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Center for Sustainable Agricultural Systems

September-October, 1998 Newsletter

A Broader View and Challenge for the CSAS

The Center for Sustainable Agricultural Systems continues to do excellent work with land, environment, and people as related to the land. The work that has been done with conserving resources, entrepreneurship and niche markets is commendable. This work needs to continue in light of increasing pressures on the rural population, land use, the environment, and the increased interest in and demand for specialty and organically certified products.

As Nebraska moves into the 21st Century, I see a mix of farms and ranches that comprise Nebraska's food and biomass production complex. For purposes of this discussion, I will oversimplify by dividing them into two groups: large farms, and small to middle-sized farms. There are sustainability issues in both of these groups.

The large farm group will include family and other operating structures. Vertical integration of production with marketing and processing will increase. New food, industrial, and medicinal farm products developed through biotechnology will increase contractual arrangements with marketers and processors. If current trends continue, these farms and ranches will have under their control the bulk of Nebraska's land, machinery and other production resources, and will supply at least 80% of Nebraska's cash receipts from farm marketings. Environmental impacts particularly related to use of chemicals and livestock concentration, land use, and food safety will be sustainability issues for these operations. Further farm consolidations will result in depopulation of rural areas and the loss of community viability and services.

The second group includes small and middle-sized farms and ranches mostly run as family operations. Networking production and marketing activities will become increasingly important to these operations. Sharing resources such as machinery and joint ventures among family members, neighbors and others offer opportunities to increase competitiveness. New forms of cooperatives may evolve. These operations will also be concerned with environmental issues. Sustainability concerns include continued access to competitive markets for their production, the entry of new farmers and ranchers into businesses, and the generation of sufficient income to provide an acceptable quality of life for the families involved. It is anticipated that throughout this group of farms, off-farm employment, home-based businesses, and production for niche markets will be important for success. Entrepreneurship will continue to be important in these operations.

The viability of this group of farms has a direct bearing on the future of communities and rural Nebraska.

Sustainability issues for the two broad groupings of farms and ranches can be classified into four interrelated types: social, human resources, economic and environmental. Social issues include laws, regulations, consumer food preferences and the values of society regarding families, communities and quality of life. Human resource issues center on the demographics of the management and labor input on farms and in rural areas and communities. Economic issues center on the profitability of operations, risk, access to market, and entrepreneurship. Environmental issues, which are of concern to the greater society as well as globally, center mainly on natural resources: land, water, air and climate. Recent terrorist events give reason to include personal safety as an environmental concern.

Two recent Nebraska initiatives fit well with the interests of the CSAS. The first is a Transitioning Agriculture initiative. This initiative centers on the need to bring new farmers into business as the farm and ranch operator population grows older. Relatively high capital requirements and risks in crop and livestock production are important considerations. The Center for Rural Affairs in Walthill, NE recently brought a group of people with diverse interests together with new farmers to discuss this issue. The availability of credit and assistance from established farmers were important aspects of the discussion. The UNL Institute of Agriculture and Natural Resources identified as a high program priority a Transitioning Agriculture initiative that includes management education and mentoring for new farmers and their families.

The Nebraska Agricultural/Environmental Bridge Building Project is an initiative led by the Nebraska Department of Agriculture and includes input from state and federal agencies, producers, agribusiness and environmental groups, and the University of Nebraska. The objective is to bring agricultural and environmental interests together and dialogue. This group has identified four priority issues: economically sustainable developmental production, land use, livestock waste, and water quantity and quality.

In conclusion, it appears that sustainable systems issues will increase in importance. The two example initiatives are consistent with the interests of the CSAS. They suggest challenges and a broader view of sustainable agricultural systems.

Submitted by Glen Vollmar, Interim CSAS Director

Highlights of Upcoming Book: *Under The Blade*

This is the third in a series of articles that highlight information in a book to be published this December by Westview Press titled *Under the Blade: The Conversion of Agricultural Landscapes*. In this article Allen Olson focuses on farmland conversion and the law.

Olson teaches land use, environmental, soil conservation, and federal farm program law at the University of Arkansas, and is a staff attorney for the National Center for Agricultural Law Research and Information. He practiced land use law in Virginia from 1977 to 1995. Additional authors who contributed chapters in the book are from universities around the country. The book is co-edited by Richard Olson, University of Nebraska and Tom Lyson, Cornell University. For more information, contact Richard Olson at the CSAS office, or e-mail him at csas005@unlvm.unl.edu.

Types of land use laws

Laws enacted by federal, state and local governments have both direct and indirect effects on land use and farmland conversion. There are at least five types of laws that affect land use:

1. Laws that directly regulate the use of land, e.g., zoning, subdivision control, site plan approval, and environmental regulations such as effluent and emission limitations.
2. Laws that give an individual landowner the right to seek redress for damage done to his/her property by the use of a neighboring property, e.g., nuisance laws.
3. Laws that tax the use of land, either directly or indirectly. Taxes may be levied on income derived from the use of the land, on capital gains from the sale of the property, or the value of the land as part of an inheritance. Local governments impose real property taxes on land, the amount sometimes depending on how the property is used.
4. Laws that subsidize a particular use of land. Federal programs that support commodity prices or farm income may promote agricultural land use while federal and state highway and sewer projects favor residential and commercial uses of property.
5. Laws that allow or encourage, but neither mandate nor subsidize, certain land uses, e.g., state statutes that authorize the voluntary donation of conservation easements or government-funded educational programs on methods to control farmland erosion.

Farmland preservation laws

State and local governments have enacted the majority of laws that have the specific objective of preserving farmland. Two major types of farmland preservation laws are agricultural zoning and purchase of development rights (PDR).

Agricultural zoning. The most common type of farmland preservation program at the state and local level is direct regulation through zoning. Agricultural zoning ordinances can take several forms: large-lot zones where only one dwelling unit is permitted on each parcel with minimum parcel sizes mandated from 10 acres to 200 acres or more; area-

based allocation zones where the number of permitted dwellings is based on the size of the overall parcel, but where the lots are required to be small (one to three acres) and clustered so as to preserve the maximum amount of farmland; exclusive agricultural zones where only farming activities and associated residential and commercial uses are permitted; and conditional-use zones where only farming activities are permitted by right, but other activities may be permitted as special uses upon an affirmative showing that they will not conflict with the agricultural uses. Although common, agricultural zoning is hardly universal. There are 3,043 counties in the U.S. A recent survey by the American Farmland Trust found that only 700 counties and townships, located in 24 states, had some form of agricultural zoning in place. This number may be a bit conservative, but the true number is probably not much higher. The major advantages of agricultural zoning are that it is relatively inexpensive to implement and is mandatory as to all agriculturally-zoned land within the jurisdiction. The major disadvantage is that zoning can be easily changed when new elected officials take office.

Purchase of development rights. In purchase of PDR programs, farmers whose land is located in areas planned for long-term agricultural use are paid the difference between the value of their land for development purposes and its value for farming. Conservation easements are then placed on the farmland restricting its use to farming and related purposes, usually in perpetuity. The farmers retain ownership of their land subject to the restrictions and continue to farm. The land can be sold or willed to an heir, but the easement restrictions run with the land and are binding upon all future owners.

Fourteen states have programs to purchase farmland development rights (sometimes also called purchase of agricultural conservation easement or PACE programs). As of 1997, the state programs have protected 406,725 acres on 2,769 farms. There are also local PDR programs that have protected additional acreage.

PDR programs have an element of permanence missing in agricultural zoning and enjoy great acceptance among farmers because they provide compensation and are voluntary. PDR has two major disadvantages, however. First, virtually all PDR programs have been chronically underfunded. They do not have enough money to buy easements from all willing sellers in areas designated for preservation. Secondly, because the programs are voluntary, key parcels in an agricultural area are often left unprotected.

Decisions for the future

Agricultural zoning and purchase of development rights represent two fundamentally different approaches to farmland preservation. Both recognize that farmland has a "development value" for urban uses in addition to its agricultural value. Agricultural zoning regulates away, without compensation to the owner, all or part of farmland development value. PDR programs use government funds to compensate owners for part or all of their land's development value.

Society must first decide whether it is committed to farmland preservation. If it is, the next question is whether to compensate farmland owners for lost development value, to

regulate farmland under the police power for the public health, safety and welfare, or to use a combination of these approaches (regulating away part of the development value and paying compensation for the rest). This is primarily a philosophical and political decision. Legal tools are available to preserve farmland should we choose to use them.

Integrated Farm Update: Will Grazing Crop Residues Hurt Next Year's Yields?

With low commodity prices, crop and livestock producers will be looking for opportunities to lower production costs and increase income per acre any way they can. For beef producers, grazing of crop residues will provide a cheap source of feed that will reduce feed and labor costs associated with feeding harvested forages. Crop producers may want to consider renting their stalks out to livestock producers. A valid concern is the effect of grazing crop residues on subsequent crop production.

At the Agricultural Research and Development Center (ARDC) Integrated Farm, we have been evaluating the effect of grazing crop residues on subsequent crop yields for the past five years. Comparisons have been made between grazed and ungrazed plots. Prior to 1997, we saw little effect on subsequent yields following grazing of crop residues. In 1997, dryland corn and grain sorghum yields were reduced 19 and 14% following grazing of crop residues compared to ungrazed plots. Irrigated corn and dryland soybean yields were reduced 6%, while irrigated soybeans were not affected. Lower yields for corn may be attributed to poorer stands on the grazed plots. During the spring of 1997, cattle were still grazing during very muddy conditions. This tracking caused a very uneven surface. At the research farm we are generally in a no-till system. Where no tillage was done following grazing, stands were more uneven because of the poorer seedbed. When tillage was done, stands were much more uniform. The wet conditions also caused surface compaction that may have influenced runoff and overall infiltration in these fields. This may have resulted in moisture stress during some of the hot and dry periods we had during the summer of 1997. In spite of that very dry summer, yields at the ARDC were surprisingly good in 1997. Timely rains and periods of low transpiration rates helped improve growing conditions. Soybean yields were not affected as much as corn, possibly due to the fact that the soybean plant can compensate for poorer stands (plants will bush out more and produce more pods per plant), whereas corn does not have the ability to compensate as much.

Fields that had been grazed for the past five years showed more yield reduction than fields that had only been grazed a couple of years. Grazed plots in fields that have had a break in crop residue grazing also had comparable yields to the ungrazed plots.

In the five-year period 1993-1997, dryland corn yields were reduced 10 bu/acre (6%) for grazed compared to ungrazed plots. Irrigated corn, grain sorghum and soybeans were not affected by previous crop residue grazing.

Grazing conditions became very muddy in mid-winter 1997-1998, but then it was cold in March. It will be interesting to see the effect grazing crop residues last winter will have on this year's crop yields. Yields will be measured this fall comparing grazed and ungrazed plots. The excellent growing conditions this year may mask any detrimental effect grazing had on crop production. A more extensive article summarizing the effects of grazing crop residues on crop yields, residue cover, and soil compaction that will include 1998 yield data will be reported in a later issue of this newsletter.

Our general recommendation is to leave the cattle on the stalk fields as long as there is adequate feed and it isn't too muddy. We recommend a sacrifice area in the field or an area of grass where cattle can be fed hay or other forages if field conditions are too muddy or snow is too deep. If cattle are left in the field later in the spring, tillage may be necessary to obtain a desired seed bed.

Submitted by Gary Lesoing

New Course: Urbanization of Rural Landscapes, Offered Spring Semester

Anew course that examines the patterns, causes and consequences of converting farmland, forests and other rural land to urban uses will be offered at UNL this spring. Changes in land use are the result of complex interactions among law, economics, landscape ecology, social and political forces, ethics, and aesthetics. The course will discuss farmland loss from each of these perspectives. Alternatives to present development patterns, such as ecological design and the compact redevelopment of inner cities, will be explored. For more information, contact Richard Olson, 402-472-0917, csas005@unlvm.unl.edu.

Socrates Network in Europe

Conceptualizing and implementing sustainability in the curricula of European universities is being catalyzed by a multinational consortium of educators planning for the future. The Socrates network for higher agricultural sciences and related sciences education is grappling with how to integrate sustainability into current courses as well as initiate new curricula with this focus. In a recent meeting, Mark Shucksmith (Aberdeen University, UK) said sustainability was both a chaotic and a contested concept, one with promise for bridging the gap between developers and environmentalists. He found the ambiguous definitions and continuing debate positive in a sense that it focuses interest and resources on key development issues, but negative in that much time is spent in "defining," when what is needed is serious work toward solving current food and resource allocation challenges.

Reporting on a survey of educators in Europe, Peter Holen (Wageningen University, Netherlands) found that management of natural resources, understanding key concepts, and facilitating critical thinking were the three issues most important in conceptualizing sustainability. Juha Helenius (Helsinki University) made the critical link with agroecology, the systematic approach using ecological principles in agriculture to establish a credible discipline for education. With Lennart Salomonsson (Sweden) and Charles Francis (Norway), he helped prepare a document on the emerging NOVA Master of Science degree in Agroecology, an international degree that can be pursued at several universities in the Nordic/Baltic region, with an intensive introductory course taught at the Agricultural University of Norway (NLH).

As in the U.S., educators in Europe continue to struggle with finding the best way to introduce sustainability issues into the current courses and curricula. The conference was organized by Wout van den Bor of Wageningen University and financed by the European Community.

Submitted by Charles Francis

Honeybee Populations Lowest Levels in Decade

A combination of parasites, disease, and pesticides has sent U.S. bee populations plummeting to their lowest levels in decades, according to *The Washington Post* (July 20, 1998). Honeybees are the primary pollinators for 90 fruit and vegetable crops, contributing directly or indirectly to a third of the food Americans eat. The article stated that the number of managed bee colonies dropped by 25% in the U.S. from 1995 to 1996, with similar declines noted in several European countries. Some experts "see the decline of the bees and other pollinators as evidence of more profound disturbances in the natural world. 'They are the canaries in the coal mine,' said Stephen L. Buchmann, a research entomologist with the USDA-Carl Hayden Bee Research Center in Tucson."

Source: *Alternative Agriculture News*, August 1998, published by the Wallace Institute.

Resources

Managing Cover Crops Profitably, 2nd Edition, 1998. $19. Comprehensive book on use of cover crops to sustain cropping systems and build soil (1st edition published in 1992).

Explores how and why cover crops work and provides information on building cover crops into any farming operation. Sustainable Agriculture Publications, Hills Building, Room 10, University of Vermont, Burlington, VT 05405-0082. For more information on this and other SARE publications, see http://www.sare.org/san/htdocs/pubs/.

Farms of Tomorrow Revisited: Community Supported Farms - Farm Supported Communities, 1998. $17.95 + s&h. Trauger Groh and Steven McFadden updated their 1990 publication. Discusses social, economic, environmental and other benefits of community supported agriculture (CSA) programs and describes several successful CSA farms in U.S. Includes basic information about how to start and run a CSA. Biodynamic Farming and Gardening Association, PO Box 550, Kimberton, PA 19442, 800-516-7797 or 610-935-7797.

Whole Farm Planning: A Survey of North American Experiments, 1998. $10 or free online. Describes whole farm planning, an approach to farm management that encourages farmers to view and manage their farms as integrated systems and to identify how their farms affect the environment. Henry Wallace Institute for Alternative Agriculture, 9200 Edmonston Road, Suite 117, Greenbelt, MD 20770-1551, 301-441-8777, hawiaa@access.digex.net, http://www.hawiaa.org/.

Nutrient Management: More Than an On-Farm Priority. Free. This 8-page bulletin, produced by the Northeast Region SARE Program, reviews characteristics of nutrient flows in agriculture, explores opportunities for enhanced nutrient cycling through sustainable farming methods, and examines how social policies and economic factors influence the nutrient management agenda. Send name, address and quantity requested to nesare@zoo.uvm.edu.

Fooling with Nature. (Call for video cost.) FRONTLINE TV program that aired in June on PBS stations explores the endocrine disruption hypothesis - a theory which posits that certain hormone-mimicking chemicals can disrupt the body's chemistry and lead to cancer, genital deformities and lowered IQ. The Web site also has considerable information on this topic. PBS Video, PO Box 791, Alexandria, VA 22313-0791, 1-800-328-7271, http://www.pbs.org/wgbh/pages/frontline/shows/nature/.

Hormone Impostors, 1997. (Call for video cost.) Video examines current research and findings about hormone disrupting chemicals, including pesticides. Interviews experts regarding several cases where synthetic hormone-disruptors have been implicated in causing harm. Reviews hormone system and describes how synthetic chemicals can interfere. Bullfrog Films, Inc., PO Box 149, Oley, PA 19547, 610-779-8226, bullfrog@igc.org, http://www.bullfrogfilms.com/index.html.

Also see the USEPA Web page on endocrine disruptors, http://www.epa.gov/opptintr/opptendo/index.htm.

Despite the 1993 pledge by the Clinton Administration to reduce pesticide use and make children's health the top priority in federal pesticide regulation, almost nothing has been

done in this area. So says an Environmental Working Group report, "Same As It Ever Was..." released in May 1998. This and other EWG reports can be found at http://www.ewg.org/.

Fields of Change: A New Crop of American Farmers Find Alternatives to Pesticides. $14 + $3 s&h. Report from the Natural Resources Defense Council profiles 22 farmers in 16 states who made the conversion from conventional pest management systems to alternative pest management systems while maintaining or improving the profitability of their operations. NRDC, Publications Department, 40 West 20th St., New York, N.Y. 10011, 212-727-4486, http://www.nrdc.org/nrdcpro/fppubl.html.

Pesticides in Surface Waters: Distribution, Trends, and Governing Factors. 1997. $69.95. Reviews all peer-reviewed and government studies of pesticides in U.S. surface waters from 1950s to early 1990s, including small- and large-scale studies. Presents wide range of data on pesticide contamination and points out data gaps and research. Also, *Pesticides in Ground Water: Distribution, Trends, and Governing Factors*. 1996. $69.95. Ann Arbor Press, Inc. 121 South Main Street, PO Box 310, Chelsea, MI 48118, 800-858-5299 or 313- 475-8787, customerservice@sleepingbearpress.com.

Specialty and Minor Crops Handbook, 1998. $35 + tax and s&h. Updated and expanded from first edition (1991), this version contains 63 crop profiles, comprehensive bibliography, glossary of Asian vegetables, and index to common and scientific crop names. Small Farm Center (UC-Davis), 530-752-8136.

The Organic Pages: Organic Trade Association's North American Resource Directory, 1998. $44.95. Lists contacts for organic growers, associations, brokers, certifiers, consultants, distributors, importers/exporters, manufacturers, retailers, restaurants, and fiber producers. Discount with membership. Organic Trade Association, PO Box 1078, Greenfield, MA 01302, 413-774-7511.

The USDA Nutrient Data Lab maintains the National Nutrient Databank, a repository of nutrient values for about 6000 foods and up to 65 nutrients. See http://www.nal.usda.gov/fnic/foodcomp.

Composting for Manure Management. $39. Describes the methods used to process and market composted manure. Covers composting methods for poultry, hog, dairy and beef manure; water quality impacts; overcoming problems, from odors to leachates; and anaerobic digestion technology for managing manures. BioCycle, 419 State Ave., Emmaus, PA 18049, 610-967-4135.

For USEPA information on composting, see http://www.epa.gov/epaoswer/non-hw/compost/index.htm#analysis

Manure Matters. For the last three years, the University of Nebraska's Livestock Envionmental Issues committee has distributed this newsletter. Future distribution will be electronic only at http://www.ianr.unl.edu/manure/ (also contains archived copies). To

receive e-mails alerting you to new issues, send message to listserv@unl.edu, and in the body type subscribe manurematters.

Small Farm Resource Guide. Free. USDA-CSREES, Plant and Animal Systems, Stop 2220, 1400 Independence Ave., SW, Washington, D.C. 20250, 202-401-4385, smallfarm@reeusda.gov, http://www.reeusda.gov/smallfarm.

The joint strategy that the USEPA and USDA proposed on 9/16/98 to reduce harmful runoff from large animal farms can be found at http://www.nhq.nrcs.usda.gov/cleanwater/afo/.

Coming Events

Contact CSAS office for more information.

1998

Nov. 6-7 - Small Farm Trade Show and Conference, Columbia, MO

Nov. 16 - Organic Crop Training, Bloomfield, NE

Dec. 9 - Organic Crop Training, Columbus, NE

Dec. 10 - Organic Crop Training, Geneva, NE

Dec. 10 - Farming Profitably in a Changing Environment Conference, Urbana, IL

Dec. 10 - Conference - Farming Profitably in a Changing Environment, Urbana, IL

Dec. 16 - Organic Crop Training, near Mead, NE

1999

January 11 - Organic Crop Training, Hastings, NE

Jan. 8-9 - Great Plains Regional Vegetable Conference, St. Jo, MO

January 19 - Organic Crop Training, Tecumseh, NE

Jan. 21-22 - Farm Marketing into the Next Millenium - joint conference of the North American Farmers' Direct Marketing Association and the Great Lakes Vegetable Growers Convention, Grand Rapids, MI

June 12-16 - 6th Conference on Agroforestry in North America: Sustainable Land-Use Management for the 21st Century, Hot Springs, AR (call for papers deadline Oct. 1, 1998). tclason@agctr.lsu.edu, http://www.missouri.edu/~afta/Sixth_Conf.html

June 14-16 - XXVIII International Congress Work Sciences in Sustainable Agriculture, Horsens, Denmark. http://www.sp.dk/~cgs/ciosta/

DID YOU KNOW?

In 1980 there were 67,000 farms and ranches in Nebraska with an average size of 715 acres; in 1996 the numbers were 55,000 and 855 acres.

Nebraska farm income declined about 25% in 1997, and another 20% decline may occur this year. Nebraska Cooperative Extension and the Nebraska Department of Agriculture will provide funding to expand financial counseling assistance to farmers and ranchers this fall.

Among the objectives of the 1996-2000 Nebraska Cooperative Extension Natural Resources and Environmental Management Action Plan are: irrigators will reduce water application per acre by 10%; number of farmers using site-specific application systems for agricultural fertilizers will increase by 15%; increase the percentage of crop acres on which IPM is practiced to 75%; reduce use of persistent or highly water-soluble pesticides by 10%; increase biological or cultural pest control practices by 10%. For details on this and other action plans, see http://www.ianr.unl.edu/ianr/coopext/Coopext3.htm.

Earlier this summer the European Commission approved a proposal to ban use and production of the toxic, ozone-depleting pesticide methyl bromide by 2001, bringing Europe in line with the U.S. phaseout date.

USEPA issued an order 8/11/98 saying U.S. water utilities (5,600 water systems serving 240 million Americans) must give consumers annual reports on the state of their drinking water.

A World Wildlife Fund study released 8/18/98 says the world is running out of seafood because 70% of its major fishing grounds are being "strip mined" by too many boats that have grown and modernized so much in the past 28 years that they can now catch almost twice as many fish as can be sustainably harvested from the world's oceans.

The earth's protective ozone layer will hit its all-time thinnest by 2000 or 2001, the World Meteorological Organisation said on 6/22/98. Rumen Bojkov, leading ozone expert at the United Nations weather agency, said the holes were forecast to stay for the coming 20 years before a recovery by the middle of the next century brings it back to the 1960s levels, according to scientific models.

About half of the world's tropical forests are located in Indonesia, Peru, Brazil, and the Congo that collectively owe the U.S. more than $5 billion. On 7/29/98 Clinton signed into law PL105-214, which allows the Administration to enter into "debt-for-nature swaps" by reducing the debts that certain foreign countries owe to the U.S. in exchange for tangible efforts to preserve and restore tropical forests in those countries.

According to the Organic Farming Research Foundation, approximately 1% of the U.S. food supply is grown using organic methods. In 1996, this represented over $3.5 billion in retail sales. Over the past six years sales of organic products have shown an annual increase of at least 20%. For more information, see the OFRF new Web site: http://www.ofrf.org/.

On 9/2/98 Vice President Gore said the federal government will spend $17.2 million to help save productive farmland in 19 states from residential or commercial development. Gore said the federal money, when combined with state and local funding to total $105 million, will keep 53,000 acres of land on 217 farms in production. The USDA Farmland Protection Program was established in 1996 with a $35 million budget.

On 9/9/98 the Sierra Club issued a release saying urban sprawl is emerging as the fastest growing threat to the U.S. environment as prime farmland is replaced with malls, parking lots, and housing developments. Ten worst cities were Atlanta, St. Louis, Washington, Cincinnati, Kansas City, Denver, Seattle, Minneapolis-St. Paul, Fort Lauderdale, and Chicago.

A child born in the U.S., France or Britain this year will consume, waste and pollute more in a lifetime than 50 children in developing nations, according to the 1998 edition of the Human Development report released by the U.N. on 9/9/98. The report states that 20% of the world's people in high income countries consume 86% of the world's goods, and global consumption of goods and services will top $24 trillion this year, six times more than in 1975.

In September President Clinton signed an executive order mandating that all paper bought by the federal government include at least 30% recycled fibers.

On 9/22/98 the federal government, an environmental group and a children's television show joined forces to recruit children to help find out what is killing the nation's frogs. They set up a Web site devoted to the search and hope to commission thousands of schoolchildren as a nationwide "frog force" to try to save the disappearing amphibians. The Web site (http://www.frogweb.gov/) gives information about the sentinel species and invites users to enter details about dead or deformed amphibians they might see while out-of-doors.

The Center for Sustainable Agricultural Systems bimonthly newsletter is currently available free in hard copy to U.S. addresses.
Current and back issues, along with other sustainable agriculture information is also available on our Web page:
http://www.ianr.unl.edu/ianr/csas/
For comments or questions, or to be added to the mailing list for hard copy, contact the editor at the masthead address, or e-mail csas001@unlvm.unl.edu.

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