

## Water

### 59. **Accomplishments of the USDA hydrologic unit area projects.**

Ebodaghe, Denis Abumere  
Washington, D.C.: U.S. Dept. of Agriculture,  
Agricultural Stabilization and Conservation Service;  
Extension Service; Soil Conservation Service;  
128 p.: maps. (1993)

*Notes:* Cover title. "Compiled by Denis Ebodaghe"--  
Foreword. "June 1993."

Alternate pages are numbered.

*NAL Call #:* aTD223.A26--1993

*Descriptors:* Water quality management---United  
States/ Nonpoint source pollution---United States/  
Agricultural pollution---United States

This citation is from AGRICOLA.

### 60. **Achieving restoration success: Myths in bottomland hardwood forests.**

Stanturf JA; Schoenholtz SH; Schweitzer CJ; and  
Shepard JP

*2nd International Congress on Restoration Ecology*  
9 (2): 189-200; 62 ref. (2001)

This citation is provided courtesy of CAB  
International/CABI Publishing.

### 61. **Benefit-cost analysis of best management practices implemented to control nitrate contamination of groundwater.**

Yadav, S. N. and Wall, D. B.  
*Water Resources* 34 (3): 497-504. (Mar. 1998)  
*NAL Call #:* 292.8 W295; *ISSN:* 0043-1397  
[WRERAQ]

*Descriptors:* nitrates / nitrate nitrogen/ groundwater  
pollution/ pollution control/ water quality/ cost benefit  
analysis/ control programs/ Minnesota/ Garvin Brook  
Rural Clean Water Program

*Abstract:* Implementing best management practices  
(BMPs) can reduce nitrate concentration in  
groundwater, but does it pay to invest in programs  
that reduce nitrate by encouraging increased  
adoption of BMPs? In this paper we evaluate water  
quality improvement by benefit-cost analysis of  
adopting BMPs under such a program. The analysis  
shows that under current levels of contamination,  
costs of the program to foster BMP implementation  
will be equal to annually accrued benefits over a  
period of 6 years. However, under the worsening  
scenarios of increased nitrate-N concentrations, the  
same costs will be equal to the benefits in a 4- to 5-  
year period. If water quality improves to acceptable  
levels through adoption of BMPs, the results reveal  
that in the long run, investing in a BMP program will  
be more cost effective to reduce contamination than  
to seek alternative sources of safe drinking water  
supplies.

This citation is from AGRICOLA.

### 62. **Beyond Swampbuster: A permanent wetland reserve.**

Heimlich, Ralph E; Carey, Marc B; and  
Brazee, Richard J

*Journal of Soil and Water Conservation*  
44: 445-450. (1989)

*NAL Call #:* 56.8 J822; *ISSN:* 0022-4561

*Descriptors:* Wetland conservation---United States  
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### 63. **Biological responses to wetland restoration: Implications for wildlife habitat development through the Wetlands Reserve Program.**

Rewa, C.

In: A comprehensive review of Farm Bill contributions  
wildlife conservation, 1985-2000/ Heard, L. P;  
Hohman, W. L.; Halloum, D. J.; and Wildlife Habitat  
Management Institute (U.S.); Series: Technical  
Report USDA/NRCS/WHMI.

Madison, MS: U.S. Department of Agriculture, 2000;  
pp. 95-116

*NAL Call #:* aS604.6 .C66 2000

*Descriptors:* Wetland Reserve Program/ wetlands/  
riparian areas/ wildlife habitats/ California/ Mississippi

### 64. **Buffered wetlands in agricultural landscapes in the Prairie Pothole Region: Environmental, agronomic, and economic evaluations.**

Rickerl, D. H.; Janssen, L. L.; and Woodland, R.  
*Journal of Soil and Water Conservation* 55 (2):  
220-225. (2000)

*NAL Call #:* 56.8 J822

This citation is provided courtesy of CAB  
International/CABI Publishing.

### 65. **Calibrating Benefit Function Transfer to Assess the Conservation Reserve Program.**

Feather, P. and Hellerstein, D.

*American Journal of Agricultural Economics*  
79: 151-162. (1997)

*NAL Call #:* 280.8 J822

*Descriptors:* Conservation Reserve Program/  
National conservation programs/ State conservation  
programs/ Indiana/ Nebraska/ Pennsylvania/  
Washington

*Abstract:* A benefit transfer function was calibrated to  
corrected for bias and used to estimate the water-  
based recreation benefits of CRP.

**66. Changes in groundwater quality in a conduit-flow-dominated karst aquifer, following BMP implementation.**

Currens, J. C.

*Environmental Geology* 42 (5): 525-531. (2002)

NAL Call #: QE1.E5; ISSN: 1073-9106 [ENGOE9]

*Descriptors:* aquifers / watersheds/ water quality/ agriculture/ pesticides/ pollution/ USDA/ governmental programs and projects/ Kentucky/ best management practices/ nonpoint source pollution/ Water Quality Incentives Program (WQIP)

*Abstract:* Water quality in the Pleasant Grove Spring karst groundwater basin, Logan County, Kentucky, was monitored to determine the effectiveness of best management practices (BMPs) in protecting karst aquifers. Ninety-two percent of the 4,069-ha (10,054-acre) watershed is used for agriculture. Water-quality monitoring began in October 1992 and ended in November 1998. By the fall of 1995 approximately 72% of the watershed was enrolled in BMPs sponsored by the US Department of Agriculture Water Quality Incentive Program (WQIP). Pre-BMP nitrate-nitrogen concentration averaged 4.65 mg/l. The median total suspended solids concentration was 127 mg/l. The median triazine concentration measured by immunosorbent assay was 1.44 microgram/l. Median bacteria counts were 418 colonies per 100 ml (col/100 ml) for fecal coliform and 540 col/100 ml for fecal streptococci. Post-BMP, the average nitrate-nitrogen concentration was 4.74 mg/l. The median total suspended solids concentration was 47.8 mg/l. The median triazine concentration for the post-BMP period was 1.48 microgram/l. The median fecal coliform count increased to 432 col/100 ml after BMP implementation, but the median fecal streptococci count decreased to 441 col/100 ml. The pre- and post-BMP water quality was statistically evaluated by comparing the annual mass flux, annual descriptive statistics, and population of analyses for the two periods. Nitrate-nitrogen concentration was unchanged. Increases in atrazine-equivalent flux and triazine geometric averages were not statistically significant. Total suspended solids concentration decreased slightly, whereas orthophosphate concentration increased slightly. Fecal streptococci counts were reduced. The BMPs were only partially successful because the types available and the rules for participation resulted in less effective. This citation is from AGRICOLA.

**67. Cleaner water in the Chesapeake Bay: Can CRP help?**

Ligon, Polly C.

Blacksburg, Va.: Virginia Polytechnic Institute and State University, 1993.

*Notes:* Original title: "Cleaner water in the Chesapeake Bay: Can CRP help?: A case study of the Conservation Reserve Program in Richmond County, Virginia 1985-1989." Vita. Abstract. Report

(M.S.)--Virginia Polytechnic Institute and State University. M.S. 1993. Bibliography: leaves 114-121. NAL Call #: ViBibV LD5655.V851-1993.L546  
*Descriptors:* Bays---Virginia---Richmond County/ Chesapeake Bay---Md and Va  
This citation is from AGRICOLA.

**68. Conservation compliance and wetlands conservation provisions of the omnibus farm acts of 1985, 1990 and 1996.**

Brady, S. J.

In: A comprehensive review of Farm Bill contributions wildlife conservation, 1985-2000/ Heard, L. P.; Hohman, W. L.; Halloum, D. J.; and Wildlife Habitat Management Institute (U.S.); Series: Technical Report USDA/NRCS/WHMI.

Madison, MS: U.S. Department of Agriculture, 2000; pp. 5-17

NAL Call #: aS604.6 .C66 2000

*Descriptors:* conservation compliance/ Conservation Reserve Program/ Wetland Reserve Program/ Farm Bill/ laws and regulations/ wildlife habitats

**69. Conservation in the farm bill.**

Rassam, Gus

*Fisheries* 27 (7): 26. (2002)

NAL Call #: SH1.F54; ISSN: 0363-2415

*Descriptors:* Fisheries management-- Political aspects

*Abstract:* The 2002 Farm Bill has a number of implications for fisheries conservation. Given the huge impact of agriculture on water resources, the conservation aspects of the 2002 Farm Bill are of crucial importance to many stakeholders, including all citizens concerned with the increasing stresses on aquatic habitats across the nation. Although many aspects of the bill proved contentious, there was almost unanimous agreement regarding the importance of conserving the nation's fish, wildlife, and plant resources and promoting sustainable practices in farming communities. Some of the specific conservation aspects in the bill include the Wetland Reserve, Conservation Reserve, Wildlife Habitat Incentives, Environmental Quality Incentives, Conservation Security, and Farmland Protection Programs.

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**70. CRP EBI as an Indicator of Riparian Ecosystem Services.**

Kraft, S. E.

In: 57th Annual Conference of the Soil and Water Conservation Society. (Held 13 Jul 2002-17 Jul 2002 at Indianapolis. IN (USA).); 2002.

*Notes:* Conference Sponsor: Soil and Water Conservation Society (Ankeny, IA); World Meeting Number 000 6096

*Descriptors:* Geoscience/ Aquatic Science  
© Cambridge Scientific Abstracts (CSA)

**71. Detecting changes in water quality in an agricultural watershed following implementation of best management practices (BMP's): The LaPlatte River watershed.**

Meals, D. W.

In: 6th Annual International Symposium on Lake and Reservoir Management: Influences of Nonpoint Source Pollutants and Acid Precipitation. (Held 5 Nov 1986-8 Nov 1986 at Portland, OR.) North American Lake Management Soc. (eds.); pp. 11; 1986.

*Descriptors:* watersheds/ water quality/ environment management/ agricultural runoff/ pollution control/ runoff/ environmental management/ United States/ Vermont/ LaPlatte River/ Prevention and control/ Freshwater pollution

*Abstract:* The LaPlatte River Watershed in northwestern Vermont is the focus of an intensive land treatment program to control agricultural runoff and a long-term monitoring program to evaluate the effectiveness of these treatments on water quality. Best Management Practices for controlling dairy manure and cropland erosion have been implemented by the U.S. Dep. of Agriculture's Soil Conservation Service on 90% of the priority areas in the watershed. Four simple trend analysis techniques have been applied to 6 years of data from four subwatersheds: (1) linear regression against time, (2) comparison of annual means, (3) analysis of frequency distributions, and (4) paired watershed regression. Results of these analyses suggest significant decreases in phosphorus and nitrogen concentrations and loads since the project began.  
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**72. Detecting reductions in sediment loads associated with Ohio's conservation reserve enhancement program.**

Richards, R. P. and Grabow, G. L.

*Journal of the American Water Resources Association* 39 (5): 1261-1268. (2003)

*NAL Call #:* GB651.W315; *ISSN:* 1093-474X.

*Notes:* Number of References: 22

*Descriptors:* Environment/ Ecology/ statistical analysis/ water quality/ watershed management/ detecting change/ suspended sediment/ water quality/ constituent loads/ rating curves

*Abstract:* Small systematic changes in loads or concentrations of water quality constituents are difficult to detect against the background of short term fluctuations ("noise") that result from weather and climate effects. Minimum Detectable Change Analysis (MDCA) uses prior knowledge of a water quality constituent to determine how much change must occur (e.g., from implementation of conservation practices) for the change to be statistically significant. In this paper we use MDCA to determine whether the goal of the Ohio Lake Erie Conservation Reserve Enhancement Program (CREP), to reduce sediment loads by an average of 6

percent over 10 years, represents a large enough change to be detected. We conclude that this amount of change is unlikely to be detected as statistically significant, even with the high frequency sampling program planned for evaluating it. The minimum detectable change ranges from about 7 to 9 percent for three different rivers.

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**73. The effect of CRP enrollment on sediment loads in two southern Illinois streams.**

Davie, D. K. and Lant, C. L.

*Journal of Soil and Water Conservation* 49 (4): 407-412. (1994)

*NAL Call #:* 56.8 J822; *ISSN:* 0022-4561

*Descriptors:* United States, Illinois, Cache R. Basin/ soil erosion/ cropland/ sediment load/ streams/ suspended sediments/ timing/ water quality/ vegetation regrowth/ rivers/ soil conservation/ erosion control/ river basins/ United States, Illinois, Cache River/ CRP enrollment/ Watershed protection/ Conservation/ Protective measures and control/ Freshwater pollution

*Abstract:* The high annual cost of damages attributed to sediment justifies the importance of gaining a better understanding of the relationship between the Conservation Reserve Program (CRP) and stream sediment loads. This relationship was studied for two watersheds within the Cache River basin of extreme southern Illinois. CRP enrollments of 15.6% and 26.5% of all cropland in the Big Creek (80.29 km super(2); 31 mi super(2)) and Cypress Creek (62.16 km super(2); 24 mi super(2)) watersheds resulted in estimated decreases in erosion of 24% and 37%, respectively. Despite this, it was estimated using path analysis (a two-step regression analysis) that a negligible 0.0125% and 0.265% decrease in sediment load occurred in these streams in the period 1986-1988. These negative results, however, should be viewed in the context of temporal and spatial considerations. First, studies of drainage basin sediment dynamics imply that reductions in suspended sediment in response to CRP enrollments are likely to be delayed for a considerable period as in- and near-stream sediments are remobilized. Second, few of the CRP enrollments were in near-stream locations where hydrologic theory indicates they would be most effective in trapping and stabilizing existing near-stream sediments.  
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**74. Effects of 1985 Food Security Act and 1990 Food, Agriculture, Conservation, and Trade Act on the 1993 flooding on the upper Mississippi and Missouri River basins.**

Miller, D. G.; Shirley, C. E.; and Chenoweth, J. W. *Water International* 19 (4): 207-211. (1994); ISSN: 0250-8060

*Descriptors:* legislation/ flooding/ historic floods/ erosion control/ evaluation/ runoff/ flood damage/ conservation/ United States, Midwest/ soil conservation/ environmental legislation/ soil erosion/ environmental protection/ floods/ government policy/ stormwater runoff/ Watershed protection/ Conservation, wildlife management and recreation/ Conservation

*Abstract:* Flooding was unusually severe throughout the Upper Midwest during the spring and summer of 1993. These floods resulted in locally great economic damages, but provided an ideal "field laboratory" for evaluation of national erosion control programs. This article documents the amount of runoff reduction and corresponding flood damage reduction resulting from the Food Security Act (FSA) and the Food, Agriculture, Conservation, and Trade Act (FACTA) to agricultural areas and rural infrastructure. Specifically, the impact on runoff and flooding of single storms with 1-, 5-, 25-, and 100-year frequency probabilities was calculated using existing, commonly accepted methods of determining runoff. This procedure was applied to nine Midwestern states (Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin) on a county basis. Conservation practices studied were those applied through FSA and FACTA. Results indicate the FSA and FACTA total programs were consistently more successful in reducing runoff than was the Conservation Reserve Program (CRP) alone. Runoff reductions range from a high of 39 per cent for the one-year storm, to a low of 2 per cent for the 100-year storm for the FSA and FACTA programs. Runoff reductions for the CRP range from 20 per cent for the one-year storm to 3 per cent for the 100-year storm. Additionally, FSA and FACTA programs were shown to be highly successful in reducing flood damage to agricultural areas and rural infrastructure. Damage reduction to agricultural areas ranges from 10 per cent to 45 per cent for the FSA and FACTA programs. For CRP, this reduction ranges from 4 per cent to 25 per cent. Rural infrastructure damages are estimated to be reduced from 15 per cent to 56 per cent with the total program, and 7 to 34 per cent by CRP alone. These conservation programs are effectively reducing runoff and flood damages.

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**75. Effects of agricultural activities and best management practices on water quality of seasonal prairie pothole wetlands.**

Detenbeck, N. E.; Elonen, C. M.; Taylor, D. L.; Cotter, A. M.; Puglisi, F. A.; and Sanville, W. D. *Wetlands Ecology and Management* 10 (4): 335-354. (2002)

NAL Call #: QH541.5.M3 W472; ISSN: 0923-4861

*Descriptors:* Agricultural practices/ Environment management/ Water quality/ Wetlands/ Prairies/ Ecosystem management/ Restoration/ Agriculture/ Vegetation cover/ Plant populations/ Man induced effects/ Water levels/ Physicochemical properties/ Dissolved oxygen/ Nutrients (mineral)/ Climate/ Hydrology/ Agricultural runoff / Conservation/ Environmental restoration/ Nutrients/ Vegetation/ Biogeochemistry/ Water Pollution Sources/ Nonpoint Pollution Sources/ United States/ prairie pothole wetlands/ biogeochemical cycle/ tillage effects/ Environmental degradation/ Ecosystems and energetics/ Conservation, wildlife management and recreation/ Environmental action/ General Environmental Engineering/ Sources and fate of pollution

*Abstract:* Long-term effects of within-basin tillage can constrain condition and function of prairie wetlands even after uplands are restored. Runoff was significantly greater to replicate wetlands within tilled basins with or without vegetated buffer strips as compared to Conservation Reserve Program restoration controls with revegetated uplands (REST). However, mean water levels for native prairie reference sites were higher than for REST controls, because infiltration rates were lower for native prairie basins, which had no prior history of tillage. Nutrient dynamics changed more in response to changes in water level and vegetation structure than to increased nutrient inputs in watershed runoff. Dissolved oxygen increased between dry and wet years except in basins or zones with dense vegetation. As sediment redox dropped, water-column phosphate declined as phosphate likely co-precipitated with iron on the sediment surface within open-water or sparsely vegetated zones. In response, N:P ratios shifted from a region indicating N limitation to P limitation. REST sites, with dense vegetation and low DO, also maintained high DOC, which maintains phosphate in solution through chelation of iron and catalysis of photoreduction. Reference sites in native prairie and restored uplands diverged over the course of the wet-dry cycle, emphasizing the importance of considering climatic variation in planning restoration efforts.

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**76. Effects of best management practices.**

Davenport, T. and Kohl, N.

In: 6th Annual International Symposium on Lake and Reservoir Management: Influences of Nonpoint Source Pollutants and Acid Precipitation. (Held 5 Nov 1986-8 Nov 1986 at Portland, OR.) North American Lake Management Soc. (eds.); pp. 43; 1986.

*Descriptors:* eutrophic lakes/ sedimentation/ agricultural runoff/ water quality control/ runoff/ eutrophication/ United States/ Illinois/ Pike County/ Pittsfield City Lake/ statistical analysis/ Prevention and control/ Freshwater pollution

*Abstract:* Pittsfield City Lake is a light-limited, eutrophic, multiple-purpose reservoir located in Pike County, Ill. The lake has a historic and well-documented sedimentation problem, and the predominant land use in its watershed is agriculture. In 1980, the area was designated an Agricultural Conservation Program Special Water Quality Project Area by the U.S. Department of Agriculture. The primary objective of the project was to improve the water quality of Pittsfield City Lake by reducing sediment loads through voluntary application of Best Management Practices (BMP's). To evaluate the effects of Best Management Practices on water quality in Pittsfield City Lake, the lake was monitored 2 years before, 3 years during and 2 years after implementation. Five years of BMP implementation information was correlated with corresponding lake data to determine the relationship of such implementation to in-lake water quality. The results of the statistical analyses are reported.

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**77. Effects of Urbanization on Small Watershed Project Sponsors.**

Peterson, J. W.

*Land and Water* 42 (5): 9-12. (1998);  
ISSN: 0192-9453

*Descriptors:* Urbanization/ Flood Control/ Conservation/ Watershed Management/ Flooding/ Water Management/ Water resources/ Environmental protection/ Erosion control/ Water reservoirs/ Effects on water of human nonwater activities/ General papers on resources

*Abstract:* The U.S. Small Watershed Programs, commonly called the Flood Prevention Operations Program (PL 78-534) and the Watershed Protection and Flood Prevention Program (PL 83-566), are among the most flexible and beneficial conservation acts ever enacted by the U.S. Congress. As one might deduce from their titles, their main purposes were to provide a reduction in flood damage and watershed protection (erosion and sediment control) in the nation's upstream watersheds, primarily in rural areas. Historically, the U.S. had dealt with natural

water flow and flooding by constructing large floodwater detention reservoirs. These structures were usually constructed, maintained, and owned by one of the federal water management agencies.

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**78. Estimating changes in recreational fishing participation from national water quality policies.**

Ribaudo, M. O. and Piper, S. L.

*Water Resources Research* 27 (7): 1757-1763.

(July 1991)

NAL Call #: 292.8-W295; ISSN: 0043-1397

[WRERAO]

*Descriptors:* water quality/ water policy/ water pollution/ angling/ participation/ estimation/ models/ agricultural nonpoint source pollution/ Conservation Reserve Program

*Abstract:* The complete evaluation of the offsite effects of national policies or programs that affect levels of agricultural nonpoint source pollution requires linking extensive water quality changes to changes in recreational activity. A sequential decision model is specified to describe an individual's decisions about fishing. A participation model for recreational fishing that includes a water quality index reflecting regional water quality is developed and estimated as a logit model with national level data. A visitation model for those who decide to fish that also includes the water quality index is estimated using ordinary least squares. The water quality index is found to be significant in the participation model but not in the visitation model. Together, the two models provide a means of estimating how changes in water quality might influence the number of recreation days devoted to fishing. The model is used to estimate changes in fishing participation for the Conservation Reserve Program.

This citation is from AGRICOLA.

**79. Estimating water quality benefits: Theoretical and methodological issues.**

Ribaudo, Marc O.; Hellerstein, Daniel.; and United States. Dept. of Agriculture.

Economic Research Service.

Washington, D.C.: U.S. Dept. of Agriculture, Economic Research Service; ii, 28 p.: ill. (1992)

*Notes:* Cover title. "September 1992"--P. i. Includes bibliographical references (p. 24-28).

NAL Call #: 1-Ag84Te-no.1808

<http://www.ers.usda.gov/publications/tb1808/TB1808.PDF>

*Descriptors:* Water quality

This citation is from AGRICOLA.

**80. Evaluation of reforestation in the Lower Mississippi River Alluvial Valley.**

King, S. L. and Keeland, B. D.  
*Restoration Ecology* 7 (4): 348-359. (1999)  
NAL Call #: QH541.15.R45R515; ISSN: 1061-2971  
This citation is provided courtesy of CAB International/CABI Publishing.

**81. Ground water quality implications of soil conservation measures: An economic perspective.**

Setia, P. and Piper, S.  
*Water Resources Bulletin* 27 (2): 201-208.  
(Mar. 1991-Apr. 1991)  
NAL Call #: 292.9-AM34; ISSN: 0043-1370 [WARBA]  
*Descriptors:* soil conservation/ groundwater/ water quality/ pesticides/ runoff/ leaching/ agricultural economics/ USDA/ federal programs/ Corn Belt of USA/ food security act of 1985/ Conservation Reserve Program/ conservation compliance provision/ pesticide root zone model --- PZRM/ economic models

*Abstract:* An evaluation of the intermedia movement of pesticides applied under various land management systems already in place, or to be implemented, under the Conservation Reserve and Conservation Compliance programs is presented. The simulation modeling approach followed in this analysis consists of a mathematical programming model and leaching/surface runoff, Pesticide Root Zone Model (PRZM) models. Special care was taken to ensure that the physical model was sensitive to the chemical characteristics of individual pesticides and the important physical changes brought about by different agricultural practices. Results show that, although these programs as now planned, increase farm income and achieve soil conservation goals, they may adversely affect ground water quality. Also, depending on soil and location characteristics, there are tradeoffs between surface and ground water quality implications. Hence, if these programs are to address water quality problems, the recommended practices must be evaluated for their impact on water quality, particularly in potentially vulnerable areas. This citation is from AGRICOLA.

**82. Impacts of short-rotation hybrid poplar plantations on regional water yield.**

Perry, C. H.; Miller, R. C.; and Brooks, K. N.  
*Forest Ecology and Management* 143 (1-3): 143-151. (2001)  
NAL Call #: SD1.F73; ISSN: 0378-1127  
*Descriptors:* Water relations/ Forest management/ United States, Minnesota/ Logging/ Vegetation Effects / Hydrology/ Watershed Management/ Water Yield / Groundwater/ Populus/ Effects on water of human nonwater activities  
*Abstract:* Hybrid poplar plantations are being established on northwestern Minnesota farmlands in

response to demands for timber, pulp and paper, and as a potential source of biomass energy. The Minnesota Department of Natural Resources estimates that between 30 000 and 40 000 ha of former cropland, and former Conservation Reserve Program (CRP) land that was primarily herbaceous cover, will be converted to tree plantations by 2005. This paper reports the results of a 2-year study of the effects of such land use conversions on water yield for plots within tributary watersheds of the Red River of the North, in northwestern Minnesota. Three 8- and 9-year-old hybrid poplar plantations and three 22- to 34-year-old natural mixed hardwood stands were instrumented to measure precipitation, soil moisture, and soil water chemistry. Climatological observations at these sites were used to estimate potential evapotranspiration. These data were used to apply the GLEAMS model (Knisel, W.G. (Ed.), 1993. GLEAMS: groundwater loading effects of agricultural management systems. UGA-CPES-BAED Publication No. 5, University of Georgia. Coastal Plain Experimental Station, Tifton, GA, 259 pp.) to predict water yield from the two cover types. No significant differences in water yield were detected between hybrid poplar plantations and natural forest stands ( $\alpha = 0.05$ ). The similarities between the hydrology of these two cover types suggest that increasing the acreage of short-rotation hybrid poplar plantations may influence average peak flows in streams, stormflow during average events, snowmelt runoff and spring flooding in the region.  
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**83. Implementing Swampbuster: Two years of progress.**

Margheim, G. A.  
*Journal of Soil and Water Conservation* 43 (1): 27-29. ill. (Jan. 1988-Feb. 1988)  
NAL Call #: 56.8-J822; ISSN: 0022-4561 [JSWCA3]  
*Descriptors:* wetlands / resource conservation/ regulations/ program development/ water conservation/ food security act of 1985/ wetland conservation provision  
This citation is from AGRICOLA.

**84. Instream benefits of CRP filter strips.**

Whitworth, M. R. and Martin, D. C.  
In: Transactions of the fifty-fifth (55th) North American wildlife and natural resources conference. (Held 16 Mar 1990-21 Mar 1990 at Denver, CO.)  
McCabe, R. E. (ed.); pp. 40-45; 1990.  
*Notes:* ISSN: 0078-1355  
NAL Call #: 412.9 N814  
*Descriptors:* water quality/ soil erosion/ erosion control/ agricultural runoff/ government policy/ United States/ Prevention and control  
*Abstract:* The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Agriculture (USDA) are both involved in developing programs

that reduce the environmental degradation associated with agricultural activities. At EPA, the water quality impacts that are caused by runoff from farm fields to lakes, streams, and estuaries are an important issue for the Nonpoint Source water pollution control program. In February, 1988, the eligibility requirements for the Conservation Reserve Program (CRP) were changed so that 100-foot field borders parallel to streams, lakes and estuaries could be leased to the federal government if left fallow. These field borders, or filter strips, do not have to meet the "highly erodible" criteria that upland CRP lands have to meet. This is because filter strips are expected to reduce the amounts of sediments, nutrients, and pesticides that flow into surface water and improve the habitat for fish and biota.  
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**85. Integrated assessment of uses of woody draws in agricultural landscapes.**

Qiu, Z.; Prato, T.; Godsey, L.; and Benson, V.  
*Journal of the American Water Resources Association* 38 (5): 1255-1269. (2002)  
NAL Call #: GB651.W315; ISSN: 1093-474X  
Descriptors: Drainage Area/ Land Use/ Agriculture/ Comparison Studies/ Economic Impact/ Environmental Effects/ Government Supports/ Resources Management/ Environmental Policy/ Catchment areas/ Comparative studies/ Economics/ Environmental issues/ Resources/ Evaluation process/ Water Resources and Supplies  
Abstract: This study assesses economic and environmental impacts of uses of woody draws, small natural drainage areas covered by trees and shrubs in agricultural landscapes. Three agricultural uses and four alternative uses are evaluated. A net present value approach is used to compare economic impacts of uses of draws and APEX is used to evaluate the interaction between a woody draw and the contributing upland area and simulate the environmental impacts of uses of draws in the field. The study shows that relative to agricultural uses, alternative uses of draws have significant environmental benefits in terms of reducing surface runoff and sediment and associated pollutants, such as nitrogen, phosphorus and pesticides. Agricultural uses of draws are not always the most profitable option. Certain alternatives, such as curly willow and the mixed buffer, are highly profitable. Agricultural landscapes could be differentially managed to achieve both economic variability and environmental benefits. Government support is necessary to promote alternative uses of woody draws. The support can be in the form of CRP payments or market development of buffer products. Farmers and resource managers can use study results to manage woody draws and evaluate the merits of alternative policies for managing woody draws.  
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**86. Iowa's wetlands present and future with a focus on prairie potholes.**

Bishop, R A; Joens, J; and Zohrer, J  
*Journal of the Iowa Academy of Science* 105 (3): 89-93. (1998)  
NAL Call #: Q11.J68; ISSN: 0896-8381  
Descriptors: pothole habitat/ prairie marsh/ riparian floodplain/ uplands/ wetland restoration/ wildlife habitat  
Abstract: The vast prairie marsh-pothole complex that historically covered approximately 7.6 millions acres in Iowa was reduced to less than 30,000 acres by 1980 when it was estimated that only 5,000 acres of prairie marsh and pothole habitat remained in private ownership. A bleak outlook for the future of wetlands was presented by Bishop (1981)." This outlook changed with the development of the North American Waterfowl Management Plan and the passage of two important pieces of legislation: the North American Wetlands Conservation Act and the Food Security Act of 1985. Protection of existing wetlands was afforded through the Swampbuster provision of the Food Security Act. The North American Wetlands Conservation Act and the Wetland Reserve Program offered through the Food Security Act provided needed funding for the protection and restoration of wetlands in Iowa. Since 1988, the Iowa Department of Natural Resources, the U.S. Fish and Wildlife Service, and various county conservation boards together with Pheasants Forever, Ducks Unlimited, and the Iowa Natural Heritage Foundation have purchased over 10,000 ha (25,000 ac) of wetlands and uplands in the Prairie Pothole Region of Iowa and restored over 24,240 ha (6,600 ac) of public and private wetlands. The United States Department of Agriculture, Natural Resources Conservation Service has enrolled approximately 24,240 ha (60,600 ac) of riparian floodplains and potholes into the Wetland Reserve Program and Emergency Wetland Reserve Program, affording them protection through permanent easements. Public support of wetland legislation will ensure that funding continues to be available to protect and restore Iowa's prairie wetlands.  
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**87. Irrigated Acreage in the Conservation Reserve Program.**

Schaible, G. D.  
Washington, DC: Economic Research Service; ERSAER610XSP; USDAAER610, 1989. 27 p.  
Notes: Replaces PB89-214175  
NAL Call #: A281.9-Ag8A-no.610  
Descriptors: Land use / Area/ Soil erosion/ Benefit cost analysis/ Erosion control/ Cost effectiveness/ Nebraska/ Texas/ History/ Soil conservation/ Irrigation/ Marginal land/ Conservation Reserve Program/ Agriculture and food/ Agricultural equipment facilities and operations/ Natural



resources and earth sciences/ Soil sciences

*Abstract:* Marginal irrigated acreage enrolled in the Conservation Reserve Program (CRP) through 1987 represent less than 2 percent of the 23 million acres enrolled nationwide. Marginal irrigated acreage is irrigated land that results in low net returns because of high energy costs (due to high pump lifts and/or low pump capacities) or low productivity. Most of the enrolled irrigated acreage is in 17 Western States, with 68 percent of it in Nebraska and Texas. The report identifies the extent of marginal irrigated acreage enrolled in the CRP through 1987 and the potential enrollment in the CRP under two rates of enrollment, the historical and half the historical rate. The report also examines why producers would enroll irrigated land in the CRP and estimates cost savings and other benefits to remaining irrigators in Nebraska and Texas over a 40-year period.

**88. Land use changes since 1982 reduce pesticide leaching potential.**

Kellogg, R. L. and Wallace, S.

In: Proceedings of the 50th Annual Meeting of the Soil and Water Conservation Society; p. 22. (Held 7-9 August, 1995 at Des Moines, Iowa.); 1995.

*Descriptors:* leaching / pesticides/ land use/ indexing/ cropland/ water quality/ benefits/ groundwater/ risks/ mapping/ NRI/ CRP/ Water quality control/ Evaluation, processing and publication

*Abstract:* A spatial index based on the intrinsic leaching potential of soils, annual rainfall, cropping patterns, and chemical use (originally published by Kellogg, Maizel, and Goss (1992)) has been updated to incorporate the recently released 1992 National Resources Inventory (NRI) data on land use change from 1982 to 1992. Results indicate total number of acres with a high risk of pesticide leaching fell by 16 million as a result of changes in land use alone. The reduction of 16 million high risk acres of cropland conversions to non-cropland use, which was offset somewhat by 6 million acres of new cropland (since 1982) that had higher index scores. Of the 22 million acre reduction, 8.3 million were associated with enrollment of cropland in the CRP, 6.5 million were associated with cropland converted to pastureland and forestland, 1.9 million were due to conversion of cropland to developed land, 3.8 million were due to changes in the crop mix, and the remainder to conversion of cropland to a variety of other uses. The largest reductions in high risk acres attributable to the CRP occurred in Iowa and Texas. The greatest ground water quality benefit from the CRP enrollment was in the Midwest, the South, and the Southeast. National maps will be presented on change in cropland acreage, average pesticide leaching scores,

the change in pesticide leaching scores during the 10-year period, and a map showing where the CRP enrollment had the greatest potential for ground water benefits.

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**89. MKT Trial/Hinkson Creek emergency watershed program project in Boone County, Missouri.**

Pellmann NF and Wallace DC.

In: ASAE Annual International Meeting. (Held 10 Aug 1997-14 Aug 1997 at Minneapolis, Minnesota.)

St. Joseph, Mich.: American Society of Agricultural Engineers (ASAE); 4 p.; 1997.

*Notes:* ASAE Paper no. 972075

*NAL Call #:* S671.3 .A54

This citation is provided courtesy of CAB International/CABI Publishing.

**90. A modeling approach to evaluate best management practices.**

Williams, R D and Nicks, A D

*Water Science and Technology* 28 (3-5): 675-678. (1993)

*NAL Call #:* TD420.A1P7; ISSN: 0273-1223

*Descriptors:* agriculture/ chemicals runoff and erosion from agricultural management systems/ Conservation Reserve Program/ mathematical model/ soil pollution/ vegetative filter strips/ water erosion prediction project/ water pollution

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**91. Monitoring changes in agricultural runoff quality in the Laplatte River Watershed, Vermont.**

Meals, D. W.

In: Perspectives on nonpoint source pollution: Proceedings of a national conference. (Held 19 May 1985-22 May 1985 at Kansas City, Missouri.)

Washington, D.C.: U.S. Environmental Protection Agency; pp. 185-190; 1985.

*Notes:* Document number: EPA 440-5-85-001

*Descriptors:* nonpoint sources/ agricultural runoff/ Freshwater pollution/ watersheds/ pollution monitoring/ pollution control/ runoff/ nonpoint pollution/ United States, Vermont, LaPlatte River/ agricultural land/ Environmental action/ Freshwater pollution/ Pollution monitoring and detection/ Prevention and control/ Characteristics, behavior and fate/ Prevention and control

*Abstract:* The LaPlatte River watershed in northwestern Vermont is the focus of an intensive program of land treatment to control agricultural runoff. Best Management Practices for controlling dairy manure and cropland erosion have been implemented by the USDA-SCS on 90 percent of the priority areas in the watershed. A long-term monitoring program is being conducted to evaluate the effectiveness of BMP application in improving water quality. The monitoring program includes



precipitation and stream discharge recording and water sampling for suspended solids, phosphorus, and nitrogen analysis. A concurrent land use monitoring program is collecting information required to couple changes in agricultural practices with changes in stream water quality. The water quality monitoring program is outlined. Application of several statistical trend analysis techniques to 5 years of record from four watersheds is described and some results are discussed.

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**92. Nitrate losses through subsurface tile drainage in Conservation Reserve Program, alfalfa, and row crop systems.**

Randall, G. W.; Huggins, D. R.; Russelle, M. P.; Fuchs, D. J.; Nelson, W. W.; and Anderson, J. L. *Journal of Environmental Quality* 26 (5): 1240-1247. (Sept. 1997-Oct. 1997)

NAL Call #: QH540.J6; ISSN: 0047-2425 [JEVQAA]

*Descriptors:* nitrate nitrogen/ losses from soil/ cropping systems/ biomass production/ zea mays/ glycine max/ medicago sativa/ Minnesota

*Abstract:* Subsurface drainage of gravitational water from the soil profile through tiles is a common practice used to improve crop production on poorly drained soils. Previous research has often shown significant concentrations of nitrate-N (NO<sub>3</sub>-N) in drainage water from row-crop systems, but little drainage research has been conducted under perennial crops such as those used in the Conservation Reserve Program (CRP). Four cropping systems (continuous corn, a corn-soybean rotation, alfalfa, and CRP) were established in 1988 to determine aboveground biomass yields, N uptake, residual soil N (RSN), soil water content, and NO<sub>3</sub> losses to subsurface tile drainage water as influenced by cropping system. Hydrologic-year rainfall during the 6-yr study ranged from 23% below normal to 66% above normal. In dry years, yields were limited, RSN accumulated at elevated levels in all crop systems but especially in the row-crop systems, soil water reserves and RSN were reduced to as deep as 2.7 m in the alfalfa (*Medicago sativa* L.) and CRP systems, and tile drainage did not occur. Drainage occurred only in the corn (*Zea mays* L.) and soybean [*Glycine max* (L.) Merr.] systems in the year of normal rainfall. In years of excess precipitation, drainage from the row-crop systems exceeded that from the perennial crops by 1.1 to 5.3X. Flow-weighted average NO<sub>3</sub>-N concentrations in the water during the flow period of this study were continuous corn = 32, corn-soybean rotation = 24, alfalfa = 3 and CRP = 2 mg/L. Nitrate losses in the subsurface drainage water from the continuous corn and corn-soybean systems were about 37X and 35X higher, respectively, than from

the alfalfa and CRP systems due primarily to greater season-long ET resulting in less drainage and greater uptake and/or immobilization of N by the perennial crops.

This citation is from AGRICOLA.

**93. Nonmarket Economic Benefits Provided by Increased Recreational Fishing From Conservation Reserve Program (CRP) Related Water Quality Improvement.**

Douglas, A. J. and Johnson, R. L. U.S. Geological Survey, Biological Resources Division, Midcontinent Ecological Science Center, 2001.

*Descriptors:* Conservation Reserve Program/ Local conservation programs/ United States/ Klamath Basin

*Abstract:* Estimated the nonmarket angling benefits of CRP-related water quality improvements.

**94. Permanent Wetland Reserve: Analysis of a New Approach to Wetland Protection.**

Carey, M.; Heimlich, R.; and Brazee, R. Washington, DC: Economic Research Service; USDA AIB610; ERSAIB610XSP, 1990. 20 p.

*Notes:* Agriculture information bulletin 610; Replaces PB90-267352

*Descriptors:* Regulations/ Land use/ Biological productivity/ Vulnerability/ Government policies/ Area/ History/ Legislation/ Swamps/ Conservation/ Food Security Act of 1985/ North American Wetlands Conservation and Restoration Act of 1989/ Natural resources and earth sciences--- Natural resource management

*Abstract:* Current Federal wetland protection efforts, such as the Swampbuster provision of the 1985 farm act, may be insufficient to attain the administration's goal of 'no net loss' in wetland acreage. One option is to establish a permanent wetland reserve program, which the report discusses. The report reviews why wetlands are important, looks at past and present Federal wetland policies, and examines the dimensions of a reserve under three sizes. The likely geographic distribution of the reserve and likely crop rotations affected are both analyzed, and potential easement and restoration costs are estimated.

**95. A potential integrated water quality strategy for the Mississippi River basin and the Gulf of Mexico.**

Greenhalgh S and Faeth P

*The Scientific World* 1 (S2): 976-983. (2001)

NAL Call #: 472 SCI25.

*Notes:* UID: 2001.01.354; Number of References: 32; From: Optimizing nitrogen management in food and energy production and environmental protection: Proceedings of the 2nd International Nitrogen Conference on Science and Policy 2001/ Potomac, MD, USA, 14-18 October 2001

This citation is provided courtesy of CAB International/CABI Publishing.

**96. Potential of the Conservation Reserve Program to control agricultural surface water pollution.**

Lant, C. L.

*Environmental Management* 15 (4): 507-518. (1991)

NAL Call #: HC79.E5E5; ISSN: 0364-152X

*Descriptors:* pollution control/ agricultural pollution/ agricultural runoff/ erosion control/ environmental protection/ United States/ agriculture/ surface water/ government programs/ erosion/ Illinois/ Fayette County/ wetlands/ Prevention and control/ Environmental action/ Land pollution

*Abstract:* The Conservation Reserve Program (CRP), initiated by the Conservation Title of the Food Security Act of 1985, is the primary federal program to control nonpoint-source pollution in agricultural watersheds of the United States. This study estimates potential enrollment of streamside and floodplain croplands in this ten-year retirement program in order to gauge the potential of the CRP as a water-quality improvement policy. A contingent choice survey design was employed in Fayette County, Illinois, to demonstrate that there is substantial potential for retirement of streamside and floodplain croplands in the CRP.

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**97. Rock Creek Rural Clean Water Program: The experiment continues.**

Neubeiser, M. J.

In: Perspectives on Nonpoint Source Pollution: Proceedings of a national conference. (Held 19 May 1985-22 May 1985 at Kansas City, MO.)

Washington, D.C.: U.S. Environmental Protection Agency; pp. 391-396; 1985.

*Notes:* Document number: EPA 440-5-85-001

*Descriptors:* nonpoint sources/ Freshwater pollution/ pollution control/ agricultural runoff/ government policy/ pollution legislation/ rivers/ nonpoint pollution/ legislation/ United States/ Idaho/ Twin Falls County/ Rock Creek/ Rural Clean Water Program/

*Abstract:* Rock Creek in Twin Falls County, Idaho, has long been recognized as one of the most severely degraded streams in the State. Both point and nonpoint sources of pollution have contributed to this problem. The 1972 Federal Water Pollution Control Act (P.L. 92-500) stimulated pollution abatement efforts, and since then both State and Federal programs have been directed toward pollution abatement in Rock Creek. Point source discharges have been essentially eliminated from food processing plants, fish hatcheries, and the Twin Falls sewage treatment plant. Agricultural nonpoint sources, however, continue to cause severe pollution problems within the Rock Creek drainage. Irrigation return flows to the creek contain high concentrations of suspended sediment and related agricultural pollutants such as phosphorus, nitrogen, and fecal

coliform bacteria. This paper presents and discusses the history, major activities, and progress in restoring the health of Rock Creek through the Rural Clean Water Program.

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**98. Runoff, erosion, and soil quality characteristics of a former Conservation Reserve Program site.**

Gilley, J. E.; Doran, J. W.; Karlen, D. L.; and Kaspar, T. C.

*Journal of Soil and Water Conservation* 52 (3): 191-193. (June 1997)

NAL Call #: 56.8 J822; ISSN: 0022-4561

*Descriptors:* Iowa/ tillage/ runoff rates/ soil erosion/ organic matter/ simulated rainfall/ conservation/ land management/ soil conservation/ soil properties/ Conservation Reserve Program/ soil quality/ Erosion and sedimentation/ Streamflow and runoff/ Environmental degradation / United States

*Abstract:* No-till and moldboard plow tillage systems were established on a former Conservation Reserve Program (CRP) site in southwest Iowa. Runoff rates from simulated rainfall events were significantly greater on sites returned to crop production than from adjoining, undisturbed CRP areas. Substantial soil loss was measured from the moldboard plow treatments, but no significant differences in erosion rates were found between the undisturbed CRP and no-till management systems. No-till management maintained levels of soil quality similar to those of CRP by preserving soil structural integrity and reducing losses of soil organic matter (SOM) associated with tillage. Conservation tillage systems which maintain residue materials on the soil surface may be well suited for former CRP areas which are used as cropland.

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**99. Sedimentation of Prairie Pothole Wetlands: The Need for Integrated Research by Agricultural and Wildlife Interests.**

Gleason, R. A. and Euliss, N. H.

In: Water for Agriculture and Wildlife and the Environment: Win-Win Opportunities -- Proceedings from the USCID Wetlands Seminar. (Held 27 Jun 1996-28 Jun 1996 at Bismarck, North Dakota.)

Schaack, J.; Anderson, S. S.; U.S. Committee on Irrigation and Drainage; and U.S. Bureau of Reclamation (eds.)

Denver, Colo.: U.S. Committee on Irrigation and Drainage; pp. 107-114; 1997.

*Descriptors:* Conservation Reserve Program/ Regional conservation programs/ Prairie Pothole region

*Abstract:* Examined the influences of sedimentation on wildlife values in wetlands within the Prairie Pothole Region.

**100. Soil management after CRP contracts expire.**

Schumacher, T. E.; Lindstrom, M. J.; Blecha, M. L.; Cogo, N. P.; Clay, D. E.; and Bleakley, B. H.  
 In: Clean water, clean environment, 21st century team agriculture, working to protect water resources conference proceedings. (Held 5 Mar 1995-8 Mar 1995 at Kansas City, Missouri.); Vol. 3. St. Joseph, Mich.: ASAE; pp. 239-242; 1995.  
 NAL Call #: TD365.C54-1995; ISBN: 0929355601  
 Descriptors: soil conservation/ cover crops/ bromus inermis/ medicago sativa/ no-tillage/ chiselling/ plowing/ moldboards/ biological activity in soil/ mineralization/ nitrogen/ carbon/ soil flora/ land banks/ soil organic matter/ South Dakota/ Conservation Reserve Programs  
 This citation is from AGRICOLA.

**101. Subsurface drain losses of water and nitrate following conversion of perennials to row crops.**

Huggins, D. R.; Randall, G. W.; and Russelle, M. P.  
*Agronomy Journal* 93 (3): 477-486.  
 (May 2001-June 2001)  
 NAL Call #: 4-AM34P; ISSN: 0002-1962 [AGJOAT]  
 Descriptors: medicago sativa/ glycine max/ zea mays/ rotations/ rowcrops/ perennials/ drainage/ soil water/ nitrate/ water quality/ use efficiency/ water use efficiency/ Minnesota  
 Abstract: Nitrate losses through subsurface drains in agricultural fields pose a serious threat to surface water quality. Substantial reductions in drainage losses of NO<sub>3</sub>-N can occur with alfalfa (*Medicago sativa* L.) or perennial grasses as used in Conservation Reserve Program (CRP) plantings. Conversion of perennials to annual row crops, however, could have rapid, adverse affects on water quality. We evaluated water and N use efficiency of row crops following perennials, and losses of water and NO<sub>3</sub>-N to subsurface drains. Four cropping systems: continuous corn (*Zea mays* L.), a corn-soybean [*Glycine max* (L.) Merr.] rotation, alfalfa (ALF), and CRP, were established in 1988. The ALF and CRP were converted to a corn-corn-soybean sequence from 1994 through 1996 while continuous corn (C-C) and corn-soybean (C-S) rotations were maintained. Following CRP, corn yield was 14% and water use efficiency (WUE) 20% greater as compared with C-C. Yield was 19% and WUE 21% greater for soybean following corn in CRP and ALF as compared with C-S. Residual soil NO<sub>3</sub>-N (RSN) increased 125% in first year corn following CRP and was 32% greater than C-C by 1996. High N uptake efficiencies of corn following alfalfa slowed the buildup of RSN, but levels were equal to row crop systems after 2 yr. Nitrate losses in drainage water remained low during the initial year of conversion, but were similar to row crop systems during the

subsequent 2 yr. Beneficial effects of perennials on subsurface drainage characteristics were largely negated following 1 to 2 yr of corn.  
 This citation is from AGRICOLA.

**102. Survey of management practices used for reserve acreage and grassed waterways.**

Pike, D. R.; Knake, E. L.; and Hill, J. L.  
*Journal of Soil and Water Conservation* 49 (6): 612-615. (1994)  
 NAL Call #: 56.8 J822; ISSN: 0022-4561  
 Descriptors: agricultural practices/ waterways/ crops/ soil conservation/ farms/ land management/ Watershed protection  
 Abstract: During 1991 a mail survey of Illinois farmers was conducted to determine cover crop usage and pest control practices on government subsidized program plantings. Ninety-four percent of the respondents reported having Acreage Reduction Program (ARP) plantings, 21% having Conservation Reserve Program (CRP) plantings, and 29% having grass waterways or filter strips. Results of the survey indicate that oats (*Avena sativa*), alfalfa (*Medicago sativa*), and clover (*Trifolium* spp.) were the most widely used crops for ARP plantings while perennial grasses, alfalfa, and clover combinations were widely used for CRP plantings. Herbicides were used by only 9% of the farmers for control of weeds on ARP. In the opinion of the farmers surveyed, wildlife populations have increased for several animals. While weeds in program plantings were noted by a large number of farmers, injury by insects in crops adjacent to ARP and CRP was reported by fewer than 20% of the farmers.  
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**103. The use of Conservation Reserve Program land for grazing cattle.**

Boyles, S. L.; Stoll, B. W.; and Dobbles, T. L.  
*Journal of Sustainable Agriculture* 18 (4): 113-120. (2001)  
 NAL Call #: S494.5.S86S8; ISSN: 1044-0046 [JSAGEB]  
 Descriptors: cattle/ grazing/ nature conservation/ agricultural land/ land use/ intensive husbandry/ rotational grazing/ stocking rate/ liveweight gain/ crude protein/ protein intake/ nitrate nitrogen/ Ohio  
 Abstract: The Conservation Reserve Program (CRP) is a voluntary program under which landowners enter into contracts with the United States Department of Agriculture (USDA) to remove highly erodible and environmentally sensitive cropland from production. A 3 year project was done to evaluate intensive, rotational cattle grazing as an alternative for this land when it is removed from the federal program. A 16 ha area was divided into 28 cells for grazing. Cattle were moved to a new cell on a daily basis. A seasonal average stocking rate of 3.5 hd ha<sup>-1</sup> was used during the three-year study. Yearling cattle (248 +/-

17.9 kg) were placed on grass in the spring. Average daily gain was .7 +/- .03 kg d(-1). Crude protein (23 +/- 4.7%) did not change over years (P > .05). Breakeven values needed to meet direct and overhead expenses ranged from \$US 0.87 to \$US 0.73/kg gain. Based on nitrate-nitrogen levels in run-off water samples, maintaining forage on what was CRP land and using it for grazing does meet the Environmental Protection Agency (EPA) conservation compliance demands to participate in other USDA programs.

This citation is from AGRICOLA.

**104. Water Quality and the Conservation Reserve Program: Implications of Targeting Saline Croplands.**

Aillery, M. P.

In: Nonpoint pollution 1988: Policy, economy, management, and appropriate technology -- Proceedings of a symposium.

Bethesda, Maryland: American Water Resources Association; pp. 261-270; 1988.

*Descriptors:* Conservation---Cropland/ Environmental policy/ Government finance/ Nonpoint pollution sources/ Saline soils/ Water resources management/ Cost benefit analysis/ Crop production/ Farming/ Governmental interrelations/ Irrigation/ Water policy/ Water quality control/ Conservation in agricultural use

*Abstract:* The Conservation Reserve Program (CRP) of the 1985 Food Security Act provides an opportunity for improved water quality and higher farm prices through retirement of environmentally-sensitive croplands. Although current enrollment is limited to highly erodible soils and stream buffers, salinity is cited as one of several criteria which may be used to determine future cropland eligibility. Extending CRP eligibility to highly saline irrigated soils has an effect on acreage enrollment, water quality, production control, and program cost.

Modification of program eligibility criteria to include irrigated saline croplands will not significantly expand the national acreage pool, although local effects may be important. Potential new enrollment is limited by additional eligible acreage, county enrollment ceilings, and enrollment incentives for irrigated lands. Offsite water quality benefits attributable to reduced salt-loading may be very significant. However, enrollment of irrigated saline cropland is less cost-effective than currently eligible cropland from a commodity supply perspective. State involvement in support of a CRP salinity provision is likely to increase program effectiveness. (See also W91-03704) (Author 's abstract)

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**105. Water Quality Benefits from the Conservation Reserve Program.**

Ribaudo, M. O.

Washington, DC: Economic Research Service, Resources and Technology Div.; USDAAER606; ERSAER606XSP, 1989. 40 p.

*Notes:* Replaces PB89-175624

*NAL Call #:* A281.9-Ag8A-no.606

*Descriptors:* Ground water/ Cost benefit analysis/ Land reclamation/ Land use/ Soil erosion/ Soil conservation/ Water quality/ Farmlands/ Environmental transport/ Nonpoint sources/ Food Security Act of 1985/ Conservation Reserve Program/ Natural resources and earth sciences/ Soil sciences/ Hydrology and limnology

*Abstract:* The Conservation Reserve Program, a land retirement program designed to remove from production 40 to 45 million acres of highly erodible cropland, may generate an estimated \$3.5 to \$4 billion in water quality benefits. Potential benefits include lower water treatment costs, lower sediment removal costs, less flood damage, less damage to equipment which uses water, and increased recreational fishing. Benefits were estimated with a set of procedures that approximated the physical, chemical, biological, and economic links between soil erosion and water use.

**106. Water quality improvement and wetlands restoration.**

Weitman, D.

In: When Conservation Reserve Program contracts expire: The policy options; Ankeny, IA: Soil and Water Conservation Society, 1994. pp. 20-22

*Descriptors:* Conservation Reserve Program/ United States

*Abstract:* Addressed the importance of water quality and wetland benefits related to CRP.

**107. Watershed water quality programs: Lessons learned in Illinois.**

Davenport, T. and Lowrey, J.

In: Perspectives on nonpoint source pollution: Proceedings of a national conference. (Held 19-22 May 1985; at Kansas City, MO.)

Washington, D.C.: U.S. Environmental Protection Agency; pp. 256-258; 1985.

*Notes:* Document number: EPA 440-5-85-001

*Descriptors:* nonpoint sources/ watersheds/ pollution control/ Freshwater pollution/ agricultural pollution/ soil erosion/ government policy/ United States, Illinois/ lakes/ nonpoint pollution/ Illinois/ state policies/ United States, Illinois, Pittsfield Lake/ Environmental action/ Pollution control/ Prevention and control

*Abstract:* Several nonpoint source control projects-- Sec. 108 Great Lakes Demonstration Projects, Clean Lakes Projects, Sec. 314 Agricultural Conservation Program Projects, and Rural Clean Water Projects--

have been implemented in watersheds critical for agricultural pollution. Evaluation of these ongoing nonpoint source control projects is necessary for facilitating future NPS control programs. Presently in the State of Illinois, 2 major watershed nonpoint source evaluation projects exist--the Lake Pittsfield (Blue Creek) and Silver Lake (Highland) Watershed projects. Recommendations on projects selection, development, and implementation are discussed based on evaluation of these projects. Priority lakes for agricultural nonpoint source water quality problem abatement are tabulated in order of priority.

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**108. Wetlands Reserve Pilot Program: An assessment based on state leadership workshops.**

American Farmland Trust.

Washington, D.C.: American Farmland Trust; 12, 10 p. (1993)

*Notes:* Cover title. "December 1993."

*NAL Call #:* QH75-.W47-1993

*Descriptors:* Wetland conservation/ Wetlands

This citation is from AGRICOLA.

**109. Wetlands Reserve Program.**

Hussey, S. L.

*Fisheries* 19 (8): 42-43. (1994)

*NAL Call #:* SH1.F54; *ISSN:* 0363-2415

*Descriptors:* wetlands / fishery resources/ agriculture/ nature conservation/ legislation/ resources management/ environmental protection/ fisheries/ habitats/ wildlife conservation/ Wetlands Reserve Program/ Stock assessment and management/ Law/ policy/ economics/ social sciences/ Conservation/ wildlife management/ recreation/ Water law and institutions/ Environmental action/ United States

*Abstract:* Historically, one of the greatest threats to wetlands has been drainage for agricultural purposes. One-fourth of U.S. Cropland, more than 100 million acres, was obtained by clearing and draining wetlands. This loss of wetland functions and terrestrial ecosystems. Three-fourths of the nation's fish production depends on wetlands. A wetlands protection program with tremendous potential is the Wetlands Reserve Program, authorized by the food, Agriculture, Conservation and Trade Act of 1990. While not commonly associated with fisheries, this program offers significant opportunities to improve fisheries habitats. The Wetlands Reserve Program was established for the voluntary restoration and protection of wetland by landowners through permanent or 30-year easements on up to 1 million acres of wetlands previously modified for agricultural production. The program is designed to take marginal cropland out of production, providing landowners with the opportunity to benefit by maintaining wetlands. Riparian areas are also eligible for enrollment in the program. The prospect of habitat for fish and wildlife is one national priority factor in determining eligibility for enrollment.

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**110. When a Landowner Adopts a Riparian Buffer: Benefits and Costs.**

Lynch, L. and Tjaden, R. Maryland Cooperative Extension; Fact Sheet 774, 2000.

<http://www.riparianbuffers.umd.edu/PDFs/FS774.pdf>

*Descriptors:* State conservation programs/ Conservation Reserve Enhancement Program/ Maryland

*Abstract:* Detailed costs and benefits of riparian buffer installation.