American Rivers * Defenders of Wildlife * Environmental Defense * Environmental Working Group * Friends of the Earth * Global Resource Action Center for the Environment (GRACE) * The Humane Society of the United States * Minnesota Project * National Audubon Society * National Campaign for Sustainable Agriculture * National Catholic Rural Life Conference * Natural Resources Defense Council * Ocean Conservancy * Sierra Club * Sustainable Agriculture Coalition * Union of Concerned Scientists * Waterkeeper Alliance

Chief Bruce Knight
Natural Resources Conservation Service
U.S. Department of Agriculture
14th and Independence Ave., SW
South Building, Room 5105-A
Washington, D.C. 20250

VIA HAND-DELIVERY & FACSIMILE

August 27, 2002

RE: EQIP FUNDING FOR LIVESTOCK PRODUCTION

Dear Chief Knight:

The 2002 Farm Bill directs the Natural Resources Conservation Service to target 60 percent of each year's Environmental Quality Incentives Program (EQIP) funds for cost-share and incentive payments to practices related to livestock production. As your agency develops new regulations for this program we urge you to consider the following recommendations for that funding. The overall intent of these recommendations is to ensure that EQIP funds are used to encourage and assist farmers and ranchers to adopt livestock production systems and conservation practices that *over the long-term and in a cost-effective manner* will protect and enhance the nation's natural resources, environment, quality of life, and public health. We ask that these recommendations be adopted by NRCS as EQIP regulations and clear directives to NRCS State Conservationists.

As you consider the important issue of how taxpayer dollars will and will not be used to support large concentrated animal feeding operations (CAFOs), we trust that you will weigh the full environmental and social ramifications of these decisions. The substantial environmental and public health risks associated with CAFOs are well documented and increasingly wide spread. The revised EQIP rule will mark the first time decisions are made concerning how federal tax dollars will be used in this context. It is essential for NRCS to ensure that taxpayer dollars are not used to perpetuate the status quo and that funds meant to protect and enhance the environment are not diverted into technologies and practices that actually degrade natural resources and pose significant public health risks.

1. Highest Funding Priority for Sustainable Livestock Production Systems.

We recommend that NRCS give the highest priority for use of EQIP funds to sustainable livestock and poultry producers whose systems are designed to minimize the risk of harm to natural resources and public health. A major purpose of EQIP is to assist producers in avoiding the inclusion of their agricultural operations in regulatory programs while also helping the operations meet the environmental and natural resource quality criteria established by the regulatory programs.[i] The Managers' Statement in the Conference Report for the 2002 Farm Bill emphasizes this mandate by directing the agency to maximize efforts that help producers avoid inclusion in future regulatory programs. The Statement also directs the agency to encourage the use of grazing systems, such as year-round, rotational or managed grazing systems, that enhance productive livestock and poultry operations.[ii] Promotion of these sustainable production systems achieves another major purpose of EQIP - to assist producers to make beneficial and cost-effective changes to their productions systems with regard to nutrient management, grazing management and other practices.[iii] Giving priority to sustainable livestock and poultry production systems also addresses the statutory requirement that the Secretary accord a higher priority to providing assistance and payments that encourage use of cost-effective conservation practices.[iv]

The issue of technical assistance is also of particular concern to us. We urge NRCS to educate and train its own personnel to ensure that they can give well-informed advice and guidance about sustainable livestock and poultry production systems to farmers and ranchers. We also recommend that NRCS direct State Conservationists to actively seek out entities and individuals with expertise in sustainable livestock and poultry production systems for consideration as providers of third party technical assistance.

2. Recommendations for Concentrated Animal Feeding Operations (CAFOs): (a) Target Funds to Deal Comprehensively with Existing CAFO Problems; (b) Prohibit Funding for New and Expanded CAFOs; (c) Determine Cumulative Environmental Impacts of CAFO EQIP Subsidies; and (d) Ensure Public Participation.

We are aware of the statutory directive that EQIP be used in part to help producers comply with local, state, and national regulation. In addition, the 2002 Farm Bill amended EQIP by removing the authority of NRCS to impose a *categorical* restriction on the distribution of EQIP cost-share funds to large livestock feeding operations. <u>NRCS, however, still retains a mandate to target EQIP funds for livestock and poultry production in a cost-effective manner that optimizes environmental benefits. We urge NRCS to use these statutory requirements to ensure that the distribution of EQIP funds to CAFOs is carefully targeted to deal comprehensively with existing environmental degradation and public health threats caused by CAFOs.</u>

Background: As a prelude to discussing our specific recommendations on EQIP funding for CAFOs, we briefly recount some of the many problems posed by CAFOs. The proliferation of CAFOs in the United States has resulted in significant environmental degradation and increased threats to public health. Most of these CAFOs were established with little or no regard for their environmental and public health impacts. Many CAFO waste handling systems, for example large-scale liquid manure lagoons and effluent sprayfields, have inherent design flaws and are operated in a manner that guarantees significant releases of air pollutants, catastrophic spills of manure, urine and other wastes, significant odor problems, health threats from antibiotic resistant pathogens, and long-term, chronic environmental degradation.[v]

There is a growing body of evidence that CAFO systems can serve as incubators for antibiotic resistant bacteria and as sources of pollution by both the antibiotics and the bacteria.[vi] Some of these bacteria are human pathogens that can cause disease directly. In addition, because bacteria can share genetic material with other types of bacteria, the development of genes for antibiotic resistance is of concern in any type of bacteria. All such bacteria contribute to the worsening problem of antibiotic resistance affecting humans, which a federal task force recently termed "a growing menace to all people."[vii] An estimated 70% of the antimicrobials used in the U.S. each year are added to animal feed for nontherapeutic purposes, i.e., to promote slightly faster growth and to prevent diseases that would otherwise result from the stressful, unsanitary conditions prevalent at CAFOs.[viii] An array of health organizations – including the American Medical Association, American Public Health Association, American College of Preventative Medicine, Ambulatory Pediatrics Association, Council of State and Territorial Health Officials, World Health Organization, and other expert groups – have called for a phase out of the nontherapeutic use of medically important antibiotics.

Recently, one medical organization - the Michigan State Medical Society, an association representing 14,000 Michigan physicians - called for a moratorium on all new CAFOs based on a comprehensive assessment of public health risks. In May 2002, this group passed a strongly worded resolution stating that animal factories pose very significant public health and environmental risks to communities and the general public. Threats range from hastening the development of antibiotic resistant bacteria to contaminating ground and surface water to releasing ammonia gas. The resolution urged the state to impose an immediate moratorium on animal factories until public health and environmental risks are addressed. The resolution also criticized the State of Michigan for developing a system which fails to contain animal factory pollution including no permit system for discharges in waters, no public input mechanism for the people impacted by animal factory pollution, and no monitoring of adjacent drains, streams or wells. The resolution called for an immediate moratorium on new CAFOs, a mandatory permit process, mandatory monitoring of adjacent waters, and a phase out of open air waste lagoons.

Many CAFOs were established with no guaranteed access to a land base sufficient for environmentally sound use of manure and other animal wastes as nutrient inputs for agricultural operations. The result has been chronic over-application of nutrients, salts, and other CAFO waste components leading to significant surface and ground water degradation and soil deterioration.[ix] NRCS itself has identified numerous areas around the country where the nutrient load from animal production is significantly out of balance with the available land base.[x]

The quantity of water used by large-scale CAFOs is also an issue of concern, especially in relatively arid areas of the West. The western states of New Mexico, Idaho, Kansas, and Oklahoma have seen an influx of dairy and hog CAFO operations into areas, such as the Ogallala Aquifer, where groundwater is already being overdrafted.

The response to impacts of CAFOs on the environment and public health has been increased environmental and public health regulation of CAFOs at all levels of government, as well as a significant increase in litigation over CAFO siting and operation brought by government and private plaintiffs. In one notable case, the city of Tulsa and the Tulsa Metropolitan Utility Authority have sued the poultry industry and a poultry processing plant based on studies showing that nutrient loading from cumulative land application of poultry waste has degraded the city's drinking water supply from Lakes Eucha and Spavinaw.[xi] Some state and local governments have called for a moratorium on the establishment of more CAFOs in their jurisdictions. Others have focused on phasing out the use of liquid waste lagoons and sprayfields.

We also note that in addition to negative impacts on the environment and public health, the establishment of large-scale CAFOs also has net negative economic impacts on many communities, with some seeing a net overall decrease of individual income and increased burdens on public services.[xii] Proximity to a CAFO may also significantly decrease neighboring property values.[xiii] Another issue, which we believe needs further examination, is the extent to which the proliferation of large-scale CAFOs in an area stifles the development of other agricultural operations and businesses and non-agricultural businesses in the community.[xiv]

OVERALL RECOMMENDATION: Given the significant increase in EQIP funding and the continuing public conflict over the adverse impacts of CAFOs discussed above, it is crucial that NRCS take measures to ensure that federal funds are used to alleviate, and not further exacerbate, the harms arising from CAFOs. Our organizations, and many others, will seek a thorough public accounting of the use of EQIP funds to ensure that the program is not used to perpetuate or expand CAFO facilities and systems that are inadequate to protect the environment and public health. EQIP should not be administered to underwrite and promote the expansion of an industry whose adverse effects have already cost the nation millions of federal, state, and local tax dollars to redress. We provide the following specific recommendations with regard to EQIP funding for CAFOs that can help achieve this overall recommendation:

(a) Target funding to deal comprehensively with environmental and public health impacts *from existing CAFOs.*

- We recommend that NRCS give a high priority for funding to existing CAFO producers who wish to make the transition from total confinement production systems to non-confinement, sustainable production systems. This type of transition can allow the producer to address numerous problems, such as surface and water quality, air quality, erosion and soil health, and wildlife habitat, in a comprehensive manner.

- We recommend with regard to CAFO producers who do not choose to transition to sustainable systems that NRCS give a priority to those producers who agree to employ technologies and measures demonstrated to effectively control pollution problems through a multi-media approach. Environmental benefits will be optimized if producers consider all the impacts of their operations, including surface and ground water pollution, air emissions, odor, and pathogens, and find the least-cost methods for dealing with the problems simultaneously. In addition, producers who agree to phase out routine use of medically important antibiotics for nontherapeutic purposes, as part of a comprehensive approach to decreasing the environmental impacts of the operation, should receive a priority for funding. Such producers will be taking an important step in protecting overall human health. Producers who also propose projects to capture methane for energy production or to process and reuse manure as a value-added compost product should be encouraged to do so. On the other hand, producers who choose to address only one environmental problem while failing to address other significant problems should receive a low priority for funding.

- We recommend that NRCS refrain from funding the re-construction of waste handling and management facilities with demonstrated design and operational flaws, particularly large-scale liquid waste lagoons and effluent sprayfields. These systems have been the source of significant water and air pollution across the nation. While it may be appropriate for NRCS to help retrofit these systems with covers, berms, or other partial pollution controls in the interim, the overall goal should be to phase out their use.

- We recommend that NRCS prohibit the use of EQIP cost-share funds for CAFOs with structures and waste handling facilities located in 100-year floodplains, except to help producers safely remove the facilities from the 100-year floodplain. The practice of siting animal waste storage and handling facilities in the middle of frequently inundated floodplains is contrary to all good conservation common sense. When storms come, these bad siting decisions result in large quantities of animal waste pouring into surface waters and seeping into groundwater supplies. Some jurisdictions have already imposed restrictions on the siting of new or expanding CAFO waste handling and storage facilities in floodplains, while others are paying to buy out existing CAFOs with facilities in floodplains.[xv] Producers should not be encouraged by the provision of federal cost-share dollars to remain in 100-year floodplains awaiting the next disaster. Instead, EQIP funds would be better spent helping producers to safely remove constructed facilities, before they are damaged or abandoned, and restore the land.

(b) Prohibit Funding for New and Expanding CAFOs.

In light of the clear need for EQIP to be targeted to providing long-term solutions to environmental and public health threats posed by *existing* CAFOs, we recommend that NRCS prohibit cost-share funding for the construction of new or expanding CAFOs until: (1) existing CAFOs' environmental and public health problems are addressed and (2) technologies demonstrated to deal *adequately and comprehensively* with all environmental and public health threats arising from CAFO operation are available. Without these assurances, the net effect of the use of EQIP funds for construction of new and expanding CAFOs will be a significant increase in environmental degradation and risks to the public health.

(**c) Determine Cumulative Environmental Impact of CAFO EQIP Subsidies.**

- We recommend that NRCS undertake a comprehensive environmental review with respect to providing EQIP cost-share payments to existing CAFOs as part of the preparation of a proposed EQIP rule. We disagree with the determination of NRCS, provided in the Notice of Availability of EQIP program funds, that it is appropriate to limit environmental assessment only to individual EQIP contracts rather than to provide a comprehensive environmental impact statement for the cumulative impacts of CAFO perpetuation or proliferation stimulated by the use of EQIP funding.[xvi] Note that we also disagree that effects from EQIP activities authorized in FY02 will not be significantly different from those identified in the environmental assessment of EQIP prepared in 1996.

We have recommended that NRCS not provide EQIP cost-share funds to new and expanded CAFOs. If the NRCS is still considering such funding, it is imperative that NRCS and other federal agencies conduct a thorough environmental review of the use of EQIP funds for new and expanded CAFOs before making a final decision. Pursuant to the National Environmental Policy Act, this review should address impacts on air and water resources, soil quality, wildlife, food safety, and social and economic impacts.

- We also recommend that NRCS undertake, or request from other agencies, an analysis of whether the use of EQIP funds to provide capital construction cost-share payments for the expansion of livestock and poultry production CAFOs qualifies as amber box payments under the World Trade Organization framework for agricultural subsidies. These payments appear particularly suspect if the resulting facilities provide little or no net environmental benefits and are themselves significant sources of environmental pollution.

(d) Ensure Public Participation.

We recommend that NRCS direct State Conservationists to provide adequate public notice and an opportunity for the public to speak at State Technical Committee meetings on the issue of EQIP funding for CAFOs. Sound public policy requires that when a federal agency has the discretion to allocate large amounts of federal money that may have profound effects on a community, all members of that community should have an opportunity to provide the agency with information. When making determinations about the use of EQIP funds, the consideration of NRCS and its State Conservationists should extend beyond the interest of individual producers to include the communities that will be affected by the determinations.

3. Priority for Livestock Producers Involved with Cooperative Conservation Efforts.

We recommend that NRCS direct State Conservationists to give priority to EQIP contracts from livestock and poultry producers involved with cooperative conservation efforts. These efforts include initiatives to involve multiple producers in watershed restoration or wildlife habitat improvement that will require the cooperation of multiple landowners. This priority should also include livestock producers seeking to improve water quality in areas identified by federal, state, or local governments as being impaired or of special conservation interest to the community.

4. Revision and Improvement of Comprehensive Nutrient Management Planning.

- We recommend that the NRCS continue with the review and revision of its technical guidance for Comprehensive Nutrient Management Plans (CNMPs). This guidance must ensure that CAFO operators who receive EQIP cost-share and incentive payments will develop and implement a CNMP that provides for environmentally sound management of animal manures and other wastes, including land application of the manure and waste. The guidance must also ensure that such CNMPs deal *comprehensively* with the environmental and public health challenges of livestock and poultry feeding operations and their wastes, including air emissions, surface and ground water pollution, odor, and pathogens.

• We recommend that NRCS significantly improve its nutrient management policy and standards. We appreciate the efforts of NRCS to incorporate phosphorus-based land application standards into its CNMPs but some significant improvements are still necessary. We urge NRCS to revise its nutrient management policy so that CNMPs will include required measures to remediate land with high levels of phosphorus and prevent the buildup of phosphorus to high or very high levels. Current policy allows for significant buildup of soil phosphorus to levels that pose a threat to water quality.

• We recommend that NRCS review and resolve differences among the state Field Office Technical Guides for factors such as the definition of realistic crop yield for determining application rates of nutrients and the extent to which concerns beyond water pollution by nutrients are addressed. Many of these differences are not based on an assessment of regional differences but instead appear to be arbitrary decisions made by State Conservationists. These differences must be examined and resolved by NRCS to provide a greater degree of protection for the environment and public health.

• We also recommend that buffers be considered in the context of all comprehensive nutrient management planning and be required where facilities are sited near wellheads, water bodies, and other environmentally sensitive sites that may be degraded by nutrient pollution.

• We recommend, in light of the long-term nature of CNMPs, that all EQIP contracts that require CNMPs be ten-year contracts.

5. Privacy Provision

We recommend that NRCS advise livestock producers whose operations are subject to federal, state, or local regulation that information provided to NRCS that may be considered private under the statutory privacy provision applicable to farm bill conservation programs may not be considered private for purposes of regulatory programs.[xvii] The provision of conservation program information to NRCS, FSA, or any other USDA agency should not be a barrier for sound administration, public participation, and public accountability that is required by regulatory programs.

Thank you for considering these recommendations. We look forward to a continuing dialogue with you as EQIP is implemented.

Sincerely,

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Cc: Jim Moseley, Deputy Secretary of Agriculture
Mark Rey, Under Secretary of Natural Resources and Environment
Marcus Peacock, Office of Management and Budget
James Connaughton, Chairman, Council on Environmental Quality
Jean-Mari Peltier, EPA, Counselor to the Administrator

ENDNOTES

[i] Food Security Act of 1985, § 1240(2), as amended by Pub. L. No. 107-171, § 2301.

[ii] House Report No. 107-424, Conference Report on Farm Security and Rural Investment Act of 2002 (H.R. 2646) at p. 498.

[iii] Food Security Act of 1985, § 1240(4), as amended by Pub. L. No. 107-171, § 2301.

[iv] Id. § 1240C, as amended by Pub. L. No. 107-171. For example, a 2001 University of Minnesota study of modern rotational grazing demonstrated that sustainable dairy farming methods met or exceeded the environmental and economic performance of conventional farming methods. G. Digiacomo et al, *Sustainable Farming Systems: Demonstrating Environmental and Economic Performance* (June 2001). A University of Wisconsin study found that compared to confinement systems, managed intensive grazing systems for dairy cows can turn work hours into higher profits per animal by reduction of machine, production, and feed costs. G. Frank, et al., *Economics of Alternative Dairy Grazing Scenarios*, Managing Agricultural Resources (October 1995), vol. 28, No. 3, posted on the web at <www.aae.wisc.edu/www/pub/marnews>, with discussion and summary of the study posted at <www.wisc.edu/cias/pubs/briefs/019.htm>. A long-term study comparing the costs of raising pigs in confinement versus pigs raised in non-confined hoop house systems found that fixed costs were $3.33 cents *less* per pig weaned for outdoor herds than for confined herds. Leopold Center for Sustainable Agriculture, *Swine System Options for Iowa* (May 1996) (available on the web at <www.leopold.iastate.edu/pubinfo/pubinfo.html>.

[v] *See generally,* Robbin Marks, CESSPOOLS OF SHAME: HOW FACTORY FARM LAGOONS AND SPRAYFIELDS THREATEN ENVIRONMENTAL AND PUBLIC HEALTH (NRDC & Clean Water Network, July 2001); Merritt Frey et al., SPILLS & KILLS: MANURE POLLUTION AND AMERICA'S LIVESTOCK FEEDLOTS (Clean Water Network, Izaak Walton League & Natural Resources Defense Council)(Aug. 2000). S*ee also,* William W. Simpkins et al., *Potential Impact of Earthen Waste Storage Structures on Water Resources in Iowa,* JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION, vol. 38, no. 3 (June 2002) at p. 759 (study found potential for water contamination by waste lagoons greater than previously thought and recommended that if earthen waste lagoons are allowed, continued water table monitoring should be used to confirm that the state-mandated separation between the liner and the water table is maintained during the life of the structure); U. Iowa & Iowa State U., 2001 Iowa Concentrated Animal Feeding Operations Air Quality Study, Final Report (February 2002) posted on the web at <www.public-health.uiowa.edu/ehsrc/CAFOstudy.htm> (checked Aug. 9, 2002). J.A. Zahn, *Functional Classification of Swine Manure Management Systems Based on Effluent and Gas Emission Characteristics,* JOURNAL OF ENVIRONMENTAL QUALITY, vol. 30 at pp. 635-647 (2001); Janet Raloff, *Hormones: Here's the Beef,* SCIENCE NEWS, vol. 161 (No. 1)(Jan. 5, 2001)(citing studies documenting the transport of growth promoting hormones from livestock feeding operations to downstream waters); Bettina Schiffer et al., *The Fate of Trenbolone Acetate and Melengestrol Acetate After Application as Growth Promoters in Cattle: Environmental Studies*, ENVIRONMENTAL HEALTH PERSPECTIVES, vol. 109 (no. 11)(Nov. 2001)(fate and transport study showing that growth promoting hormone fed to cattle persists in the soil for up to 8 weeks after manure from the cattle is land applied).

[vi] For a comprehensive review of this issue, *see The Need to Improve Antimicrobial Use in Agriculture: Ecological and Human Health Consequences,* CLINICAL INFECTIOUS DISEASES, Vol 34, Supp. No. 3, (June 1, 2002)(multi-author comprehensive published report, also posted on the web at <www.journals.uchicago.edu/CID/journal/contents/v34nS3.html>). Se*e also*, Dana W. Kolpin et al., *Pharmaceuticals, Hormones, and Other Organic Wastewater Contaminants in U.S. Streams, 1999-2000: A National Reconnaissance,* ENVIRONMENTAL SCIENCE & TECHNOLOGY, v. 36, no. 6 at pp. 1202-1211

(March 15, 2002); J. A. Zahn, *Evidence for Transfer of Tylosin and Tylosin-Resistant Bacteria in Air from Swine Production Facilities Using Sub-Therapeutic Concentrations of Tylan in Feed* (Published abstract presented at the International Animal Agriculture and Food Science Conference, Indianapolis, IN (July 24-28, 2001)); J. C. Chee-Sanford et al., *Occurrence and Diversity of Tetracycline Resistance Genes in Lagoons and Groundwater Underlying Two Swine Production Facilities,* APPL. ENVIR. MICROBIOL., vol. 67 (no. 4) (2001)

[vii] Interagency Taskforce on Antimicrobial Resistance, *A Public Health Action Plan to Combat Antimicrobial Resistance* (Jan. 2001), posted on the web at <www.cdc.gov/drugresistance/actionplan/aractionplan.pdf>.

[viii] Margaret Mellon, Charles Benbrook, and K.L. Benbrook, HOGGING IT – ESTIMATES OF ANTIMICROBIAL ABUSE IN LIVESTOCK, Union of Concerned Scientists, Cambridge, MA: UCS Publications (2001).

[ix] Laura Jackson & E. Gilbert, *Swine Manure Management Plans in North-Central Iowa: Nutrient Loading and Policy Implications*, JOURNAL OF SOIL & WATER CONSERVATION, vol. 55, no. 2 (2000)(study of a six square mile area of Hamilton County, Iowa, found that the land area required for agronomic application of phosphorous was 9.4 times the amount of land that was being used and 6.2 times the available land); *see also* J. Schimmel, R. Levins, & D. Keeney, *Phosphorous Balance in Minnesota Feedlot Permitting*, Generic Environmental Impact Statement on Animal Agriculture in Minnesota: Final Technical Working Paper on Economic Structures, Profitability and External Costs. State of Minnesota Environmental Quality Board (June 29, 2001) (analysis of 3,607 Minnesota feedlot permits indicated that the larger the operations, the greater the excess phosphorous per acre, Minnesota feedlots are currently over-applying 1.4 million pounds of surplus phosphorous every year.). The state of Delaware provides an example of this imbalance in the Delmarva region. In 1999, Delaware produced 260,000,000 broiler chickens in a state with 225,000 hectares of cropland. More than one-half that cropland was planted in soybeans, a crop for which land application of manures is not recommended. J. Thomas Sims, *Delaware's Animal Agriculture: Its Role in Nonpoint Source Pollution and Options for the Future,* published in EFFECTS OF ANIMAL FEEDING OPERATIONS ON WATER RESOURCES AND THE ENVIRONMENT (USGS Open File Report 00-204)(2000). California's 1998 Clean Water Act Section 305(b) report listed 41 California ground water basins impaired by salinity, chlorides, and/or total dissolved solids from animal operations. STATE WATER RESOURCES CONTROL BOARD, 1998 CALIFORNIA STATE WATER RESOURCES CONTROL BOARD (May 1999).

[x] NEAL GOLLEHON ET AL., CONFINED ANIMAL PRODUCTION AND MANURE NUTRIENTS (USDA Agriculture Information Bulletin No. 771, June 2001); ROBERT KELLOGG ET AL., MANURE NUTRIENTS RELATIVE TO THE CAPACITY OF THE CROPLAND AND PASTURELAND TO ASSIMILATE NUTRIENTS (USDA PUB. NO. NPS00-0579, DEC. 2000).

[xi] *See, e.g.,* DANIEL E. STORM ET.AL., FINAL REPORT, MODELING PHOSPHORUS LOADING FOR THE LAKE EUCHA BASIN (study by the Oklahoma State University (Stillwater), Biosystems & Agricultural Engineering Dept.(submitted to the Tulsa Metropolitan Utility Authority on Nov. 1, 2001)(concluding that 74 percent of the phosphorus entering Lake Eucha is from land-applied chicken litter). Note that the Lake Eucha watershed has over 700 poultry houses, over 50 hog confinements, and 5 turkey confinement operations.

[xii] *See* BRINGING HOME THE BACON: THE MYTH OF THE ROLE OF CORPORATE HOG FARMING IN RURAL REVITALIZATION, (Report to the Kerr Center for Sustainable Agriculture by the North Central Regional Development Council documenting the negative economic and social impacts of industrialized hog

production on a rural Oklahoma county) posted at the website <http://www.kerrcenter.com/kerrweb/html/pub2.html> (checked Aug. 8, 2002). *See also* Sacoby M. Wilson et al., *Environmental Injustice and the Mississippi Hog Industry*, ENVIRONMENTAL HEALTH PERSPECTIVES SUPP., vol. 110 (no. 2) (April 2002).

[xiii] J. Kilpatrick, *Concentrated Animal Feeding Operations and Proximate Property Values*, THE APPRAISAL JOURNAL, vol. LXIX, No. 3 (July 2001)(concluding that a property located near a CAFO will be negatively impacted by this externality; diminished marketability, loss of use and enjoyment, and loss of exclusivity with a resulting diminishment in value ranging from 50% to 90% of otherwise unimpaired value); R. Palmquist et. al., *Hog Operations, Environmental Effects, and Residential Property Values*, LAND ECONOMICS, Vol. 73, No. 1 (Feb. 1997)(1995 North Carolina study that looked at the impact of hog CAFOs on property values - concluded that the proximity of hog operations has a statistically significant and negative impact on property values).

[xiv] For example, a recent report on the decision by the Norton County Kansas Country Commission to implement stricter CAFO regulations on hog and beef operations included a quote by the co-owner of a local food service business employing over 100 people. He indicated that company officials had considered moving the company out of the county because of the negative environmental impacts of hog CAFOs. U.S. WATER NEWS ONLINE, *Hog Group Says New Norton County Regulations Devastating to Operations* (March 2002).

[xv] For example, in 2000 after the massive flooding of hog and poultry CAFOs during Hurricane Floyd, North Carolina prohibited the siting of new lagoons and waste facilities in the state's 100-year floodplain. The state administers a publicly-funded program to buyout existing lagoons and establish agricultural conservation easements in the floodplains. To date, the state has spent $5.7 million in Phase 1 of the program and is using $6.2 million in public funds for Phase II. North Carolina Dept. Environment & Natural Resources, *DSWC Announces Second Phase of Voluntary Swine Buyout Program* (Press Release issued Jan. 23, 2002). Georgia has prohibited siting in the 100-year floodplain waste storage and handling facilities for new and expanding livestock feeding operations over 300 animal units (except dry poultry operations). Georgia Code of Regulations, §§ 391-3-6.20 & 391-3-6-.21. Minnesota has enacted prohibitions on the siting of new animal feedlots and manure storage areas, or the expansion of existing feedlots and manure storage areas, in its 100-year floodplains. Minn. Rules, Chapter 7020. Iowa has also enacted a new law that will prohibit construction of concentrated feeding operation structures in areas identified by regulation as 100-year floodplains. Iowa Senate File 2293 (2002). Virginia also restricts the siting of poultry houses and litter storage facilities in the 100-year floodplain. Poultry waste storage facilities constructed after December 1, 2000 may not located in the 100-year floodplain, unless the grower has no land outside the floodplain and can store the waste above the 100-year flood elevation or otherwise assure that floodwaters will not contact the waste. New, expanded, or reconstructed poultry houses may not be sited in a 100-year floodplain, unless they are part of an existing, ongoing confined poultry feeding operation and the operator raises the house above the 100-year flood elevation or otherwise assures that poultry and poultry litter do not contact floodwaters. 9 Virginia Administrative Code § 25-630-50, Part IB(3)(Virginia Pollution Abatement General Permit Regulation for Poultry Waste Management)(effective Dec. 1, 2000). Local governments have also enacted prohibitions on livestock and poultry feeding operations in 100-year floodplains. *See, e.g.,* Kent County, Maryland Zoning Ordinance, Article 5, § 1 (prohibiting the siting of poultry houses and livestock waste management facilities in the 100-year floodplain).

[xvi] Federal Register, vol. 67 at pp. 48431-48432 (July 24, 2002).

[xvii] Food Security Act of 1985, § 1244(b), as amended by Pub. L. No. 107-171, § 2004 (a).