SEIZING A WATERSHED MOMENT

Making EQIP Work for Water Quality in 10 Mississippi River Border States

Missouri

Environmental Quality Incentives Program
State Report 8 of 10

ENVIRONMENTAL WORKING GROUP

APPENDIX – STATE REPORTS

MISSOURI
ENVIRONMENTAL QUALITY INCENTIVES PROGRAM

OVERVIEW

Missouri received an average of $21.8 million in EQIP technical and financial assistance funds per year from 2003 to 2007, ranking it 3rd out of the 10 states that border the Mississippi River for EQIP funds. In FY2008, 60 percent of MO-EQIP funds were reserved for livestock-related conservation practices provided through the Animal Waste application categories while the remaining 40 percent of funds were provided through the General EQIP applications, Flood Impacted applications, and Windbreak/ Shelterbreak applications categories. Only the General EQIP applications compete against each other within each of Missouri's 114 counties while the other 3 types of applications compete on a statewide basis.

Applications to participate in EQIP are evaluated using multiple ranking criteria that include: (1) national priorities, (2) state issues, (3) local issues, (4) cost-efficiency score, and (5) a planned conservation practices checklist. Missouri uses ranking sheets called "Application Data Forms" that contain these 5 criteria. Missouri EQIP uses 114 County Application Data Forms that double as both a General EQIP application-ranking sheet and as an Animal Waste application sheet. Missouri EQIP has separate Application Data Forms for Flood Impacted-Bottom Land and Windbreak/Shelterbreak applicants.

Missouri's State Conservationist determines the questions and point values for the state ranking criteria and evaluates applications competing statewide. District conservationists in each Soil and Water Conservation District determine the ranking criteria and evaluate applications for counties, while four "Area" Conservationists representing the four regional Areas in Missouri review the work of these district conservationists. The Area Conservationists or the State Conservationist can use discretion to determine which projects are funded if certain projects are close in ranking criteria values. Missouri county Local Working Groups provide input to the Area Level Group while the State Technical Committee provides input to the State Conservationist.

MISSOURI EQIP WEBSITE

http://www.mo.nrcs.usda.gov/programs/eqip/eqip.html

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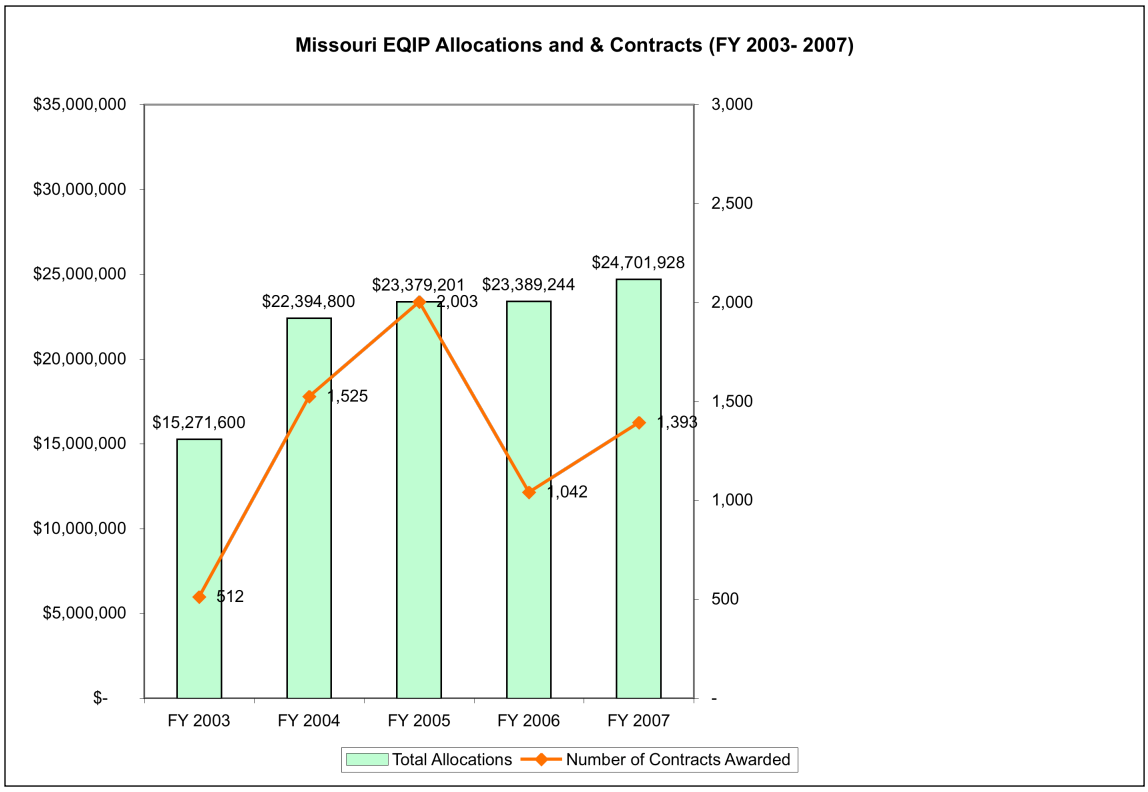
FUNDING AND REACH OF EQIP

EQIP funding is allocated to states using a national formula. The chart below shows the amount of financial and technical assistance Missouri has received from FY2003 to 2007 and the number of contracts awarded each fiscal year. A total of 6,475 contracts have been entered into with producers between 2003 and 2007 providing $109.1 million and addressing 909,946 acres in the state.



Source: EWG compiled annual data from EQIP's "Allocation" and "Contract" tables found on the USDA NRCS website: http://www.nrcs.usda.gov/programs/EQIP/.

KEY FACTORS ANALYSIS

We analyzed the following factors for indications of the extent to which EQIP in Missouri is focused on reducing sediment and nutrient loads to streams, lakes, and rivers: (1) the presence or absence of qualitative or quantitative goals for pollutant reductions, (2) the methods used to allocate state-level funds to counties or other sub-state levels or to specific projects or priorities, and (3) the application ranking criteria used to select participants in EQIP. We relied primarily on the information and data presented on the Natural Resources Conservation Service (NRCS) website to complete this analysis and followed up on our investigation with interviews of the state EQIP program manager.

Goals

EWG did not find evidence to suggest that Missouri EQIP has a) established explicit quantitative or qualitative goals for EQIP to clean up agricultural sources of pollution, b) identified, which lakes, streams, or tributaries are priorities for improvement, c) set a timetable to achieve those goals, or d) established a means to track progress toward the goals. Missouri's application ranking systems do create an implicit set of priorities for treating water quality, but measurable goals and timelines do not exist.

EWG recommends that Missouri EQIP set clear and specific goals for how much and what types of agricultural pollution need to be reduced, which lakes, streams or tributaries are priorities for improvement, and a timetable to achieve those goals. EWG also recommends that Missouri EQIP develop systems to track, evaluate, and report on the environmental performance of EQIP.

Fund Allocation

In FY2008, 60 percent of MO-EQIP funds were reserved for livestock-related conservation practices through the Animal Waste and General application funding categories, while the remaining 40 percent were provided for General EQIP applications, Flood Impacted applications, and Windbreak/Shelterbreak applications categories. Grazing-related livestock practices are usually submitted and funded under the General EQIP funding code available in all counties.[1]

The Animal Waste, Flood Impacted, and Windbreak/Shelterbreak applications compete against the same type of applications on a statewide basis while the General EQIP applications compete against each other within each of Missouri's 114 counties.

Darlene Johnson, Missouri's Resource Conservationist for Programs described, in writing, Missouri EQIP's funding allocation formula for distributing funds to its counties this way:

> "Missouri follows guidance established in the Conservation Program Manual, Section 515, Subpart G Fund Allocation. Once statewide funding pool allocations are made, the State Conservationist allocates the remaining funds to the four administrative areas, based upon a base allocation per county. If a county does not use its entire allocation (due to a lack of eligible applications), the portion remaining is allocated to another county with the highest ranked unfunded application, within the same administrative area."

EWG recommends that if funds are allocated directly to local jurisdictions, Missouri EQIP

[1] Written comments from R. Darlene Johnson, Resource Conservationist (Programs), and Missouri NRCS.

should use allocation formulas based primarily on natural resource and environmental factors, rather than generic production factors, to channel more funding to localities with significant environmental problems associated with agriculture.

In the April 2008 State Technical Committee Meeting, EWG found a discussion of the following funding allocations for FY2007 and FY2008 and placed the data in a table. [2]

FY2007 Obligated		**FY2008 Obligated**	
Total	$20.4 million	**Total**	$18.5 million
Selected categories:		Selected categories:	
Animal Waste	$5.8 million	Animal Waste	$5.9 million
Beginning Farmer	$1.8 million	Forestry	$3.6 million
Limited Resource Farmer	$970,000	Bottomland	$700,000
Windbreak	$407,000		

EWG recommends that Missouri EQIP's best opportunity for improving water quality is to fund well-designed, watershed-based clean-up projects. This approach encourages multiple farmers within a watershed to reduce pollution to a specific lake, stream, or tributary to the Mississippi River.

The problem-solving advantages of this approach are well understood. They include focusing resources in specific locations to solve well-defined problems using a strategy that directs funding to those farmers within the watershed who can do the most to reduce pollution. Ideally, such water quality improvement projects include developing monitoring and evaluation systems to adjust the strategy and resource allocations based on the results that are being realized. Ramping up the emphasis in EQIP on such watershed-based clean-up projects would dramatically increase the effectiveness of the program.

EWG recommends that Missouri EQIP allocate 60 percent of its EQIP funds to watershed-based clean-up projects by 2012. Missouri EQIP should then allocate the remaining 40 percent of funds by 2012 to funding pools that target high priority natural resource and environmental problems. These state-level funding pools create important opportunities to focus EQIP on the most pressing designated problems. The funding pools allow EQIP managers to select the best applications from all the applications proposing to address the same natural resource or environmental problem.

Application Ranking Criteria

Applications to participate in Missouri EQIP are evaluated using multiple ranking criteria that include: (1) national priorities, (2) state issues, (3) local issues, (4) cost-efficiency score, and (5) a planned conservation practices checklist. Missouri uses ranking sheets

[2] State Technical Committee Meeting Minutes, April 2008.
http://www.mo.nrcs.usda.gov/technical/out/stc/April%2010%2008%20STC%20Minutes.doc

called "Application Data Forms" that contain these 5 criteria. Missouri EQIP uses 114 County Application Data Forms that double as both a General EQIP application-ranking sheet and as an Animal Waste application sheet. MO-EQIP has separate Application Data Forms for Flood Impacted-Bottom Land and Windbreak/Shelterbreak applicants.

Thus, Missouri EQIP uses 3 types of application data forms but has 4 funding categories. All three types of Missouri EQIP application data forms ask yes/no questions, and though there are points associated with each of the questions, no points are provided on Missouri EQIP's website. Applications that receive a greater total point score get a higher priority for participation in EQIP, within the selected funding category. See Box 1 for background information on the cost-efficiency score.

Box 1. The Cost-Efficiency Score

A cost-efficiency score is generated for each application to determine how effective the cost-shared practices will be at addressing the priority resource concerns (soil, water, air, plant, animal, and human). The cost-efficiency score is calculated by multiplying the practice(s)'

Conservation Practice Physical Effects (CPPE) value(s)
x Service life of the practice(s)
/ Average cost of installing and maintaining the practice(s)

NRCS maintains a national database of each practice's CPPE value. CPPE values range from -5 to + 5 reflecting the practice's ability to worsen or improve each resource concern. The CPPE value can be modified by the state or local jurisdiction to reflect the soil, weather, topographic, and other state or local conditions that may impact the effectiveness of the practice.

All 10 Mississippi River border states are using the NRCS Pro-Tracts Cost-Efficiency software to calculate a Cost-Efficiency score for each application. However, because the Cost-Efficiency score is embedded in the software, this step in the ranking process is not transparent since the state EQIP managers were unable to fulfill our request of reviewing the CPPE values given to practices funded by EQIP.

For information purposes, we randomly chose Callaway County to review and Resource Conservationist Johnson provided upon request, Callaway County's multipliers for 2008: National – 4, State – 0.18, Local – 1, and Cost-Efficiency – 10. When points are summed in each issue section and multiplied by the multiplier, Missouri EQIP arrives at the following percentages of weighted scores in each of the 4 main sections, which sum to the final score: National – 35 percent, State – 2 percent, Local – 21 percent, and Cost-efficiency – 43 percent.

Since the only section asking whether applications are located in 303(d) impaired watersheds is the State section, giving only 2 percent of an application's ranking score to the State section raises a question about the level of emphasis Missouri EQIP places on geographic priorities.

Our efforts to determine how much priority Missouri EQIP places on nutrient and sediment pollution and on geographic priority areas was hampered because we were unable to receive a copy of a Summary sheet with points. Thus, we will comment only on the number and quality of questions that appear to give priority to these 3 issues.

In addition, the lack of specificity in the ranking criteria made it difficult to conclude whether many ranking questions were aiming to select applicants that reduced sediment and nutrient pollution and applicants located in priority areas. These complications are described in Box 2.

Box 2. The Lack of Specificity in Ranking Criteria

The ranking criteria in all 10 Mississippi River border states lacked sufficient specificity for us to determine with real certainty the emphasis each state was giving in its ranking sheets to the reduction of sediment and nutrient pollution and to areas of geographic importance. For example, many ranking factors do not specify the particular source of natural resource or environmental problems, such as sediment or nutrient loss from cropland. Instead the ranking factors refer to more generic sources of problems, such as nonpoint source pollution.

In those cases where more specific types of pollutants like sediments or nutrients were cited, they were usually included in a longer list of pollutants, such as pathogens, pesticides, or excess salinity, making determination of the priorities implicit in the ranking criteria difficult. A similar lack of specificity hampered our ability to determine the emphasis placed on location of an application within a priority watershed or other geographic unit.

Despite these difficulties, it is clear that the factors used in ranking criteria and the priority assigned those factors through point allocations and multipliers are critical determinants of effectiveness of EQIP in reducing sediment and nutrient pollution.

Regarding emphasis on geographic priorities, a review of the FY2008 Callaway County Application Data Form (see Appendix) does not provide clear answers about how much priority Missouri EQIP may give to geographic priorities. In the National Ranking Factors section, the National Priorities Question 1 includes a reference to impaired watersheds:

> "Will the treatment you intend to implement using EQIP result in considerable reductions of non-point source pollution, such as nutrients, sediment, pesticides, excess salinity in impaired watersheds, groundwater contamination or point source contamination from confined animal feeding operations?"

This question does give some priority to an application located in an impaired watershed as part of a larger priority for addressing nonpoint and point source pollution.

In the state issues section of the Callaway County Application Data Form, there are 2 geographically related questions.

> "Offered acres are in the watershed of a public drinking water supply reservoir, or 303d watershed with at least one EQIP planned practice that addresses the water quality concern in the watershed area identified."
>
> "Planned EQIP practice(s) include installing buffers on a) 50 percent or more or b) 75 percent or more of the eligible perennial or intermittent streams, wetlands, sinkholes, or permanent waterbodies, and/or limiting or excluding livestock access to streams."

Regarding emphasis on reducing nutrient and sediment pollution, a review of Callaway County's Form does not provide clear answers about how much priority Missouri EQIP places on these two specific water quality impairments. For example, National Priority Question 1 does mention the words "nutrients" and "sediment" but the question lacks sufficient specificity for us to distinguish between points awarded for treatment of nutrients and sediments versus points awarded for reducing excess salinity or pesticides.

Callaway's Summary includes National Priorities Question 4 related to sediment pollution:

> "Will the treatment you intend to implement using EQIP result in a considerable reduction in soil erosion and sedimentation from unacceptable levels on agricultural land?"

Three questions in Callaway County's State Issues section are likely to address sediment pollution and nutrient pollution: a) offered acres include a conservation practice(s) that will reduce sheet and/or rill soil erosion, b) planned EQIP practice(s) include nutrient management, and c) planned improvements to an existing animal waste management system and/or development of a CNMP by a TSP.

In Callaway County's Local Issues section, 3 questions are likely to address sediment pollution and nutrient pollution: a) Will more than 50%, 70% or 85% of the cropland acres treated in EQIP have a Land Capability Class 3 or higher?[3], b) Will the planned EQIP practices include the Pest Management (595) conservation practice and the Nutrient Management (590) and/or Waste Utilization (633) conservation practices on 100% of the enrolled cropland?, and c) Will the planned EQIP practice include the Terrace (600) conservation practice?

Without access to the points assigned to the factors listed above, it is impossible to conclude how much emphasis in raw unweighted points Missouri is providing for the

[3] A Land Capability Class rating of II is defined as "soils (that) have moderate limitations that reduce the choice of plants or require moderate conservation practices" while Subclass e "is made up of soils for which the susceptibility to erosion is the dominant problem or hazard affecting their use. Erosion susceptibility and past erosion damage are the major soil factors that affect soils in this subclass." Thus, Class ratings of greater than IIe have greater limitations and greater susceptibility to erosion and other environmental hazards.

reduction of sediment and nutrient pollution or to locations within impaired watersheds or other geographic units.

EWG recommends that Missouri EQIP revise their ranking systems to increase the priority given to applications located in high priority watersheds that will reduce sediment and nutrient pollution. Sediment and nutrient pollution are the two most important pollutants of streams, lakes, and reservoirs in the 10 states bordering the Mississippi River, the main stem of the Mississippi River, and the Dead Zone in the Gulf of Mexico.

Conclusion

We find that EQIP has not been deployed as effectively as it could be in Missouri or any of the 9 states that border the Mississippi River. The methods used to decide how to spend EQIP dollars within the state and which farmers will get those dollars are more likely to result in diffuse and fragmented efforts to reduce pollution from farms rather than the focused and coordinated effort needed to solve both local and regional water pollution problems.

Watershed-based water quality clean-up projects are the best use of federal taxpayer resources and offer the greatest hope for cleaning up the unintended environmental damage of agriculture. These projects entail setting goals to clean up specific bodies of water that are deemed the highest priorities, determining how many of the most cost effective practices are needed, and persuading key farmers to participate in the project.

To quickly ramp up the effectiveness of EQIP, Missouri NRCS should:

1. Set clear and specific goals for how much pollution needs to be reduced, which lakes, streams or tributaries are priorities for improvement, and a timetable to achieve those goals.

2. Use 60 percent of EQIP dollars by 2012 to fund watershed-based water quality clean-up projects that encourage multiple farmers within selected watersheds to reduce pollution to specific lakes, streams, or tributaries to the Mississippi River.

3. Use 40 percent of EQIP funds by 2012 in state-level funding pools to target the highest priority natural resource and environmental problems in each state.

4. Select farmers to participate in EQIP who can do the most to contribute to watershed-based clean-up projects or solve high priority problems.

APPENDIX— Missouri EQIP Ranking Criteria
MISSOURI EQIP FY 2008 Callaway County Application Data Form

Missouri Environmental Quality Incentives Program (EQIP)
2008 Callaway County Application Data Form

Applicant(s):		**Date:**	
Address:			
Farm Number:	**Tract Number:**	**Acres in Application:**	
LRF:	**Beginning Farmer:**	**Livestock Type:**	

Answer each question below, considering conservation practices planned to receive EQIP financial assistance. All applicants must sign a CPA-1200 in addition to this form to be considered for EQIP funding.

	NRCS National Conservation Priorities		
1	Will the treatment you intend to implement using EQIP result in considerable reductions of non-point source pollution, such as nutrients, sediment, pesticides, excess salinity in impaired watersheds consistent with TMDL's where available as well as the reduction of groundwater contamination or point source contamination from confined animal feeding operations?	Yes	No
2	Will the treatment you intend to implement using EQIP result in the conservation of a considerable amount of ground or surface water resources?	Yes	No
3	Will the treatment you intend to implement using EQIP result in a considerable reduction of emissions, such as particulate matter, nitrogen oxides (NO_x), volatile organic compounds, and ozone precursors and depleters that contribute to air quality impairment violations of National Ambient Air Quality Standards?	Yes	No
4	Will the treatment you intend to implement using EQIP result in a considerable reduction in soil erosion and sedimentation from unacceptable levels on agricultural land?	Yes	No
5	Will the treatment you intend to implement using EQIP result in a considerable increase in the promotion of at-risk species habitat conservation?	Yes	No
	Missouri State Issues		
6	Offered acres are in the watershed of a public drinking water supply reservoir, or in a watershed of a 303d list stream, with at least one EQIP planned practice that addresses the water quality concern in the watershed area dentified.	Yes	No
7	Planned EQIP practice(s) include installing buffers on 50 percent or more of the eligible perennial or intermittent streams, wetlands, sinkholes, or permanent waterbodies, and/or limiting or excluding livestock access to streams.	Yes	No
8	Planned EQIP practice(s) include installing buffers on 75 percent or more of the eligible perennial or intermittent streams, wetlands, sinkholes, or permanent waterbodies, and/or limiting or excluding livestock access to streams.	Yes	No
9	EQIP planned practice(s) address basic habit requirements of bobwhite quail on 50 percent or more of the eligible offered acres.	Yes	No
10	EQIP planned practice(s) address basic habit requirements of bobwhite quail on 75 percent or more of the eligible offered acres.	Yes	No
11	EQIP planned practice(s) benefit a federal threatened or endangered species or a state rare species.	Yes	No
12	EQIP planned practice(s) on offered cropland acres include a conservation practice(s) that will reduce sheet and/or rill soil erosion from the existing condition, or treated to address air quality (for example, residue management, crop rotation, cover crop, and/or buffer practices) on 25 percent or more of the eligible cropland acres.	Yes	No
13	EQIP planned practice(s) on offered cropland acres include a conservation practice(s) that will reduce sheet and/or rill soil erosion from the existing condition, or treated to address air quality (for example, residue management, crop rotation, cover crop, and/or buffer practices) on 50 percent or more of the eligible cropland acres.	Yes	No
14	EQIP planned practice(s) on offered cropland acres include a conservation practice(s) that will reduce sheet and/or rill soil erosion from the existing condition, or treated to address air quality (for example, residue management, crop rotation, cover crop, and/or buffer practices) on 75 percent or more of the eligible cropland acres.	Yes	No
15	Application includes EQIP planned practice(s) on currently irrigated cropland that will improve Irrigation Water Management efficiencies on 50 percent or more of the eligible offered cropland acres.	Yes	No
16	Application includes EQIP planned practice(s) on currently irrigated cropland that will improve Irrigation Water Management efficiencies on 75 percent or more of the eligible offered cropland acres.	Yes	No
17	Planned EQIP cropland practices include Nutrient Management on 50 percent or more of the eligible offered cropland acres.	Yes	No
18	Planned EQIP cropland practices include Nutrient Management on 75 percent or more of the eligible offered cropland acres.	Yes	No

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Missouri Environmental Quality Incentives Program (EQIP) 2008 Callaway County Application Data Form			
Missouri State Issues			
19	Application includes EQIP planned practice(s) that will improve grazing efficiency through a prescribed grazing system on 25 percent or more of the eligible offered acres.	Yes	No
20	Application includes EQIP planned practice(s) that will improve grazing efficiency through a prescribed grazing system on 50 percent or more of the eligible offered acres.	Yes	No
21	Application includes EQIP planned practice(s) that will improve grazing efficiency through a prescribed grazing system on 75 percent or more of the eligible offered acres.	Yes	No
22	Application includes planned forest stand improvement (thinning) on woodland stands needing treatment, development of a conservation plan on forest land, and/or planned treatment of eroding areas on forest land (harvest trails, log landing areas, gullies, etc).	Yes	No
23	Application includes a resource concern(s) subject to Local, County, State, or Federal Regulation.	Yes	No
24	Application is on existing livestock feeding operation and includes planned improvements to an existing animal waste management system, and/or development of a CNMP by a TSP.	Yes	No
25	Application includes an existing animal feeding operation with a current CNMP developed prior to submission of EQIP application.	Yes	No
26	EQIP planned practices on livestock confinement facilities address air quality odor mitigation needs.	Yes	No
27	EQIP planned practices on farmstead headquarters area address energy conservation needs which have a positive impact on mitigating air temperature and air movement.	Yes	No
Local Issues			
28	Will more than 50% of the cropland acres treated in EQIP have a Land Capability Class of 3 or higher?	Yes	No
29	Will more than 70% of the cropland acres treated in EQIP have a Land Capability Class of 3 or higher?	Yes	No
30	Will more than 85% of the cropland acres treated enrolled in EQIP have a Land Capability Class of 3 or higher?	Yes	No
31	Will the planned EQIP practices include the Pest Management (595) conservation practice and the Nutrient Management (590) and/or the Waste Utilization (633) conservation practices on 100% of the enrolled cropland?	Yes	No
32	Will the planned EQIP practices include the Forest Stand Improvement (666) conservation practice?	Yes	No
33	Will the planned EQIP practices include the Prescribed Grazing (528) conservation practice?	Yes	No
34	Will the planned EQIP practices include the Terrace (600) conservation practice?	Yes	No

Missouri Environmental Quality Incentives Program (EQIP)
2008 Callaway County Application Data Form

Planned Conservation Practices

The following list contains every conservation practice eligible for 2008 EQIP. List the field(s) for each conservation practice(s) that is planned for financial assistance through this EQIP application.

____ Agrichemical Mixing Facility
____ Alley Cropping
____ Anaerobic Digester - Ambient Temp.
____ Anaerobic Digester - Controlled Temp.
____ Animal Mortality Facility
____ Brush Management
____ Closure of Waste Impoundments
____ Composting Facility
____ Comprehensive Nutrient Mgmt. Plan
____ Conservation Cover
____ Conservation Crop Rotation
____ Contour Buffer Strips
____ Cover Crop
____ Critical Area Planting
____ Diversion
____ Drainage Water Management
____ Early Successional Habitat Dev/Mgmt
____ Fence
____ Field Border
____ Filter Strip
____ Forest Slash Treatment
____ Forest Stand Improvement
____ Forest Trails and Landings
____ Grade Stabilization Structure
____ Grassed Waterway
____ Heavy Use Area Protection
____ Herbaceous Wind Barriers
____ Irrigation Land Leveling
____ Irrigation Systems - Microirrigation
____ Irrigation System - Sprinkler
____ Irrigation System - Surface and Subsurface
____ Irrigation System - Tailwater Recovery
____ Irrigation Water Conveyance
____ Irrigation Water Management
____ Manure Transfer
____ Nutrient Management
____ Pasture and Hayland Planting
____ Pest Management
____ Pipeline
____ Prescribed Burning
____ Prescribed Forestry
____ Prescribed Grazing
____ Pumping Plant
____ Residue Management, No Till/Strip Till
____ Restoration & Mgmt of Declining Habitats
____ Riparian Forest Buffer
____ Shallow Water Management for Wildlife
____ Silvopasture Establishment
____ Spring Development
____ Stream Crossing
____ Streambank and Shoreline Protection
____ Stripcropping
____ Structure for Water Control
____ Terrace
____ Tree/Shrub Establishment
____ Tree/Shrub Site Preparation
____ Underground Outlet
____ Upland Wildlife Habitat Management
____ Use Exclusion
____ Vegetative Barrier
____ Vertical Drain
____ Waste Facility Cover
____ Waste Storage Facility
____ Waste Treatment Lagoon
____ Waste Utilization
____ Water and Sediment Control Basin
____ Water Well
____ Watering Facility
____ Well Decommissioning
____ Wetland Restoration
____ Wetland Wildlife Habitat Management
____ Wildlife Watering Facility
____ Windbreak/Shelterbelt Establishment