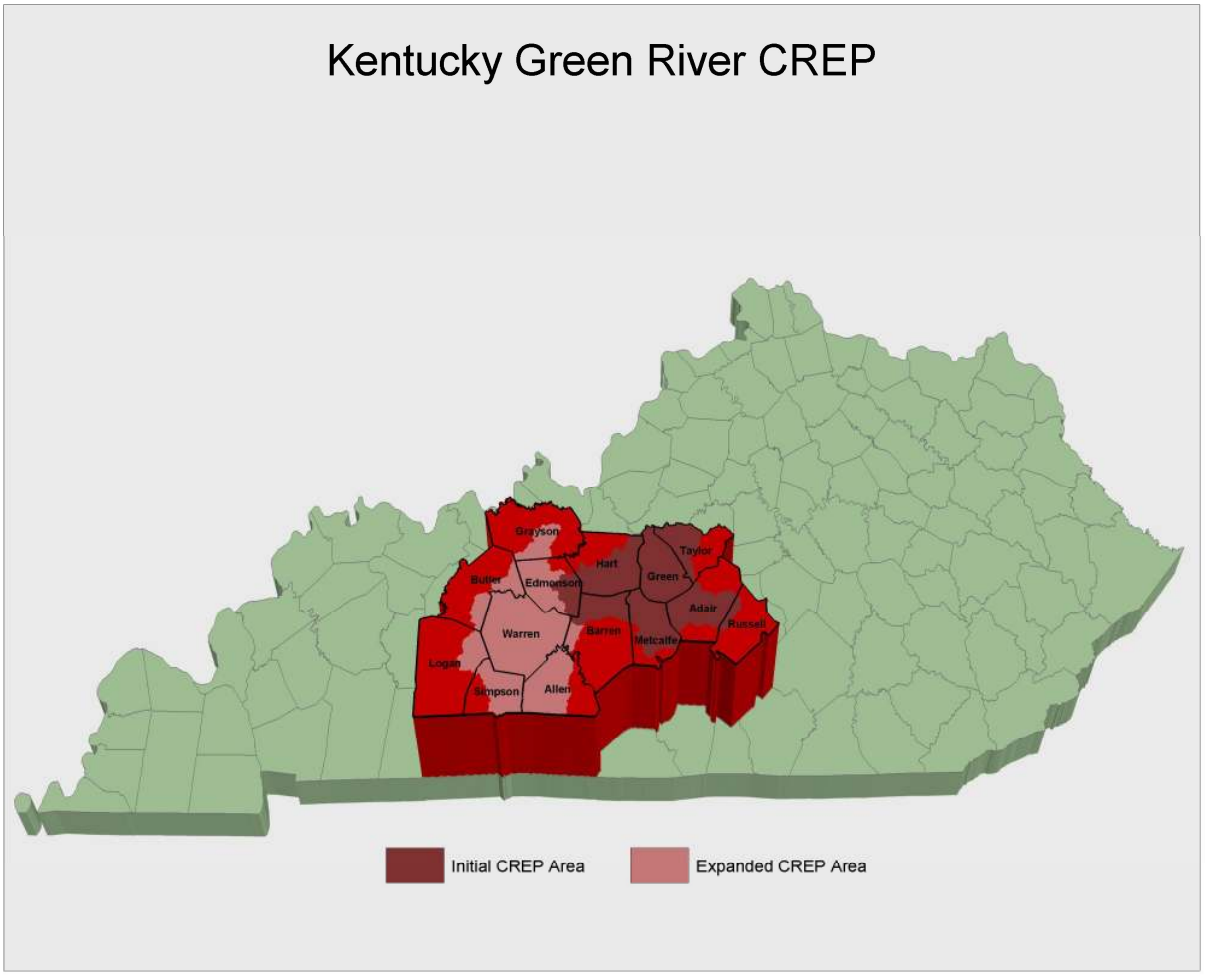
View of Green River. Photo courtesy of TNC.

The proposed additional area included all or parts of Allen, Barren, Butler, Edmonson, Grayson, Logan, Simpson, and Warren Counties (see map on the following page). This area contains a total of 946,101 acres, and includes counties that rank among the Commonwealth's top producers in several agricultural categories. In addition to the geographic expansion, practical changes to the program to more effectively service the local population and to protect unique natural resources were proposed. These proposals included the addition of the CP29-Marginal Pastureland Wildlife Habitat Buffer to effectively buffer sinkholes in the watershed's predominantly pastured sinkhole plain. In addition, expanded buffer widths on third order and larger streams for the CP29 practice, as well as the CP22-Riparian Buffers practice, helped to more effectively meet local landscape needs.

After discussion and adjustments made by partner agencies, this proposal was accepted. An amendment to the Memorandum of Agreement was drafted. The amendment became effective on February 6, 2007.

Federal Fiscal Year (FFY) 2012 continued final practice installations and the progression to the monitoring phase of this program. Upon the writing of this report, there are still a few contracts enrolled that have not been fully installed in Warren County. These contracts will either be completed in the coming months through utilizing contract extensions or cancelations. Approximately 1,100 acres, previously enrolled into the program, have been cancelled by landowners this past year, bringing the current total land area in the Green River CREP to 99,594.5

acres. The allotted acreage for the Green River CREP has been fulfilled, and no further contracts will be accepted.



Aerial view of Green River Valley. Photo courtesy of TNC.

The following pages of this report contain visual aids that reflect the program's cumulative accomplishments and photographs of the region that represent the progress that has been made. More specific statistical analysis (such as annual by county and by practice) for active years of the program may be found online (http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=rns-crt).

Brush Spring flowing into the Green River. Photo courtesy of TNC.

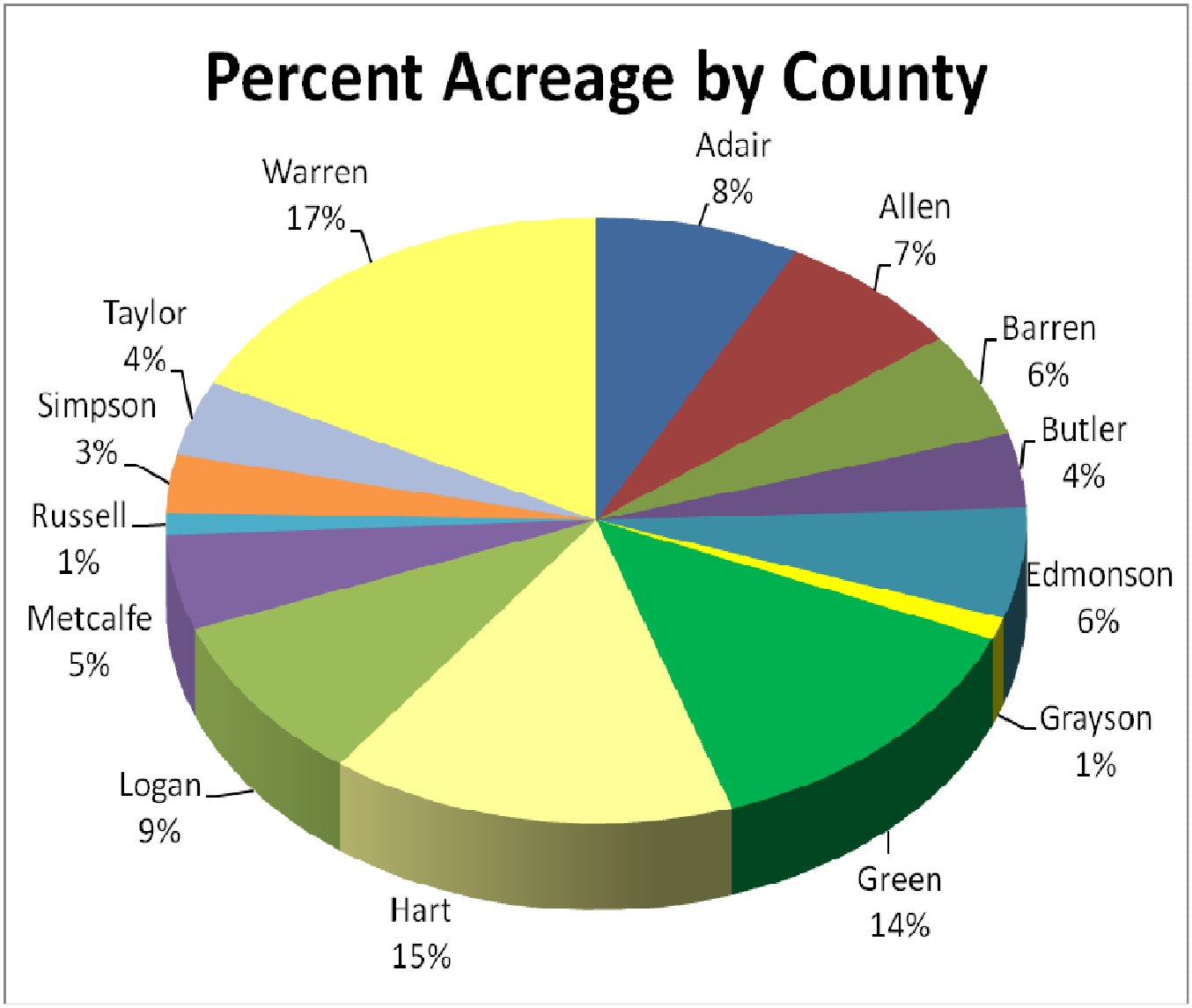
CREP Amendment Kick-off event in Barren County in August 2007
Photo courtesy of Jay Nelson

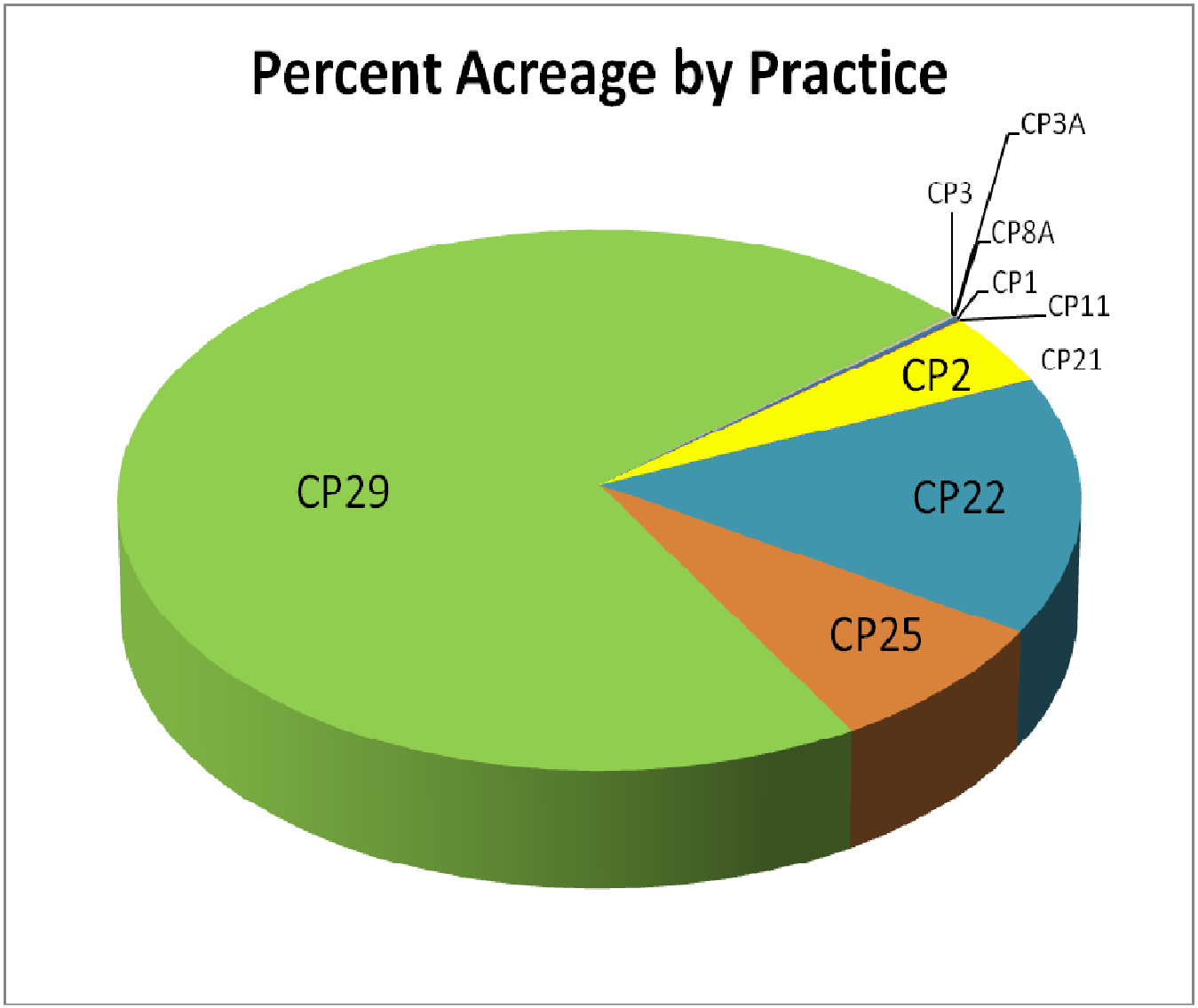
Areas such as the sinkhole plain have greatly benefited from the newly added CP-29 practice.
Photo courtesy of WKU

CREP Native Grass Planting. Photo courtesy of Barren Co NRCS

CREP mid-contract management, Allen County, November 2012.
Photo courtesy of Jay Nelson

CREP mid-contract management, Warren County, Nov 2012. Photo courtesy of Jay Nelson.


Percent Acreage by County
Adair 8%
Allen 7%
Barren 6%
Butler 4%
Edmonson 6%
Grayson 1%
Green 14%
Hart 15%
Logan 9%
Metcalfe 5%
Russell 1%
Simpson 3%
Taylor 4%
Warren 17%


Percent Acreage by Practice
CP3A
CP3
CP8A
CP1
CP11
CP21
CP2
CP29
CP22
CP25

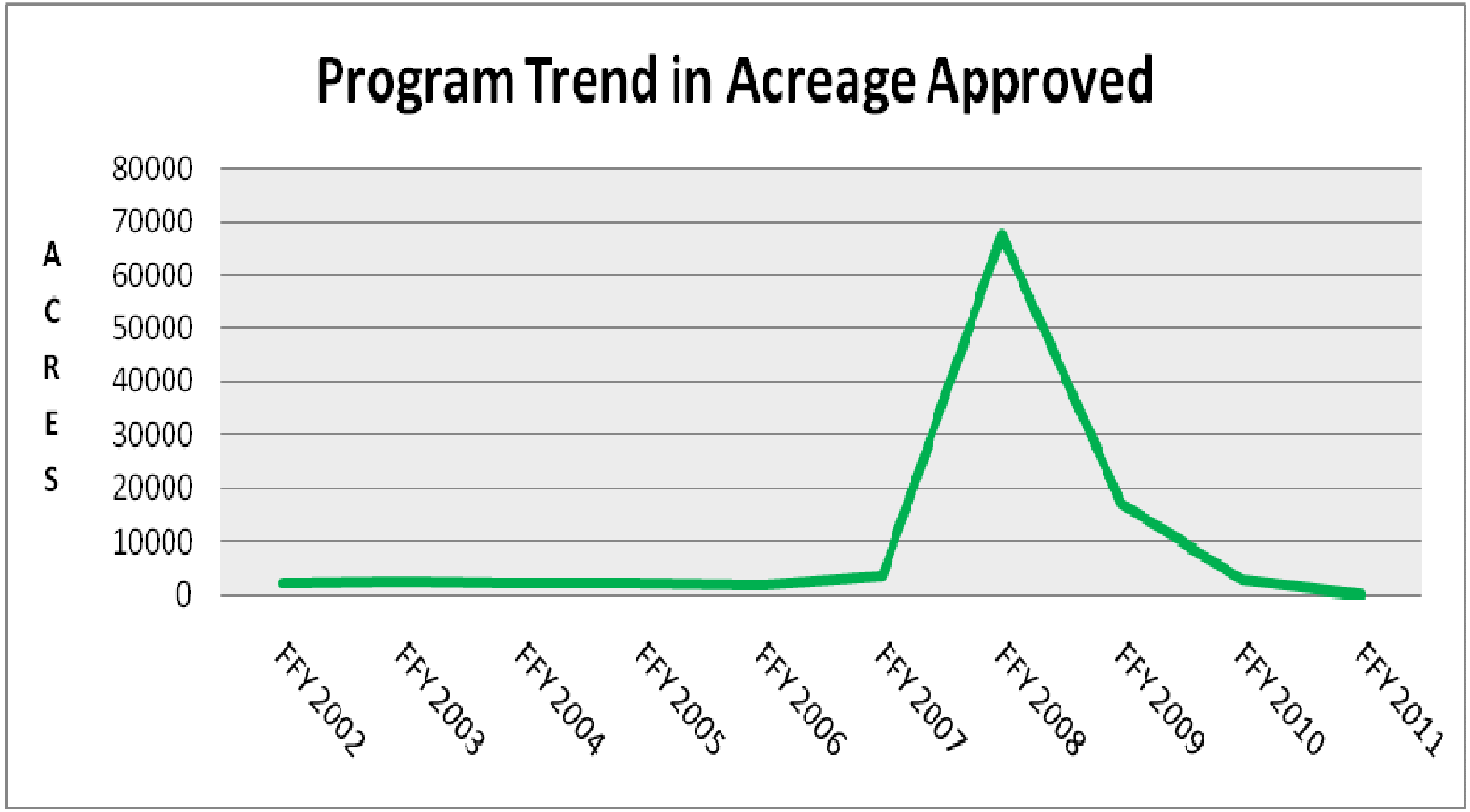
Acreage Tables by County and by Practice

COUNTY	ACRES
Adair	7,424.8
Allen	7,260.5
Barren	4,934.9
Butler	3,980.7
Edmonson	6,026.7
Grayson	1,178.6
Green	13,633.6
Hart	15,078.9
Logan	8,963.2
Metcalfe	5,554.7
Russell	1,163.7
Simpson	2,755.8
Taylor	3,541.3
Warren	18,093.2

PRACTICE		
No.	NAME	ACRES
CP1	Est Permanent Grass/Legume	200.0
CP11	Vegetative Cover/Trees already est	55.6
CP2	Est Permanent Native Grass	3,896.5
CP21	Filter Strips	42.7
CP22	Riparian Buffer	15,050.9
CP25	Rare and Declining Habitat	7,862.8
CP29	Marginal Pastureland Wildlife Habitat Buffer	72,330.6
CP3	Tree Planting	39.2
CP3A	Hardwood Tree Planting	109.2
CP8A	Grassed Waterways	7.0
		99,594.5

Program Cumulative Payment Summary

County	Number of Contracts	Average Acres Per Contract	Avg. Rental Rate Per Acre	Incentive Paid Per Acre	Total Estimated Cost-Share	Avg. Cost-Share $/Acre	Total Life of Contract Rental Payment
Adair	304	24.4	$142	$68	$1,438,114	$320	$14,979,389
Allen	210	35	$165	$81	$1,467,632	$245	$15,793,558
Barren	157	31	$132	$61	$861,632	$275	$8,525,912
Butler	109	37	$184	$90	$454,435	$116	$9,052,219
Edmonson	205	29	$173	$84	$1,024,763	$182	$13,422,146
Grayson	25	47	$177	$86	$197,718	$148	$3,100,725
Green	431	32	$155	$75	$2,317,452	$271	$29,198,858
Hart	428	35	$202	$99	$2,247,190	$166	$40,960,115
Logan	228	39	$245	$120	$1,385,235	$163	$30,181,601
Metcalfe	158	35	$139	$67	$1,042,365	$205	$10,673,839
Russell	41	29	$142	$69	$192,556	$232	$2,190,619
Simpson	82	34	$210	$103	$437,596	$167	$7,218,260
Taylor	191	19	$143	$68	$603,100	$318	$6,877,485
Warren	515	32	$183	$108	$2,734,417	$183	$52,680,397
Region	3085	32.3	$183.00	$89.06	$16,404,984	$220.75	$244,857,901


Program Trend in Acreage Approved
ACRES
80000
70000
60000
50000
40000
30000
20000
10000
0
FFY 2002
FFY 2003
FFY 2004
FFY 2005
FFY 2006
FFY 2007
FFY 2008
FFY 2009
FFY 2010
FFY 2011

CREP mid-contract management, Warren County, November 2012. Photo courtesy of Jay Nelson.

GREEN RIVER CREP FEDERAL PAYMENT MATRIX

Federal CREP									
Practice Code	**Practice Description**	**Land Eligibility**	**Crop History**	**Base C/S**	**PIP**	**SIP** Acres X Full Years (not>10yrs) X $10	**SRR Incentive (ac/yr) % x SRR)**	**Maintenance Payment** ac/yr	**Maintenance w/fence //and water** ac/yr
CP1	Introduced Grasses and Legumes	HEL	Yes	50%			50%	$4	
CP2	Native Grasses	HEL	Yes	50%			75%	$4	
CP3	Tree Planting	HEL	Yes	50%			100%	$4	
CP3A	Hardwood Tree Planting	HEL	Yes	50%			100%	$4	
CP4B	Permanent Wildlife Habitat Corridors	HEL	Yes	50%			75%	$4	
CP4D	Permanent Wildlife Habitat	HEL	Yes	50%			75%	$4	
CP8A	Permanent Grass Waterways	NA	Yes	50%	40%	X	75%	$4	
CP9	Shallow Water Areas for Wildlife	NA	Yes	50%	40%		75%	$4	
CP10	Grass Cover-already established	HEL	Yes	0			50%	$4	
CP11	Tree Cover –already established	HEL	Yes	0			50%	$4	
CP12	Wildlife Food Plots	HEL	Yes	0			50%	N	
CP15A	Contour Grass Strips	NA	Yes	50%	40%		50%	$4	
CP21	Filter Strips	NA	Yes	50%	40%	X	75%	$4	$8//$9
CP22	Riparian Buffers	NA	Yes or MP	50%	40%	X	100%	$6	$8//$9
CP23	Wetland Restoration	Wetland	Yes	50%	**	**	100%	$4	
CP23A	Wetland Restoration Non-Floodplain	NHE	Yes	50%	**	**	100%	$4	
CP25	Rare and Declining Habitat	HEL	Yes	50%			100%	$4	
CP29	Marginal Pastureland Wildlife Habitat Buffer	NA	MP	50%	40%	X	100%	$4	$8/$9

Green River CREP

State CREP Cost Share/Incentive Matrix

State Practice Code	Federal Practice Code or Practice Description	State Cost Share Rate	State Incentive Rate	State Incentive Rate w/ Easement Option
KREP1	CP1	25%	25%	75% *
	CP2	25%	25%	75% *
	CP3	25%	25%	75% *
	CP3A	25%	25%	75% *
KCREP2	CP8A	25%	25%	75% *
	CP15A	25%	25%	75% *
	CP21	25%	25%	75% *
	CP22	25%	25%	75% *
	CP29	25%	25%	75% *
KCREP3	Livestock Water System	25%	25%	75% *
KCREP4	Fence	25%	25%	75% *
KCREP5	Stream Crossing	25%	25%	75% *

* Incentive available if permanent easement is offered on noted practice, and in watershed of federal contract.

- Cost share and incentive payments combined cannot exceed $7,500 per practice per state fiscal year.
- Each applicant or operation is limited to $20,000 total per state fiscal year, not to exceed $40,000 in any two consecutive program years.

II. State and Local Partners' Financial Contribution

The Kentucky Chapter of The Nature Conservancy (TNC)

The Kentucky Chapter of The Nature Conservancy has been a key CREP partner since the proposal was made to bring CREP to the Commonwealth of Kentucky. TNC funds, offers and holds the optional permanent easements on CREP contracts that are available on a limited basis in the original CREP region. The eligibility is limited based on type of practice installed. In addition to the easements and associated duties, TNC has been active with program promotion; field and office assistance to local USDA offices with program implementation; funding initiatives for CREP meetings, field days and printed public relations materials; and conducting biological monitoring.

The Kentucky Chapter of The Nature Conservancy (TNC) has permanent conservation easements on 56 properties, totaling 1,251 acres, that were enrolled in the CREP program. These easements include properties in six different counties: Adair, Green, Hart, Metcalfe, Russell, and Taylor. TNC monitors each and every one of these easements annually.

No additional information was received from the Kentucky Chapter of the Nature Conservancy to include in this year's report.

Kentucky Department of Fish and Wildlife Resources (KDFWR)

The Kentucky Department of Fish and Wildlife Resources has been a key partner in field implementation of the Green River CREP. KDFWR has contributed man-hours from several field positions, such as: KDFWR/NRCS liaisons, farm bill biologists, private lands biologists, four CREP biologists and four CREP technicians. One CREP biologist and all four CREP technicians were new positions created in 2008 to help meet the landowner demands that were needed for this program. KDFWR personnel adopted many duties while working directly with both the landowners and with NRCS district conservationists. These biologists and technicians helped with the physical establishment procedures, such as on site guidance, the delivery of seed drills, and spraying equipment, among others. These biologists and technicians worked to initiated landowner contacts, coordinated and/or assisted with field days and informational meetings.

The above referenced CREP biologists and CREP technicians, are supervised by KDFWR in partnership with NRCS. They have greatly aided in the following tasks for this program:

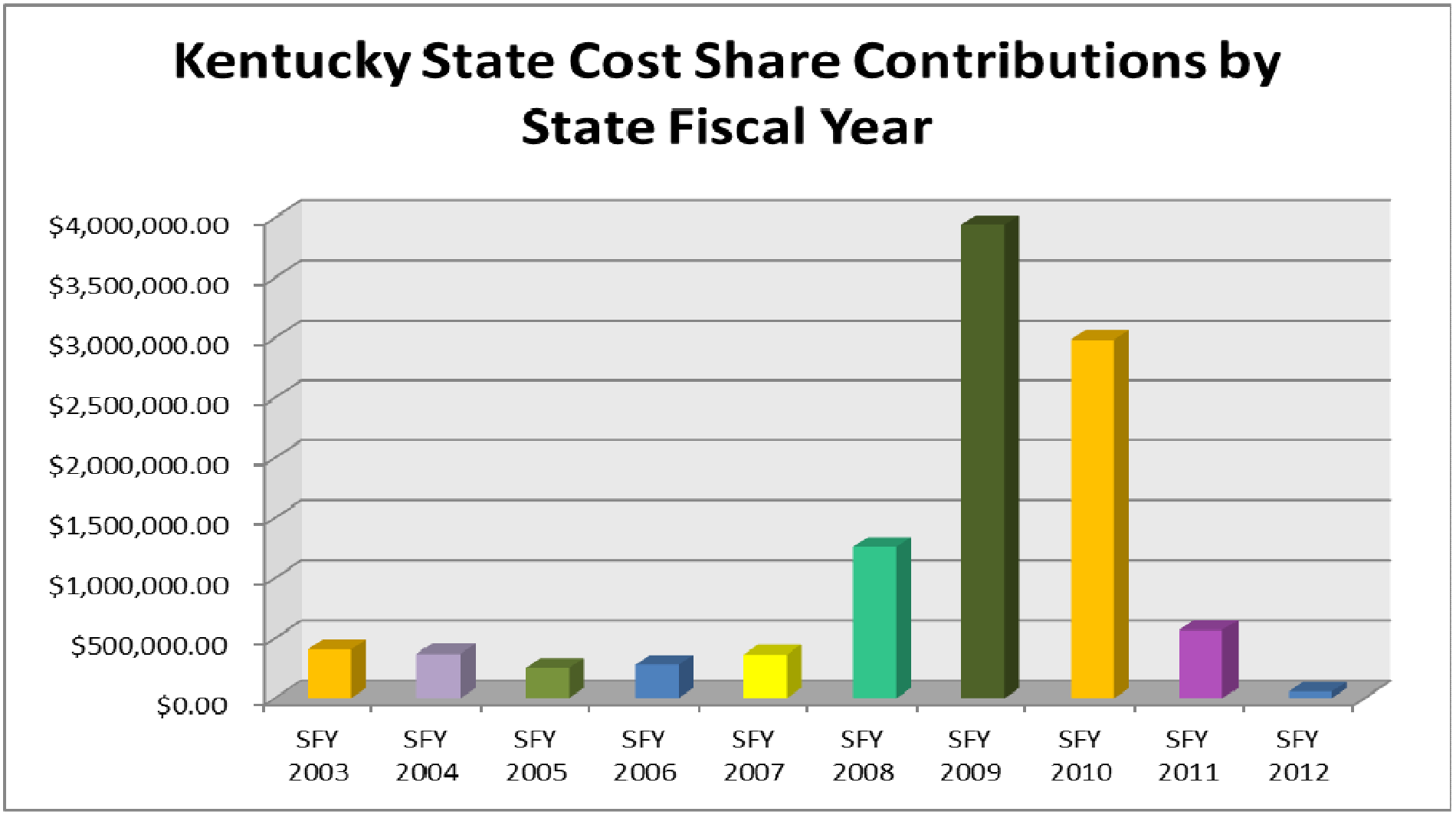
- Assisting with program promotion, planning, contract writing &modifications, on-site measurements and practice layout.
- Site visits during practice installation; practice evaluation, final and annual status reviews.
- Providing technical guidance on vegetation plantings which includes site preparation, planting, and post-planting management to ensure successful stand establishment.
- Assisting district conservationists with writing and/or modifying participants' contracts.

No additional information was received from the Kentucky Department of Fish and Wildlife Resources to include in this year's report.

KDFWR biologist on native warm-season grass seed drill.
Photo courtesy of KDFWR.

Kentucky Division of Conservation
(KDOC)

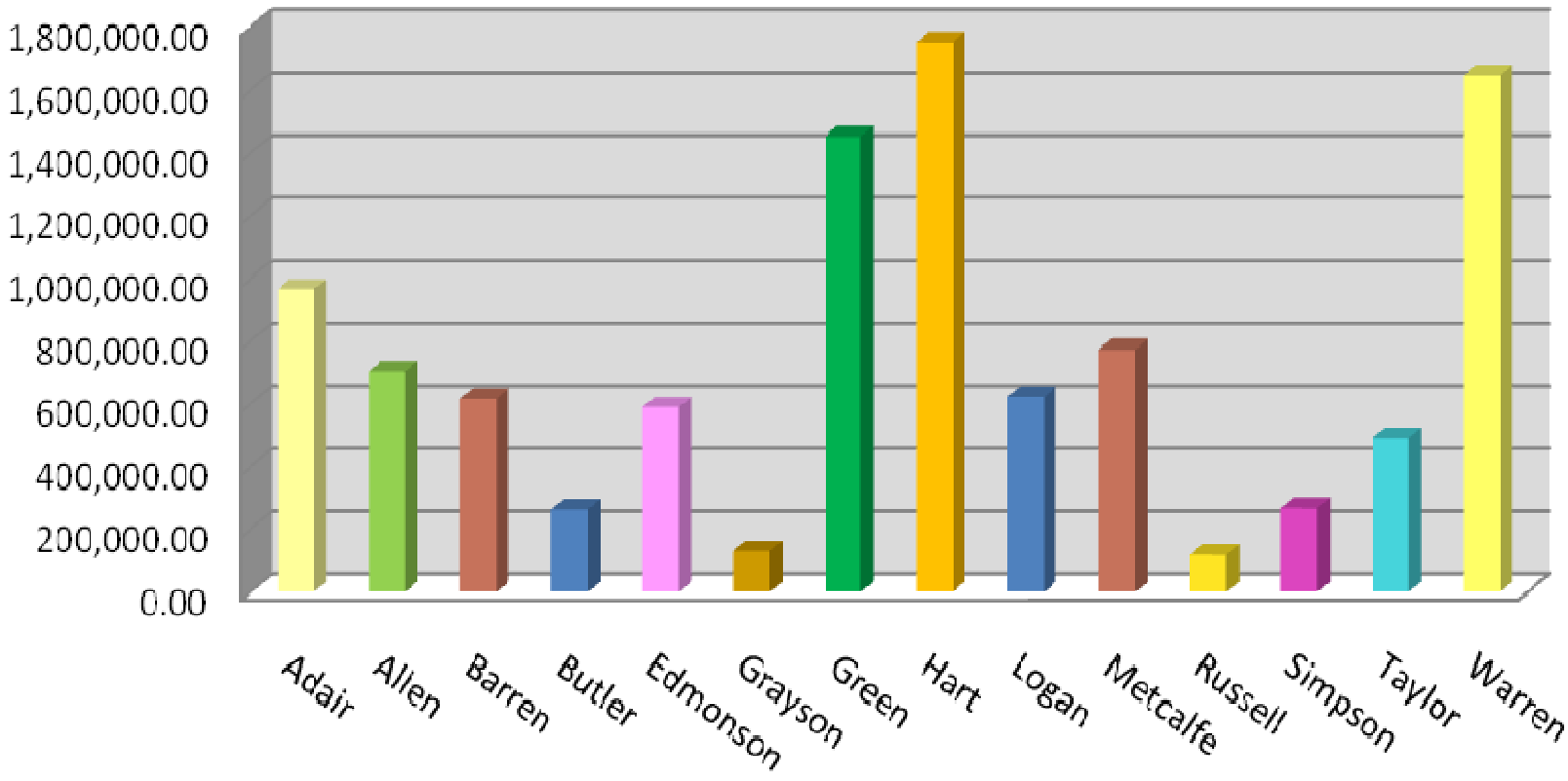
The Kentucky Division of Conservation is the state contact agency for the Green River CREP. The Division administers the financial portion of CREP (state cost share and incentive payments), in addition to working closely with local conservation districts and partner agencies in the promotion and administration of the program. The Green River CREP coordinator works through, and is primarily funded by, the KDOC. The following photographs are of state practices offered for CREP, and the chart on the following page documents funds expended for CREP state cost share and incentive payments.



SFY 2003	SFY 2004	SFY 2005	SFY 2006	SFY 2007	SFY 2008	SFY 2009	SFY 2010	SFY 2011	SFY 2012
$403,287.00	$369,958.00	$248,246.00	$276,246.00	$363,087.00	$1,256,224.00	$3,938,889.00	$2,981,672.00	$565,189.00	$53,756.00

TOTAL: $10,456,554.00

Kentucky State Cost Share Contributions by Coutnty



Adair	Allen	Barren	Butler	Edmonson	Grayson	Green	Hart	Logan	Metcalfe	Russell	Simpson	Taylor	Warren
$966,000	$703,607	$618,475	$263,653	$589,492	$130,138	$1,453,863	$1,753,842	$623,947	$774,692	$117,674	$267,428	$490,346	$1,703,397

Kentucky Division of Forestry
(KDOF)

The Kentucky Division of Forestry has been primary in providing technical assistance and guidance with tree planting practices within the Green River CREP. In addition to technical guidance and assistance, KDOF personnel have also assisted landowners with tree seedling orders, most of which are through the KDOF state nursery.

Green River CREP Tree Planting in Edmonson County. Photo courtesy of Barren County NRCS Office

III. Monitoring and Evaluation

Western Kentucky University is responsible for the organization and implementation of a comprehensive monitoring and evaluation plan to determine the success of program goals. This effort is funded through various grant sources and is being implemented within the watershed.

A monitoring report was submitted by Dr. Ouida Meier, WKU Biology Department. It is available online by clicking the following link (http://bioweb.wku.edu/faculty/omeier/crep/NRCS_CREP_Nov12_report-summary-final.doc).

IV. Conclusion

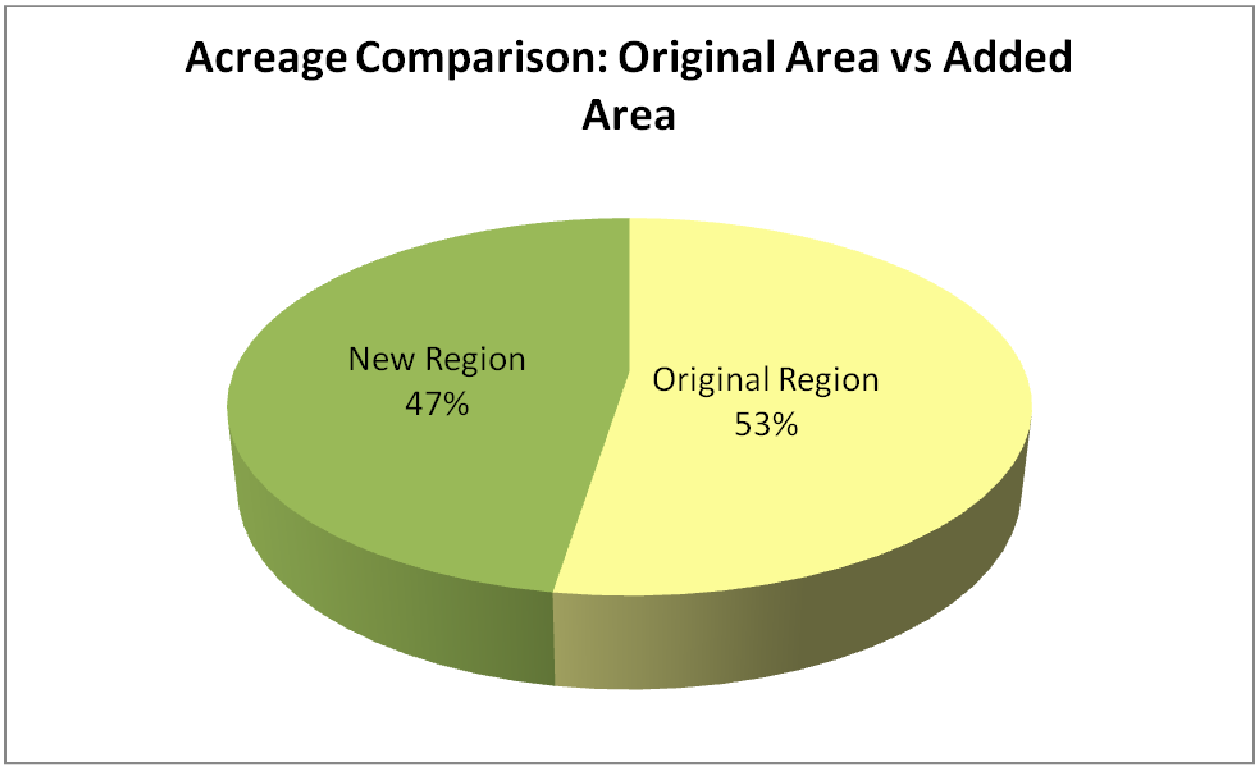
General Financial Overview: The Green River CREP was approved as a 100,000 acre and $110,000,000 program which was divided among USDA ($88,000,000 commitment), the Commonwealth of Kentucky state government ($17,000,000 commitment), and The Nature Conservancy ($5,000,000 commitment). These funds were those that were to be paid to landowners for conservation practices. Any expenses involved in the working and management of the program were not included in this total.

State Partners: The Commonwealth of Kentucky's state government agencies have paid just under $11,000,000 to landowners in the forms of cost share assistance, practice incentives, and practice maintenance assistance. Some limited state cost share and incentive payments will continue be made in the coming year due to regulatory annual limitations and assistance to KDFWR on mid contract management assistance, but these payments will not have a significant impact on the overall total. After review of previous TNC monies paid to landowners and knowledge that some limited activity on easements has occurred, an estimate would be that their contribution should approach $1,000,000.

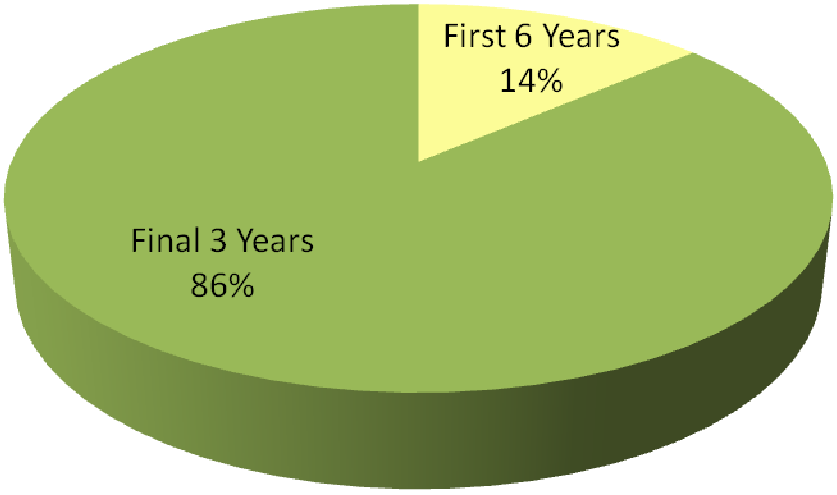
Federal Partners: Federal expenditures have far exceeded the originally pledged $88,000,000. Federal payouts will easily exceed $260,000,000 over the lifetime of these contracts. There are a few obvious reasons for these numbers to be larger than originally thought. The Farm Safety Administration (FSA) office reviewed soil rental rates across the Commonwealth. Many rental rates were increased in the CREP counties. At nearly the same time, the expansion amendment, which added counties to the southwest was approved. The expansion encroached into a more "high-end" agricultural area, encompassing some of the more productive agricultural counties in the Commonwealth. Soil rental rates are much higher in these counties, thus increasing cost on payments. A detailed statistical analysis would be needed to fully identify the scope of the economics

of this program. This is also a primary reason that the state contributions have not been as high as the federal. State contributions are based on cost share amounts only and are unrelated to soil rental rate incentives.

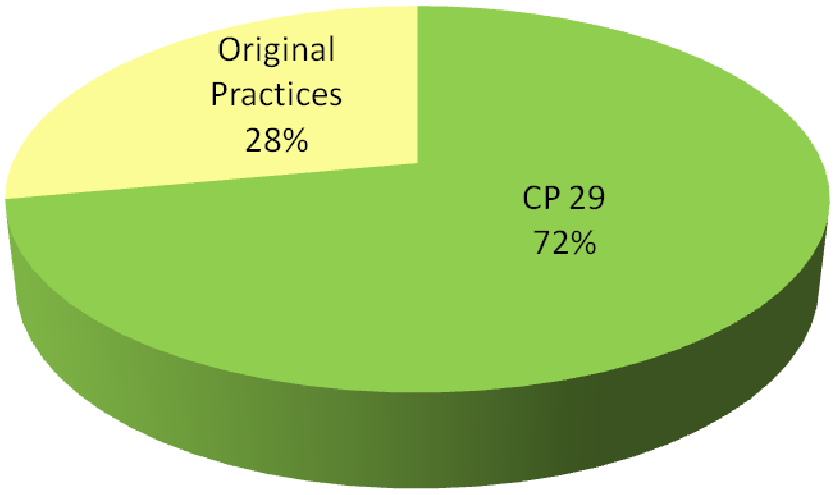
The following charts represent a simple comparison of acreage enrolled into the program. It is related to the above conversation, as it shows how much of the enrolled land is in the expanded program area. Also, note the one added practice from the addendum (CP29), and how much of the acreage was enrolled after this addendum took effect. This information is a very important component of this program's success.



Acreage Comparison: First 6 Years of Program vs Final 3 Years of Program



Acreage Comparison by Practice: CP29 vs Original Practices



The success of the Green River CREP in this small, rural area of south central Kentucky truly represents what this program was designed to do. The program started out rather slowly as compared with some other states that had already established CREP programs of their own. Partner agency personnel identified gaps in CREP program policy and design with the local geographic and land use characteristics and created an amendment that truly embodies the intent of CREP. This is evident with the program's accomplishments in recent years. The enrollment data and conservation benefits speak for themselves. In addition to those programmatic changes that better fit the area, when the amendment was rolled out to a new part of the region, the CREP staff was much better prepared and ready for what had to be accomplished due to the successes and failures from early in the process. It was an excellent lesson learned, and the field staff's adjustments were instrumental to the very quick success that was experienced.

Riparian Buffer in Allen County, December 2009

It is hoped that future endeavors similar to CREP will be able to benefit from the adjustments that were made in this program. It is a very nice and satisfying conclusion to the program, but early problems should be noted so that the next program will be able to be implemented as smoothly as was the amendment and expansion. Concerns such as agency responsibilities and "boundaries;" personal, individual attitudes about the success of the program, i.e. employee "buy-in;" proper planning and reasonable expectations;

timely hiring of a program coordinator and proper placement of that position; basic communication; and several other items all played a part of the early success level of this program but were overcome when the amendment was implemented. It is a testament to the agencies and the individuals involved that this program attained the success that it did as quickly as it did. Other, less obvious, lessons were also learned. For example in the current time of economic hardship, things such as the CREP National Forums that were conducted early in the decade may seem excessive to some with regard to paying for employee travel, etc. However, one of the key successes of this program was attained by simple networking and conversation at one of these forums. During a conversation about how to amend the program and more effectively protect the unique karst landscape, employees from another state suggested an additional practice, the CP29, which was used in that state for protection of sinkholes and karst features. That practice was included in the amendment, and now, at the conclusion of the program, and despite only being in place for nearly two years, that practice has accounted for 73 percent of the Green River CREP's total acreage. It is sometimes small experiences and lessons such as this that can make huge differences in even the largest of programs.

There are very few contracts still left to be installed in the upcoming year, and a few federal and state cost shares and incentives left to be paid. However, in large part, the bulk of the work has been completed. All of the allotted acreage has been contracted, and the program is winding down. It has been a success for both the local landowners and the resources within the area.

V. Acknowledgements

Partner Listing:

Kentucky Department of Fish and Wildlife Resources
Kentucky Division of Conservation
Kentucky Division of Forestry
Kentucky Division of Water
Kentucky General Assembly
Kentucky Soil and Water Conservation Commission
Kentucky State Nature Preserves Commission
Kentucky's Soil and Water Conservation Districts
Mammoth Cave National Park
The Nature Conservancy
The Office of the Governor
USDA Farm Service Agency
USDA Natural Resources Conservation Service
Western Kentucky University

Thanks to the partner agencies and organizations for their commitment to this project and to the landowners and natural resources of this unique area. Also, thanks to those partner agency personnel that supplied information for the completion of this report.