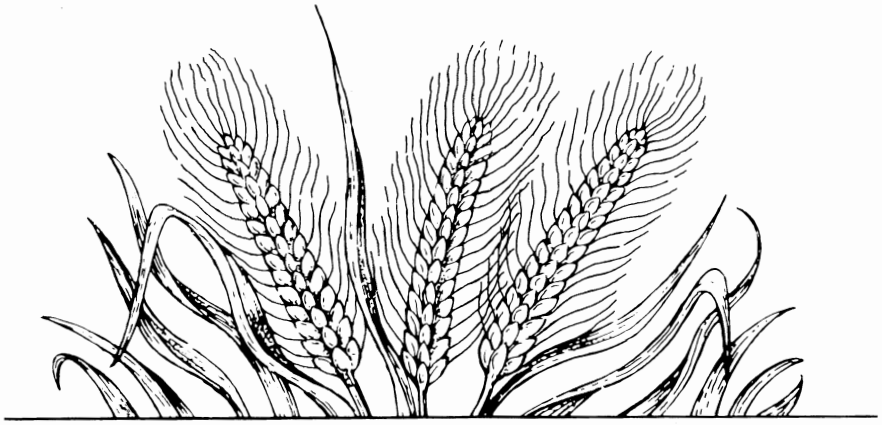
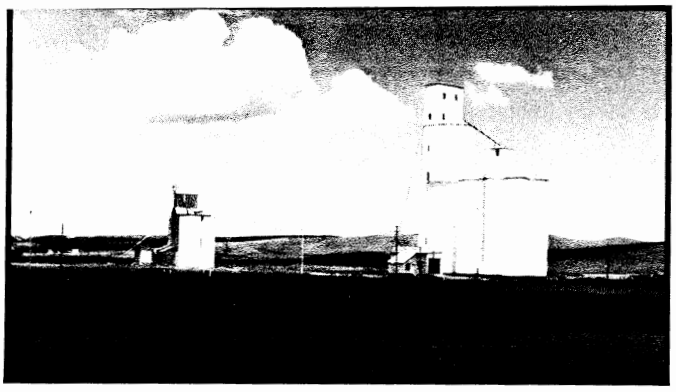
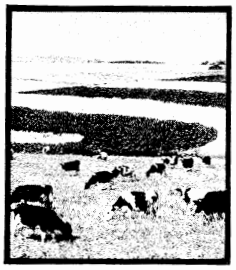
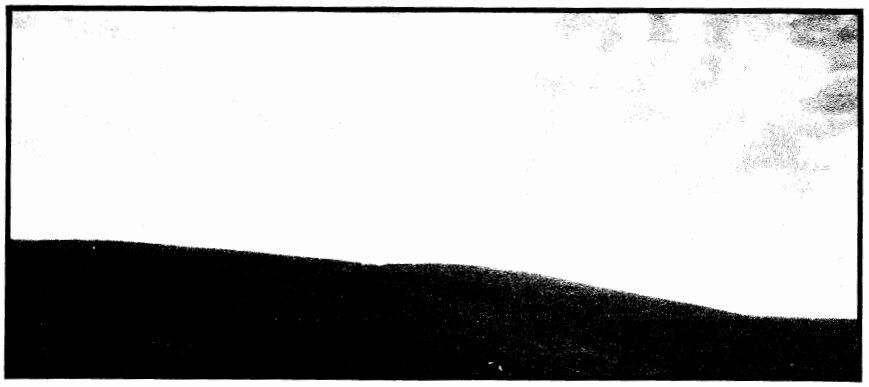


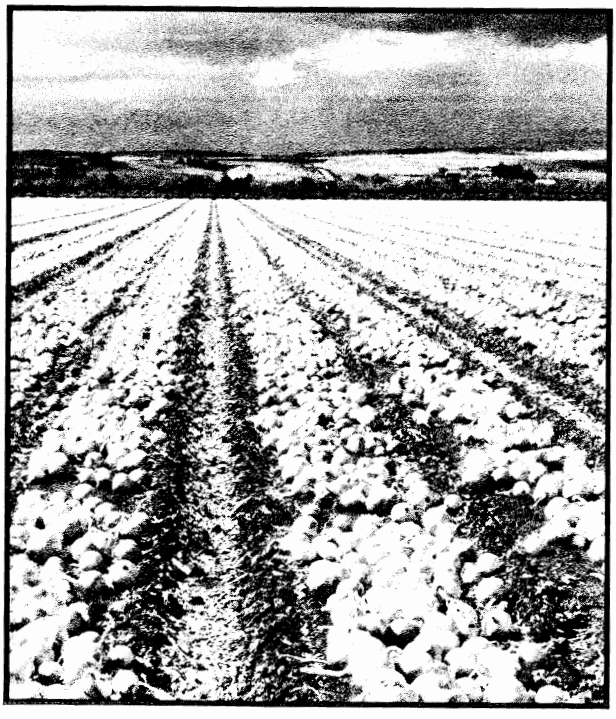
National Agricultural Lands Study

Agricultural Land Retention and Availability: A Bibliographic Source Book









National Agricultural Lands Study

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

Agricultural Land Retention and Availability: A Bibliographic Source Book

PREFACE

In recent years, there has been a rapid proliferation of literature on the rates and consequences of conversion of agricultural land to other uses. Other studies have focused on efforts at all levels of government to protect farmland. This source book is intended to provide the reader with a broad familiarity with this literature, and with the issues involved in the current debate about protecting farmland.

Given the rapidly expanding interest in the subject, the report does not attempt to be a comprehensive guide. Instead, it provides a selection of sources that should be useful to a diverse audience, including state and local officials; planners and researchers; farmers, ranchers and farm organizations; business and professional groups; and members of civic, religious and educational institutions.

The National Agricultural Lands Study defines "agricultural lands" as lands currently used to produce agricultural commodities, or lands that have potential for such production. The definition includes cropland, pastureland, rangeland, forestland and other land in farms. This source book concentrates on the cropland portion of agricultural land.

Each of the book's five chapters begins with a brief introduction to the topic covered, followed by a few annotated citations to the literature. For the reader's convenience, a somewhat unorthodox method of citation has been followed. The title is referred to first and reference to the author is second. This approach is intended to make it easier for the general reader to identify literature most relevant to his or her interests. Most citations are accompanied by information about obtaining the publication.

The five chapters include:

One: AGRICULTURAL LAND WITHIN A CHANGING CONTEXT

This overview chapter is intended to be of broad interest. It describes some of the reasons why concern has arisen over the conversion of agricultural land to other uses, and provides references to reports and studies which, in varying degrees of detail, survey the topic. Most of these reports cover subjects taken up in subsequent sections of the book. For the reader's convenience, therefore, references to these overview studies are repeated in subsequent chapters where relevant.

Two: THE AGRICULTURAL LAND BASE: LIMITATIONS AND CAPABILITIES

This chapter provides references to recent, national level resource surveys, inventories, and assessments that are especially relevant to concerns about agricultural land conversions and availability. The references have been divided into two groups—summary information and short reports likely to be of interest to most readers, and detailed resource inventories and analyses likely to be of primary interest to a more specialized audience.

Three: COMPETITION FOR AND ALLOCATION OF AGRICULTURAL LAND

This chapter, in two sections, is likely to be of greatest interest to resource economists, planning professionals, and researchers. The references in the first section describe urban and non-urban competition for agricultural land, and the processes involved in conversion of agricultural land to other uses.

Accurate and reliable measures of whether the market is allocating agricultural land among different uses in socially, economically, and environmentally satisfactory ways are not available. The references in the second section represent different views about how optimal land allocation can best be achieved, including discussion of alternative public policies designed to improve the performance of the land market.

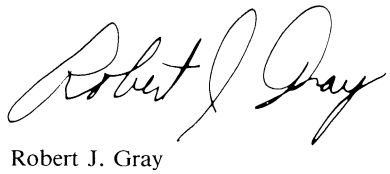
Four: STATE AND LOCAL AGRICULTURAL LAND PROTECTION PROGRAMS

State and local officials, farmers, citizen groups, and others interested in agricultural land protection programs may find this section especially relevant. It provides references to literature which addresses state and local programs and issues on a generic basis. Those interested in specific state and local programs will find additional references in Appendix III.

Five: THE FEDERAL ROLE

This chapter is divided into two sections. Sources listed in the first section discuss the role of federal and federally assisted projects in encouraging the conversion of farmland. Of more general interest, the second section provides references to hearings, reports, and congressional debate on proposed legislation designed to assist states in demonstrating techniques for protecting agricultural land. Other literature on land use policy or legislation also is discussed.

Information about the availability of publications and their price was gathered in mid-1980, and is, of course, subject to change. Readers may wish to contact the publisher before ordering any publication.



January 1981

Robert J. Gray
Executive Director
National Agricultural Lands Study
Washington, D.C.

PUBLICATIONS OBTAINABLE FROM THE NATIONAL AGRICULTURAL LANDS STUDY

Just before this bibliography went to press, the National Agricultural Lands Study (NALS) completed its inventory of NALS publications. We proudly share with you our final inventory. Each publication may be obtained free-of-charge by writing:

National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006

Twelve major NALS publications are now in print. The are:

1. **Executive Summary of NALS Final Report—1981**
2. **NALS Final Report—1981**
3. **Protecting Farm Land: A Guidebook for State and Local Governments**
4. **Executive Summary of Protecting Farmland: A Guidebook for State and Local Governments**
5. **Zoning to Protect Farming**
6. **Where Have The Farm Lands Gone?**
7. **Interim Report Number One—The NALS Plan of Study**
8. **Interim Report Number Two—Agricultural Land Data Wall Chart**
9. **Interim Report Number Three—Farm Land and Energy: Conflicts in the Making**
10. **Interim Report Number Four—Soil Degradation: Effects on Agricultural Productivity**
11. **Interim Report Number Five—America's Agricultural Land Base**
12. **Agricultural Land Retention and Availability—A Bibliographic Source Book**

A few of the NALS publications are referred to elsewhere in this bibliography. For your convenience, a brief summary of each work follows:

1. **Executive Summary of the NALS Final Report—1981**

In fulfilling its responsibility to present a Final Report to the President in January 1981, NALS has evaluated the nature, rate, extent and causes of the conversion of agricultural land to non-agricultural uses. The report discusses the economic, environmental and social consequences of conversion, and evaluates the various methods for retaining land for agriculture. It recommends ways to reduce potential losses to the nation resulting from the continued conversion of agricultural lands.

The Study estimates that U.S. farmers will need to plant between eighty-four and 143 million additional acres by the year 2000 to meet anticipated domestic and foreign demands for agricultural products. The result: most if not all of the nation's good agricultural land is likely to be under cultivation by the century's end.

2. **NALS Final Report—1981**

A longer, more detailed version of the Executive Summary described above.

3. **Protecting Farm Land: A Guidebook for State and Local Governments**

This guidebook is the first comprehensive evaluation of farm land protection programs ever published in the United States. It is the result of intensive field and technical research, and is a centerpiece of the NALS effort. It is expected that the guidebook will be a classic in its field—valuable to citizens and officials interested in farm land protection for many years to come.

4. **Executive Summary of Protecting Farmland: A Guidebook for State and Local Governments.**

A condensed version of the above.

5. **Zoning to Protect Farming**

Local government officials and the layman interested in ways to protect farm land will find this guidebook a valuable aid. The book's special emphasis is on comprehensive planning and zoning. In clear, concise language, the author explains why people protect farm land, how farms are converted to other uses, ways to protect farm lands, case histories of local farm land protection programs, and how to start a farm land protection program.

6. **Where Have the Farm Lands Gone?**

A vividly written, informative pamphlet used nationwide by citizens who are advocating farm land protection. Now in its fourth printing, this twenty-four page booklet is in high demand where there is a need for public education about the local, national and global consequences of farm land conversion. Used by state and local government officials and citizens' groups to encourage community action to save agricultural land for agriculture. Urban development away from prime agricultural land is urged. University professors have made the pamphlet required reading in a wide range of disciplines: soil science, agricultural economics, sociology, environmental studies, landscape architecture, geology, geography, biology and agronomy. Also in demand by high school teachers, and by farm, professional, civic and religious groups. Winner of National First Place Award at 1980 Agricultural Communicators in Education (ACE) Conference, University of California, Berkeley.

7. **NALS Interim Report Number One—The Plan of Study**

The origin, organization and aims of the National Agricultural Lands Study are set forth in this introductory report. The report outlines the Study's program of research, discusses factors affecting the use of agricultural land, and there is an inquiry into the debate by competing interests over the use of agricultural land.

8. **NALS Interim Report Number Two—Agricultural Lands Data Sheet**

This report presents basic information about the American agricultural land base in concise wall chart form. Entitled the Agricultural Lands Data Sheet, it is available in fold-out form in black and white, and also in wall-chart form, in color, on sturdy paper. The data sheet focuses upon non-federal lands only. On an individual state-by state basis, it shows the total acreage of crop, pasture, range and forest lands; total prime

farm land, and the number of agricultural acres converted to non-agricultural uses in each state between 1967 and 1977. NALS definitions for the various categories of agricultual lands are provided.

9. **NALS Interim Report Number Three—Farm Land And Energy: Conflicts in the Making**

The possible future effects of energy development on agricultural lands are described in the NALS Interim Report Number Three. The report addresses some of the conflicts that may arise as the nation's energy program evolves in the months ahead. Topics discussed include projections of feedstock availability, energy "boomtowns," surface mining, synthetic fuels, power plants and transmission lines, hydroelectric facilities and damage to crops from air pollution.

10. **NALS Interim Report Number Four—Soil Degradation: Effects on Agricultural Productivity**

The National Agricultural Lands Study's central concern is the conversion of agricultural land to non-agricultural use. However, in Interim Report Number Four, the Study also examines the effect of soil erosion upon the United States' present and future ability to produce food for the nation and the world. Prepared by the National Association of Conservation Districts, this report defines types of soil erosion; and discusses the effects of erosion on agricultural productivity. Other topics include soil compaction and loss of organic matter; water supples for irrigation; soil salinity and alkalinity; air pollution and soil problems in urbanizing areas. Erosion is discussed from both an historical and present-day point-of-view.

11. **NALS Interim Report Number Five—America's Agricultural Land Base in 1977.**

This detailed presentation of U.S. agricultural land facts is handsomely illustrated with easy-to-understand land maps. Farm production regions are delineated (excluding Alaska and Hawaii). The number of non-federal prime farm land acres in each state are shown, and there is a state-by-state delineation of total non-federal prime agricultural acres in cropland, pastureland, rangeland, forest land and other uses. Agricultural lands with high and medium potential for conversion to cropland are shown. The report points out that although the U.S. has about 125 million acres left of quality agricultural land with a high or medium potential for cropland conversion, it is not realistic to assume that all of these acres will be available for conversion because they are presently producing red meat, dairy and wood products, etc. Conversion is possible, the report emphasizes, only at various costs to other segments of our national economy.

12. **Agricultural Land Retention and Availability—A Bibliographic Source Book**

The National Agricultural Lands Study has published sixteen case studies, workshop reports and technical papers. These are also available free-of-charge by writing NALS. They are:

NALS Technical Papers

1. The Role Of Agricultural Land In National And Regional Economies, by Benjamin Huffman.
2. Federal Documentation Of Agricultural Land Availability And Use, by Allen Hidlebaugh, Tom Frey and Joseph Yovino.
3. Adequacy Of Land Use Information, by Michael Caughlin.
4. Future Demands For U.S. Agricultural Land, by Robert Boxley.
5. Agricultural Land Use Shifts And Cropland Conversion Potential, by Thomas Schenarts.
6. The Sociodemographic Context Of Land Use In Nonmetropolitan America In The 1970's, by David Brown and Calvin Beale.
7. The Conversion Of Agricultural Land To Development Uses, by Anthony DeVito.
8. Markets For Agricultural Land And Their Performance, by Michael Caughlin, John Noble and Benjamin Huffman.
9. Demographic, Social And Economic Conditions In Farm Production Regions Of The United States, by David Brown.
10. Federal Programs Affecting Agricultural Land, by Thomas Mierzwa and Hal Hiemstra.
11. Consequences Of Federal Tax Provisions On Agricultural Land Availability, by John Noble and Michael Caughlin.
12. Maintaining American Cropland Availability: Global Dimensions Of A National Controversy, by David McClintock.
13. Public Perception Of Agricultural Land Availability Problems, by Nancy Bushwick with Elwood Schaefer.
14. Maintaining The Production Capacity Of Agricultural Land: Implications of RCA Projections, by Allen Hidlebaugh.
15. An Assessment of Technological Change Underlying Long-Run Projections of Agricultural Productive Capacity, by Robert Weaver.
16. Balancing Energy Production With Agricultural Land Availability.

NALS Case Studies

1. Perinton, New York: A Case Study in Farmland/Open Space Preservation.
2. The Residential Construction Tax: A Closer Look at the Southern York County (Pennsylvania) School District's Version of Subdivision Taxation.
3. Competition for Farmland: A Case Study of Frederick County, Maryland.

4. Rural Water Systems and Land Use: A Case Study of Sioux Falls, South Dakota.
5. A Case Study of Ohio's Current Agricultural Use Value Taxation Program for the Preservation of Farm Land.
6. Canton Township, Michigan: Local Action to Preserve Farmland.
7. A Case Study: St. Joseph County, Indiana.
8. Farmland Preservation Policy in Dane County, Wisconsin.
9. Local Soil and Water Conservation Policy: The Case of the Town of Sterling, Vernon County, Wisconsin.
10. Rural Zoning in Madison County, Nebraska.
11. Land-Use Case Study: Bottineau County, North Dakota.
12. Land Use Planning in Southwestern Missouri: A Struggle for Control of the Future.
13. Five Case Studies from the Western Region: 1980.
14. Rural Development Research and Education: Case Studies from the Southern Rural Development Center.
15. Ten Case Studies of Agricultural Zoning: Black Hawk County, Iowa; DeKalb County, Illinois; Marion County, Oregon; Stanislaus County, California; Tulare County, California; Walworth County, Colorado; Weld County, Colorado; Brooklyn Park, Hennepin County, Minnesota; Sioux Falls, Minnehaha County, South Dakota; West Hempfield, Lancaster County, Pennsylvania.
16. Case Studies of State Programs to Protect Agricultural Land: Maryland, Oregon and Wisconsin.
17. Case Studies of Agricultural Districting: Virginia Agricultural Districting Program and New York Agricultural Districting Program.
18. Case Study of Purchase of Development Rights: Suffolk County, New York.
19. Case Study of Metropolitan Growth Management: Twin Cities Metropolitan Council, Minnesota.
20. Case Study of Transfer of Development Rights: Buckingham Township, Lancaster County, Pennsylvania.
21. Coping with Public Agencies.

NALS Workshop Reports

The impact of agricultural land losses on the United States' present and future ability to produce food and fiber was discussed during the fall and winter of 1979 at NALS public workshops held in seventeen states. A listing of workshop reports follows:

1. Agricultural Lands Workshops Northeastern Region.
2. Report of the Phillipsburg, New Jersey Agricultural Land Workshop.
3. Report of the Carlisle, Pennsylvania Agricultural Land Workshop.

4. Report of the Ashland, Massachusetts Agricultural Land Workshop.
5. Report of the West Lebanon, New Hampshire Agricultural Land Workshop.
6. Agricultural Lands Workshops North Central Region.
7. Regional Summary Agricultural Lands Workshop North Central Region.
8. Summary of the Kansas City, Missouri Agricultural Lands Workshop.
9. Summary of the Dubuque, Iowa Agricultural Lands Workshop.
10. Summary of the Moorhead, Minnesota Agricultural Lands Workshop.
11. Summary of the Fort Wayne, Indiana Agricultural Land Workshop.
12. Agricultural Lands Workshops Western Region.
13. Report from the Western Regional Workshops.
14. Agricultural Lands Workshops Southern Region.
15. Summary: Agricultural Lands Study Workshops (Southern Region).
16. Proceedings of the Agricultural Lands Study Workshop Memphis, Tennessee.
17. Proceedings of the Agricultural Lands Study Workshop, Irving, Texas.
18. Proceedings of the Agricultural Lands Study Workshop, Burlington, North Carolina.
19. Proceedings of the Agricultural Lands Study Workshop, Tallahassee, Florida.

TABLE OF CONTENTS

One: AGRICULTURAL LAND WITHIN A CHANGING CONTEXT

The conversion of agricultural land to non-agricultural uses such as housing, water reservoirs, and highways, is attracting a great deal of attention and debate at all levels of government. To some, this conversion is viewed primarily as a local problem, with little or no importance to the country's overall agricultural productive capacity. Others fear that a continuation of current trends will limit, over the long run, the country's ability to increase its production of agricultural commodities.

During the 1950's and 1960's, American farmers greatly increased agricultural production while actually reducing the amount of land used for crops. Loss of agricultural land during this period was perceived as a concern not because of the resource value of this land for agriculture, but because of dispersed patterns of metropolitan-area growth. On the urbanizing fringes of many cities, protection of open space and prevention of sprawl development were key motivations behind local policies to keep agricultural land in farm use.

As the references in this section discuss, however, the current debate about farmland conversion now encompasses a broader concern: whether the country will have enough high quality agricultural land to meet long-term demands for food, fiber, and other agricultural products.

The United States has the most extensive body of high quality cropland in the world. Even though only a small fraction of the land base is converted to non-agricultural uses each year, new pressures are being exerted on the agricultural land base.

Most conspicuously, world demand for U.S. food has mushroomed. More land is now required for crop production than was the case in the 1950's and 1960's. In the last decade, the volume of U.S. food exports has doubled, and world demand is expected to continue to grow for years to come. Agricultural exports now account for about one fifth of all U.S. exports, and have become an important factor in offsetting trade deficits incurred from oil imports.

Demands being placed on agricultural land could also be increased through efforts to produce alcohol fuels and other non-food products from agricultural commodities.

How much agricultural land will be needed to meet future demands? The answer will depend not only on the level of demand, but also on the extent to which improvements in agricultural technology will increase yields. As is discussed in most of the references below, opinions differ on the question of future yields. Some analysts believe that the dramatic increase in yields experienced during the 1950's and 1960's is leveling off. Accordingly, land would become a more important factor in the agricultural production equation than it has been since World War II. Higher energy costs, constraints on fertilizer, and the effects of pesticide use on the environment are among the factors affecting the relative importance of land.

Other analysts consider breakthroughs in agricultural technology likely, and predict

that science and technology will mitigate natural resource constraints on agricultural production capacity.

Regardless of the future situation, the current trend has been towards greater utilization of the agricultural land base—especially cropland—relative to the 1950's and 1960's. This has focused attention on the amount of additional land not currently cropped which could be economically drawn into regular cropland rotation if the need arose.

The most recent resource inventory conducted by the Department of Agriculture suggests that the amount of land that potentially could be converted to cropland and that could readily be brought into crop production is more limited in extent than was once thought (about 127 million acres as opposed to 266 million acres).

To what extent is agricultural land availability being affected by conversion to other uses? There is disagreement on this, but the most recent SCS survey estimated that about 2.92 million acres of rural land are being converted to urban and water uses each year. About a quarter of this land was cropland prior to its conversion.

Moreover, development pressures, once considered to be limited primarily to the counties in and around large cities, have apparently become more diffuse. During the 1970's, for the first time, the non-metropolitan counties of the country grew at a faster rate than metropolitan counties, because of an in-migration of people from metropolitan areas. Although the land use implications of this rural population growth have not been intensively studied, many rural areas today are experiencing relatively greater development pressures than was the case a short time ago.

If the trend toward rural population growth continues, development pressures on farmland will no longer be confined to the urbanizing fringe of large cities, but also will occur near many small towns and cities, including many areas where agriculture has been the dominant economic activity. How rural growth will affect such activities is an important concern.

The question remains: What, if anything, should be done about the conversion of agricultural land to other uses?

A number of states and localities around the country have adopted farmland protection programs of one sort or another, and many other areas are actively considering programs. At the federal level, a number of legislative and/or executive branch initiatives have been proposed.

Overview Analyses of the Agricultural Land Retention Issue

The publications described on the following pages address important aspects of the agricultural land retention issue. They vary significantly in length and detail, but generally readers can feel comfortable that they are familiar with the issue if they read two or three of these reports.

(1.) *Where Have the Farm Lands Gone?* by Shirley Foster Fields, National Agricultural Lands Study, Washington, D.C. 1981. 24 pp. Single copies free.

Obtain from:
For free copy write:
National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006
For packet of fifty copies send $10.00 to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Now in its fourth printing, this illustrated pamphlet vividly and succinctly describes the many implications–local, national and global–of farm land conversion. It discusses the irreversible loss of crops, defines *prime* and *unique* agricultural lands, points to enviromental damage and stresses the importance of directing urban growth away from prime agricultural acres. The pamphlet is required reading at universities throughout the U.S. in a broad range of disciplines. Widely circulated, also, by farmers, state and local officials, environmental, civic, professional and religious groups. Winner of National First Place Award at 1980 Agricultural Communicators in Education (ACE) Conference, University of California, Berkeley.

(2.) *Vanishing Acres* by George Anthan, Washington correspondent for the *Des Moines Register.* Seven-part series of articles appearing in the *Register* July 8 through 13 and July 15, 1979. No charge.

Obtain from:
Des Moines Register and Tribune
715 Locust St.
Des Moines, Iowa 50304

In this series of front-page articles, Anthan explores the dimension of the problem of the loss of prime and unique crop lands and how the loss could affect the production of food. Land speculation, how and why cropland is lost, the impact of tax policy and other government actions are discussed. The series also describes the sociological and economic aspects of the encroachment of non-farmers into rural areas, and the efforts of various state and local governments to deal with the problems of farm land loss. Winner of 1980 Raymond Clapper Memorial Award presented by White House Correspondents Association, Washington, D.C.

(3.) *Disappearing Farmlands: A Citizen's Guide to Agricultural Land Preservation.* Washington: National Association of Counties Research Foundation. 1979. 18 pp. No charge up to 10 copies.

Obtain from:
National Association of Counties Research Foundation
1735 New York Avenue, N.W.
Washington, D.C. 20006

This short primer is a useful introduction to the farmland protection topic for public officials and the general public. It succinctly discusses the implications of farmland conversion, describes several state and local farmland protection programs, and provides some observations about the factors involved in establishing local programs. A brief bibliography includes, among other things, references to seven county farmland protection programs.

(4.) *Farmland, Food and the Future,* edited by Max Schnepf. Ankeny, Iowa: Soil Conservation Society of America. 1979. 214 pp. $8.00.

Obtain from:
Soil Conservation Society of America
7515 N.E. Ankeny Road
Ankeny, Iowa 50021

This book should be of considerable interest to planners, resource managers, agronomists, other professionals, and the seriously interested citizen. It contains sixteen chapters, written by different specialists in a variety of disciplines. Topics include most aspects of the agricultural land retention issue: trends in agricultural land use; urban and non-urban competition for farmland; market issues; population distribution and agricultural land; ethical considerations in farmland protection; technological, energy, and land-related factors in agricultural production; policy implications for the future; perspective of the farmer/rancher; state, local, and federal policy considerations relevant to farmland protection; and inferences to be derived from European experience with farmland protection.

(5.) *Land and Food: The Preservation of U.S. Farmland,* edited by Charls E. Little. Washington: American Land Forum. 1979. 63 pp. $6.00.
Obtain from:
American Land Forum
1025 Vermont Ave., N.W.
Washington, D.C. 20005

This report, intended for a general audience, provides an overview discussion of demands upon the agricultural land base, cropland conversion pressures, and the politics and policies of agricultural land protection. It also contains viewpoints of nine individuals, representing a variety of perspectives, on these subjects. The report also reproduces proposed federal legislation and executive branch policies on agricultural land retention, and provides bibliographic and organizational references.

(6.) *Land Use: Tough Choices in Today's World.* Ankeny, Iowa: Soil Conservation Society of America. 1977. 434 pp. (Special Publication No. 22.) $7.00.
Obtain from:
Soil Conservation Society of America
7515 N.E. Ankeny Road
Ankeny, Iowa 50021

Not limited to agricultural land issues, these symposium proceedings should be useful to local officials, citizen groups, and others interested in agricultural land protection programs. It contains over forty-five articles by different authors on a wide variety of land use topics, including case studies and discussions of farmland protection techniques; land use data needs; and institutional and intergovernmental aspects of land use planning and regulation. It also includes a panel discussion on the respective roles of elected officials, farmers, citizens, developers, planners, and legal advisors in land use.

(7.) *Preserving America's Farmland—A Goal the Federal Government Should Support.* Washington: U.S. General Accounting Office. September 20, 1979. 72 pp. (GAO Report CED-79-109.) Single copies free.
Obtain from:
U.S. General Accounting Office
Distribution Section
Room 1518, 441 G Street, N.W.
Washington, D.C. 20548

This report should be of interest to most readers. It discusses concerns about the loss and future supply of farmland, and technological and resource limitations on agricultural production. It concludes that state and local methods to protect farmland have not been very effective, and that federal and federally assisted projects sometimes result in the inadvertent conversion of high quality farmland. It discusses the lack of a firm national policy on, and federal role in, retaining farmland, and concludes that further analysis of land potentially available for crop production is needed. The appendix includes federal agency responses to a draft version of the report.

(8.) *Saving the Garden: The Preservation of Farmland and Other Environmentally Sensitive Land,* by Robert E. Coughlin, et al. Regional Science Research Institute. Prepared for the National Science Foundation. 1977. 341 pp. $19.00 (microfiche $3.50).

Obtain from:
National Technical Information Service
5285 Port Royal Road
Springfield, Va. 22161
(Refer to NTIS Accession # PB 286 747/AS in ordering. Orders not accompanied by payment are assessed a $5.00 billing charge.)

This is a comprehensive and detailed analysis of the issue, likely to be of considerable interest to policy makers, planning officials, and researchers. Focusing on state and local approaches for protecting farmland, it provides in-depth discussion of direct and indirect effects of urbanization; forces and institutions affecting land use; mechanics of land use controls (including discussion of prevalent techniques for protecting agricultural land); experience with implementing land use measures; and factors affecting enactment, implementation, and potential effectiveness of land use controls. It includes an extensive bibliography.

(9.) *Structure Issues of American Agriculture.* Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. 1979. (Agricultural Economics Report 483.) No charge.

Obtain from:
ESCS Publications
Room 0054-South Building
U.S. Department of Agriculture
Washington, D.C. 20250

Thirty-six essays dealing with the way farming is organized, who controls it, and where, given current trends, it seems to be heading. Grouped under six sections (covering historic setting, farm production, public policies, marketing, rural America, and the experience of other countries), the essays deal with such issues and concerns as the family farm, impact of rising land values on agriculture, ownership and land use policy, water use, and the changing role of agriculture in the rural economy.

(10.) *The Worldwide Loss of Cropland.* Lester R. Brown. Washington: Worldwatch Institute. 1978. 48 pp. $2.00.

Obtain from:
Worldwatch Institute
1776 Massachusetts Ave., N.W.
Washington, D.C. 20036

For readers interested in global aspects of the agricultural land availability and conversion issue, this short report should be of great interest. It briefly summarizes what is known about the severity of cropland problems—land conversion, soil depletion, and land abandonment—in various areas of the world, and discusses the public policy implications of these problems.

Two: THE AGRICULTURAL LAND BASE: LIMITATIONS AND CAPABILITIES

Good information about the capabilities and limitations of the agricultural land base is essential for assessing the implications of land conversion for agriculture. As a result of recent U.S. Department of Agriculture inventories and assessments of agricultural land, much more information about the national and state land use trends has become available.

Debate about the national implications of agricultural land conversion has arisen from two studies conducted by USDA's Soil Conservation Service—the *1975 Potential Cropland Study* (Reference 18), and the *1977 National Resources Inventory* (Reference 13). These surveys suggest that more land is being converted to non-farm uses than was once thought, while less land is potentially available for crop production. Because some earlier surveys used different procedures, there is disagreement within USDA about some of these findings. USDA also is conducting a *Soil and Water Resources Conservation Appraisal* (Reference 20), which is expected to be updated every five years. In addition, the Census of Agriculture (Reference 21), conducted every five years, provides detailed information about agricultural trends—nationally, by state, and by county—including information about land-in-farms.

On the basis of its assessment of these existing data sources, the National Agricultural Lands Study has prepared an *Agricultural Land Data Sheet* (Reference 11), which provides on the state-by-state, regional, and national levels, statistics on land currently available for agriculture, land not available for agriculture, and land converted to non-agricultural uses in the 1967 to 1977 period. NALS staff also has prepared a paper (Reference 19) which discusses some of the problems involved in determining rates of conversion.

SELECTED SUMMARY OF THE NALS AGRICULTURAL LAND DATA SHEET

Land Currently or Prospectively Available for Agriculture: The land area of the United States is about two and a quarter billion acres, of which about one and a half billion were in non-federal ownership in 1977. Non-federal land currently or prospectively available for agriculture is about 1.35 billion acres. Of this, about 30 percent (413 million acres) is currently irrigated or non-irrigated cropland, the rest being rangeland, forestland, or other farmland. NALS estimates that about 124.6 million acres of pasture, range, and forest land have a high or medium potential for being used as cropland, assuming 1976 commodity prices.

Land Not Available for Agriculture: NALS estimates that about 156 million acres are no longer available for agriculture because of urban, built-up, or other uses. This includes 68.7 million acres of urban or built-up land; 25.9 million acres in rural roads and railroads; and 48.9 million acres in other non-farm uses such as greenbelts, large unwooded parks, and unreclaimed surface mines. Another 9.4 million acres were in small water bodies and streams.

Estimated Rate of Conversion to Non-Agricultural Uses: The data sheet indicates that about 30.8 million acres of rural land were converted to urban, built-up, transportation, and water uses between 1967 and 1977—an average of about three million acres per year. NALS cautions that this figure should be considered an estimate rather than a precise measure of land use change, because different procedures were used in obtaining the 1967 data.

Many factors other than the physical availability of land need to be considered in order to make a judgment about the effects of land conversion on agriculture. Continuing increases in foreign demand for U.S. food, for example, could encourage expansion of the amount of land in producton, while improvements in agricultural technology could, by increasing yields, have a moderating influence on land requirements for agriculture. The higher energy costs involved in producing agricultural commodities also could influence agricultural land needs. (See Reference 4, [Chapter 8], and Reference 15 for discussion of some of these factors.)

Sources of Information

The references below are in three groups: short summaries and analyses of agricultural land trends; more detailed references and analyses; and previously cited sources which contain relevant sections on the agricultural land base.

Less Technical Summaries and Analyses of the Data

Several excellent summaries of major land inventories and surveys are available. These would be useful for both technical and non-technical audiences. Among them:

(11.) *Agricultural Land Data Sheet: America's Land Base in 1977,* by Allen R. Hidlebaugh. National Agricultural Lands Study. 1980. No charge.

Obtain from:
National Agricultural Lands Study,
722 Jackson Place, N.W.
Washington, D.C. 20006

This short study and chart defines key categories of land data, and provides state-by-state, regional, and national summaries on the status of non-federal lands available for agriculture. Categories covered include total land area; non-federal acreage available for agriculture; non-federal land unavailable for agriculture (i.e. in urban, built-up, rural transportation, water, and other non-farm uses as of 1977); and prime farmland, both used for cropland and not used for cropland. It also contains a state-by-state estimate of agricultural land converted to urban, built-up, rural transportation, and water uses in the 1967 to 1977 period.

(12.) *Major Uses of Land in the United States: 1974,* by H. Thomas Frey. Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. 1979. (Agricultural Economic Report No. 440.) 33 pp. No charge.

Obtain from:
ESCS Publications
Room 0054-S, U.S. Department of Agriculture
Washington, D.C. 20250

This summary provides an overview of basic land use patterns in the country. Includes state-by-state, regional, and national summaries of agricultural and forest uses; and land in special uses. Because of differing methodologies, definitions, and assumptions, some of the information in this report differs from other studies cited.

(13.) *National Resource Inventories: Summary.* Soil Conservation Service, U.S. Department of Agriculture. 1979. No charge.
Obtain from:
Soil Conservation Service
P.O. Box 2890
U.S. Department of Agriculture
Washington, D.C. 20013

This short summary contains key data from the National Resource Inventories. It provides data on cropland, grassland, and forestland trends; provides estimates of land in urban and built-up uses in 1977; identifies potentials for new cropland; and estimates prime farmland acreage in the U.S.

(14.) *Summary of Non-Federal Natural Resources of the United States,* National Association of Conservation Districts. 1979.
Obtain from:
National Association of Conservation Districts
1025 Vermont Avenue, N.W.
Washington, D.C. 20005

This is a short useful summary of the National Resources Inventories; some information from other recent natural resources appraisals is included.

(15.) *Who Owns the Land?* Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. September 1979. 21 pp. No charge.
Obtain from:
ESCS Publications
Room 0054-South Building
U.S. Department of Agriculture
Washington, D.C. 20250

For readers interested in landownership trends, this brief summary of a landownership survey conducted by the Department of Agriculture should be of interest.

More Technical Information and Analyses

For readers interested in greater detail about the availability of agricultural land, the reports cited below should be of interest.

(16.) *A Perspective on Cropland Availability,* by Linda Lee. Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. 1978. 23 pp. (Agricultural Economic Report No. 406.) No charge.
Obtain from:
ESCS Publications
Room 0054-S
U.S. Department of Agriculture
Wahington, D.C. 20250

An analysis of the overall national implications of the 1975 *Potential Cropland Study.* Topics covered include trends in cropland use; projected cropland demand; changes in the cropland base; and research needs. It contains regional statistics on prime farmland availability.

(17.) *Perspectives on Prime Lands: Background Papers for a Seminar on the Retention of Prime Lands, July 16–17, 1975.* Sponsored by the Committee on Land Use, U.S. Department of Agriculture. 1975. 257 pp. No charge.

Obtain from:
Information Division
Soil Conservation Service
U.S. Department of Agriculture
Washington, D.C. 20250

This report contains background papers for a 1975 USDA seminar on prime lands. Although some of the information is a bit dated, the articles remain pertinent to a variety of land data subjects, especially those related to defining, classifying, and mapping prime and unique farmlands.

(18.) *Potential Cropland Study, 1975,* by Raymond I. Dideriksen, Allen R. Hidlebaugh, and Keith O. Schmude. Soil Conservation Service, U.S. Department of Agriculture. 1977. 104 pp. (Statistical Bulletin No. 578.) No charge.
Obtain from:
Information Division
Soil Conservation Service
U.S. Department of Agriculture
Washington, D.C. 20250

This study provides data and analysis from SCS's 1975 study of potentially available cropland, and land conversion trends. Much of the information in the study was updated by the National Resources Inventory. However, unlike the NRI, the potential cropland study estimated rates of rural land conversion from 1967 to 1975. It found that about three million acres of rural land were converted to urban and water uses each year during this period–a significant increase over prior estimates of land conversion. The 1975 estimate may have been affected by different methodologies used in 1968 and 1975, when the potential cropland study was undertaken.

(19.) "The Potential Supply of Cropland," by Michael Brewer and Robert Boxley. Paper presented at the Resources for the Future Symposium on the Adequacy of Agricultural Land. June 19, 1980.
Obtain from:
National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006

This paper, prepared by NALS staff, analyzes recent data on agricultural land conversion and availability; discusses some of the difficulties involved in comparing recent data with past inventories; and identifies several factors that might explain the apparent increase in agricultural land conversion during the 1970's in comparison with the 1960's.

(20.) *Soil and Water Resource Conservation Act Appraisals (RCA)–Review Drafts.* U.S. Department of Agriculture. 1980. 4 v. (Summary, Part I, Part II, and Program Report.) No charge.
Obtain from:
RCA Manager
Soil Conservation Service
U.S. Department of Agriculture
P.O. Box 2890
Washington, D.C. 20013

Under the Soil and Water Resources Conservation Act of 1978, the Department of Agriculture has been directed to conduct a thorough appraisal of the nation's soil, water, and related resources on a continuing basis. The first such appraisal (called RCA for short) is now in draft form, and provides a great deal of information about the current status of soil, water, and related resources, and possible future demands on these resources, under three different assumptions about future population growth and export

demand for agricultural products. A summary volume of RCA is available and probably will meet the needs of the general reader. Resource professionals may wish to obtain the more detailed reports.

A similar continuing appraisal of forest and rangeland resources is being conducted by the Department of Agriculture, under the Forest and Rangeland Renewable Resources Planning Act of 1974 (acronymed RPA). The second RPA assessment has been completed and is available from the Forest Service (*An Assessment of the Forest and Rangeland Situation in the United States: 1980*). To obtain this report, contact the USDA Forest Service, P.O. Box 2417, Washington, D.C. 20013.

(21.) *U.S. Census of Agriculture, 1974.* (Multivolumed.) Bureau of the Census, U.S. Department of Commerce. For sale by the U.S. Government Printing Office.

Conducted every five years (four years for 1978 and 1982), the Census of Agriculture provides detailed information about changes in land in farms; farm ownership; production of agricultural commodities; and a wide variety of other topics. This information is broken down nationally, by state, and by county. The Census of Agriculture is available in many libraries. Persons seeking to obtain individual volumes should address inquiries to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Previously Cited Sources Containing Pertinent Sections on this Topic:

Reference (4.), *Farmland, Food, and the Future.*
Chapter 2, "Trends in Agricultural Land Use," pp. 13-28.
Chapter 8, "Agricultural Land Use: A Technological and Energy Perspective," pp. 77-89.

Reference (5.), *Land and Food: The Preservation of U.S. Farmland,* pp. 23-29.

Reference (7.), *Preserving America's Farmland,* pp. 5-22.

Three: COMPETITION FOR AND ALLOCATION OF AGRICULTURAL LAND

A. Competing Demands for Agricultural Land and Related Resources

Judging from land conversion statistics, competition for land between agriculture and other activities is intensifying. The most intense competition comes from urbanization. Urbanization pressures are most acute in the suburbs and fringes of major cities, and the land conversion process in such areas has been the subject of considerable study. (See, for example, References 4 [Chapter 3], 22, and 27.) During the 1970's, however, non-metropolitan counties grew faster than metropolitan areas over the decade. The implications of this rural growth for land use have not been fully assessed, but one result may be increased development pressures in largely agricultural areas. Few rural counties, nevertheless, are likely to experience the magnitude of development pressures that characterize suburban growth around major cities.

In addition, non-urban land uses (such as energy development, water reservoirs, and interurban highways) also can compete with agriculture for land (Reference 4 [Chapter 4]). For example, much of the farmland in southern Illinois is underlain with potentially strippable coal. Biomass energy production (such as production of alcohol fuels from crops and crop residues) leaves the land in agricultural use, but could place additional demands on the agricultural land base—both in terms of increasing the amount of land in production, and in terms of potential soil degradation problems if poorer quality land or crop residues are used to produce energy crops (Reference 23).

Changing patterns of landownership also are relevant to the competition between agriculture and other uses of land (Reference 25). During the 1970's, farmland prices increased greatly. Most farm sales were farmer-to-farmer, but many non-farm owners bought land. People who buy land for investments and for amenity value may have different long-term expectations for the land than the traditional farm-oriented landowner.

Literature on Competition for Agricultural Land

(22.) *Dynamics of Land Use in Fast Growth Areas,* by Kathryn A. Zeimetz et al. Economic Research Service, U.S. Department of Agriculture. April 1976. 48 pp. (Agricultural Economic Report No. 325.) No charge.

Obtain from:
ESCS Publications
Room 0054-S
U.S. Department of Agriculture
Washington, D.C. 20250

This report analyzes land use changes (on the basis of aerial photography) between 1961 and 1970 in fifty-three rapid-growth counties, which accounted for about twenty percent of the country's population growth during that decade. The study concluded that land developed for urban uses increased from thirteen percent to sixteen percent

during that period. Of land developed during that period, thirty-five percent had been cropland; twenty-eight percent forestland; and thirty-three percent open idle (this assumes that land not used as cropland or forestland is "open idle"). The study found, however, that there was a wide variation in these percentages in different regions of the country. The proportion of newly urbanized land coming from cropland ranged from a low of six percent in Florida, to seventy percent in California. In the Corn Belt, about half of the newly urbanized land had been cropland; in the Great Lakes states, sixty-two percent had been cropland.

(23.) *Growing Energy: Land for Biomass Farms,* by Kathryn A. Zeimetz. Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. June 1979. 35 pp. (Agricultural Economic Report No. 425.) No charge.
Obtain from:
ESCS Publications
Room 0054-S
U.S. Department of Agriculture
Washington, D.C. 20250

This report discusses land requirements and impacts that might arise from widespread production of biomass energy. It notes that the feasibility of biomass energy production is partially dependent on land availability, and that there is a limited supply of high quality land. Moreover, much of the land potentially available for biomass energy production is currently used for crops, pasture, or timber production, and these uses would need to be accommodated elsewhere. Use of lesser quality land would pose greater land degradation hazards.

(24.) *Growth and Change in Rural America,* by Glenn V. Fuguitt, Paul R. Voss, and J.S. Doherty. Washington: Urban Land Institute. 1979. 101 pp. $13.00.
Obtain from:
Urban Land Institute
1200 18th Street, N.W.
Washington, D.C. 20036

This study contains two essays on rural population growth, and its implications for non-metropolitan government. The first essay, by Glenn V. Fuguitt and Paul R. Voss, analyzes recent trends in non-metropolitan population growth. The study notes that in contrast to past trends, the populations of non-metropolitan counties have increased at a faster rate than those of metropolitan counties—chiefly as a result of a migration of people from metropolitan areas to rural areas and small towns and cities. The second essay, by J.C. Doherty, discusses public and private implications of this population growth – including implications for growth management, land use, and agriculture.

(25.) "Rural Land: Market Trends and Planning Implications," by Robert G. Healy and James L. Short. *Journal of the American Planning Association,* July 1979. pp. 305-316.

This article discusses three recent trends in rural land markets—increased demand for rural properties by non-traditional owners, changes in the size-distribution of landholdings, and increases in land prices—and the effects of theses trends on resource productivity and the environment.

(26.) *The Market for Rural Land: Trends, Issues, Policies,* by Robert G. Healy and James L. Short. Washington: The Conservation Foundation. March 1, 1981. $11.50.

Obtain from:
The Conservation Foundation
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20036

This book provides a more extensive treatment of these issues than Reference 25. Some of the material has been presented in other publications.

(27.) *Suburban Land Conversion in the United States: An Economic and Governmental Process,* by Marion Clawson. (Published for Resources for the Future by Johns Hopkins University Press, Baltimore.) 1971. 406 pp. $22.50.
Obtain from:
Johns Hopkins University Press
Baltimore, Md. 21218

This is a comprehensive assessment of the land conversion process, with special emphasis on the northeastern United States. It should be of considerable interest to those with a need for detailed information about the land conversion process, but may be too technical for the general reader. Among other things, the book discusses the nature of urban impacts on the countryside; the decision-making process and chief actors in urban expansion; suburban land markets; and externalities and interdependencies in urban land uses and values.

Previously Cited Sources Containing Sections Pertinent to This Topic:

Reference (4), *Farmland, Food, and the Future.*
Chapter 3, "Agricultural Land Conversion in the Urban Fringe." pp. 29-47.
Chapter 4, "Non-Urban Competition for Farmland." pp. 49-65.

Reference (8), *Saving the Garden.* pp. 12-77.

B. The Allocation of Agricultural Land Among Competing Demands

A fundamental question associated with the competing demands for agricultural land is whether land is optimally allocated among agricultural and non-agricultural uses. Traditionally, the land market has been the primary means for allocating land. This generally means that land is sold to the highest bidder. When competition arises between farming and development uses, agriculture usually cannot compete, since land prices for development uses are almost always higher than the value of land for agriculture.

Allocation of land is also affected by government policy. Thus, for example, local zoning or state land use controls may limit certain uses of the land, while preferential tax policies may encourage retention of land in agricultural or open space use. And, at times, governments purchase land or rights to land directly.

As the references in this section suggest, economists differ about the desirability or need for government action to allocate land. Some feel that the conversion of agricultural land to other uses does not have a significant enough impact on agricultural production to warrant government policies. Moreover, government policies sometimes have unintended effects.

Others believe that the market is shortsighted in terms of land, and cannot anticipate long-range problems that could result from conversion of high quality farmland. These problems are not limited to effects on agricultural production; they include social and environmental goals, such as protection of the family farm, and protecting open space in metropolitan areas. Finally, there is uncertainty about the effects of new trends in the market for rural land and their consequences for farmland.

Literature on Agricultural Land Allocation

(28.) *Background Paper in Support of an EPA Policy to Protect Environmentally Significant Agricultural Lands.* Prepared by the Office of Land Use Coordination, U.S. Environmental Protection Agency. 1978.
Obtain from:
Office of Public Inquiries (A-107)
U.S. Environmental Protection Agency
Washington, D.C. 20460

For the reader interested in the "environmental case" for farmland protection, this brief document should be of interest. It discusses the environmental consequences of farmland conversion; environmental variables in agricultural production; and the impacts of EPA programs on farmlands.

(29.) "The Economics of Agricultural Land Preservation ," by B. Delworth Gardner, *American Journal of Agricultural Economics,* December 1977. pp. 1026-1036.

This article, though perhaps a bit technical for the general reader, presents a strong case against public intervention to affect the allocation of agricultural land. After reviewing various market imperfections used to justify agricultural land retention legislation, the author concludes that agricultural land retention legislation "is the wrong thing at the wrong time for the wrong reasons."

(30.) *Farm Real Estate Market Developments.* Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. (Series CD-83.)
Obtain from:
ESCS Publications
Room 0054-South Building
U.S. Department of Agriculture
Washington, D.C. 20250

The statistical series provides an introductory discussion of recent market developments, and statistical tables and estimates of recent farm real estate activities.

(31.) "New Forces in the Market for Rural Land," by Robert Healy and James Short. *The Appraisal Journal,* April 1978.

This article describes new factors affecting rural land markets, such as nontraditional owners, consolidation, and parcelization of land which could affect land allocation among various uses.

(32.) "On the Allocation of Prime Argicultural Land," by James L. Gibson. *Journal of Soil and Water Conservation,* Nov.-Dec. 1977.

This article examines, from an economist's perspective, three examples of misallocation of agricultural land on the urban fringe. The author concludes that the "decision to have public action preserve prime agricultural land or let the market mechanism operate is really a decision that must be made on a parcel-by-parcel basis."

(33.) "Resources for Food and Living," by Thomas Jorling, A.D. Latornell, and Gerald W. Thomas, *Journal of Soil and Water Conservation,* v. 33, Sept.-Oct. 1978. pp. 313-320.

These three articles discuss food and environmental quality concerns and protection of agricultural land resources; and ecological concerns about sustaining food and fiber production on a renewable basis.

(34.) "Rural Land: Private Choices, Public Interests," by Robert G. Healy. *Conservation Foundation Letter,* August 1977. 8 p. $1.00.
Obtain from:
The Conservation Foundation
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20036

This short essay should be of interest to most readers. It notes that private landowners make thousands of different land use choices each day that affect land and resources in rural areas. It addresses the question regarding the extent to which these individual choices are compatible with the public interest.

Previously Cited Sources Containing Sections Pertinent to this Topic:

Reference (4), *Farmland, Food, and the Future.*
Chapter 5, "Land Market Issues," pp. 67-75.
Chapter 9, "Land as a Factor of Agricultural Production," pp. 113-122.

Reference (8), *Saving the Garden.*
Chapter III. "Forces and Institutions Influencing Land Use," pp. 77-110.

Reference (9), *Structure Issues of American Agriculture.*
"Impact of Rising Land Values on Agricultural Structure," pp. 88-96.
"Tenure and Equity Influences on the Incomes of Farmers," pp. 97-107.
"Ownership and Land Use Policy," pp. 161-167.

Reference (27), *Suburban Land Conversion in the United States.*

Four: STATE AND LOCAL AGRICULTURAL LAND PROTECTION PROGRAMS

During the last decade, several states and localities across the country have adopted farmland protection programs of one sort or another. Many other localities and states currently are considering such programs. Most of these programs supplement or go beyond preferential tax policies designed to protect open space, which have been adopted by most states since the 1950's. There is fairly widespread agreement that these preferential tax approaches in and of themselves have not been especially successful in protecting farmland (Reference 46).

For citizens and communities interested in considering farmland protection programs, a key first step is often to identify and be able to apply existing information about the farmland base. Some instructive information is available about the specific information needs of localities interested in identifying what land may be best for farming and what land might be used for other purposes (e.g., Reference 35). In addition, there are several general-purpose planning guides (References 40, 41) which may be useful to communities interested in understanding how agricultural land protection objectives may fit into overall local planning goals.

Federal agencies often can be of assistance in such efforts. The Department of Agriculture, for example, recently initiated a mapping program for prime farmland in selected counties around the country (see Reference 36). Recent soil surveys also can be of use, since they generally provide interpretations of soil capabilities for a variety of agricultural and developmental uses.

States and communities interested in farmland protection almost certainly will wish to become familiar with the approaches and experience to date with the various techniques for protecting farmland.

The National Argicultural Lands Study has published two guidebooks on protecting farmland. One, a guidebook for state and local governments (Reference 47) is a comprehensive assessment of farmland protection programs, methods, and laws. The other (Reference 43) is written for local government officials and laymen with special emphasis on comprehensive planning and zoning. To date, most farmland protection programs have used agricultural zoning. Forty-eight states have also enacted various property tax laws favorable to farmers.

There is also a steadily growing body of literature of considerable utility to readers wishing to familiarize themselves with various approaches to protecting farmland. In addition to analyses on specific state or local programs (References 36, and 6 [various chapters]), these analyses include: a survey and reference to existing state programs (Reference 45); a discussion of state agricultural land issues (Reference 44); and guides to community action at the local level (References 35 and 42). While zoning and purchase of development rights are the most prevalent techniques used to date to protect farmland, there also are several other approaches that are being experimented with in various areas of the country (see Reference 38 for a discussion of some of these).

Literature on State and Local Problems

(35.) *Agricultural Planning Handbook: Identifying Long-Term Productive Farmland.* St. Paul, Minnesota: Metropolitan Council. 1976. 48 pp. No charge.

Obtain from:
Metropolitan Council
300 Metro Square Building
7th and Robert Streets
St. Paul, Minnesota 55101

For local officials, planners, citizen groups, and others who are seeking guidance in how to determine what land is most important for agriculture, this handbook should be useful. Although focusing especially on the Twin Cities region, much of the publication is relevant elsewhere. The report provides a step-by-step discussion of one way to identify agriculturally important lands on the basis of data that are often readily obtainable. Also discussed are the relevant factors to be considered in formulating public decisions about protection of local agricultural land, and a brief discussion of the legal issues and techniques for farmland protection at the local level. The report contains a model zoning ordinance focused on the Twin Cities region which may be of reference value elsewhere.

(36.) *Farmlands Preservation: The State of the Art.* Proceedings of a Conference held November 12–14, 1979, at Washington State University, Pullman, Washington. 167 pp.

Obtain from:
Cooperative Extension
Washington State University
Pullman, Washington 99164

This conference proceeding will be of interest to public officials, citizen groups, planners, and others. Consisting of 16 contributed papers, it includes a variety of topics of relevance to state and local programs; legal issues associated with state and local programs; guidelines for communities in maintaining farms and farmland; case histories of zoning and development rights programs in four areas of the country; state approaches to farmland preservation (including Wisconsin, Oregon, and state property tax relief programs); and U.S. Department of Agriculture programs, including description and status of the Soil Conservation Service's "important farmlands" mapping program.

(37.) *Land Use and the States,* by Robert G. Healy and John S. Rosenberg. Published by the Johns Hopkins University Press for Resources for the Future. Baltimore: Johns Hopkins University Press. 1979. Second Edition. 296 pp. $18.00 hardcover; $4.95 paperback.

Obtain from:
Johns Hopkins University Press
Baltimore, Maryland 21218

This book provides an in-depth discussion of several state land use programs, most of which were initiated in the early 1970's, and their implementation.

(38.) *Middleground Approaches to the Preservation of Farmland,* by Charles E. Little. Prepared for the National Agricultural Lands Study by the American Land Forum, June 5, 1980. 35 pp. No charge.

Obtain from:
National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006

This paper will be of interest to public officials, planners, and others that are interested in protecting farmland through techniques other than zoning and purchase of development rights. It describes some of the reasons why zoning and the purchase of development rights may not be feasible in some areas, and includes description and discussion of several alternative approaches, including deed restriction programs in effect or proposed in Pennsylvania; private land trusts; the coastal conservancy approach now being attempted in California; and Canadian and French approaches to farmland protection or land tenure.

(39.) *Retention of Agriculture Land.* Soil Conservation Society of America. 1976. 30 pp. Special publication No. 19. $2.00.

Obtain from:
Soil Conservation Society of America
7515 Northeast Ankeny Road
Ankeny, Iowa 50021

This is a reprint of five articles from the *Journal of Soil and Water Conservation.* It includes articles discussing: various factors to be considered in defining prime land; farmland retention within a land use planning context; alternatives for controlling development rights; a national viewpoint on important farmlands; and farmland protection initiatives in California and New Jersey.

(40.) *Rural and Small Town Planning,* edited by Judith Getzels and Charles Thurow. Chicago: American Planning Association. 1980. 326 pp. $12.95.

Obtain from:
American Planning Association
1313 E. 60th St.
Chicago, Illinois 60637

This book is likely to be of chief interest to planners and local officials who are interested in how to tailor planning to the specific needs of rural areas. It does not address agricultural land protection issues in great detail, but does provide useful discussion of a variety of planning techniques and assumptions that should be considered in rural areas.

(41.) *Rural Environmental Planning,* by Frederic O. Sargent. South Burlington, Vermont: F.O. Sargent. 1976. 199 pp. $10.00

Obtain from:
American Planning Association
1313 E. 60th Street
Chicago, Illinois 60637

Likely to be of primary interest to planners, this book discusses factors to be considered in planning for environmental considerations in rural areas. Includes discussion on inventorying and classifying rural natural resources (including agricultural land) and the social, economic, and legal framework for rural environmental planning. Although the book focuses on Vermont, much of the discussion is of general interest.

(42.) *Saving Farms and Farmlands: A Community Guide,* by William Toner. American Society of Planning Officials, Report No. 333. July 1978. 45 pp. $6.00.

Obtain from:
American Planning Association
1313 East 60th Street
Chicago, Illinois 60637

This guide contains information of interest to local officials, citizen groups, and others considering farmland protection programs. Topics covered include public purposes in saving farms; tips for planners; discussion of two basic approaches (regulate first, plan second, and vice versa); zoning innovations for protecting farmland (with brief case histories of several zoning alternatives, and discussion of strengths and weaknesses of each variant). The appendix excerpts various zoning ordinances.

(43). *Zoning to Protect Farming,* National Agricultural Lands Study, by William Toner. Washington: National Agricultural Lands Study. 1981. 30 pp. No charge.
Obtain from:
National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006

This guidebook is written for local government officials and laymen interested in ways to protect farming, with special emphasis on comprehensive planning and zoning. In clear, concise language, the author explains why people protect farmland, how farms are converted to other uses, ways to protect farmlands, case histories of local farmland protection programs, and how to carry out a farmland protection program.

(44.) *State Agricultural Land Issues,* by Leonard U. Wilson. Lexington, Kentucky: Council of State Governments. August 1979. 75 pp. $4.00.
Obtain from:
Council of State Governments
Iron Works Pike
Lexington, Kentucky 40578

This short study provides a brief introduction to a variety of agricultural land issues–farmland preservation, foreign ownership, water, and erosion. It discusses emerging farm problems; state agricultural problems; intergovernmental aspects of land resource problems; as well as questions posed, and answers provided, by state officials responsible for administering farmland protection programs in Oregon and Massachusetts.

(45.) *Survey of State Programs to Preserve Farmland,* by Bob Davies and Joe Belden. Prepared for the U.S. Council on Environmental Quality by the National Conference of State Legislatures and Roger Blobaum Associates. April 1979. 79 pp. No charge.
Obtain from:
Public Information
U.S. Council on Environmental Quality
722 Jackson Place, N.W.
Washington, D.C. 20006

Likely to be of considerable reference value to public officials, planners, and citizen groups in states considering farmland protection programs, this is probably the most comprehensive checklist to date on state agricultural land programs. It categorizes state programs by kind (i.e. property tax provisions; agricultural districting; agricultural zoning; transfer and purchase of development rights; and so forth). The report also contains brief summaries of the provisions of agricultural land legislation in each state as of 1979, and a bibliography.

(46.) *Untaxing Open Space: An Evaluation of the Effectiveness of Differential Assessment of Farms and Open Space,* by John C. Keene, *et al.* Prepared for the Council on Environmental Quality by the Regional Science Research Institute, 1976. 401 pp.
Obtain from:
Superintendent of Documents

U.S. Government Printing Office
Washington, D.C. 20402
(Refer to Stock No. 041-011-00032-7 to order Executive Summary; to order full report, refer to Stock No. 041-011-00031-9.)

This is a comprehensive study of state programs that provide property tax incentives to landowners to keep land in farm or open space use. It describes the various approaches to differential assessment, and discusses the extent to which such programs succeed in protecting agricultural land. Both an Executive Summary and the full report are available through the Government Printing Office.

(47.) *Protecting Farm Land: A Guidebook for State and Local Governments,* Washington: National Agricultural Lands Study. 1981. No charge.
Obtain from:
National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006

This guidebook is a major effort by NALS to evaluate current U.S. farmland protection programs. NALS anticipates that this guidebook will be widely used throughout the nation for many years to come. It is the first comprehensive work of its kind in our nation's history.

Previously Cited Sources Containing Sections on this Topic:

Reference (3.) *Disappearing Farmlands: A Citizen's Guide to Agricultural Land Preservation.*

Reference (4.) *Farmland, Food, and the Future.*
Chapter 14, "State's Role in Farmland Retention," pp. 165–188.
Chapter 14, "Local Programs to Save Farms and Farmland," pp. 189–203.

Reference (6.) *Land Use: Tough Choices in Today's World.* Contains articles on state and/or local farmland programs in effect or proposed in New York, California, New Jersey, Iowa, Illinois, Colorado, and elsewhere.

Reference (8.) *Saving the Garden,* pp. 112–322.

Five: FEDERAL PROGRAMS AND AGRICULTURAL LAND AVAILABILITY

Although zoning and most other land use control techniques have traditionally been an activity of state and local governments, debate about farmland loss also involves the alternative role of the federal government. There are two, somewhat different components to this debate: one concerns existing federal programs and policies that sometimes inadvertently encourage the conversion of high quality agricultural land to other uses. The second concerns what role, if any, the federal government should assume in assisting states and localities in developing and implementing farmland protection programs. These two questions are addressed in Parts A and B below.

A. Federal Programs Which May Reduce the Availability of Farmland

The federal government administers a large number of programs that affect land use at the state and local levels (Reference 50). Federal projects and federally assisted projects for highways, water resource development, sewage treatment facilities, and other public works projects have sometimes contributed to the conversion of prime agricultural land. In addition, other federal objectives also can at times conflict with farmland protection objectives. Federal tax policies, for example, affect land development patterns significantly (Reference 49). And, there is growing concern that federal efforts to achieve greater domestic energy production will adversely affect agricultural land, and related resources (such as water). Although it would be difficult to determine exactly how great a role the federal government plays in encouraging farmland conversion, a 1979 survey of the country's soil and water conservation districts found that more than half the districts that characterized farmland conversion as a serious problem also characterized federal actions as a significant or major cause of this conversion (Reference 48).

While social and economic benefits often may justify conversion of farmland to other uses, most federal agencies have yet to factor farmland protection objectives into the planning of projects, or review of state and local project proposals. Exceptions include the U.S. Department of Agriculture, and the Environmental Protection Agency, which recently have adopted internal agency policies designed to reduce the effects of their programs on farmland (References 52 and 53). In addition, the Council on Environmental Quality has issued a memorandum to all federal agencies suggesting that they include effects on prime agricultural land in agency environmental impact statements (Reference 51). A CEQ survey of agency response to the memorandum, however, suggests that impact statements have not generally resulted "in either an adequate description of or mitigation of adverse impacts to agriculture" (Reference 51).

Literature on Federal Programs

(48.) *The Conversion of Agricultural Land: A Look at*

the Issues by Conservation District Officials, Preliminary Report. National Association of Conservation Districts. July 6, 1979. 10 pp. No charge.

Obtain from:
National Association of Conservation Districts
1025 Vermont Ave., N.W.
Washington, D.C. 20005

This is a summary of responses by local soil and water conservation districts to a questionnaire about agricultural land loss within individual districts. About 65 percent of the country's conservation districts (which generally have boundaries coinciding with county boundaries) responded. The questionnaire asked district officials to estimate the severity of agricultural land loss within the individual district, and to identify the kinds of conflicts involved. The questions included the extent to which federal actions contribute to farmland loss; which federal agencies are primarily involved; and what kind of federal programs were involved.

(49.) *Effects of Tax Policy on Land Use.* GAO Report CED-78-97. Washington: U.S. General Accounting Office. April 28, 1978. 48 pp. Single copies free.

Obtain from:
U.S. General Accounting Office
Distribution Section
Room 1518, 441 G Street, N.W.
Washington, D.C. 20548

This report provides an overview of the potential effects of local, state, and federal taxes on land use.

(50.) *Land and Natural Resources Management: An Analysis of Selected Federal Policies, Programs, and Planning Mechanisms.* Report to the President's Interagency Task Force on Environmental Data and Monitoring Programs. Prepared for the U.S. Council on Environmental Quality by Aspen Systems Corp. February 1979. $12.00 ($3.50 microfiche).

Obtain from:
National Technical Information System
5285 Port Royal Road
Springfield, Virginia 22161
(Refer to NTIS Accession # PB-292-500 in ordering. A $5.00 billing charge is assessed if payment does not accompany the order.)

This report provides a detailed and relatively comprehensive description of federal programs affecting land use. In addition to management of federal lands, the report describes planning and coordination acts; federal development programs with land use impacts; federal programs designed to protect natural resources; and a discussion of land use planning mechanisms and conflicts in federal conservation policies. Appendices provide: information on financial programs with land use impacts; a conflicts guide; and a table of statutes.

Federal Agency Policies on Farmland Protection

(51.) U.S. Council on Environmental Quality, "Memorandum for Heads of Agencies: Analysis of Impacts of Prime and Unique Farmland in Environmental Impact Statements." August 30, 1976.

Obtain from:
Public Information
U.S. Council on Environmental Quality
722 Jackson Place, N.W.
Wasington, D.C. 20006

This memorandum requests federal agencies to consider the impacts of federal actions on prime and unique agricultural lands when preparing environmental impact

statements. In addition, CEQ recently has carried out an assessment of agency consideration of agricultural land in impact statements, entitled *Environmental Impact Statement/Prime Agricultural Land Study,* which concluded that the environmental impact statement process generally does not "result in either an adequate description of or mitigation of the adverse impacts to agriculture."

(52.) U.S. Department of Agriculture, "Secretary's Memorandum No. 1827, Revised." October 30, 1978.

This revised USDA land policy indicates that agencies within the Department are to avoid proposing or assisting activities that are likely to force the conversion of high quality agricultural lands to other uses.

(53.) U.S. Environmental Protection Agency, "Memorandum on Environmentally Significant Agricultural Lands." September 8, 1978.
Obtain from:
Office of Public Inquiries (A-107)
U.S. Environmental Protection Agency
Washington, D.C. 20460

This memorandum established an internal policy to "protect, through the administration of its programs and regulations, the nation's environmentally significant agricultural land from irreversible conversion to uses which could result in its loss as an environmental or essential food production resource."

Previously Cited Sources with Sections Pertinent to this Topic:

Reference (4.), *Farmland, Food, and the Future.*
Chapter 12, "The Changing Role of the Federal Government in Farmland Retention," pp. 133–146.
Chapter 13, "The Evolution of a Land Use Policy Within USDA," pp. 147–164.

Reference (6.), *Land and Food: The Preservation of U.S. Farmland.*

Reference (7.), *Preserving America's Farmland – A Goal the Federal Government Should Support,* pp. 35–72.

Reference (28.), *Background Paper in Support of an EPA Policy to Protect Environmentally Significant Farmland.*

B. Proposed Federal Legislation

House and Senate reports, and hearings and debates about legislation often contain much valuable information. This is the case with the farmland retention issue. While states and localities are the key actors in farmland protection programs, several bills have been proposed in Congress over the years which are designed to assist states and localities with farmland protection programs. National legislation to fund state and local farmland protection demonstration projects, and to encourage federal agencies to pay greater attention to the effects of their activities was proposed in both the 95th and 96th Congresses* (see References 55, 56, 57,

59, and 60 for hearings and reports). Although a bill has yet to be enacted, legislation has twice been reported from the House Agriculture Committee, and the House narrowly defeated this legislation when it was brought to the floor in February 1980 (Reference 54). In addition, more general land use planning assistance legislation was proposed in both the House and Senate between 1970 and 1976. Some of these bills included prime agricultural land within their coverage. Although this legislation was never enacted, the legislative process resulted in the preparation of many volumes of testimony and reports of value, including References 58 and 61.

Literature on Proposed Legislation

A few references to congressional literature on land use subjects are provided below. Congressional hearings and reports can be obtained, at various prices, from the U.S. Government Printing Office. Inquiries should be directed to:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

(54.) "The Demise of the Jefford's Bill" by Charles B. Little. *Journal of Soil and Water Conservation,* Vol. 35, No. 2. March-April 1980. pp. 99-100.

This article describes the debate and issues associated with House consideration and defeat of the proposed Agricultural Land Protection Act in the 96th Congress.

*These bills include H.R. 11122, S.2757, and S.1616 in the 95th Congress, and, in the 96th Congress, H.R. 2551, and S.795.

U.S. House of Representatives. Committee on Agriculture:

(55.) *Agricultural Land Retention Act.* Report together with dissenting views to accompany H.R. 11122 including Congressional Budget Office cost estimate. Washington: U.S. Government Printing Office. 1978. (95th Congress, 2nd sess., House Report no. 95-1400.)

U.S. House of Representatives. Committee on Agriculture. Subcommittee on Family Farms, Rural Development, and Special Studies:

(56.) *Agricultural Land Protection Act of 1979.* Hearings, 96th Congress, 1st sess., on H.R. 2551. May 17, 1979. Washington: U.S. Government Printing Office. 1979. 179 pp. Serial no. 96-M.

(57.) *National Agricultural Land Policy Act.* Hearings, 95th Congress, 1st Sess., on H.R. 5882. June 15 and 16, 1977, Washington: U.S. Government Printing Office. 1977. 260 pp. Serial no. 95-L.

U.S. House of Representatives. Committee on Interior and Insular Affairs:

(58.) *Land Use and Resource Conservation.* Hearings. 94th Congress, 1st sess., on H.R. 3510 and related bills. March 17, 18, 24, and 25, and April 14, 1975. Washington: U.S. Government Printing Office. 1975. 622 pp. Serial No. 94-7.

U.S. Senate. Select Committee on Small Business:

(59.) *The Preservation and Control of Farmland.* Hearings, 96th Congress, 1st sess. July 10, 1979. Washington: U.S. Government Printing Office. 1979. 343 pp.

(60.) *Ownership and Control of Farmland in the United States.* Report of the Select Committee on Small Business. January 10, 1978. Washington: U.S. Government Printing Office. 1980. 19 pp. Serial no. 56-195.

U.S. Senate. Committee on Interior and Insular Affairs:

(61.) *Land Resource Planning Assistance Act and the Energy Facilities Planning and Development Act.* Hearings. 94th Cong., 1st sess., on S.619 and S.984. April 23, 24 and 29, 1975. Washington: U.S. Government Printing Office. 1976. 817 pp. Serial No. 57-493 O.

APPENDICES

Appendix I. Federal Agencies

Several federal agencies are involved in research, analysis, and policy aspects of the agricultural land issue. A few of these are listed below.

Council on Environmental Quality
722 Jackson Place, N.W.
Washington, D.C. 20006

CEQ has issued a memorandum (Reference 51) to federal agencies suggesting that they include impacts on prime agricultural land in environmental impact statements. It has also conducted studies on the various subjects related to agricultural land.

Department of Agriculture
Independence Avenue, S.W.
Washington, D.C. 20024

USDA's Economics and Statistics Service frequently conducts research relevant to agricultural land use. The Department's Soil Conservation Service undertakes a variety of inventory and resource monitoring activities relevant to agricultural land, including a prime farmlands mapping program in selected counties. USDA is in the process of implementing an internal departmental policy intended to reduce the impacts on farmland stemming from activities sponsored by USDA agencies. The Secretary's memorandum No. 1827, revised, October 30, 1978, presents USDA's statement on land use policy (see reference 52).

Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20024

EPA's Office of Enviromental Review is involved in co-ordinating EPA's internal policy designed to mitigate the impacts of EPA actions on farmland. The policy is articulated in EPA's "Memorandum on Environmentally Significant Agricultural Lands" (see Reference 53).

National Agricultural Lands Study
722 Jackson Place, N.W.
Washington, D.C. 20006

NALS completed its study in January 1981. In addition to its final report, the study issued a number of interim reports, including two guidebooks on agricultural land protection. One guidebook is for local governments; the other is for both local and state governments, and *all* other interested citizens.

Appendix II. Journals and Periodicals

The reader interested in keeping current with policy developments and research pertinent to farmland retention issues will find a number of newsletters, journals, and periodicals that address agricultural land topics on a more or less regular basis. A few of these are listed below.

Aglands Exchange. Published by the National Association of Counties Research Foundation, 1735 New York Ave. N.W., Washington, D.C. 20006.

American Journal of Agricultural Economics. Published by the American Agricultural Economics Association. Regular membership dues: $25 per year; reduced rates for some categories of members. Send inquires to: John C. Redman, Secretary-Treasurer, American Agricultural Economics Association, Department of Agricultural Economics, University of Kentucky, Lexington, Kentucky 40546.

Farmland Preservation Survey. Published monthly by the Farmland Preservation Institute, Inc., 9107 East Parkhill Drive, Bethesda, Maryland 20014. Price: $60 per year in the U.S. and Canada.

Journal of Soil and Water Conservation. Published six times a year by the Soil Conservation Society of America, 7515 N.E. Ankeny Road, Ankeny, Iowa 50021. Price: $22 a year.

Journal of the American Planning Association. published quarterly by the American Planning Association, 1313 East 60th Street, Chicago, Illinois

60637. Price $10 a year for members; $22 for non-members.

Land Use Notes. Issued by the U.S. Department of Agriculture's Committee on Land Use. Warren T. Zitzmann, editor.

Land Use Planning Reports. Published weekly by Business Publishers, Inc., P.O. Box 1067, Silver Spring, Maryland 20910. Price $157 per year.

Tuesday Letter. Published weekly by the National Association of Conservation Districts. 1025 Vermont Ave. N.W., Washington, D.C. 20005. Price: $50 per year.

Appendix III. A Selected Bibliography on State and Local Farmland Protection Programs

This selected bibliography includes:

- references to multi-state (regional) assessments and conferences on farmland protection issues.
- references to state and local farmland protection programs and proposals in selected states.
- a selected list of bibliographies relevant to farmland protection issues.

Multi-State Literature

American Institute of Planners, *State Land Use Activity.* Prepared for the Department of Housing and Urban Development. Washington: U.S. Department of Housing and Urban Development. 1976. 524 pp. (HUD-CPD-159.)

Although somewhat dated, this reference document describes land use and activities in all 50 states.

Clark, Jon., *Conserving the Nation's Farmland: Background Paper.* Washington: Northeast-Midwest Institute. May 1979. 28 pp.

Focuses especially on the northeast and midwest.

Davies, Bob and Joe Belden, *A Survey of State Programs to Preserve Farmland.* Prepared for the U.S. Council on Environmental Quality by the National Conference of State Legislatures and Roger Blobaum Associates. Washington, D.C.: U.S. Council on Environmental Quality. April 1976. 79 pp.

Huemoeller, William A., *et al., Land Use: Ongoing Developments in the North Central Region.* Ames, Iowa: Iowa State University. 1976. 294 pp.

Land Use: Tough Choices in Today's World. The proceedings of a national symposium, March 21-24, 1977, in Omaha, Nebraska. Ankeny, Iowa: Soil Conservation Society of America. 1977. 424 pp. (Special Publication No. 22.)

Northeast Agricultural Leadership Assembly, *Proceedings of the Northeast Agricultural Leadership Assembly, March 20-22, 1979, Cherry Hill, New Jersey.* Amherst, Massachusetts: University of Massachusetts Environmental Institute. 1979. Vol. 1, 92 pp.; Vol. 2, 436 pp.

Pizor, Peter V., George H. Niewsand, and John H. Swanson, *A Transfer of Development Rights Sampler: A Collection of TDR Ordinances from Municipalities in Eight States.* New Brunswick: Rutgers–State University of New Jersey, Extension Station. 1979. 123 pp. (Extension Circular No. 612.)

Provides local TDR Ordinances in Arizona, California, Connecticut, Florida, Massachusetts, New Jersey, New York, and Pennsylvania.

State and Local Literature: By State

ALASKA

Burton, Wayne E., *Reservation and Preservation of Agricultural Lands in Alaska.* Fairbanks: University of Alaska, Agricultural Experiment Station. 1976. 27 pp. (AES Bulletin #45)

CALIFORNIA

Falasco, Michael R., *Preserving California's Agricultural Green.* Sacramento: California Senate Committee on Governmental Organization. 1976. 85 pp.

Urban/Agricultural Resource Management Taskforce, *California Agricultural Land Preservation.* 1977. 97 pp. (Available through Visalia Planning Department, 707 W. Acequia, Visalia, California 93277).

People for Open Space, *Bay Area Farmland Loss: Trends and Case Studies.* POS Farmlands Conservation Project. San Francisco: People for Open Space. 1980. 37 pp. (Background Report #4.)

–*Farmland and Farming in the Bay Region: A Description.* San Francisco: People for Open Space. 1979. 27 pp. (Background Report #1.)

COLORADO

Buckner, David L., "Land Use Control in Colorado." *Journal of Soil and Water Conservation.* May–June 1979. Vol. 34, no. 3. pp. 127–131.

Ciruli, L. Floyd, *Hold the Mesa: Colorado's Growing Struggle to Preserve Agricultural Land.* Pueblo. 1976. 33 pp. (Available from 34 Fordham Circle, Pueblo, Colorado 81005)

CONNECTICUT

Governor's Task Force for the Preservation of Agricultural Land, *Final Report.* Hartford: Governor's Task Force for the Preservation of Agricultural Land. 1974. 12 pp.

Sadwith, Lucille, "Benefits of Keeping Agricultural Lands in Production in Connecticut." Cornwall Bridge, Connecticut: Center for Farm and Food Research. 1977.

Waggoner, Paul E., *et al., Land for Growing Food in Connecticut.* Storrs: Connecticut Agricultural Experiment Station. 1977. (CAES Bulletin 767.)

FLORIDA

Davis, Bonnie E., "Florida Greenbelts: Preservation of Public and Private Interests." *University of Florida Law Review,* Vol. 27. Fall 1974. pp. 142–150.

Gordon, John R., *Reflections on the Question of Protecting Agricultural Lands.* Gainesville: University of Florida. 1979. 20 pp. (Food and Resources Economics Department Staff Paper No. 124.)

–*Should We Protect Land for Agriculture?* Gainesville: University of Florida. 1978. 16 pp. (Food and Resource Economics Department Staff Paper 110.)

GEORGIA

Georgia Department of Community Affairs, *Rural Problems and Issues: A Background Report.* (Draft Background Report.) Atlanta: Department of Community Affairs. March 21, 1979. 32 pp.

HAWAII

Hawaii Department of Agriculture, *State Agriculture Plan: A State Functional Plan.* Hawaii Department of Agriculture. 1980. 150 pp.

Myers, Phyllis, *Zoning Hawaii: an Analysis of the Passage and Implementation of Hawaii's Land Classification Law.* Washington: Conservation Foundation. 1976. 128 pp.

ILLINOIS

Krohe, James, "Illinois' Shrinking Farmlands: You Can't Grow Corn on Asphalt," *Illinois Issues.* Dec. 1978. pp. 23–26.

Doyle, John C., *Strip Mining in the Corn Belt: The Destruction of High Capability Agricultural Land for Strip-Minable Coal in Illinois.* Washington D.C.: Environmental Policy Institute. 1976. 30 pp.

INDIANA

—*Effects of Urban Encroachment on Rural Land Use: An Indiana Case Study.* West Lafayette, Ind.: Purdue University Department of Forestry and Natural Resources. Septemberr 1977. 53 pp.

Smith, J. Ralph, *Proceedings: Indiana's Preservation of Prime Agricultural Land.* Workshop. January 5 and 6, 1977. Vincennes, Indiana: Vincennes University. Various pagings.

IOWA

Fenton, Thomas E., *et al., Model Development and Evaluation of Interpretative Data Maps for Local Land Use Planning.* Iowa City, Iowa: Institute of Urban and Regional Research, University of Iowa. 1980. Various pagings.

Temporary State Land Preservation Policy Commission, *Final Report: Addendum to the Interim Report (Recommendations for Legislation).* Submitted to the Iowa General Assembly. Des Moines: Temporary State Commission. May 1, 1979. 38 pp.

—*Interim Report: Recommendations for Legislation.* Submitted to the Iowa General Assembly. Des Moines: Temporary State Commission. March 1, 1979. Various pagings.

—*Interim Report: Appendices.* Submitted to the Iowa General Assembly. March 1, 1979. Various pagings.

Clark, Janice M., *Agricultural Zoning in Black Hawk County, Iowa.* Black Hawk County Zoning Administrator. n.d. 73 pp.

MAINE

Maine Food and Farmland Study Commission, *Report to the Governor and the 109th Maine Legislature.* June 1979. 42 pp. plus appendices.

MARYLAND

Bellows, William J., *Maryland Agricultural Land Preservation Foundation: A Summary.* College Park: University of Maryland Cooperative Extension Service. 1977. 12 pp. (Leaflet 88.)

Mullinix, Gene and Bruce Bendel, *The Work Force for the Preservation of Howard County Farmland: Report 1976.* Ellicott City, Md.: Howard County Office of Planning and Zoning. 1976. 39 pp.

Nielsen, Craig A., "Preservation of Maryland Farmland: A Current Assessment," *University of Baltimore Law Review,* Vol. 8, No. 3. 1979. pp. 429-460.

Maryland-National Capital Park and Planning Commission, *Functional Master Plan for the Preservation of Agriculture and Rural Open Space in Montgomery County Preliminary Draft.* Silver Spring: Maryland-National Capital Park and Planning Commission. March 1980. 80 pp.

Schiff, Stanley D., "Saving Farmland: the Maryland Program." *Journal of Soil and Water Conservation.* Vol. 34, no. 5. Sept.-Oct. 1979. pp. 204-206.

Giordano, Cynthia and Frank Schnidman, "Agricultural Preservation in Montgomery County, Maryland." *Journal of Soil and Water Conservation.* Vol. 34, No. 5. Sept.-Oct. 1979. pp. 204-207.

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Braiterman, Marta *et al. The Agricultural Land Resource Base of Massachusetts.* Amherst: Massachusetts Agricultural Experiment Station. 1976. 50 pp. (AES Research Bulletin No. 639.)

Commonwealth of Massachusetts, *A Policy for Food and Agriculture in Massachusetts.* Boston: Executive Office of Environmental Affairs. 1976. 22 pp.

Foster, John H. and William McConnell, *Agricultural Land Use Change in Massachusetts, 1951-1971.* Amherst: Agricultural Experiment Station University of Massachusetts. 1977. 54 pp.

Livezey, Emilie T., "New Bay State Law to Help Plow Fight Bulldozer," *Christian Science Monitor.* Dec. 19, 1977. p. 17.

Platt, Rutherford H., "The Loss of Farmland: Evolution of Public Response," *Geographic Review,* Vol. 67, Jan. 1977. pp. 93-101.

MICHIGAN

Lyman, Gregory, *The Use of Zoning to Retain Essential Agricultural Lands.* Lansing, Michigan: Michigan Department of Natural Resources, Division of Land Resource Programs. Sept. 1976. 58 pp.

MINNESOTA

—*Agricultural Planning Handbook: Identifying Long-Term Productive Farmland.* St. Paul: Metropolitan Council. 1976. 48 pp.

Citizen's Advisory Committee on Agricultural Land Preservation, *Agricultural Land Preservation in Blue Earth County.* Nov. 1979. 25 pp.

MONTANA

Subcommittee on Agricultural Lands, *Preservation of Agricultural Lands, Alternative Approaches.* Report to the 45th Legislature: Interim Study. Helena: Montana Legislative Council. 1976. 51 pp.

NEBRASKA

—*Preserving Agricultural Lands.* Lincoln: University of Nebraska College of Architecture. 1975. 32 pp.

NEW JERSEY

Blueprint Commission on the Future of New Jersey Agriculture, *Report of the Blueprint Commission on the Future of New Jersey Agriculture.* Phillip Alampi, Chairman. Trenton: Blueprint Commission. 1973. 38 pp.

Derr, Donn A., *Application of the Agricultural Districts Concept to Farmland Protection in New Jersey.* New Brunswick: New Jersey Agricultural Experiment Station/Cook College, Rutgers. Nov. 1978. 80 pp. (Bulletin # 849.)

Middlesex Somerset Mercer Regional Study Council, Inc., *A Preliminary Working Paper on Farmland Retention Alternatives for New Jersey,* Princeton. March 14, 1980. 29 pp.

—*Growth Policies in New Jersey as a Background for Farmland Retention.* Prepared for the New Jersey Department of Agriculture Division of Rural Resources. Princeton. June 1980. 43 pp. (Working Paper # 3.)

New Jersey Department of Agriculture/Department of Environmental Protection, *The Agricultural Preserve Demonstration Program: A Report to the People of New Jersey.* Feb. 1979. 25 pp.

Small, Leslie E., *et al. Transfer of Development Rights Marketability.* New Brunswick: New Jersey Agricultural Experiment Station/Cook College, Rutgers. 1978. 56 pp. (Bulletin # 848.)

Small, Leslie E., and Carey L. Hesse, *TDR: An Assessment of the Economic Potential of TDR for Maintaining Agricultural Open Space in New Jersey.* New Brunswick: New Jersey Agricultural Experiment Station/Cook College, Rutgers. 1979. 56 pp.

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Pennsylvania Land Policy Project, *A Land Use Strategy for Pennsylvania: A Fair Chance for the "Faire Land" of William Penn.* Pittsburgh. 1975. 205 pp.

Harler, Curt, "Lancaster County Establishes Agricultural Preserve Board," *Lancaster Farming.* April 5, 1980. pp. 1, 21.

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University of Rhode Island Community Development and Urban Field Center, *Preserving Open Space: Approaches for Rhode Island Communities.* Kingston. 1978. 44 pp.

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Myers, Phyllis, *So Goes Vermont.* Washington: Conservation Foundation. 1974. 34 pp.

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Myers, David A., "The Legal Aspects of Agricultural Districting." *Indiana Law Journal.* Vol. 55. Fall 1979. pp. 1-39

Robin, Stephen P., *Zoning and Subdivision Law in Virginia: A Handbook.* Charlottesville: Institute of Government, University of Virginia. 1980. 73 pp. (Includes discussion of agricultural land preservation.)

WASHINGTON

Report of the Citizens Study Committee, *Saving Farmlands and Open Space.* James R. Ellis, Chairman. Report to the Executive and Council of King County. May 21, 1979. Various pagings.

King County Office of Agriculture, *King County's Farmland Preservation Program.* n.d. 12 pp.

John M. Sanger Associates, Inc. *Purchase of Development Rights to Retain Agricultural Land: An Economic Study.* Prepared for the King County Washington Office of Agriculture. San Francisco: John M. Sanger, Associates. July 1978. Various pagings.

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Van Eck, William A. *Prime Farmland Retention.* Morgantown, West Virginia: West Virginia University Cooperative Extension. 1979. 36 pp.

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Amato, Peter W., "Wisconsin Hopes A New Law Will Preserve Its Farms." *Planning.* Vol. 45. Jan. 1979. pp. 10–14.

Barrows, Richard, *Wisconsin's Farmland Preservation Program.* Madison: University of Wisconsin-Extension. August 1979. 4 pp.

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Barrows, Richard L. and James Johnson, *Planning to Preserve Agricultural Land.* Madison: Wisconsin Farmland Preservation Office. n.d. 20 pp.

Farmland Preservation Planning—The State of the Art in Wisconsin. Conference Proceedings. April 1978. Available from University of Wisconsin Extension, Department of Urban and Regional Planning, Madison.

University of Wisconsin Cooperative Extension, *Sample Agricultural Zoning Provisions Under the Farmland Preservation Law.* Madison: University of Wisconsin Cooperative Extension Programs. n.d. 14 pp.

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Wyoming State Land Use Commission, *Wyoming State Land Use Plan.* June 1979. Jan. 1980. 180 pp.

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Hess, David, *Bibliography of State Land Resources Planning, 1970–1975 (Supplemental Edition) Indexed by State, Topic, Year, Agency.* Monticello, Ill.: Council of Planning Librarians. 1975. 2 Vols. (Exchange Bibliograpy 845–850.)

Lafever, Scott, *et al., Rural Planning Bibliography.* Monticello, Ill.: Council of Planning Librarians. 1978. 8 pp. (Exchange Bibliography 1505.)

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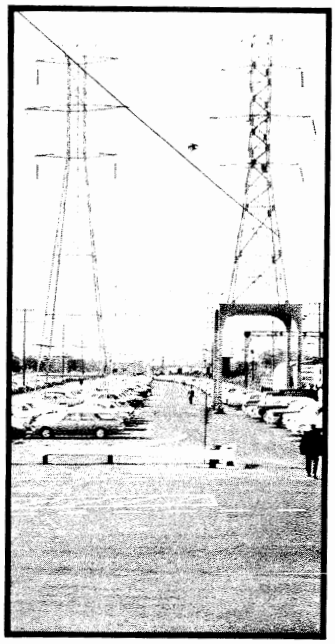

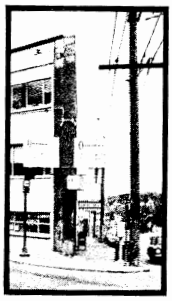

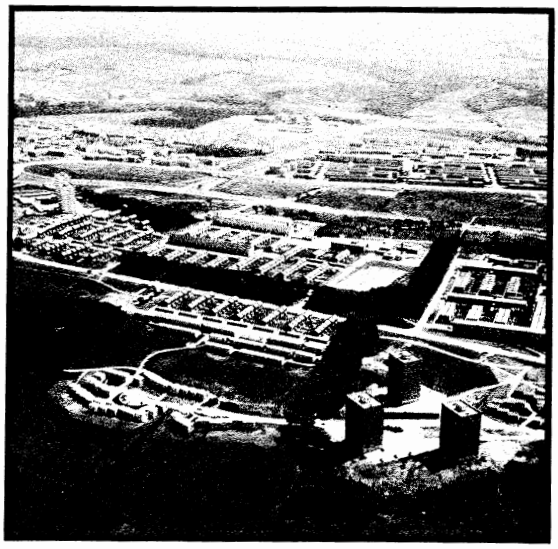

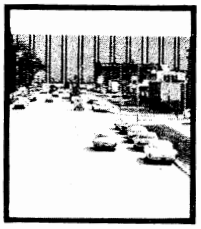

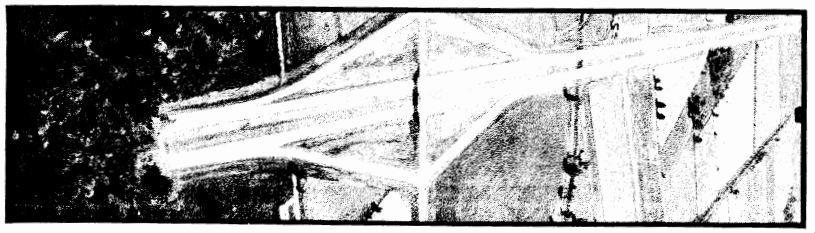

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National Agricultural Lands Study

New Executive Office Building
722 Jackson Place, N.W.
Washington, D.C. 20006
(202) 395-5832

Robert Gray
Executive Director

Shirley Foster Fields
Information Director

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