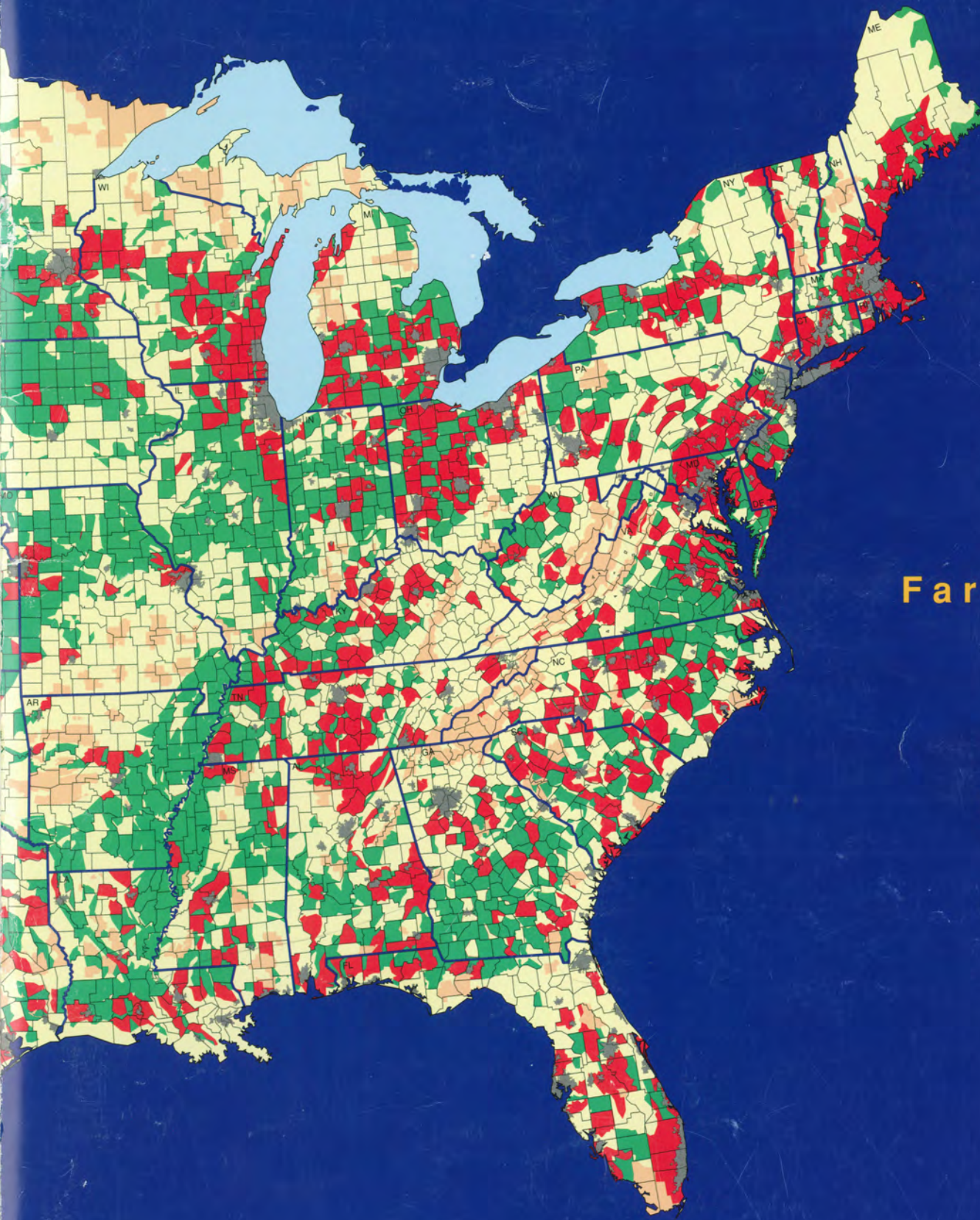


American Farmland Trust



Farming
on
the
Edge



American Farmland Trust is a private, nonprofit, membership organization founded in 1980 to protect our nation's agricultural resources. AFT works to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment. Its action-oriented programs include public education, technical assistance in policy development and direct farmland protection projects. Basic annual membership is \$20. For membership information, contact the National Office.

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**Farming
on
the
Edge**

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March 1997

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Acknowledgments

A number of people contributed to the creation of the map and the report. American Farmland Trust staff includes Ed Thompson, Ralph Grossi, Tim Warman, Gary Kozel, Bryan Petrucci, Bob Wagner, Julia Freedgood, Marlene Kweskin, Patrick Stewart and Deepak Jayaraman. Larry Libby, on sabbatical at AFT's Center for Agriculture in the Environment, also critically reviewed the report. Teresa Bullock, CAE, designed and produced the report. Some of the databases used to generate the map have been made available online through AFT's Farmland Information Library at: <http://farm.fic.niu.edu/fic/home.html> courtesy of Denyse Sturges, the FIL librarian.

The idea of using Geographic Information Systems to explore farming on the edge came from Ed Thompson, and the original *Farming on the Edge* map was done by Ed Thompson and Dr. Richard Greene in conjunction with AFT's Center for Agriculture in the Environment and Northern

Illinois University. Christine Clarke from the U.S. Department of Agriculture's Natural Resources Conservation Service, Margaret Maizel from the National Center for Resource Innovation and Dr. John Harlin from Northern Illinois University also contributed to our efforts. The multicolored Major Land Resource Area map was kindly provided and prepared by USDA NRCS National Soil Survey Center Lincoln, Neb.

Geographic Information Systems support was provided by James Moore from Michigan Technical University and Karen Russ, Northern Illinois University. Leonard Walther, Phillip Young and Mark Howland in the Cartography Laboratory at Northern Illinois University produced the map for us.

Financial support has been provided by the members of American Farmland Trust. **The "Farming on the Edge" initiative is funded by Philip Morris Companies Inc.**

Executive Summary

*Urban sprawl and the loss of farmland are readily visible to anyone familiar with suburban America. The quality of the land being lost and the distribution of that loss are issues that deserve national attention. This report focuses on the **irreplaceable** loss of each state's share of the nation's prime and unique farmland.*

American Farmland Trust's analysis shows that between 1982 and 1992, every state lost some of its high quality farmland, prime or unique, to urban development. Texas lost more prime and unique farmland than any other state (489,000 acres), accounting for 11.5 percent of the total loss in the United States. Other leading states with farmland lost to urban development were North Carolina, Ohio, Georgia, Louisiana, Florida, Illinois, Tennessee, Indiana and California. When AFT analyzed the country's 181 geographic regions known as Major Land Resource Areas, 70 percent had high quality farmland in the same areas where rapid development was occurring. The greatest loss of prime or unique farmland occurred in 20 MLRAs representing 7 percent of the land in the continental United States. Twenty-one percent of the prime or unique farmland conversion that took place occurred within these areas:

*Sacramento and San Joaquin Valleys (central California)
Northern Piedmont (primarily*

parts of Maryland, New Jersey, Pennsylvania and Virginia)

Southern Wisconsin and Northern Illinois Drift Plain (parts of Illinois and Wisconsin)

Texas Blackland Prairie (eastern part of Texas)

Willamette and Puget Sound Valleys (parts of Oregon and Washington)

Florida Everglades and Associated Areas (southern tip of Florida)

Eastern Ohio Till Plain (primarily parts of Ohio)

Lower Rio Grande Plain (southern Texas)

Mid-Atlantic Coastal Plain (primarily parts of Delaware and Maryland)

New England and Eastern New York Upland, Southern Part (primarily parts of Connecticut, Massachusetts, New Hampshire, New Jersey, New York and Rhode Island)

Ontario Plain and Finger Lakes Region (western New York)

Nashville Basin (central Tennessee)

Central Snake River Plains (parts of Idaho)

Southwestern Michigan Fruit and Truck Belt (southwestern Michigan)

Central California Coastal Valleys (central coast of California)

Columbia Basin (primarily parts of Washington)

Imperial Valley (southern California)

Long Island-Cape Cod Coastal Lowland (parts of Massachusetts,

New York and Rhode Island)

Connecticut Valley (primarily parts of Connecticut and Massachusetts)

Western Michigan Fruit and Truck Belt (parts of Michigan and Wisconsin)

The long-term implications are troubling. In 50 years, the population in the United States could increase 50 percent to more than 390 million with farmers and ranchers having to make do with 13 percent fewer acres of high quality farmland. In the worst case scenario, within the next 60 years, the United States could become a net food importer instead of a net food exporter.¹ Regardless of whether this is true, the loss of open space, wildlife habitat, groundwater recharge areas and other benefits attributable to farmland are reason enough for our country to develop its land in a more efficient manner, directing development onto land less suitable for growing food and fiber.

American Farmland Trust concludes the following:

- *America is destroying farmland in every state.*
- *The United States is squandering its best quality and often irreplaceable farmland.*
- *The patterns of urban development are scattered and fragmented, thereby increasing the pressures on farmland beyond those acres actually lost.*

- By converting some of its best farmland to urban uses, the United States is limiting future options to deal with social, economic, food security and environmental problems.

- Efforts in the United States to manage land have, for the most part, failed to protect farmland.

- To date, the vast land resources in the United States have masked the most negative effects of farmland destruction.

- Conflicts are now escalating over varied uses of the nation's land resources.

To address these concerns, AFT recommends the following steps:

Research and Information Needs

- Federal agencies should quantify the impact of farmland conversion on key environmental measures such as water quality, air quality, wildlife populations, rural economic health and regional food security.

- The U.S. Department of Agriculture should take the lead in defining farmland by its importance and vulnerability to development as a means of targeting policy and programs at the federal level and assist states to do the same, including better quantification of farmland of statewide and local importance.

- States should develop similar inventories and systems for tracking the fate of farmland.

- The benefits of working landscapes beyond the production of food and fiber should be defined and measured.

Federal Policies

- The Farmland Protection Policy Act should be strengthened and enforced and the Farmland Protection Program should be expanded.

- All levels of government should review policies affecting land use decisions of land owners and eliminate those that discourage the retention of quality farmland.

- Federal and state estate taxes should be revised to help keep agricultural land in the hands of farm families committed to continue farming.

- Federal legislation should be written to take advantage of the benefits farmland protection can provide the public.

State and Local Programs

- Every state with land in one of the top 20 threatened MLRAs should take specific measures to protect farmland including a statewide inventory and tracking system, a FPPA-type law to promote review and reconciliation of state policies, and technical and financial assistance to local communities.

- Local communities should undertake a land inventory and analysis of development trends and risks, agree on which farmland to save, determine which policies adversely affect farmland and implement policy reforms.

- A process of dialogue and debate should be initiated in each locality where conversion of farmland is significant to develop long-term objectives for the land

and mechanisms to share responsibility to protect it.

- Urban planners should look more closely at the principles of compact growth including building homes at optimal density, renewing inner cities and using existing infrastructure.

I. Introduction

In 1993, American Farmland Trust published its first *Farming on the Edge* map and study.² Analysis of agricultural and population census data (1987 and 1980-1990, respectively) revealed that more than half the value of United States farm production was generated in counties in and around urban areas. The population growth in counties with the highest agricultural productivity was more than twice the national average. These numbers were alarming. Not only is farmland of immense value in terms of the food and fiber it produces and the jobs it supports, but it also provides scenic beauty, open spaces and maintains the economic stability of communities.³ The environmental benefits of farmland are equally important.⁴ Well-managed farms can contribute to wildlife habitats and protect aquifer recharge areas. Indeed, according to the U.S. Department of Agriculture, it is hard to overestimate the importance of these non-market environmental goods and services.⁵ Furthermore, by protecting the most productive farmland, we reduce the pressure for intensive agricultural use of marginal lands that can result in increased soil erosion, water pollution, wetlands' drainage problems and the overuse of fertilizers and pesticides.

American Farmland Trust felt that a further study of land use trends was warranted. The numbers used to create the first map, namely population growth and agricultural productivity, were proxies for the

trend of central interest: the location and rate at which high quality farmland is being converted to other uses and some of the state-level impacts of this loss. Consequently, this present version of the *Farming on the Edge* map analyzes how actual land use changes are affecting each state's share of the nation's high quality farmland. State by state, the areas in red represent concentrations of prime and/or unique farmland **coinciding** with that state's most rapidly developing area(s). We categorize these areas as **threatened** since the data does not allow us to conclude definitively that development in each red area is actually taking place on the high quality farmland in that area. It is also important to keep in mind that we focused solely on threats to prime and unique farmland. States also need to protect farmland that is not prime or unique but is of statewide or local importance for the production of food, feed, fiber, forage and oilseed crops (see *Glossary*). Unfortunately, not all states have identified farmland of statewide importance so we could not include threats to this valuable resource in our analysis.

II. How We Created the Map

Our objective was to determine the geographic relationship between high quality farmland and land development pressure in the United States. To do this, we took advantage of the improved database design structure of the U.S. Department of Agriculture's most recent National Resources Inventory.

The NRI is a nationwide inventory of natural resources based on soils and other natural resource data. It can be used to evaluate actual land cover and land use, soil erosion rates, extent of prime farmland, extent of wetlands and other natural resource characteristics on all non-federal public lands and on all private lands. To compile the inventory, ground investigations, air photo and other remote sensing data have been collected at about 800,000 preselected sites across the nation every five years. Because these same sites are assessed each time, researchers can use any observed land use changes to measure how rapidly conversion has been taking place.

The 1992 NRI database was released in digital format with built-in linkages to the 1982 and 1992 inventories. NRI sample points are referenced and coded to a variety of geographic units including Major Land Resource Areas, U.S. Geologic Survey hydrologic units (watersheds) and counties. With these linkages, NRI data can be mapped to geographic areas of interest to analyze natural resources within those areas. The approximately 33,000 spatial mapping units underlying our map were created by the intersections of counties, watershed boundaries and MLRAs.⁶ The average size of a mapping unit is 92 square miles. However, because the statistical variance in some of these areas may be large, map readers should use our map to identify broad spatial trends and avoid making highly localized interpretations.

Once our Geographic Information System database was developed, we set out to define high quality farmland and development pressure. For *high quality farmland*, we used the USDA's *prime farmland* designation, defined as land most suitable for producing food, feed, forage, fiber and oilseed crops and our own *unique farmland* definition which includes land used to grow vegetables, grapes and horticultural crops, including fruits, nuts and berries, that have unique soil and climatic requirements. Although based on the definition that USDA uses, our *unique farmland* definition allowed us to more easily identify variables in the NRI to identify unique farmland. We then determined acreage amounts of prime and unique farmland within each of the 33,000 mapping units included in our map database. *Development* was defined as the change in urban built-up land occurring within each of the 33,000 mapping units between 1982 and 1992.

Establishing Statistical Thresholds for High Quality Farmland and Development

Our next decision was whether to analyze trends at a national or state level. In the first *Farming on the Edge* map, we looked at national trends in farmland conversion. However, this analysis provided little information to states with high quality farmland and development pressures below the national average. Local municipalities are typically the key policy units for land use decisions and farmland protection with some

level of guidance from state government. Because farmland conversion is taking place in every state, we decided to identify high quality farmland that was important relative to statistical benchmarks established for each state. We reasoned that once development pressures were also identified, this could help states set priorities for farmland protection. So, in addition to identifying the most intense areas of high quality farmland conversion in the nation, our proposed map would also identify where conversion was most intense within a given state. To do this, we used two threshold tests: **high quality farmland** included mapping units that in 1992 had greater than their statewide mapping unit averages of prime or unique farmland and **high development** included mapping units that experienced a rate of development greater than their statewide mapping unit average, providing it had at least 1,000 acres developed between 1982 and 1992 (see *Glossary* for a more detailed explanation of urban land/development). We chose to exclude areas which experienced 1,000 acres or less of development during the 10 year period because such a small amount of development over that time could be attributed to sampling variability.

III. Major Findings

The resulting map highlights in red those mapping units with a greater percentage of high quality farmland than the average mapping unit within that state, a rate of development higher than the average mapping unit in the

state and more than 1,000 acres developed between 1982 and 1992.

Every state lost some of its best prime and unique farmland to urban development. As was shown by AFT's earlier map⁷, much of the prime and unique farmland threatened by development is adjacent to major metropolitan areas. However, the map also shows that the gradual dispersal of the nation's population into smaller, less densely settled cities and towns is having an impact on high quality farmland (see *Discussion*). This migration back into rural communities is driven by better communications, the decline of industrial jobs and other factors that make distance a less important factor. Had we superimposed major freeways and highways on our map, this trend would have been readily evident. Significantly, when AFT analyzed the agricultural production occurring on high quality farmland threatened by development, 79 percent of the total United States' production of fruit, 69 percent of the vegetables, 52 percent of the dairy products, 28 percent of the meat and 27 percent of the grain are produced in counties that are at least 20 percent red.

The map graphically illustrates the distribution of prime and unique farmland based on individual state thresholds. Mapping units shaded in green exceeded the average amount of high quality farmland found in mapping units within their state, but they experienced a

lower rate of development than the average mapping unit in their state or had less than 1,000 acres of development. Red areas on the map signal rapid development and a potential threat to high quality farmland. Table 2 in the Appendix lists all of the NRI state mapping unit averages.

It is worth noting the considerable variation in state mapping unit averages for prime and unique farmland. Some of this variation is due to the use of state threshold tests rather than national averages to determine concentrations of prime and unique farmland. For example, Illinois, Indiana and Iowa have mapping unit averages of prime farmland exceeding 50 percent while average mapping units in Wyoming, Nevada and New Mexico contain less than 1 percent prime farmland. Many states also have farmland that qualifies as unique. For example, California, Florida and New Jersey have sizeable acreages of specialty crops. Although some states (e.g., Wyoming and Montana) score low on both measures of high quality farmland when compared to national averages, the map highlights areas within those states that exceed the state averages. Conversely, a state may have areas with large amounts of high quality farmland when compared to other states, but these areas are not highlighted because they fall below their state average thresholds (e.g., Ohio). Therefore, one should take care in interpreting the map, remembering that *high quality farmland areas are relative to their state benchmarks*.

State development averages also vary greatly across the country. New Jersey and Florida have the highest state mapping unit development averages. The average mapping units in those states experienced an increase in urban development of 5,053 and 4,003 acres, respectively. The states of Montana, South Dakota, Wyoming, Iowa and Nebraska have the lowest state mapping unit development averages due in part to the large population losses occurring there during the 1980s.

We also looked at agricultural production data and NRI totals for the continental United States. Summaries and rankings by state for total agricultural market value and market value per acre of farmland are given in Tables 6 - 8 in the Appendix, along with the acres of prime and unique farmland in each state which have been converted to urban and the percentage of state land that is prime or unique.

The top 10 states in total agricultural market value are California, Texas, Iowa, Kansas, Nebraska, Illinois, Minnesota, Florida, Wisconsin and North Carolina. Much of the potential threat to the United States' production of fruits and vegetables is due to development pressures in California and Florida. On a per acre basis, the New England states with their high value crops dominate the top 10. Ranked by market value per acre of farmland, Delaware, Connecticut, Rhode Island, Massachusetts, New Jersey, California, North Carolina,

Maryland, Pennsylvania and Florida are the top 10 producing states.

Looking at NRI data for prime and unique farmland, Texas lost more high quality farmland to urban development between 1982 and 1992 than any other state (489,000 acres), accounting for 11.5 percent of the total loss in the United States. Other leading states for acres of high quality farmland lost to urban development are North Carolina, Ohio, Georgia, Louisiana, Florida, Illinois, Tennessee, Indiana and California. In percentage of prime and unique farmland, the top 10 states are Illinois, Indiana, Iowa, Ohio, Kansas, Arkansas, Louisiana, Minnesota, Mississippi and Missouri.

IV. Identifying the Nation's Most Threatened Regions

Working with Major Land Resource Areas

In order to quantify red areas on the map and more fully understand what they meant, we needed a unit of analysis. We decided to use Major Land Resource Areas, one of the map layers used in the GIS to create our sub-county geographic units (see fold-out map). MLRAs are geographic areas defined by USDA that have relatively homogeneous patterns of soil, climate, water resources, land use and type of farming.⁸ Most MLRAs are several million acres in extent.

To rank MLRAs, we first determined how many MLRAs contained red areas (high quality farmland coinciding with a high development rate). Of the 181 MLRAs in the continental United States, 127 had some red within their borders (see Appendix, Figure 1). These 127 threatened MLRAs represent 76 percent of the nation's land but contain 95 percent of the nation's prime farmland. Twenty-two percent of their land was classified as prime or unique farmland by our map, but, disproportionately, 32 percent of the development in these MLRAs was on land that was prime or unique.

We then developed special procedures for linking tabular information aggregated by county from the Census of Agriculture. Because MLRAs are based on the physical properties of a landscape, their boundaries do not coincide with county boundaries which are political designations. We decided to include a county in our MLRA region if it overlapped any area of the MLRA. In the case of overlap with more than one MLRA, the county was assigned to the MLRA region with the largest area overlap. After applying this procedure, we still had 127 regions, but they were now composed of entire counties as opposed to the more narrowly defined MLRA regions.⁹ This, in turn, allowed us to look at crop production data for each region. Thus, crop production data only approximates what is grown in that MLRA and may overestimate market value. Counties linked to

the top 20 MLRAs in our analysis are listed in Table 5 in the Appendix. A listing of counties assigned to all the MLRAs used in our analysis is available online through AFT's Farmland Information Library along with additional data too detailed for this report. The Internet address is: <http://farm.fic.niu.edu/fic/home.html>

Ranking the Threat to High Quality Farmland in the MLRAs

In analyzing the 127 threatened MLRAs, we first ranked them by the percentage of red within their boundaries. Twenty of these 127 "threatened regions" had close to 50 percent or more of their area shaded in red. With the degree of red indicating higher than average amounts of high quality farmland coinciding with a higher than average rate of development, we decided to analyze these 20 separately from the remaining 107 MLRAs. We considered three basic factors in scoring these top 20:

1. market value of agricultural production
2. development pressure
3. land quality

Market value was measured by the total agricultural market value; development was measured by the acreage of prime or unique farmland converted to urban land between 1982 and 1992; and land quality was measured by the percentage of land that was prime or unique farmland. We used a formula devised to give equal weight to all three factors:

$$\text{Score} = [(market\ value/13,000) \times (market\ value\ per\ acre\ farmland/644)] + [2.8 \times (acreage\ of\ prime\ and\ urban\ farmland\ converted\ to\ urban\ between\ 1982\ and\ 1992)] + [3.8 \times (percentage\ of\ land\ that\ is\ prime\ or\ unique\ farmland)]$$

The top 20 MLRAs were ranked by the highest score obtained from the formula (Table 3, Appendix).

In a separate analysis, we then ranked the remaining 107 MLRAs (Table 4, Appendix). Less than 45 percent of the areas within these MLRAs were red on our map.

The values for all 127 MLRAs, are given in Tables 9-11 in the Appendix.

The Top 20 Threatened MLRAs

Ranked from highest to lowest score, the top 20 MLRAs are listed below and shown in Figure 2 (Appendix). They range in size from 2,300 square miles up to 20,090 square miles. They represent only 7 percent of the nation's land, excluding Alaska and Hawaii, but account for 21 percent of the nation's prime or unique farmland lost to urban development. Furthermore, these 20 MLRAs alone are responsible for 51 percent of the United States' fruit production, 39 percent of vegetable production, 28 percent of dairy production, 9 percent of meat production and 6 percent of grain production. Descriptions are based, in part, on the USDA MLRA narrative and 1994 census data.^{10 11} Table 1 at the end of this section (pg. 17) summarizes values for the 20 MLRAs.

The top 20 MLRAs are:

Sacramento and San Joaquin Valleys (*central California*)

Northern Piedmont (*primarily parts of Maryland, New Jersey, Pennsylvania and Virginia*)

Southern Wisconsin and Northern Illinois Drift Plain (*parts of Illinois and Wisconsin*)

Texas Blackland Prairie (*eastern part of Texas*)

Willamette and Puget Sound Valleys (*parts of Oregon and Washington*)

Florida Everglades and Associated Areas (*southern tip of Florida*)

Eastern Ohio Till Plain (*primarily parts of Ohio*)

Lower Rio Grande Plain (*southern Texas*)

Mid-Atlantic Coastal Plain (*primarily parts of Delaware and Maryland*)

New England and Eastern New York Upland, Southern Part (*primarily parts of Connecticut, Massachusetts, New Hampshire, New Jersey, New York and Rhode Island*)

Ontario Plain and Finger Lakes Region (*western New York*)

Nashville Basin (*central Tennessee*)

Central Snake River Plains (*parts of Idaho*)

Southwestern Michigan Fruit and Truck Belt (*southwestern Michigan*)

Central California Coastal Valleys (*central coast of California*)

Columbia Basin (*primarily parts of Washington*)

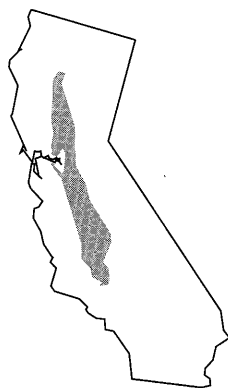
Imperial Valley (*southern California*)

Long Island-Cape Cod Coastal Lowland (*parts of Massachusetts,*

New York and Rhode Island)

Connecticut Valley (*primarily parts of Connecticut and Massachusetts*)

Western Michigan Fruit and Truck Belt (*parts of Michigan and Wisconsin*)

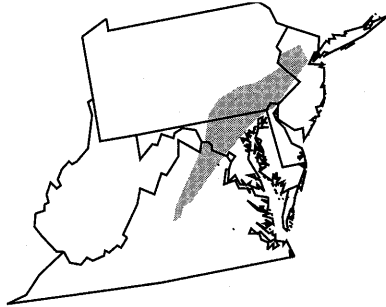


1. Sacramento and San Joaquin Valleys (*central California*)
[MLRA no. 17]

Stretching down the center of California and encompassing 19,140 square miles, about 88 percent of this MLRA is in farms and ranches. The San Joaquin Valley, part of California's Central Valley, contains the most productive farm county in the United States (Fresno County) and is the nation's most important agricultural resource, producing 250 different commodities worth more than \$13 billion a year. Cotton, fruits, nuts, grapes, hay, grain, rice, alfalfa, citrus and tomatoes are among the principal crops grown. Remarkably, this MLRA accounts for 15 percent of the United States' vegetable production, 38 percent of the fruit production and 9 percent of the dairy production. In our analysis, 77 percent of this MLRA turned up red. The proximity of both valleys to the San Francisco Bay

Area and the San Francisco-Sacramento transportation corridor (Interstate 80) has resulted in rapidly growing development pressures. Land in urban development more than tripled between 1981 and 1992, increasing from 2.5 percent up to 8 percent. Sacramento and Fresno counties ranked 13th and 25th in the United States in population growth between 1980 and 1992. Sacramento County was ranked 16th and Fresno County ranked 23rd in the United States in the number of new private housing units between 1990 and 1992. Four of the counties in this MLRA will grow faster in the next five years than they did between 1990 and 1996 (Kings, Tuolumne, Tehama and Stanislaus), and one (Butte) will have a growth rate in the next five years at least three times the national average, landing it in the list of the 10 "hottest" counties in the United States.¹² The Central Valley's population is expected to triple between now and the year 2040, putting tremendous pressure on agricultural land and public services. A 1995 study predicts low density urban sprawl will consume more than 1 million acres of Central Valley farmland by 2040 and cost taxpayers \$29 billion more than compact, efficient growth would have cost.¹³ In addition, agriculture in the valley could experience increased risks and costs, and lower productivity, within a one-third mile wide "zone of conflict" around urban areas, totaling 2.5 million acres. If present land use patterns continue, the cumulative loss of direct and indirect

agricultural sales in the next 45 years will be \$72 billion higher than the costs attributable to compact, efficient growth, a tragic waste of agricultural resources and tax dollars.



2. Northern Piedmont (primarily parts of Maryland, New Jersey, Pennsylvania and Virginia) [148] Covering 11,530 square miles, approximately 72 percent of this temperate, humid region is in farms and 25 percent is urbanized. On our map, 69 percent of the Northern Piedmont MLRA is red. Farms are intensively cropped in Maryland, Pennsylvania and most of New Jersey. They are mostly in pasture or woodland in the northern parts of New Jersey and in Virginia. Forage crops, soybeans and grain for dairy cattle are the primary crops. Throughout the region, urban areas are encroaching on farmland. The major metropolitan areas of Philadelphia-Wilmington-Atlantic City, Trenton, and Washington, D.C.- Baltimore all impact this MLRA. Charlottesville, Va. and Lancaster, Pa. are also expanding urban areas. The county which grew most rapidly was Loudoun County, Va. near Washington, D.C. Between 1980 and 1992, its population grew by 64.1 percent. Projected rapid growth in this

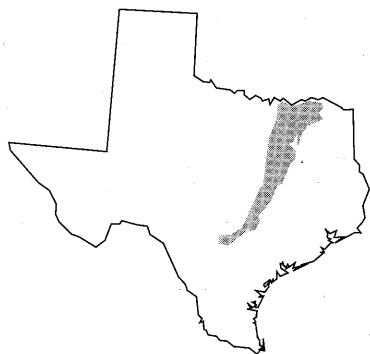
county over the next five years places it in the top 50 fastest growing counties in the United States.¹⁴ Other rapidly growing counties were Carroll, Frederick and Harford counties in Maryland (all grew by more than 34 percent), Hunterdon County next to Trenton, N.J. (28 percent), Chester County, Pa. (22.5 percent) and Albemarle and Culpeper counties in Virginia (22.6 percent and 28.8 percent, respectively). The unrelenting rate of land development across the area has given rise to new economic realities, and bond ratings have begun to reflect the fact that unlimited or mismanaged growth can threaten a community's fiscal health while land conservation and sound planning can sustain it.¹⁵ Howard County, Md. was rewarded in 1990 with an Aaa bond rating because of its innovative farmland preservation program.



3. Southern Wisconsin and Northern Illinois Drift Plain (parts of Illinois and Wisconsin) [95B]

More than 80 percent of the 11,020 square miles in this MLRA are in farms. Feed grains and forage for livestock are the chief crops but cash-grain farming (corn and

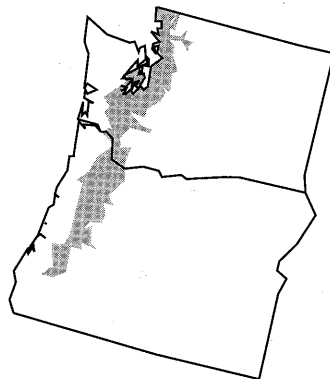
soybeans) is also significant. Canning crops, potatoes, fruit and other specialty crops are important, especially around the urban areas in the south and east. On our map, 67 percent of this MLRA is red. Because the suburbs of Milwaukee-Racine, Janesville-Beloit, Madison, Rockford and Chicago are expanding rapidly and half the soils in this MLRA are prime or unique, some of the best farmland in this MLRA is being used for urban development. About 15 percent of the land is now urbanized. Our analysis concluded that 59 percent of development was occurring on prime or unique soils. The fastest growing county in the MLRA is McHenry County, Ill., just north of Chicago. Between 1980 and 1992, the county's population grew by 35 percent. Other rapidly growing counties are Boone County near Rockford, Ill., Dane County where Madison, Wis. is located and Waukesha, Washington and Ozaukee counties bordering Milwaukee.



4. Texas Blackland Prairie
(eastern part of Texas) [86]

Located in the eastern part of Texas, this MLRA encompasses 18,480 square miles. About 30 percent of the area is cropland, about 52 percent is improved pasture or rangeland, and the remainder is in urban areas (12 percent) or narrow strips of woodland along streams. Major cash crops are cotton and grain sorghum. Other principal crops include small grain, corn, soybeans and hay. Cropland on the more sloping and eroding soils is gradually being converted to pasture, mainly for beef cattle. Half this MLRA shows up in red on our map. The rapidly growing metropolitan areas of Dallas-Ft. Worth, Waco, Dennison, Austin-San Marcos, Bryan-College Station, Houston and Galveston all impact this MLRA. Collin and Williamson counties had the 15th and 16th highest population growth rates of counties in the United States between 1980 and 1992, both more than 100 percent. Collin County, just north of Dallas, also has the highest income per capita and highest median value of homes of any county in Texas. Williamson County is directly northeast of Austin. The projected growth rates of both of these counties during the next five years

place them among the 50 most rapidly growing counties in the United States.¹⁶



5. Willamette and Puget Sound Valleys
(parts of Oregon and Washington) [2]

Occupying 18,590 square miles, our map highlighted 54 percent of this MLRA in red. Much of the land in the Puget Sound Valley is forested and lumbering is the major industry. Overall, about 50 percent of the MLRA is in forest land. About 22 percent of the region is in crops or improved pasture and farming is highly diversified. Deciduous fruits, berries, vegetables, seed crops and grains grown under intensive management predominate. A large acreage is also used for growing hay and grain for dairy and poultry feed. This MLRA ranks eighth out of 127 MLRAs threatened by some development in market value per acre. Urbanization is increasing in much of the area, expanding outward from the metropolitan areas of Seattle-Tacoma-Bremerton and Bellingham in Washington and Portland-Salem and Eugene-Springfield in Oregon. About 15 percent of the MLRA is now urbanized. Counties influenced by these areas included Clackamas

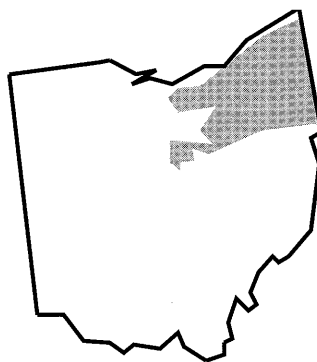
and Washington counties in Oregon, with population spurts of 22.7 percent and 37.5 percent, respectively, between 1980 and 1992, and Clark, King, Kitsap, Pierce, Snohomish, Thurston and Whatcom counties in Washington, with net changes in population of 36.6 percent, 22.7 percent, 43.2 percent, 27.6 percent, 34.4 percent, 42 percent and 29 percent, respectively. Thurston County's projected growth rate in the next five years places it among the 50 fastest growing counties in the United States.¹⁷ King County in Washington was ranked sixth in the United States in the number of new private housing units authorized by building permits between 1990 and 1992.



6. Florida Everglades and Associated Areas
(southern tip of Florida) [156A]

Covering 4,330 square miles, about 45 percent of this area is in Indian reservations, national parks, game refuges and other large holdings. About 26 percent of this MLRA is forested with a large part of the area in open marsh. About 10.5 percent is cropland with winter vegetables as the main crop. The growing season is virtually year around, with an average freeze-free period of 330 to 365 days. Ten percent of the United States' vegetable production takes

place here. Some citrus fruits, avocado and papaya are grown on better drained sites. Sugarcane is an important crop on the organic soil south of Lake Okeechobee. The acreage of improved pasture, about 6 percent, is increasing, supporting mainly beef cattle and some dairies. All total, the market value per acre in this MLRA ranks it third among the 127 MLRAs threatened by development. Our map showed 53 percent of this MLRA in red. Urbanization is extensive along the eastern coast with Miami, Fort Lauderdale, West Palm Beach and Boca Raton all expanding rapidly. Urbanized land now accounts for 10 percent of the MLRA. Indeed, the state of Florida is one of the fastest growing states in the nation, adding 800 new residents daily. Naples, along the coast at the northern edge of this MLRA, had a 77 percent increase in its population between 1980 and 1990.¹⁸ Collier County was the 24th fastest growing county in the United States in population growth rate between 1980 and 1992. During the same period, Dade, Palm Beach and Broward counties ranked ninth, 12th and 15th in the United States in largest population growth. Dade, Broward and Palm Beach counties ranked ninth, 10th and 12th in the United States in the number of new private housing units between 1990 and 1992.



7. *Eastern Ohio Till Plain* (primarily parts of Ohio) [139]

About 73 percent of the 5,800 square miles in this MLRA are in farms, 23 percent is urbanized and the remainder is used for other purposes. About 35 percent of the Eastern Ohio Till Plain is in cropland. Feed grains and forage for dairy cattle are the main crops in the west. In the east, many part-time farms and rural residences also raise feed grains. About 26 percent of the area is hardwood forest, mainly in farm woodlots. Wildlife habitat and recreation are important land uses. Our map shows 47 percent of this MLRA in red. The metropolitan areas of Cleveland-Akron, Youngstown-Warren and Canton-Massillon all influence this MLRA. According to the Ohio Department of Development Office of Strategic Research, between 1990 and 1994, 23.4 percent of the farmland around the Cleveland-Akron area was lost, and 11.5 percent was lost around the cities of Youngstown-Warren. Counties with the highest rate of growth were along a northeast-southwest line along Interstate 71 which leads from Cleveland, in Cuyahoga County, through Columbus to Cincinnati. The county in this MLRA primarily affected by that growth

was Medina County, which grew by 13.6 percent between 1980 and 1992. During this period, Holmes, Geauga, Portage, Wayne and Carroll counties also increased in population by 14.7 percent, 11.8 percent, 7.6 percent, 6.7 percent and 6.3 percent, respectively. In late October 1996, Ohio took a significant first step in protecting its farmland by creating the Ohio Farmland Preservation Task Force to study the feasibility of balancing farmland preservation with development.



8. *Lower Rio Grande Plain* (southern Texas) [83D]

Only 2,550 square miles, 82 percent of this area is cropland, improved pasture or range and more than 10 percent is urbanized. Our map shows 68 percent of this MLRA in red. Major crops are cotton, grain sorghum, citrus (particularly Texas ruby-red grapefruit and very sweet juice oranges), onions, cabbage and other truck crops, all benefiting from 300 to 330 frost-free days a year. However, since 1982, several unusually severe freezes have reduced citrus plantings significantly. In 1992, citrus acreage (Hidalgo and Cameron counties) was only 44 percent of what it had been in 1982. Many of the abandoned orchards were

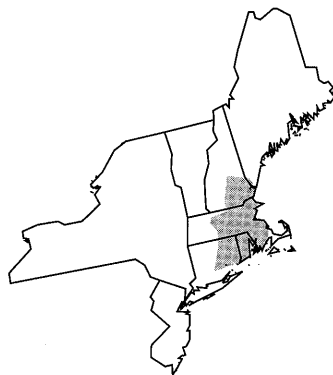
converted to mobile home parks for retirees. However, citrus plantings have increased in recent years. Rangeland is mainly grazed by beef cattle. Wildlife and hunting leases for quail and dove are an important source of income. The cities of McAllen, Edinburg, Mission, Brownsville, Harlingen and San Benito are all growing rapidly, primarily through migration across the border from Mexico, but also through seasonal demand for retirement homes for retirees from the northern plains states or "snowbirds." Eighty-five percent of this development is occurring on prime and unique soils, according to our analysis. Starr County's population grew by 64.9 percent between 1980 and 1992, Hidalgo's by 48.6 percent and Cameron's by 32.9 percent. Hidalgo's growth rate in the next five years puts it in the ranks of the 50 fastest growing counties in the United States.¹⁹



9. Mid-Atlantic Coastal Plain
(primarily parts of Delaware and Maryland) [153C]

Covering 5,990 square miles, about 65 percent of the area is in farms. Overall, 30 percent of the MLRA is woodland, 44 percent is cropland, less than 2 percent is pasture and 9 percent is urban. Major crops are corn, soybeans,

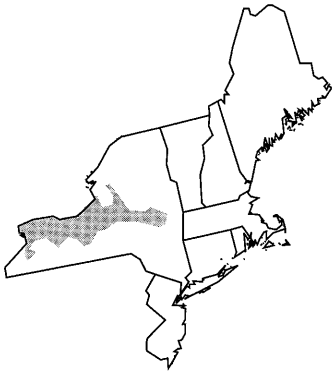
small grains, vegetables and fruit. Poultry, truck crops, sod farms and fruit crops are significant in some counties and many large tracts of loblolly pine are managed for timber production. The market value per acre produced in this MLRA ranks it as sixth out of the 127 MLRAs threatened by some development. A narrow band along the Atlantic coast is intensively developed for resorts and recreation. On our map, 58 percent of this MLRA is in red. Urban encroachment from the Wilmington-Newark and Washington-Baltimore metropolitan areas is responsible for most of the conversion threat. The county which grew most rapidly in the threatened areas is Queen Annes County in Maryland, which grew by 37.8 percent between 1980 and 1992. Sussex County in Delaware and Caroline, Talbot and Worcester counties in Maryland all grew by more than 20 percent during the same period.



10. New England and Eastern New York Upland, Southern Part
(primarily parts of Connecticut, Massachusetts, New Hampshire, New Jersey, New York and Rhode Island) [144A]

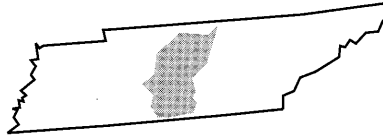
Ranging through eight states, this MLRA covers 20,090 square miles. On our map, 58 percent of

this MLRA turns up red. About 53 percent of this MLRA is in hardwoods and pine forests, most of which are in small holdings. Woodlands support various wood products, hunting and other recreation. Use of woodlands for residential development is increasing. About 12 percent of the area is in crops and pasture. Forage crops for dairy cattle are grown on most of the cropland. Truck crops, small fruits and apples are grown near the larger towns and cities. The market value per acre ranks this MLRA as 14th among the 127 MLRAs threatened by development. About 24 percent of the area is now in urban development, up from 13 percent in 1981. Many farmsteads are now used as rural residences. Major metropolitan areas and cities impacting this MLRA include Hartford-New Haven-Meriden, Waterbury, New York-Northern New Jersey-Long Island, Boston-Worcester-Lawrence, Providence-Fall River-Warwick, Newark, Newburgh and Albany-Schenectady-Troy. Most of the growth coinciding with prime and unique farmland is occurring in New Hampshire (Hillsborough, Merrimack and Rockingham counties grew by 22.9 percent, 22 percent and 29.3 percent, respectively, between 1980 and 1992) and Orange County in New York (which grew by 21.6 percent). Highly unique muck soils in part of Orange County currently support a thriving onion production area.



11. Ontario Plain and Finger Lakes Region (*western New York*) [101]

Encompassing 12,660 square miles, most of this area is in farms. Fifty-two percent of this MLRA is highlighted in red on our map. About 37 percent of the acreage in this MLRA is cropland and used mainly for hay, corn and small grains associated with dairy operations. Cash crops including canning and truck crops, wheat and dry beans are also important. Orchard crops are grown near Lake Ontario and vineyards are common near some of the Finger Lakes. About 29 percent of the area is forested, mostly in farm woodlots. Urban uses account for 13 percent of the area and are expanding around the larger cities such as Buffalo and Rochester and the major metropolitan areas of Albany-Schenectady-Troy and Syracuse-Utica-Rome. As a result, in July 1996, the upstate New York community of Pittsford approved the first local farmland protection program in New York in 20 years. Its town board unanimously approved nearly \$10 million in funding to save seven farms and 1,200 acres of farmland near Rochester from encroaching development.



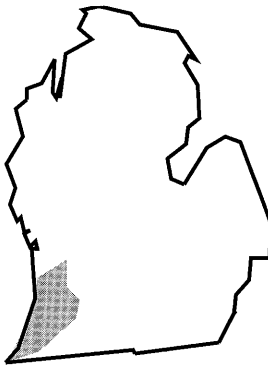
12. Nashville Basin (*central Tennessee*) [123]

Covering 6,060 square miles, this area is densely populated. About 14 percent is in cropland, 33 percent in pasture, 33 percent in forestland and 13 percent in urban development. Fifty-eight percent of this MLRA is red on our map. Much of the farmland in the Nashville Basin has been converted to residential use and to small estate-type farms, especially around Nashville. Hay, pasture and some grains for beef cattle and dairy cattle are the principal crops. Small acreages of burley tobacco, cotton and soybeans are grown as well. The Nashville area is growing most rapidly toward the south (the number of people living in Williamson County grew by 52.5 percent between 1980 and 1992) and southeast (Rutherford County grew by 53.1 percent). The growth rate projected in Williamson County over the next five years is high enough to put it in the 50 fastest growing counties in the United States.²⁰ Wilson County, directly east of Nashville, and Sumner County, to the northeast, grew by 26.9 percent and 25.8 percent, respectively. The growth is no longer confined just to the metropolitan area. The adjoining southern counties of Marshall and Maury grew by 16.6 percent and 16.9 percent, respectively.



13. Central Snake River Plains (*parts of Idaho*) [11A]

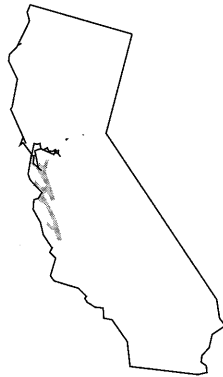
Covering 5,823 square miles, 42 percent of the area, mostly rangeland, is owned by the federal government with the remainder in farms and ranches. Forty-three percent of the land is cultivated cropland. The principal crops grown are potatoes, grain, sugar beets, beans and alfalfa hay and the market value per acre of these crops is high enough to rank 13th among the 127 MLRAs. Half of this MLRA is shown in red on our map. Boise, Idaho is immediately west of this MLRA, and development patterns seem to follow Interstate 84 and the Snake River although the population growth within the counties shaded red on our map is relatively modest (up to 5.8 percent between 1980 and 1992).



14. Southwestern Michigan Fruit and Truck Belt (*southwestern Michigan*) [97]

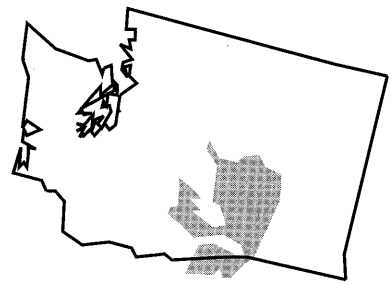
Nearly 80 percent of the 2,300 square miles of this MLRA are in farms with about 45 percent in cropland. Peaches and grapes are grown extensively near the shores of Lake Michigan. Many other fruits, vegetables and melons are also grown. Forage and feed grains for dairy cattle and other livestock are important crops. The market value per acre produced within this MLRA ranks it as 18th out of 127 MLRAs threatened by some development. Seventy-eight percent of this MLRA is shaded red on our map with low density development spreading out from Benton Harbor, Kalamazoo and Battle Creek. About 14 percent of the area is now urbanized, up from about 5 percent in 1981. Michigan expects to house an additional 1.1 million people in the next 30 years and, if present land development and density trends persist, this 11.8 percent increase in the population will result in 63 percent to 87 percent more parking lots, buildings, roads and other development. In other words, it will take nearly as much land to accommodate 1.1 million new

people and 900,000 new jobs over the next three decades as served 9 million people and 3.5 million jobs in 1978.²¹



15. Central California Coastal Valleys (*central coast of California*) [14]

Most of the 4,000 square miles in California's coastal valleys are in farms and ranches but urbanization now covers 25 percent of the region. The acreage used for urban development in the Central California Coastal Valleys continues to expand rapidly. Fifty-seven percent of this MLRA is red on our map due to its proximity to the San Francisco-Oakland-San Jose metropolitan area. The gentle sloping soils in the valleys are intensively farmed. This MLRA ranks seventh in market value per acre among the 127 MLRAs threatened by some development. Truck crops, wine grapes, strawberries and other fruits, cut flowers, small grains, hay and pasture are the principal irrigated crops. Small grains are grown on non-irrigated lands and dairy farming is important near the large cities. Because the coastal valleys contain micro climates supporting unique agricultural crops, highly productive farmland in these areas cannot be replaced at any cost.²²



16. Columbia Basin (*primarily parts of Washington*) [7]

About 83 percent of the 7,150 square miles in this MLRA are privately owned, and about 17 percent is federally owned or is set aside as Indian reservation. About a fifth of the Columbia Basin is dry-farmed with a wheat-fallow crop sequence. About 15 percent of the area is irrigated, and fruits, vegetables, sugar beets, hops, grain, hay and pasture are grown under intensive management. On our map, 58 percent of the Columbia Basin is red. Population movements from the metropolitan areas of Richland-Kennewick-Paco and Portland-Vancouver both impact this MLRA. Grant County in Washington experienced the greatest population change between 1980 and 1992, growing by 21.1 percent.



17. Imperial Valley (*southern California*) [31]

The Imperial Valley in southern California stretches 3,640 square miles. About 28 percent of the valley is cultivated and produces citrus fruit, dates, grapes, sugar beets, many kinds of vegetables, small grains, flaxseed, hay and pasture grasses. Soils consist of very fertile, alluvial deposits from the Colorado River flood plain and may be as deep as a mile in some places. The valley is well-known for its midwinter salad vegetables. Shipments of crisp head lettuce, leaf lettuce, cauliflower, broccoli and cabbage start in December and continue until March. Spring production of warm-season vegetables starts in late April with onions, sweet corn, bell pepper, chili peppers, cantaloupes and assorted melons. Total annual vegetable production is around 115,000 acres worth \$350 million. Fifty-six percent of this MLRA was highlighted in red on our map. The MLRA lies within commuting distance of both the San Diego and Los Angeles-Riverside-Orange County metropolitan areas. Imperial County's population grew by 40 percent between 1980 and 1992. Its projected growth

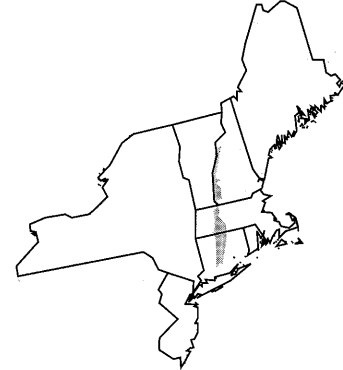
rate over the next five years ranks it among the 50 fastest growing counties in the United States.²³



18. Long Island-Cape Cod Coastal Lowland (*parts of Massachusetts, New York and Rhode Island*) [149B]

Extending 2,640 square miles, these are the islands lying off the eastern shore board (Dukes, Nantucket, Barnstable and Long Island). About 44 percent of the area is used for urban development and urban expansion is continuing. Recreational uses are extensive along the shorelines and 18 percent of the MLRA is forested. Less than 3 percent of the area is in cropland, but the market value per acre in this MLRA is the highest of the 127 MLRAs threatened by some development. Cash crops and vegetables such as potatoes, cauliflower and cabbage are particularly important. Our map shows 68 percent of this MLRA in red. The area is adjacent to the metropolitan areas of New York-Northern New Jersey-Long Island, Boston-Worcester-Lawrence, Barnstable and Yarmouth. Population changes were greatest in the Massachusetts' counties of Barnstable, Dukes and Nantucket,

growing between 1980 and 1992 by 27.8 percent, 32.7 percent and 22.8 percent, respectively.



19. Connecticut Valley (*primarily parts of Connecticut and Massachusetts*) [145]

Extending over four states and occupying 2,530 square miles, about 46 percent of the area is in hardwood and pine forests. In our analysis, 58 percent of this MLRA turned up red. The forested land in the Connecticut Valley region is used for residential, recreational, wildlife and aesthetic purposes or is held for investment. Locally, maple syrup and Christmas trees are important. About 28 percent of the area is used for urban development. Expansion of industrial and commercial facilities is rapidly using up prime farmland. Many small tracts are used as rural residences for occupants who are employed in cities and towns. About 20 percent of the area is in farms and about 60 percent of that has been cleared for use growing crops and pasture. Forage, tobacco, vegetables, fruits, potatoes and nursery stock are major crops. Greenhouses are important locally. The market value per acre of this MLRA ranks

it fifth among the 127 MLRAs threatened by some development. The metropolitan areas of Hartford, New Haven-Meriden and Springfield all impact this MLRA.



20. *Western Michigan Fruit and Truck Belt* (parts of Michigan and Wisconsin) [96]

With 4,110 square miles stretching over two states, it is the development threat to unique farmland along Lake Michigan that catapulted this MLRA into the top 20. The counties of Antrim, Benzie, Grand Traverse and Leelanau enjoy a unique microclimate that supports numerous fruit orchards and most of the tart cherry production in the United States. Areas in all four of these counties are shaded red on our map, covering 58 percent of this MLRA. Between 1982 and 1992, these counties lost more than 14 percent of their farmland. Benzie and Antrim counties lost 20 percent and 17 percent of their farmland, respectively. Leelanau, Grand Traverse and Antrim counties experienced rapid population growth between 1980 and 1992, increasing in numbers by 23.5 percent, 22.6 percent and 16.7 percent, respectively.

Michigan's farmland loss has been greater and more rapid than any other state in the Great Lakes Region.^{24 25} Most of this loss is due to the large demand for second homes and retirement homes in Michigan and fragmentation of land caused by low density developments. Michigan has the largest number of second homes in the nation and ranks second in the nation in the number of golf courses. A task force report to Governor Engler in December 1994 points to an increase in housing lot sizes, which has greatly accelerated the consumption of rural land. Their population projections show a 10 percent population increase for Michigan in the next 20 years resulting in a loss of 18 percent of Michigan's farmland if current land use trends continue.

[note: Door County, Wis. not shown above]

Table 1: The Top 20 MLRAs

Top 20 MLRAs (rankings are among the 127 MLRAs threatened by some development)	% Red on Map	Size in Sq. Miles (in thousands)	Total Market Value (rank)	Market Value per Acre (rank)	Acreage Prime + Unique Developed (rank)	% Land that is Prime + Unique (rank)	% Developed Land that was Prime + Unique
Sacramento/San Joaquin	77%	19.14	1	10	20	28	39%
Northern Piedmont	69%	11.53	28	12	6	57	34%
So. Wis. No. Ill. Drift	67%	11.02	24	21	11	18	59%
Texas Blackland	50%	18.48	49	85	5	35	42%
Willamette/Puget S.	54%	18.59	25	8	12	65	27%
Florida Everglades	53%	4.33	31	3	22	106	40%
Eastern Ohio Till	47%	5.80	72	25	19	31	57%
Lower Rio Grand	68%	2.55	90	75	31	13	85%
Mid-Atlantic Coastal	58%	5.99	48	6	67	36	43%
New England, E. NY	58%	20.09	53	14	21	86	14%
Ontario Plain, W. NY	52%	12.66	52	28	42	37	47%
Nashville Basin	58%	6.06	99	81	29	53	39%
Central Snake River	50%	5.82	50	13	93	49	41%
SW Michigan	78%	2.30	100	18	84	32	27%
Central Calif. Coastal	57%	4.00	65	7	60	66	22%
Columbia Basin	58%	7.15	54	26	83	64	34%
Imperial Valley	56%	3.64	126	126	88	43	42%
Long Island Cape Cod	68%	2.64	113	1	61	84	24%
Connecticut Valley	58%	2.53	117	5	56	71	29%
Western Michigan	58%	4.11	111	50	84	69	27%

V. Discussion

Concerns about the impact of urban growth on the availability of land for agriculture have persisted for the last 50 years, intensifying in the early 1970s when international demands for United States agricultural commodities soared. Several studies have analyzed urbanization and land quality at the national and regional level, but results have been mixed, with some showing that better quality land was developed disproportionately and others showing no relationship.²⁶ A recent study looking at prime farmland, land capability classes and gross crop revenue lost through conversion found negligible reductions in the quality of cropland between 1982 and 1992 in urbanizing areas.²⁷ The authors conclude that of all possible reasons for concern about the quality of land lost to urban development, its impact on aggregate United States productive capacity appears to be the least well founded. They argue instead that we should focus on threats to open space, watersheds, public infrastructure costs, rural lifestyles and local agricultural self-sufficiency. We do not disagree with the latter multitude of impacts and their adverse effects on local communities, but our study indicates that some level of concern about the disproportionate loss of high quality farmland is justified if present development trends continue. Prime and unique farmland made up 22 percent of the 127 threatened MLRAs we studied, but urban development

had consumed 32 percent of this resource. This needless loss of the country's best farmland to development is reason enough to consider developing land in a more efficient manner, directing development onto land that is less appropriate for growing food and fiber.

Roughly 56 percent of our crops are grown on prime farmland soils. According to 1992 NRI highlights, the total acreage of prime farmland for the nation in 1992 was 333.4 million acres, 6 million acres less than in 1982 and an area roughly the size of Vermont. Prime farmland is used not only as cropland (65 percent) but also as forestland (14 percent), pastureland (11 percent) and rangeland (6 percent). Some of the prime farmland lost was moved into federal ownership or was reclassified as non-prime. However, 4 million acres of prime farmland were converted to urban and built-up land. This conversion of prime farmland to development between 1982 and 1992 translates into an annual loss of 400,000 acres of prime farmland per year or 45.7 acres every hour every day.²⁸ While no land is truly "lost," of course, and reconversion to farming is possible, the practical reality is that this developed land will never again be farmed. The NRI does not generate similar statistics for unique farmland but our analysis indicates 266,000 acres of unique farmland were also converted during this period, an additional three acres of irreplaceable farmland lost every hour every day.

Such losses are not surprising. According to USDA, the land most likely to be converted to nonagricultural uses is prime farmland.²⁹ This is because agriculture was the basis for most permanent inland settlements in the United States. Settlements were typically established in the center of the most fertile areas and near rivers that offered a source of water and transportation. Thus, most United States cities and larger rural towns are surrounded by productive agricultural land which, in turn, is threatened by their expansion. During the 1980s, most major metropolitan areas developed commercial and employment centers at or near their outer boundaries, creating "edge cities," often with suburbs of their own. As a result, 84 percent of non-metropolitan counties that are adjacent to a metropolitan area gained population between 1990 and 1994, averaging net migration gains double that of the nearby metro area.³⁰ Pittsburgh, Chicago, Cleveland, St. Louis and Detroit lost, on average, 37 percent of their central city population between 1960 and 1990 while suburban population and land use soared.³¹ Philadelphia, America's birthplace, has lost 500,000 people since World War II while subdivisions and office parks have paved more than 25 percent of the fertile farmland surrounding the city.

Sadly, the sprawling nature of postwar suburban development may also have irreparably damaged the nation's sense of community, leaving in its wake

colorless subdivisions with names such as Orchard Hills or Blackhawk Ranch, desperately trying to retain the image of places destroyed as homes and streets were built.³² Given the acceleration in the pace of rural growth in the 1990s, demographers now predict a long-term and gradual dispersal of the United States population into smaller, less densely settled cities and towns driven by technological changes, the decline of industrial jobs and other factors that make distance a less important factor.³³ In other words, the pressure to convert farmland will continue to increase and impact both metropolitan and non-metropolitan counties.

The conversion of agricultural land is a complex process, often taking place over a period of 20 to 30 years.³⁴ This makes it more difficult to define or analyze. It involves such factors as farm profitability, urban growth pressures, land values, personal decisions about work and retirement, community expectations, taxes and government programs, incentives and regulations. The conversion of farmland also tends to be highly incremental, with a farm going out of production here and another there.³⁵ As a consequence, the cumulative impact of agricultural land loss is rarely appreciated until much has already been lost. What seems insignificant or even acceptable a little at a time becomes a pattern or a whole that most Americans reject.

Unfortunately, ever-changing land use patterns and an evolving

agricultural structure complicate our understanding of the long term impacts of losing high quality farmland. Studies by the USDA show that use and management of private land change constantly in response to economic, social and environment forces.³⁶ Although the amount of cropland in the United States has remained essentially the same since the 1920s, the location and use of that cropland have changed dramatically. Millions of acres of former cropland are now forests in the northeastern and southern states, and Mississippi River bottomland forests and Great Plains grasslands are cropped instead. In addition, cropland taken out by urban development has been offset up to now by clearing forests, draining wetlands or plowing up grazing land.³⁷ However, land use changes of this magnitude are coming under closer public scrutiny because of environmental concerns.

Even more troubling, while prime farmland is being withdrawn from the nation's cropland base, non-prime farmland is being added to the base from rangeland in the arid west and forestland in the humid east.³⁸ The rangelands to cropland conversions in the West are directly associated with increased erosion rates totaling 11 million tons of topsoil.³⁹

Other shifts in farmland use provide additional arguments for stepping up national efforts to preserve the highest quality farmland. Irrigated acreage in the western states has declined

substantially with the increased cost of water but has expanded in the eastern United States. Conflicts between urban demands and agriculture's need for water will continue to escalate. At the same time, problems with soil and water salinity have affected at least 48 million acres of cropland and pasture.⁴⁰ Saline soils contain enough salt to adversely affect plant growth and reclaiming these soils is difficult, if not impossible. Soil erosion, although partly addressed through effective farm programs over the last decade, also continues to affect the sustainability of cropland, removing 3.1 billion tons of soil in 1982 and 2.1 billion tons in 1992.⁴¹ Other factors which adversely affect soil quality and productivity include soil compaction from heavy farm machinery, acidification and biological degradation.⁴² However, none of these problems threaten productivity on prime farmland by its very definition (see *Glossary*).

At the same time, farm numbers have declined dramatically, and the average farm size has increased proportionately. Today, there are fewer than 2 million farms, down from 29.8 million in 1900. The number of small rural residence farms and large farms has increased while the number of mid-size farms has decreased. This pattern of small ownerships, coupled with rapid population growth in many rural counties bordering metropolitan areas, has resulted in a dramatic increase in the "edge effect" as urban land

uses conflict with rural ones.⁴³ Rural homesites, ranchettes and farmettes increasingly mix with prime farmland. The conflicts that can result make commercial production more expensive and difficult. Lack of profitability, increasing taxes, regulations, trespassing incidents, scarcity of labor and escalating land prices can force farmers to give up.⁴⁴ This can adversely affect the production of agricultural commodities located predominately in fast-growth areas. For example, vegetables, fruits, nursery stock and greenhouse products tend to be grown in highly populated, fast-growing areas.⁴⁵ According to our analysis, the top 20 threatened MLRAs produce 51 percent of the fruit and 39 percent of the vegetables the United States produces.

In addition, an increasingly complex mix of urban and rural land uses have natural resource impacts with long-term repercussions. Urbanization creates pavement, roads and roofs that collect and pass storm water directly into drains instead of filtering it naturally through the soil.⁴⁶ Low-density rural subdivisions and rural residences may also add untreated wastes directly into surface and shallow groundwater sources from their septic systems.⁴⁷ Land conversion to low-density subdivisions on septic fields can actually result in a higher nutrient loading than that which may have occurred from livestock operations alone.⁴⁸ New pollutants such as oil leaked from automobiles, salt from icy roads

and lawn care chemicals are introduced into the environment. And watersheds, where the maintenance of water quality formerly depended on land stewardship by a few dozen farmers now often rely on the actions of hundreds of small landowners, making the task of developing effective cooperation even more difficult.

In other words, increasing environmental concerns coupled with the loss of productive cropland through erosion, soil degradation or lack of affordable water and increasing expanses of asphalt and concrete could limit our future options to deal with social, economic, food security and environmental problems. This is, perhaps, the most persuasive argument for keeping the nation's best land in production.

As pointed out earlier, urbanization at the highly populated rural-urban fringe areas may also be cause for concern where open space for recreation, wildlife, environmental quality and aesthetic enjoyment is scarce.⁴⁹ Early studies asserted that protecting farmland was a way for the public to maintain open space, retain natural systems and processes, control public infrastructure costs, preserve the local economic base and local self-sufficiency, promote rural lifestyles, maintain local specialty crops and conserve energy.⁵⁰ Recently, the Bureau of Land and Water Resources in the Illinois Department of Agriculture, working with the Illinois Coalition

for Farmland Protection, started a list of farmland attributes.⁵¹ They have identified 26 attributes so far ranging from groundwater recharge and flood storage to wildlife habitats, the production of raw materials for a broad variety of manufactured goods, the adsorption of pollutants such as wastewater and petroleum-contaminated soils intentionally applied to the land, contributions to the tax base (farmland provides more in tax revenues than it requires in cost of services⁵²) and recreational opportunities such as hunting and fishing.

Given all of these concerns, how successful has the United States been in protecting its high quality farmland? There are few quantitative studies available to indicate how successful programs have been in actually preventing high quality farmland from being converted to other uses. Fifteen states, mostly in the Northeast, have enacted laws and appropriated funds to pay farmers willing to keep their land in an agricultural use (Purchase of Agricultural Conservation Easements, PACE, also known as Purchase of Development Rights programs or PDR; see *Glossary*).⁵³ Easements then stay with the land, even when it is sold, guaranteeing it will always be farmland. These programs use soil quality as one of the criteria for selecting farms to protect. Since 1976, farmland preservation laws have protected nearly 444,000 acres of farmland. About 76,000 acres will be added to this total through the Federal Agriculture Improvement and

Reform Act of 1996, which established a Farmland Protection Program to provide assistance to states with farmland protection programs to purchase conservation easements. However, at this rate, we're losing at least 16 acres of prime and unique farmland to urban development for every acre saved and for every farmer who has sold an easement, another six are waiting in line.⁵⁴

In addition to the purchase of agricultural conservation easements, other farmland protection tools include agricultural districts, agricultural protection zoning, comprehensive growth management, conservation easements, death taxes, property tax relief, right-to-farm laws, various state policies and transfer of development rights.⁵⁵

⁵⁶ The number and quality of farmland acres protected under these various statutes are not readily available and protection may not be permanent.

All of these factors lead us to conclude that our country needs to refocus its efforts and its energies to saving its best farmland for future generations. Farmland deserves to be treated as more than just a holding pattern for future development. The nation needs to take a more strategic approach to farmland protection by giving communities, states and regions the ability to identify the various agricultural, environmental and economic benefits provided by farmland, encouraging them to develop a consensus on their most important and vulnerable farmland and providing them ways to

permanently protect this resource.⁵⁷ **Consequently, American Farmland Trust recommends the following steps:**

Research and Information Needs

- USDA, the Commerce Department, states departments of agriculture and U.S. Environmental Protection Agency should work together to *quantify the impact of farmland conversion on key parameters such as water quality, air quality, wildlife populations, rural economic health, crop production, distribution of produce, agricultural imports and regional food security.*

- *USDA should take the lead in defining farmland by its importance and vulnerability to development as a means of targeting policy and programs at the federal level and assist states to do the same, including better quantification of farmland of statewide and local importance.* Farmland defined by its importance and vulnerability to development is known as strategic farmland and is an innovative approach that goes beyond food and fiber production to recognize the other environmental, economic and social goods that the land provides people.

- *States should develop similar inventories and systems for tracking the fate of farmland, especially strategic farmland as they define the concept to fit their own needs. Again, this should drive their own policy and program priorities.*

- *The benefits of working landscapes beyond the production of food and fiber should be defined and measured to give local communities the opportunity to include the multiple benefits of farmland in their land use planning process. They include such attributes as aesthetics of open space, wildlife habitat, recreational opportunities, groundwater recharge and food sources for migratory birds.*

Federal Policies

- *The Federal Farmland Protection Policy Act should be strengthened and enforced and the Farmland Protection Program should be expanded.* The FPPA is a 1981 program that calls for the federal government to review and minimize actions leading to farmland loss. Its information and research provisions should be fully implemented as well as the law's mandate that all agencies review policies that conflict with the goal of protecting strategic farmland. An interagency working group should be established to assure that construction funding and land management projects under federal agency supervision do not unnecessarily consume or encourage the conversion of strategic farmland. In addition, the Farmland Protection Program, which was established by the 1996 Farm Bill and authorizes \$35 million over the next five years to assist states and localities in farmland preservation efforts, should be expanded. Approximately \$100 million per year would be needed to match state and local Purchase of Agricultural

Conservation Easements funding, thus making the federal government a “full partner.”⁵⁸ This funding should be targeted to strategic farming areas within the top threatened MLRAs identified in this report. A good start has been made. Late in 1996, the Farmland Protection Program directed more than \$14 million in federal funds to assist 37 programs in the purchase of conservation easements on more than 76,000 acres of farmland in 17 states. Programs in 12 of the 17 states funded are located in the top 20 threatened MLRAs identified by this map (the exceptions are programs in San Bernardino County, Calif.; Routt County, Colo.; Kentucky, Florida and North Carolina). As this report goes to press (February 1997), not all the programs awarded grants by USDA have worked out their agreements.⁵⁹

- *All levels of government should review policies affecting land use decisions of land owners and eliminate those that discourage the retention of quality farmland.* Those policies that encourage development of high quality farmland should be eliminated or modified to minimize their impacts. For example, federal housing programs, construction programs and favorable tax treatment of home mortgages influence land use patterns in urbanizing areas.⁶⁰

- *Federal and state estate taxes should be revised to help keep agricultural land in the hands of farm families committed to*

continue farming. Estate taxes can cause farmland to be sold for development because intergenerational transfers have become very costly for most farm families. An effective way to ensure land remains in farming is to provide estate tax relief or deferment in return for a farmland protection easement that will prevent development and protect the land for at least another generation.

- *Federal legislation should be written to take advantage of the benefits farmland protection can provide the public.* Water quality, air quality, wildlife and endangered species habitat, and rural economic health can all be improved through farmland protection. Other USDA matching funds programs such as the Environmental Quality Incentives Program (EQIP) could be used in partnership with local, state and federal farmland protection efforts to help protect farmland that specifically addresses the objectives of federal legislation such as the Endangered Species Act and Water Quality Protection Act. Conversely, legislation that results in some farmland destruction should include mitigation features. For example, the Intermodal Surface Transportation Efficiency Act should provide funds to protect farmland and offset the otherwise negative effects of many transportation projects on farmland.

State and Local Programs

- *Every state with land in one of the top 20 threatened MLRAs should take specific measures to protect strategic farmland, as it defines it.* Those steps should include:

- *A statewide inventory and tracking system for strategic farmland to drive policy and programs.*

- *A FPPA-type law to promote review and reconciliation of state policies to protect farmland.*

- *Technical and financial assistance to local communities in strategic farming areas.* This should include a Purchase of Agricultural Conservation Easements program to take advantage of the federal FPP partnership opportunity.

- *Communities should also take specific steps to identify and protect strategic farmland.* American Farmland Trust recommends the following steps:

- *Conduct a land inventory and analysis of development trends and risks.* For example, AFT's Center for Agriculture in the Environment is currently using computer-assisted mapping or Geographic Information Systems in two of the top 20 threatened MLRAs (Southern Wisconsin and Northern Illinois Drift Plain and Sacramento and San Joaquin Valleys) to merge natural resource information with projections of future development and fiscal impacts. This will help us better understand how to use our land resources more efficiently. It is particularly important to focus on

rapidly growing counties since counties with the most rapid increase in population use the most land per new household. In addition, urban conversion per household is inversely proportional to initial population level with the least populated counties growing 60 percent faster than the most populous counties and converting almost three times as much land per change in household.⁶¹

- *Reach consensus on criteria to identify strategic farmland.* For example, in the Chesapeake Bay watershed, American Farmland Trust is working with farmers, public officials, planners, developers and land trust representatives to reach a consensus on criteria for strategic farmland in the watershed, using GIS to plot its location. The MLRAs encompassing much of this area, the Northern Coastal Plain and the Atlantic Coast Flatwoods, ranked 45th and 46th out of the 127 threatened MLRAs in our analysis.

- *Undertake a policy "audit"* or analysis of the adequacy of existing policies to protect strategic farmland and recommend policy improvements if needed.

- *Reach consensus on and implement policy reforms* including development of programs such as PACE, agricultural zoning, etc.

- *A process of dialogue and debate should be initiated in each locality where conversion of farmland is significant to develop long-term objectives for the land and mechanisms to share responsibility to protect it.*

Americans need to recognize that irrevocable decisions regarding the fate of farmland are being made every day without guidance on public priorities for the land.

- The most significant threat to farmland in most of the nation's top 20 threatened MLRAs was rapidly expanding metropolitan areas. *Urban planners should look more closely at the principles of compact growth, including building homes at optimal density, renewing inner cities and using existing infrastructure.* Fiscal impact studies show compact development relative to sprawl is 75 percent as expensive with respect to roads, 95 percent as expensive with respect to schools and 85 percent as expensive with respect to utilities.⁶² More importantly, for the protection of farmland, compact growth consumes 40 percent as much land overall with 60 percent the amount of farmland and 17 percent the level of development on fragile lands.

Endnotes

1. American Association for the Advancement of Science. 1996. Annual Meeting, Baltimore, Maryland. Press Conference: *New Views on Consumption, Population and the Environment*. February 9, 1996. Despite the conclusions of those participating in the AAAS press conference, many economists, planners and researchers argue that, while land use change on the urban periphery may be a valid concern for state and local governments, farmland lost to urban development is not a significant constraint on our nation's capacity to produce food and fiber. However, no one disputes that farmland loss is a growing international problem. U.S. Secretary of Agriculture Dan Glickman points out that "even as worldwide food demand rises, nations such as Indonesia, China and Vietnam are transforming their arable farmland into commercial use to support their burgeoning economies." He adds, "Our ability to advance our national and global interests is inextricably linked to how we manage America's natural resources."
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52. Suburban developments are often advocated and approved because communities feel expanding the tax base will reduce local property taxes. AFT, in nine cost of community services studies, has found that any apparent gain in tax revenue from residential development is lost when the cost of delivering the necessary public services is considered. Residential development requires anywhere from \$1.04 to \$1.27 in services for every \$1 paid in taxes whereas for every farm dollar raised, only 30 to 50 cents is spent to provide services.

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54. We have protected an average of 26,000 acres a year since 1976 (if we include the 76,000 acres soon to be added) but during the last decade alone we have lost an average of 426,600 acres of high quality farmland every year

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Appendix

Figures

Figure 1 - Map showing the 127 MLRAs threatened by development

Figure 2 - Map showing the top 20 threatened MLRAs (with MLRA designation and ranking number)

Major Land Resource Areas Map

Tables

Table 2 - State Mapping Unit Averages

Table 3 - The Top 20 Threatened Major Land Resource Areas ranked by score (MLRAs with almost 50 percent or more of their high quality farmland coinciding with rapid development)

Table 4 - The remaining 107 Major Land Resource Areas with some threat to farmland ranked by score (MLRAs with less than 45 percent of their high quality farmland coinciding with rapid development)

Table 5 - Agricultural Production Counties Linked to the Top 20 MLRAs

Rankings of States

Table 6 - States Ranked by Total Agricultural Market Value

Table 7 - States Ranked by the Acreage of Prime or Unique Farmland Converted to Urban (1982-1992)

Table 8 - States Ranked by Percentage of Land that is Prime or Unique Farmland

Rankings of Major Land Resource Areas

Table 9 - MLRA Regions Ranked by Agricultural Market Value

Table 10 - MLRA Regions Ranked by Acreage of Prime or Unique Farmland converted to Urban (1982-1992)

Table 11 - MLRA Regions Ranked by Percentage of Land that is Prime or Unique Farmland (1992)

Glossary

Figure 1
The 127 Threatened MLRAs

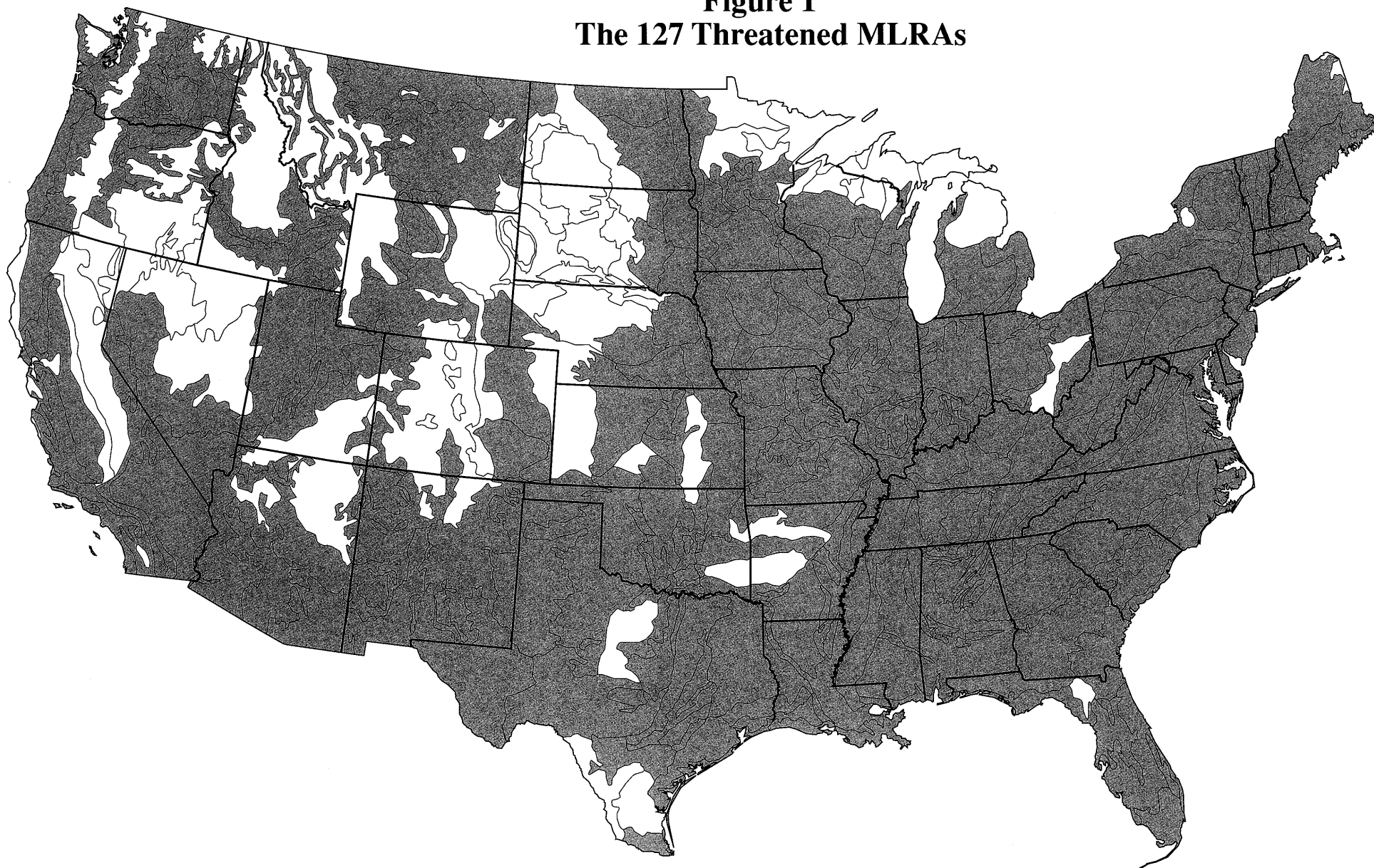


Figure 2
The Top 20 Most Threatened MLRAs
(Rank is shown in parentheses.)



Land Resource Regions and Major Land Resource Areas of Conterminous U.S., Alaska, and Hawaii

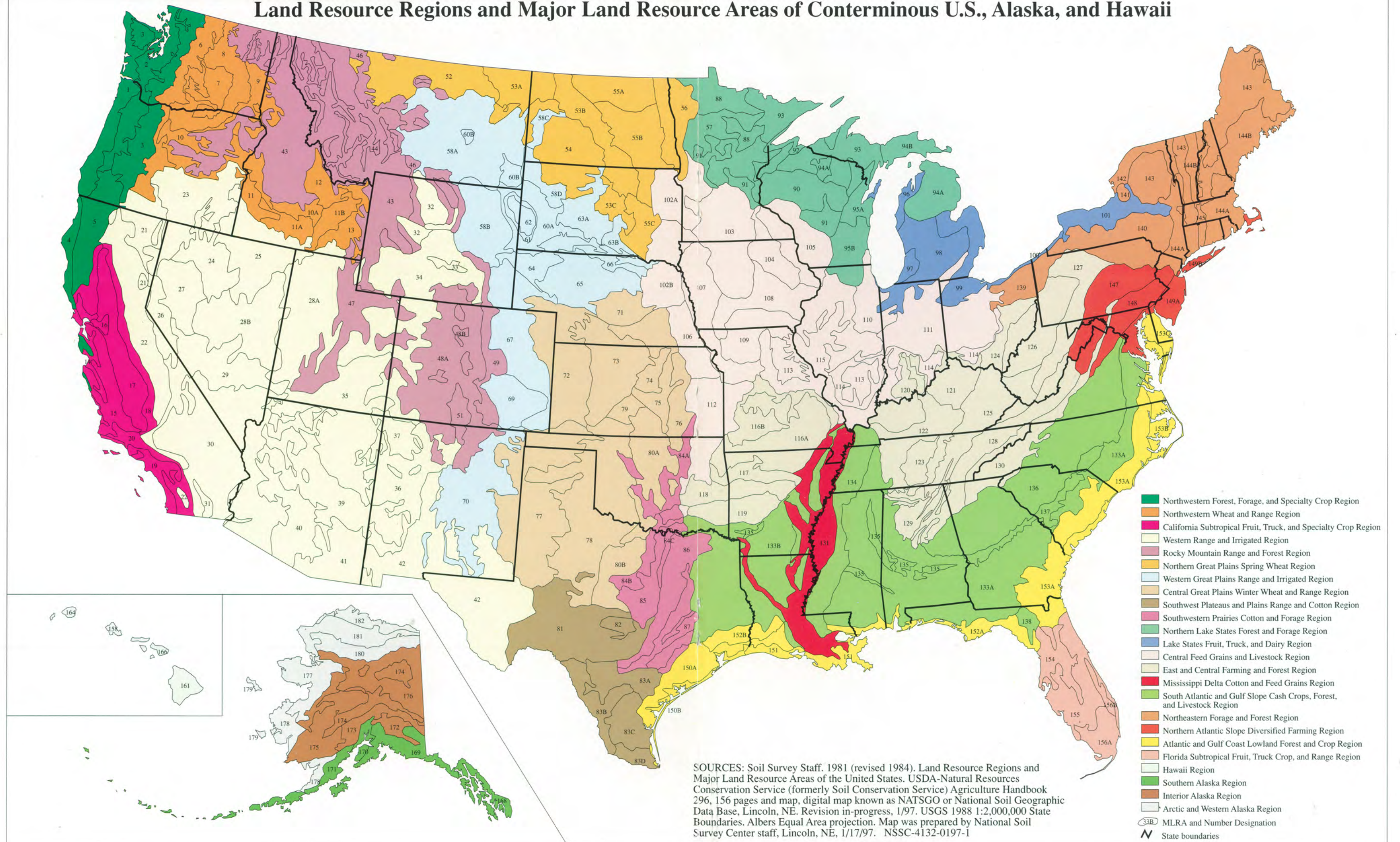


Table 2
State Mapping Unit Averages

State	State Mapping Unit Average	State Mapping Unit Average	State Mapping Unit Average
	Prime Farmland (%)	Unique Farmland (acres)	Land Developed (1982-92) (acres)
AL	22.4	320	993
AZ	2.9	504	1,490
AR	38.7	139	254
CA	5.6	5,173	1,365
CO	2.8	152	793
CT	7.5	424	2,462
DE	29.6	822	1,956
FL	2.7	4,742	4,003
GA	20.2	933	1,704
ID	6.3	114	271
IL	57.9	178	561
IN	54.4	89	645
IA	52.5	28	122
KS	46.0	12	219
KY	21.8	27	1,111
LA	39.3	139	725
ME	4.9	303	1,128
MD	13.9	422	1,552
MA	6.7	647	3,190
MI	21.5	1,228	1,474
MN	42.1	425	518
MS	32.7	250	426
MO	31.9	41	412
MT	1.3	0	190
NE	29.5	0	85
NV	0.6	38	391
NH	2.1	175	2,919
NJ	13.3	1,963	5,053
NM	0.3	544	546
NY	14.7	1,256	827
NC	22.0	463	2,887
ND	26.2	0	394
OH	45.8	258	1,375
OK	30.7	99	334
OR	6.6	521	475
PA	14.3	452	1,493

Table 2 Cont.

State	State	State	State
	Mapping Unit	Mapping Unit	Mapping Unit
	Average	Average	Average
	Prime Farmland	Unique Farmland	Land Developed
	(%)	(acres)	(acres)
RI	8.8	142	2,150
SC	17.6	408	1,644
SD	14.4	0	174
TN	21.1	183	1,271
TX	24.2	319	1,027
UT	1.5	79	488
VT	4.9	93	798
VA	18.0	232	1,349
WA	5.1	1,278	953
WV	3.0	284	721
WI	25.4	925	751
WY	0.9	0	151

Table 3**Rank of Top 20 MLRAs**

The top 20 threatened MLRAs as ranked by market value of agricultural production, development pressure and land quality.

Rank	ID	Major Land Resource Area	Score
1	17	Sacramento and San Joaquin Valleys	1,120
2	148	Northern Piedmont	537
3	95B	Southern Wisconsin and Northern Illinois Drift Plain	514
4	86	Texas Blackland Prairie	504
5	2	Willamette and Puget Sound Valleys	445
6	156A	Florida Everglades and Associated Areas	439
7	139	Eastern Ohio Till Plain	363
8	83D	Lower Rio Grande Plain	336
9	153C	Mid-Atlantic Coastal Plain	280
10	144A	New England and Eastern New York Upland, Southern Part	267
11	101	Ontario Plain and Finger Lakes Region	252
12	123	Nashville Basin	224
13	11A	Central Snake River Plains	193
14	97	Southwestern Michigan Fruit and Truck Belt	185
15	14	Central California Coastal Valleys	184
16	7	Columbia Basin	141
17	31	Imperial Valley	136
18	149B	Long Island-Cape Cod Coastal Lowland	136
19	145	Connecticut Valley	119
20	96	Western Michigan Fruit and Truck Belt	92

Table 4**Rank of Remaining MLRAs**

The bottom 107 threatened MLRAs as ranked by market value of agricultural production, development pressure and land quality.

Rank	ID	Major Land Resource Area	Score
21	136	Southern Piedmont	1,737
22	111	Indiana and Ohio Till Plain	1,714
23	133A	Southern Coastal Plain	1,710
24	103	Central Iowa and Minnesota Till Prairies	1,076
25	108	Illinois and Iowa Deep Loess Hills	968
26	131	Southern Mississippi Valley Alluvium	837
27	134	Southern Mississippi Valley Silty Uplands	767
28	77	Southern High Plains	727
29	98	Southern Michigan and Northern Indiana Drift Plain	717
30	107	Iowa and Missouri Deep Loess Hills	714
31	110	Northern Illinois and Indiana Heavy Till Plain	700
32	147	Northern Appalachian Ridges and Valleys	699
33	102B	Loess Uplands and Till Plains	648
34	150A	Gulf Coast Prairies	620
35	20	Southern California Mountains	606
36	30	Sonoran Basin and Range	592
37	104	Eastern Iowa and Minnesota Till Prairies	590
38	75	Central Loess Plains	579
39	99	Erie-Huron Lake Plain	552
40	133B	Western Coastal Plain	520
41	90	Central Wisconsin and Minnesota Thin Loess and Till	485
42	73	Rolling Plains and Breaks	479
43	115	Central Mississippi Valley Wooded Slopes	476
44	155	Southern Florida Flatwoods	469
45	149A	Northern Coastal Plain	454
46	153A	Atlantic Coast Flatwoods	447
47	122	Highland Rim and Pennyroyal	447
48	112	Cherokee Prairies	439
49	105	Northern Mississippi Valley Loess Hills	429
50	114	Southern Illinois and Indiana Thin Loess and Till Plain	424
51	56	Red River Valley of the North	419
52	19	Southern California Coastal Plain	401
53	80A	Central Rolling Red Prairies	395
54	121	Kentucky Bluegrass	382
55	128	Southern Appalachian Ridges and Valleys	364
56	102A	Rolling Till Prairie	353
57	95A	Northeastern Wisconsin Drift Plain	349
58	15	Central California Coast Range	341
59	129	Sand Mountain	337
60	153B	Tidewater Area	326

Table 4 Cont.

Rank	ID	Major Land Resource Area	Score
61	113	Central Claypan Areas	325
62	106	Nebraska and Kansas Loess-Drift Hills	308
63	140	Glaciated Allegheny Plateau and Catskill Mountains	295
64	85	Grand Prairie	291
65	55A	Northern Black Glaciated Plains	276
66	78	Central Rolling Red Plains	273
67	74	Central Kansas Sandstone Hills	269
68	135	Alabama, Mississippi, and Arkansas Blackland Prairie	268
69	55B	Central Black Glaciated Plains	261
70	120	Kentucky and Indiana Sandstone and Shale Hills and Valleys	260
71	71	Central Nebraska Loess Hills	259
72	152B	Western Gulf Coast Flatwoods	257
73	154	South-Central Florida Ridge	248
74	118	Arkansas Valley and Ridges	247
75	67	Central High Plains	239
76	40	Central Arizona Basin and Range	233
77	109	Iowa and Missouri Heavy Till Plain	206
78	116A	Ozark Highland	204
79	11	Snake River Plains	203
80	116B	Ozark Border	191
81	91	Wisconsin and Minnesota Sandy Outwash	189
82	83A	Northern Rio Grande Plain	184
83	100	Erie Fruit and Truck Area	180
84	84C	East Cross Timbers	173
85	11B	Upper Snake River Plains	172
86	84B	West Cross Timbers	163
87	137	Carolina and Georgia Sand Hills	155
88	87	Texas Claypan Area	150
89	156B	Southern Florida Lowlands	141
90	84A	Cross Timbers	133
91	144B	New England and Eastern New York Upland, Northern Part	132
92	6	Cascade Mountains, Eastern Slope	132
93	126	Central Allegheny Plateau	126
94	125	Cumberland Plateau and Mountains	119
95	130	Blue Ridge	117
96	8	Columbia Plateau	114
97	152A	Eastern Gulf Coast Flatwoods	105
98	142	St. Lawrence-Champlain Plain	101
99	143	Northeastern Mountains	99
100	9	Palouse and Nez Perce Prairies	89
101	28A	Great Salt Lake Area	82
102	81	Edwards Plateau	82
103	127	Eastern Allegheny Plateau and Mountains	75

Table 4 Cont.

Rank	ID	Major Land Resource Area	Score
104	13	Eastern Idaho Plateaus	73
105	55C	Southern Black Glaciated Plains	68
106	44	Northern Rocky Mountain Valleys	64
107	51	High Intermountain Valleys	50
108	1	Northern Pacific Coast Range, Foothills, and Valleys	49
109	10	Upper Snake River Lava Plains and Hills	46
110	82	Texas Central Basin	43
111	69	Upper Arkansas Valley Rolling Plains	42
112	5	Siskiyou-Trinity Area	28
113	34	Central Desertic Basins, Mountains, and Plateaus	27
114	47	Wasatch and Uinta Mountains	26
115	42	Southern Desertic Basins, Plains, and Mountains	24
116	41	Southeastern Arizona Basin and Range	22
117	58A	Northern Rolling High Plains, Northern Part	18
118	39	Arizona and New Mexico Mountains	17
119	26	Carson Basin and Mountains	14
120	27	Fallon-Lovelock Area	13
121	32	Northern Intermountain Desertic Basins	12
122	52	Brown Glaciated Plain	11
123	46	Northern Rocky Mountain Foothills	7
124	36	New Mexico and Arizona Plateaus and Mesas	7
125	70	Pecos-Canadian Plains and Valleys	5
126	29	Southern Nevada Basin and Range	3
127	37	San Juan River Valley Mesas and Plateaus	1

Table 5

Agricultural Production Counties Linked to the Top 20 MLRAs

The data on market value is county-level data, and county borders do not coincide with MLRA borders. Therefore, it was necessary to develop a procedure for assigning counties to MLRAs. In cases where a county straddled two or more MLRAs, the county was assigned to the MLRA that had the greatest amount of area of that county. This resulted in two of the MLRAs not being assigned any counties, the most notable case being the Imperial Valley.

Sacramento and San Joaquin Valleys

17	Sacramento and San Joaquin Valleys	CA	AMADOR COUNTY
17	Sacramento and San Joaquin Valleys	CA	BUTTE COUNTY
17	Sacramento and San Joaquin Valleys	CA	CALAVERAS COUNTY
17	Sacramento and San Joaquin Valleys	CA	COLUSA COUNTY
17	Sacramento and San Joaquin Valleys	CA	FRESNO COUNTY
17	Sacramento and San Joaquin Valleys	CA	GLENN COUNTY
17	Sacramento and San Joaquin Valleys	CA	KERN COUNTY
17	Sacramento and San Joaquin Valleys	CA	KINGS COUNTY
17	Sacramento and San Joaquin Valleys	CA	MADERA COUNTY
17	Sacramento and San Joaquin Valleys	CA	MARIPOSA COUNTY
17	Sacramento and San Joaquin Valleys	CA	MERCED COUNTY
17	Sacramento and San Joaquin Valleys	CA	PLACER COUNTY
17	Sacramento and San Joaquin Valleys	CA	SACRAMENTO COUNTY
17	Sacramento and San Joaquin Valleys	CA	SAN JOAQUIN COUNTY
17	Sacramento and San Joaquin Valleys	CA	SOLANO COUNTY
17	Sacramento and San Joaquin Valleys	CA	STANISLAUS COUNTY
17	Sacramento and San Joaquin Valleys	CA	SUTTER COUNTY
17	Sacramento and San Joaquin Valleys	CA	TEHAMA COUNTY
17	Sacramento and San Joaquin Valleys	CA	TULARE COUNTY
17	Sacramento and San Joaquin Valleys	CA	TUOLUMNE COUNTY
17	Sacramento and San Joaquin Valleys	CA	YOLO COUNTY
17	Sacramento and San Joaquin Valleys	CA	YUBA COUNTY

Northern Piedmont

148	Northern Piedmont	MD	BALTIMORE COUNTY
148	Northern Piedmont	MD	CARROLL COUNTY
148	Northern Piedmont	MD	FREDERICK COUNTY
148	Northern Piedmont	MD	HARFORD COUNTY
148	Northern Piedmont	MD	HOWARD COUNTY
148	Northern Piedmont	MD	MONTGOMERY COUNTY
148	Northern Piedmont	NJ	HUNTERDON COUNTY
148	Northern Piedmont	NJ	MORRIS COUNTY
148	Northern Piedmont	NJ	SOMERSET COUNTY
148	Northern Piedmont	PA	ADAMS COUNTY
148	Northern Piedmont	PA	BUCKS COUNTY
148	Northern Piedmont	PA	CHESTER COUNTY
148	Northern Piedmont	PA	DELAWARE COUNTY
148	Northern Piedmont	PA	LANCASTER COUNTY
148	Northern Piedmont	PA	MONTGOMERY COUNTY
148	Northern Piedmont	PA	YORK COUNTY
148	Northern Piedmont	VA	ALBEMARLE COUNTY

Table 5 Cont.

148	Northern Piedmont	VA	CULPEPER COUNTY
148	Northern Piedmont	VA	FAUQUIER COUNTY
148	Northern Piedmont	VA	GREENE COUNTY
148	Northern Piedmont	VA	LOUDOUN COUNTY
148	Northern Piedmont	VA	MADISON COUNTY
148	Northern Piedmont	VA	RAPPAHANNOCK COUNTY
Southern Wisconsin and Northern Illinois Drift Plain			
95B	Southern Wisconsin and Northern Illinois Drift Plain	IL	BOONE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	IL	DE KALB COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	IL	KANE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	IL	MCHENRY COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	IL	STEPHENSON COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	IL	WINNEBAGO COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	COLUMBIA COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	DANE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	DODGE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	FOND DU LAC COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	GREEN COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	GREEN LAKE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	JEFFERSON COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	MILWAUKEE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	OZAUKEE COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	ROCK COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	SHEBOYGAN COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	WALWORTH COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	WASHINGTON COUNTY
95B	Southern Wisconsin and Northern Illinois Drift Plain	WI	WAUKESHA COUNTY
Texas Blackland Prairie			
86	Texas Blackland Prairie	TX	BEXAR COUNTY
86	Texas Blackland Prairie	TX	CALDWELL COUNTY
86	Texas Blackland Prairie	TX	COLLIN COUNTY
86	Texas Blackland Prairie	TX	DALLAS COUNTY
86	Texas Blackland Prairie	TX	DELTA COUNTY
86	Texas Blackland Prairie	TX	ELLIS COUNTY
86	Texas Blackland Prairie	TX	FALLS COUNTY
86	Texas Blackland Prairie	TX	FANNIN COUNTY
86	Texas Blackland Prairie	TX	FAYETTE COUNTY
86	Texas Blackland Prairie	TX	GONZALES COUNTY
86	Texas Blackland Prairie	TX	GRAYSON COUNTY
86	Texas Blackland Prairie	TX	HILL COUNTY
86	Texas Blackland Prairie	TX	HOPKINS COUNTY
86	Texas Blackland Prairie	TX	HUNT COUNTY
86	Texas Blackland Prairie	TX	KAUFMAN COUNTY
86	Texas Blackland Prairie	TX	LAMAR COUNTY
86	Texas Blackland Prairie	TX	LIMESTONE COUNTY
86	Texas Blackland Prairie	TX	MCLENNAN COUNTY
86	Texas Blackland Prairie	TX	NAVARRO COUNTY
86	Texas Blackland Prairie	TX	ROCKWALL COUNTY

Table 5 Cont

86	Texas Blackland Prairie	TX	WASHINGTON COUNTY
86	Texas Blackland Prairie	TX	WILLIAMSON COUNTY
Willamette and Puget Sound Valleys			
2	Willamette and Puget Sound Valleys	OR	CLACKAMAS COUNTY
2	Willamette and Puget Sound Valleys	OR	DOUGLAS COUNTY
2	Willamette and Puget Sound Valleys	OR	LANE COUNTY
2	Willamette and Puget Sound Valleys	OR	LINN COUNTY
2	Willamette and Puget Sound Valleys	OR	MARION COUNTY
2	Willamette and Puget Sound Valleys	OR	MULTNOMAH COUNTY
2	Willamette and Puget Sound Valleys	OR	POLK COUNTY
2	Willamette and Puget Sound Valleys	OR	WASHINGTON COUNTY
2	Willamette and Puget Sound Valleys	OR	YAMHILL COUNTY
2	Willamette and Puget Sound Valleys	WA	CLARK COUNTY
2	Willamette and Puget Sound Valleys	WA	COWLITZ COUNTY
2	Willamette and Puget Sound Valleys	WA	ISLAND COUNTY
2	Willamette and Puget Sound Valleys	WA	KING COUNTY
2	Willamette and Puget Sound Valleys	WA	KITSAP COUNTY
2	Willamette and Puget Sound Valleys	WA	LEWIS COUNTY
2	Willamette and Puget Sound Valleys	WA	PIERCE COUNTY
2	Willamette and Puget Sound Valleys	WA	SAN JUAN COUNTY
2	Willamette and Puget Sound Valleys	WA	SKAGIT COUNTY
2	Willamette and Puget Sound Valleys	WA	SNOHOMISH COUNTY
2	Willamette and Puget Sound Valleys	WA	THURSTON COUNTY
2	Willamette and Puget Sound Valleys	WA	WHATCOM COUNTY
Florida Everglades and Associated Areas			
156A	Florida Everglades and Associated Areas	FL	BROWARD COUNTY
156A	Florida Everglades and Associated Areas	FL	COLLIER COUNTY
156A	Florida Everglades and Associated Areas	FL	DADE COUNTY
156A	Florida Everglades and Associated Areas	FL	MONROE COUNTY
156A	Florida Everglades and Associated Areas	FL	PALM BEACH COUNTY
Eastern Ohio Till Plain			
139	Eastern Ohio Till Plain	OH	ASHTABULA COUNTY
139	Eastern Ohio Till Plain	OH	CARROLL COUNTY
139	Eastern Ohio Till Plain	OH	COLUMBIANA COUNTY
139	Eastern Ohio Till Plain	OH	CUYAHOGA COUNTY
139	Eastern Ohio Till Plain	OH	GEAUGA COUNTY
139	Eastern Ohio Till Plain	OH	HOLMES COUNTY
139	Eastern Ohio Till Plain	OH	LAKE COUNTY
139	Eastern Ohio Till Plain	OH	LORAIN COUNTY
139	Eastern Ohio Till Plain	OH	MAHONING COUNTY
139	Eastern Ohio Till Plain	OH	MEDINA COUNTY
139	Eastern Ohio Till Plain	OH	PORTAGE COUNTY
139	Eastern Ohio Till Plain	OH	STARK COUNTY
139	Eastern Ohio Till Plain	OH	SUMMIT COUNTY
139	Eastern Ohio Till Plain	OH	TRUMBULL COUNTY
139	Eastern Ohio Till Plain	OH	WAYNE COUNTY

Table 5 Cont

Lower Rio Grande Plain

83D	Lower Rio Grande Plain	TX	CAMERON COUNTY
83D	Lower Rio Grande Plain	TX	HIDALGO COUNTY
83D	Lower Rio Grande Plain	TX	KENEDY COUNTY
83D	Lower Rio Grande Plain	TX	STARR COUNTY
83D	Lower Rio Grande Plain	TX	WILLACY COUNTY

Mid-Atlantic Coastal Plain

153C	Mid-Atlantic Coastal Plain	DE	KENT COUNTY
153C	Mid-Atlantic Coastal Plain	DE	SUSSEX COUNTY
153C	Mid-Atlantic Coastal Plain	MD	CAROLINE COUNTY
153C	Mid-Atlantic Coastal Plain	MD	KENT COUNTY
153C	Mid-Atlantic Coastal Plain	MD	QUEEN ANNES COUNTY
153C	Mid-Atlantic Coastal Plain	MD	TALBOT COUNTY
153C	Mid-Atlantic Coastal Plain	MD	WICOMICO COUNTY
153C	Mid-Atlantic Coastal Plain	MD	WORCESTER COUNTY

New England and Eastern New York Upland, Southern Part

144A	New England and Eastern New York Upland, Southern Part	CT	FAIRFIELD COUNTY
144A	New England and Eastern New York Upland, Southern Part	CT	LITCHFIELD COUNTY
144A	New England and Eastern New York Upland, Southern Part	CT	MIDDLESEX COUNTY
144A	New England and Eastern New York Upland, Southern Part	CT	NEW HAVEN COUNTY
144A	New England and Eastern New York Upland, Southern Part	CT	NEW LONDON COUNTY
144A	New England and Eastern New York Upland, Southern Part	CT	TOLLAND COUNTY
144A	New England and Eastern New York Upland, Southern Part	CT	WINDHAM COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	BRISTOL COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	ESSEX COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	MIDDLESEX COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	NORFOLK COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	PLYMOUTH COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	SUFFOLK COUNTY
144A	New England and Eastern New York Upland, Southern Part	MA	WORCESTER COUNTY
144A	New England and Eastern New York Upland, Southern Part	NH	HILLSBOROUGH COUNTY
144A	New England and Eastern New York Upland, Southern Part	NH	MERRIMACK COUNTY
144A	New England and Eastern New York Upland, Southern Part	NH	ROCKINGHAM COUNTY
144A	New England and Eastern New York Upland, Southern Part	NH	STRAFFORD COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	BERGEN COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	ESSEX COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	HUDSON COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	PASSAIC COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	SUSSEX COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	UNION COUNTY
144A	New England and Eastern New York Upland, Southern Part	NJ	WARREN COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	BRONX COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	COLUMBIA COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	DUTCHESS COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	NEW YORK COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	ORANGE COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	PUTNAM COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	RENSSELAER COUNTY

Table 5 Cont.

144A	New England and Eastern New York Upland, Southern Part	NY	ROCKLAND COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	SARATOGA COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	WASHINGTON COUNTY
144A	New England and Eastern New York Upland, Southern Part	NY	WESTCHESTER COUNTY
144A	New England and Eastern New York Upland, Southern Part	RI	BRISTOL COUNTY
144A	New England and Eastern New York Upland, Southern Part	RI	KENT COUNTY
144A	New England and Eastern New York Upland, Southern Part	RI	PROVIDENCE COUNTY
144A	New England and Eastern New York Upland, Southern Part	RI	WASHINGTON COUNTY

Ontario Plain and Finger Lakes Region

101	Ontario Plain and Finger Lakes Region	NY	ALBANY COUNTY
101	Ontario Plain and Finger Lakes Region	NY	CAYUGA COUNTY
101	Ontario Plain and Finger Lakes Region	NY	ERIE COUNTY
101	Ontario Plain and Finger Lakes Region	NY	GENESEE COUNTY
101	Ontario Plain and Finger Lakes Region	NY	LIVINGSTON COUNTY
101	Ontario Plain and Finger Lakes Region	NY	MADISON COUNTY
101	Ontario Plain and Finger Lakes Region	NY	MONROE COUNTY
101	Ontario Plain and Finger Lakes Region	NY	MONTGOMERY COUNTY
101	Ontario Plain and Finger Lakes Region	NY	NIAGARA COUNTY
101	Ontario Plain and Finger Lakes Region	NY	ONEIDA COUNTY
101	Ontario Plain and Finger Lakes Region	NY	ONONDAGA COUNTY
101	Ontario Plain and Finger Lakes Region	NY	ONTARIO COUNTY
101	Ontario Plain and Finger Lakes Region	NY	ORLEANS COUNTY
101	Ontario Plain and Finger Lakes Region	NY	OSWEGO COUNTY
101	Ontario Plain and Finger Lakes Region	NY	SCHENECTADY COUNTY
101	Ontario Plain and Finger Lakes Region	NY	SENECA COUNTY
101	Ontario Plain and Finger Lakes Region	NY	WAYNE COUNTY
101	Ontario Plain and Finger Lakes Region	NY	YATES COUNTY

Nashville Basin

123	Nashville Basin	TN	BEDFORD COUNTY
123	Nashville Basin	TN	DAVIDSON COUNTY
123	Nashville Basin	TN	GILES COUNTY
123	Nashville Basin	TN	LINCOLN COUNTY
123	Nashville Basin	TN	MARSHALL COUNTY
123	Nashville Basin	TN	MAURY COUNTY
123	Nashville Basin	TN	MOORE COUNTY
123	Nashville Basin	TN	RUTHERFORD COUNTY
123	Nashville Basin	TN	SMITH COUNTY
123	Nashville Basin	TN	SUMNER COUNTY
123	Nashville Basin	TN	TROUSDALE COUNTY
123	Nashville Basin	TN	WILLIAMSON COUNTY
123	Nashville Basin	TN	WILSON COUNTY

Central Snake River Plains

11A	Central Snake River Plains	ID	ELMORE COUNTY
11A	Central Snake River Plains	ID	GOODING COUNTY
11A	Central Snake River Plains	ID	JEROME COUNTY
11A	Central Snake River Plains	ID	LINCOLN COUNTY

Table 5 Cont.

11A	Central Snake River Plains	ID	MINIDOKA COUNTY
11A	Central Snake River Plains	ID	TWIN FALLS COUNTY
Southwestern Michigan Fruit and Truck Belt			
97	Southwestern Michigan Fruit and Truck Belt	MI	ALLEGAN COUNTY
97	Southwestern Michigan Fruit and Truck Belt	MI	BERRIEN COUNTY
97	Southwestern Michigan Fruit and Truck Belt	MI	VAN BUREN COUNTY
Central California Coastal Valleys			
14	Central California Coastal Valleys	CA	SAN MATEO COUNTY
14	Central California Coastal Valleys	CA	SANTA CLARA COUNTY
14	Central California Coastal Valleys	CA	SANTA CRUZ COUNTY
14	Central California Coastal Valleys	CA	SONOMA COUNTY
Columbia Basin			
7	Columbia Basin	WA	BENTON COUNTY
7	Columbia Basin	WA	FRANKLIN COUNTY
7	Columbia Basin	WA	GRANT COUNTY
Imperial Valley			
Long Island-Cape Cod Coastal Lowland			
149B	Long Island-Cape Cod Coastal Lowland	MA	BARNSTABLE COUNTY
149B	Long Island-Cape Cod Coastal Lowland	MA	DUKES COUNTY
149B	Long Island-Cape Cod Coastal Lowland	MA	NANTUCKET COUNTY
149B	Long Island-Cape Cod Coastal Lowland	NY	KINGS COUNTY
149B	Long Island-Cape Cod Coastal Lowland	NY	NASSAU COUNTY
149B	Long Island-Cape Cod Coastal Lowland	NY	QUEENS COUNTY
149B	Long Island-Cape Cod Coastal Lowland	NY	RICHMOND COUNTY
149B	Long Island-Cape Cod Coastal Lowland	NY	SUFFOLK COUNTY
149B	Long Island-Cape Cod Coastal Lowland	RI	NEWPORT COUNTY
Connecticut Valley			
145	Connecticut Valley	CT	HARTFORD COUNTY
145	Connecticut Valley	MA	HAMPDEN COUNTY
Western Michigan Fruit and Truck Belt			
96	Western Michigan Fruit and Truck Belt	MI	ANTRIM COUNTY
96	Western Michigan Fruit and Truck Belt	MI	BENZIE COUNTY
96	Western Michigan Fruit and Truck Belt	MI	CHARLEVOIX COUNTY
96	Western Michigan Fruit and Truck Belt	MI	EMMET COUNTY
96	Western Michigan Fruit and Truck Belt	MI	GRAND TRAVERSE COUNTY
96	Western Michigan Fruit and Truck Belt	MI	KALKASKA COUNTY
96	Western Michigan Fruit and Truck Belt	MI	LEELANAU COUNTY
96	Western Michigan Fruit and Truck Belt	MI	MANISTEE COUNTY
96	Western Michigan Fruit and Truck Belt	MI	MASON COUNTY
96	Western Michigan Fruit and Truck Belt	MI	OCEANA COUNTY
96	Western Michigan Fruit and Truck Belt	WI	DOOR COUNTY

Table 6**States Ranked by Total Agricultural Market Value**

Rank	State	Market Value of Agricultural Products Sold (1992) (\$000)	Total Farmland in 1992 (000 acres)	Market Value Per Acre of Farmland (dollars/acre)	Market Value Per Acre of Farmland (Rank)
1	CA	17,051,909	28,979	588	6
2	TX	12,004,388	129,729	93	40
3	IA	10,099,785	31,347	322	16
4	KS	8,315,963	46,672	178	33
5	NE	8,209,691	44,393	185	32
6	IL	7,336,864	27,250	269	23
7	MN	6,477,002	25,667	252	24
8	FL	5,260,281	10,689	492	10
9	WI	5,256,799	15,455	340	14
10	NC	4,834,217	8,936	541	7
11	IN	4,633,087	15,619	297	18
12	MO	4,303,149	28,547	151	35
13	AR	4,159,508	14,128	294	20
14	CO	4,113,426	33,978	121	37
15	OH	3,914,039	14,248	275	22
16	WA	3,821,222	15,726	243	26
17	PA	3,570,192	7,185	497	9
18	OK	3,562,647	32,143	111	39
19	GA	3,475,246	10,026	347	12
20	SD	3,243,561	44,828	72	42
21	MI	3,028,448	10,088	300	17
22	ID	2,964,214	13,469	220	29
23	ND	2,745,751	39,438	70	43
24	KY	2,663,703	13,666	195	31
25	NY	2,621,747	7,458	352	11
26	AL	2,369,178	8,451	280	21
27	MS	2,336,734	10,188	229	28
28	OR	2,292,971	17,609	130	36
29	VA	2,055,404	8,288	248	25
30	TN	1,933,504	11,169	173	34
31	MT	1,730,237	59,643	29	46
32	LA	1,607,508	7,838	205	30
33	AZ	1,515,386	35,038	43	44
34	NM	1,256,223	46,849	27	47
35	MD	1,169,332	2,223	526	8
36	SC	1,066,080	4,473	238	27
37	WY	824,206	32,876	25	48
38	UT	725,153	9,624	75	41

Table 6 Cont.

Rank	State	Market Value of Agricultural Products Sold (1992)	Total Farmland in 1992	Market Value Per Acre of Farmland	Market Value Per Acre of Farmland
		(\$000)	(000 acres)	(dollars/acre)	(Rank)
39	DE	559,765	589	950	1
40	NJ	532,989	848	629	5
41	ME	430,323	1,258	342	13
42	VT	415,254	1,279	325	15
43	WV	364,203	3,267	111	38
44	MA	347,870	526	662	4
45	CT	336,983	359	939	2
46	NV	288,139	8,948	32	45
47	NH	114,070	386	296	19
48	RI	39,513	50	797	3

Table 7**States Ranked by Acreage of Prime or Unique Farmland
Converted to Urban (1982-1992)**

State	Prime or Unique Farmland Converted to Urban Land	Land Developed Between 1982-1992	Percentage Developed Land that was Prime or Unique
	(000 acres)	(000 acres)	(%)
TX	489	1,402	35
NC	295	941	31
OH	281	472	59
GA	183	760	24
LA	177	270	66
FL	166	1,193	14
IL	165	240	69
TN	159	436	36
IN	147	229	64
CA	146	800	18
MI	142	463	31
PA	141	436	32
VA	134	440	30
KY	127	368	35
WI	113	249	45
AL	106	324	33
SC	101	408	25
NJ	98	298	33
MN	97	240	41
AZ	80	365	22
NY	74	222	33
OK	72	158	46
KS	72	123	59
MS	66	144	45
OR	61	164	37
MO	60	204	29
WA	59	288	21
IA	50	50	101 *
MD	43	149	29
ND	42	107	40
ID	42	94	44
AR	37	97	38
MA	35	233	15
CO	32	309	10
NE	27	38	71

Table 7 Cont.

State	Prime or Unique Farmland Converted to Urban Land	Land Developed Between 1982-1992	Percentage Developed Land that was Prime or Unique
	(000 acres)	(000 acres)	(%)
UT	24	108	22
CT	19	84	22
SD	17	64	27
DE	17	35	48
WV	16	115	14
ME	14	98	14
MT	8	82	10
NH	8	152	5
VT	8	65	12
RI	7	26	25
NM	6	162	4
NV	4	83	5
WY	1	40	1
U.S. Totals	4,266	13,823	31

* A case like Iowa's with its percentage of developed land that was originally prime or unique equaling slightly over 100% is possible because in unusual cases, developed land can be converted back to other uses. Therefore, it is possible for the net increase in developed land to be exceeded by the amount of prime or unique farmland converted to urban land.

Table 8**States Ranked by Percentage of Land that is Prime or Unique Farmland**

Rank	State	Farmland that is Prime or Unique (1992) (000 acres)	Total Land Area from NRI Sample Data (000 acres)	Percent of Land that is Prime or Unique (%)
1	IL	21,066	35,524	59
2	IN	13,137	22,668	58
3	IA	18,561	35,832	52
4	OH	11,849	26,068	45
5	KS	23,414	52,051	45
6	AR	13,053	30,816	42
7	LA	12,154	29,292	41
8	MN	20,631	50,593	41
9	MS	10,406	28,755	36
10	MO	14,336	42,505	34
11	OK	14,433	43,549	33
12	DE	419	1,275	33
13	ND	11,645	43,285	27
14	WI	9,050	34,108	27
15	NE	12,280	48,767	25
16	TN	6,180	25,580	24
17	MI	8,036	34,288	23
18	KY	5,744	24,659	23
19	AL	7,376	32,159	23
20	TX	37,026	167,531	22
21	GA	7,859	35,612	22
22	NC	6,779	31,260	22
23	VA	4,814	23,530	20
24	MD	1,207	6,468	19
25	SC	3,344	18,732	18
26	ID	3,358	19,661	17
27	NJ	770	4,824	16
28	NY	4,813	31,188	15
29	PA	4,116	28,314	15
30	SD	6,517	46,427	14
31	CA	6,693	54,529	12
32	OR	3,564	29,729	12
33	CT	311	3,197	10
34	RI	68	772	9
35	WA	2,510	31,089	8
36	FL	2,444	33,751	7
37	MA	343	5,212	7
38	VT	335	5,784	6

Table 8 Cont.

Rank	State	Farmland that is Prime or Unique (1992) (000 acres)	Total Land Area from NRI Sample Data (000 acres)	Percent of Land that is Prime or Unique (%)
39	ME	1,079	21,124	5
40	UT	847	18,121	5
41	WV	575	14,304	4
42	CO	1,690	42,479	4
43	NH	154	5,191	3
44	NV	281	10,365	3
45	AZ	1,008	41,748	2
46	MT	998	66,714	1
47	WY	335	32,462	1
48	NM	305	50,315	1

Table 9

MLRA Regions Ranked by Agricultural Market Value

Rank	ID	MLRA Name	Market Value of	Total	Market Value	Market Value
			Agricultural Product	Farmland	Per Acre of	Per Acre of
			Sold (1992)	(1992)	Farmland	Farmland
			(\$000)	(000 acres)	(dollars/acre)	(Rank)
1	17	Sacramento and San Joaquin Valleys	10,040,764	15,164	662	10
2	77	Southern High Plains	6,805,458	31,480	216	62
3	133A	Southern Coastal Plain	6,389,804	21,674	295	43
4	108	Illinois and Iowa Deep Loess Hills	5,250,863	17,961	292	46
5	111	Indiana and Ohio Till Plain	5,051,474	16,759	301	42
6	103	Central Iowa and Minnesota Till Prairies	4,903,958	14,869	330	33
7	136	Southern Piedmont	3,828,626	10,373	369	27
8	107	Iowa and Missouri Deep Loess Hills	3,628,154	11,576	313	36
9	131	Southern Mississippi Valley Alluvium	3,399,170	13,284	256	53
10	102B	Loess Uplands and Till Plains	3,325,000	11,016	302	41
11	67	Central High Plains	3,284,998	24,620	133	83
12	73	Rolling Plains and Breaks	3,249,271	18,647	174	73
13	30	Sonoran Basin and Range	2,674,159	5,031	532	16
14	105	Northern Mississippi Valley Loess Hills	2,635,356	8,487	311	37
15	78	Central Rolling Red Plains	2,529,974	33,066	77	103
16	75	Central Loess Plains	2,450,838	10,019	245	56
17	115	Central Mississippi Valley Wooded Slopes	2,371,272	11,983	198	69
18	90	Central Wisconsin and Minnesota Thin Loess and Till	2,272,699	8,042	283	49
19	133B	Western Coastal Plain	2,230,419	11,120	201	67
20	15	Central California Coast Range	2,214,061	5,540	400	24
21	147	Northern Appalachian Ridges and Valleys	2,183,020	4,290	509	17
22	98	Southern Michigan and Northern Indiana Drift Plain	2,104,907	6,407	329	34
23	155	Southern Florida Flatwoods	2,089,994	5,134	407	22
24	95B	Southern Wisconsin and Northern Illinois Drift Plain	2,008,015	4,930	407	21
25	2	Willamette and Puget Sound Valleys	1,897,447	2,721	697	8
26	134	Southern Mississippi Valley Silty Uplands	1,835,556	9,200	200	68
27	116A	Ozark Highland	1,824,266	8,944	204	65
28	148	Northern Piedmont	1,792,089	2,929	612	12
29	104	Eastern Iowa and Minnesota Till Prairies	1,711,835	4,847	353	30
30	56	Red River Valley of the North	1,564,218	9,504	165	76
31	156A	Florida Everglades and Associated Areas	1,543,645	1,047	1,474	3
32	71	Central Nebraska Loess Hills	1,399,817	6,274	223	61
33	153A	Atlantic Coast Flatwoods	1,390,320	4,077	341	31
34	102A	Rolling Till Prairie	1,371,659	7,888	174	74
35	112	Cherokee Prairies	1,364,101	11,866	115	88
36	99	Erie-Huron Lake Plain	1,322,832	4,512	293	45
37	122	Highland Rim and Pennyroyal	1,311,104	7,508	175	72
38	140	Glaciated Allegheny Plateau and Catskill Mountains	1,308,201	4,309	304	39
39	80A	Central Rolling Red Prairies	1,272,152	10,720	119	87
40	6	Cascade Mountains, Eastern Slope	1,244,335	5,122	243	58
41	121	Kentucky Bluegrass	1,242,761	5,381	231	60
42	110	Northern Illinois and Indiana Heavy Till Plain	1,226,140	4,235	290	47

Table 9 Cont.

Rank	ID	MLRA Name	Market Value of	Total	Market Value	Market Value
			Agricultural Product	Farmland	Per Acre of	Per Acre of
			Sold (1992)	(1992)	Farmland	Farmland
			(\$000)	(000 acres)	(dollars/acre)	(Rank)
43	114	Southern Illinois and Indiana Thin Loess and Till Plain	1,196,946	4,834	248	54
44	106	Nebraska and Kansas Loess-Drift Hills	1,164,716	6,663	175	71
45	20	Southern California Mountains	1,164,334	838	1,389	4
46	55B	Central Black Glaciated Plains	1,147,870	13,708	84	99
47	128	Southern Appalachian Ridges and Valleys	1,119,793	5,361	209	63
48	153C	Mid-Atlantic Coastal Plain	1,045,665	1,234	848	6
49	86	Texas Blackland Prairie	1,020,123	8,329	122	85
50	11A	Central Snake River Plains	979,268	1,619	605	13
51	8	Columbia Plateau	962,114	8,620	112	89
52	101	Ontario Plain and Finger Lakes Region	960,430	2,641	364	28
53	144A	New England and Eastern New York Upland, Southern Part	955,180	1,648	580	14
54	7	Columbia Basin	935,333	2,397	390	26
55	150A	Gulf Coast Prairies	932,661	9,089	103	92
56	109	Iowa and Missouri Heavy Till Plain	906,279	6,791	133	82
57	118	Arkansas Valley and Ridges	885,278	4,342	204	66
58	129	Sand Mountain	881,512	1,396	632	11
59	113	Central Claypan Areas	867,984	4,712	184	70
60	40	Central Arizona Basin and Range	866,324	6,105	142	80
61	58A	Northern Rolling High Plains, Northern Part	848,865	34,692	24	118
62	120	Kentucky and Indiana Sandstone and Shale Hills and Valley	808,949	3,893	208	64
63	91	Wisconsin and Minnesota Sandy Outwash	782,642	2,985	262	52
64	116B	Ozark Border	772,204	4,790	161	77
65	14	Central California Coastal Valleys	747,835	970	771	7
66	154	South-Central Florida Ridge	739,925	2,047	362	29
67	11B	Upper Snake River Plains	710,121	2,999	237	59
68	95A	Northeastern Wisconsin Drift Plain	706,197	1,758	402	23
69	11	Snake River Plains	698,809	2,843	246	55
70	42	Southern Desertic Basins, Plains, and Mountains	666,441	23,860	28	115
71	143	Northeastern Mountains	647,824	2,090	310	38
72	139	Eastern Ohio Till Plain	638,650	1,625	393	25
73	153B	Tidewater Area	638,240	1,416	451	19
74	55C	Southern Black Glaciated Plains	637,388	6,931	92	95
75	130	Blue Ridge	563,098	1,992	283	48
76	85	Grand Prairie	548,619	6,826	80	102
77	149A	Northern Coastal Plain	541,781	944	574	15
78	69	Upper Arkansas Valley Rolling Plains	526,221	7,873	67	105
79	55A	Northern Black Glaciated Plains	521,836	8,195	64	106
80	84A	Cross Timbers	514,242	6,112	84	98
81	83A	Northern Rio Grande Plain	494,376	9,864	50	109
82	9	Palouse and Nez Perce Prairies	491,044	6,098	81	101
83	126	Central Allegheny Plateau	489,107	4,024	122	86
84	34	Central Desertic Basins, Mountains, and Plateaus	471,288	21,244	22	119
85	44	Northern Rocky Mountain Valleys	435,106	10,633	41	111
86	13	Eastern Idaho Plateaus	420,185	2,874	146	79
87	28A	Great Salt Lake Area	415,692	7,589	55	108
88	84B	West Cross Timbers	412,669	4,573	90	96

Table 9 Cont.

Rank	ID	MLRA Name	Market Value of Agricultural Product Sold (1992) (\$000)	Total Farmland (1992) (000 acres)	Market Value Per Acre of Farmland (dollars/acre)	Market Value Per Acre of Farmland (Rank)
89	144B	New England and Eastern New York Upland, Northern Part	411,121	1,208	340	32
90	83D	Lower Rio Grande Plain	407,525	2,436	167	75
91	19	Southern California Coastal Plain	386,816	244	1,583	2
92	52	Brown Glaciated Plain	374,496	14,251	26	117
93	137	Carolina and Georgia Sand Hills	371,629	893	416	20
94	47	Wasatch and Uinta Mountains	366,714	3,335	110	91
95	81	Edwards Plateau	347,978	18,956	18	122
96	87	Texas Claypan Area	341,877	4,112	83	100
97	142	St. Lawrence-Champlain Plain	329,785	1,090	303	40
98	125	Cumberland Plateau and Mountains	309,407	2,461	126	84
99	123	Nashville Basin	309,158	2,250	137	81
100	97	Southwestern Michigan Fruit and Truck Belt	307,193	620	495	18
101	10	Upper Snake River Lava Plains and Hills	303,127	7,871	39	112
102	70	Pecos-Canadian Plains and Valleys	292,914	15,756	19	121
103	5	Siskiyou-Trinity Area	266,522	2,393	111	90
104	46	Northern Rocky Mountain Foothills	243,811	8,524	29	114
105	74	Central Kansas Sandstone Hills	233,390	2,637	89	97
106	135	Alabama, Mississippi, and Arkansas Blackland Prairie	231,231	946	244	57
107	1	Northern Pacific Coast Range, Foothills, and Valleys	211,477	673	314	35
108	156B	Southern Florida Lowlands	207,123	301	689	9
109	39	Arizona and New Mexico Mountains	197,590	26,518	7	124
110	127	Eastern Allegheny Plateau and Mountains	196,964	1,278	154	78
111	96	Western Michigan Fruit and Truck Belt	181,411	681	266	50
112	51	High Intermountain Valleys	172,676	1,849	93	93
113	149B	Long Island-Cape Cod Coastal Lowland	157,197	58	2,711	1
114	152A	Eastern Gulf Coast Flatwoods	143,028	545	263	51
115	32	Northern Intermountain Desertic Basins	140,199	2,545	55	107
116	27	Fallon-Lovelock Area	127,512	2,836	45	110
117	145	Connecticut Valley	109,792	94	1,168	5
118	26	Carson Basin and Mountains	106,300	1,147	93	94
119	41	Southeastern Arizona Basin and Range	86,844	4,072	21	120
120	36	New Mexico and Arizona Plateaus and Mesas	57,737	8,837	7	125
121	37	San Juan River Valley Mesas and Plateaus	51,645	1,896	27	116
122	152B	Western Gulf Coast Flatwoods	45,104	629	72	104
123	82	Texas Central Basin	33,960	1,055	32	113
124	29	Southern Nevada Basin and Range	32,278	2,306	14	123
125	100	Erie Fruit and Truck Area	26,099	89	294	44
126	84C	East Cross Timbers	NA*	NA*	NA*	126
127	31	Imperial Valley	NA*	NA*	NA*	126
Totals for the 127 Threatened MLRAs.			156,545,526	862,014		

* The data on market value is county-level data, and county borders do not coincide with MLRA borders. Therefore, it was necessary to develop a procedure for assigning counties to MLRAs. In cases where a county straddled two or more MLRAs, the county was assigned to the MLRA that had the greatest amount of area of that county. This resulted in two of the MLRAs not being assigned any counties, the most notable case being the Imperial Valley.

Table 10

MLRA Regions Ranked by Acreage of Prime or Unique Farmland Converted to Urban (1982-1992)

Rank	ID	MLRA Name	Prime or Unique Farmland Converted to Urban (1982-1992) (000 acres)	Land Developed Between 1982-1992 (000 acres)	Percentage of Developed Land That Was Prime or Unique (%)
1	136	Southern Piedmont	351	1,187	30
2	133A	Southern Coastal Plain	277	730	38
3	111	Indiana and Ohio Till Plain	265	344	77
4	134	Southern Mississippi Valley Silty Uplands	137	235	59
5	86	Texas Blackland Prairie	127	299	42
6	148	Northern Piedmont	115	333	34
7	150A	Gulf Coast Prairies	114	197	58
8	98	Southern Michigan and Northern Indiana Drift Plain	96	257	37
9	110	Northern Illinois and Indiana Heavy Till Plain	87	115	75
10	149A	Northern Coastal Plain	84	251	34
11	95B	Southern Wisconsin and Northern Illinois Drift Plain	81	136	59
12	2	Willamette and Puget Sound Valleys	78	283	27
13	131	Southern Mississippi Valley Alluvium	76	89	85
14	122	Highland Rim and Pennyroyal	76	152	50
15	147	Northern Appalachian Ridges and Valleys	71	194	37
16	133B	Western Coastal Plain	71	249	28
17	128	Southern Appalachian Ridges and Valleys	69	325	21
18	153A	Atlantic Coast Flatwoods	67	339	20
19	139	Eastern Ohio Till Plain	66	115	57
20	17	Sacramento and San Joaquin Valleys	62	159	39
21	144A	New England and Eastern New York Upland, Southern Part	61	435	14
22	156A	Florida Everglades and Associated Areas	57	141	40
23	121	Kentucky Bluegrass	56	174	32
24	103	Central Iowa and Minnesota Till Prairies	56	98	57
25	99	Erie-Huron Lake Plain	55	123	44
26	153B	Tidewater Area	55	168	33
27	40	Central Arizona Basin and Range	53	190	28
28	85	Grand Prairie	50	119	42
29	123	Nashville Basin	47	120	39
30	19	Southern California Coastal Plain	45	227	20
31	83D	Lower Rio Grande Plain	45	53	85
32	112	Cherokee Prairies	45	69	65
33	108	Illinois and Iowa Deep Loess Hills	43	56	76
34	115	Central Mississippi Valley Wooded Slopes	41	107	39
35	155	Southern Florida Flatwoods	40	494	8
36	154	South-Central Florida Ridge	37	281	13

Table 10 Cont.

Rank	ID	MLRA Name	Prime or Unique	Land	Percentage of
			Farmland Converted	Developed	Developed Land
			to Urban	Between	That Was Prime
			(1982-1992)	1982-1992	or Unique
			(000 acres)	(000 acres)	(%)
37	80A	Central Rolling Red Prairies	36	68	53
38	90	Central Wisconsin and Minnesota Thin Loess and Till	32	59	54
39	114	Southern Illinois and Indiana Thin Loess and Till Plain	31	63	49
40	140	Glaciated Allegheny Plateau and Catskill Mountains	30	120	25
41	107	Iowa and Missouri Deep Loess Hills	30	68	45
42	101	Ontario Plain and Finger Lakes Region	29	63	47
43	84C	East Cross Timbers	28	74	38
44	78	Central Rolling Red Plains	23	49	46
45	126	Central Allegheny Plateau	23	148	15
46	87	Texas Claypan Area	23	78	29
47	125	Cumberland Plateau and Mountains	23	118	19
48	55A	Northern Black Glaciated Plains	22	23	96
49	30	Sonoran Basin and Range	21	185	11
50	95A	Northeastern Wisconsin Drift Plain	20	33	61
51	152A	Eastern Gulf Coast Flatwoods	19	108	17
52	28A	Great Salt Lake Area	19	68	28
53	77	Southern High Plains	19	74	26
54	129	Sand Mountain	19	73	26
55	106	Nebraska and Kansas Loess-Drift Hills	19	35	54
56	145	Connecticut Valley	18	62	29
57	152B	Western Gulf Coast Flatwoods	18	54	33
58	120	Kentucky and Indiana Sandstone and Shale Hills and Valleys	18	39	45
59	102B	Loess Uplands and Till Plains	18	21	86
60	14	Central California Coastal Valleys	18	82	22
61	149B	Long Island-Cape Cod Coastal Lowland	18	73	24
62	137	Carolina and Georgia Sand Hills	17	140	12
63	75	Central Loess Plains	17	27	61
64	144B	New England and Eastern New York Upland, Northern Part	17	152	11
65	91	Wisconsin and Minnesota Sandy Outwash	16	88	18
66	11	Snake River Plains	16	32	50
67	153C	Mid-Atlantic Coastal Plain	16	37	43
68	67	Central High Plains	16	65	25
69	116B	Ozark Border	15	45	34
70	81	Edwards Plateau	14	111	13
71	130	Blue Ridge	14	190	7
72	135	Alabama, Mississippi, and Arkansas Blackland Prairie	14	25	56
73	100	Erie Fruit and Truck Area	14	33	42
74	104	Eastern Iowa and Minnesota Till Prairies	13	12	106*
75	105	Northern Mississippi Valley Loess Hills	12	44	27
76	56	Red River Valley of the North	12	11	109*

Table 10 Cont.

Rank	ID	MLRA Name	Prime or Unique	Land	Percentage of
			Farmland Converted	Developed	Developed Land
			to Urban	Between	That Was Prime
			(1982-1992)	1982-1992	or Unique
			(000 acres)	(000 acres)	(%)
77	44	Northern Rocky Mountain Valleys	11	58	19
78	118	Arkansas Valley and Ridges	11	31	36
79	84B	West Cross Timbers	11	31	34
80	55B	Central Black Glaciated Plains	10	(1)	NA
81	73	Rolling Plains and Breaks	10	14	73
82	102A	Rolling Till Prairie	10	16	62
83	7	Columbia Basin	9	27	34
84	96	Western Michigan Fruit and Truck Belt	9	32	27
85	127	Eastern Allegheny Plateau and Mountains	9	48	18
86	113	Central Claypan Areas	9	12	76
87	97	Southwestern Michigan Fruit and Truck Belt	8	24	32
88	31	Imperial Valley	8	19	42
89	8	Columbia Plateau	8	27	28
90	11B	Upper Snake River Plains	7	15	46
91	116A	Ozark Highland	7	65	11
92	51	High Intermountain Valleys	7	13	49
93	11A	Central Snake River Plains	7	17	41
94	34	Central Desertic Basins, Mountains, and Plateaus	6	26	21
95	10	Upper Snake River Lava Plains and Hills	6	17	38
96	13	Eastern Idaho Plateaus	6	17	38
97	84A	Cross Timbers	5	28	18
98	83A	Northern Rio Grande Plain	5	13	37
99	39	Arizona and New Mexico Mountains	5	35	14
100	1	Northern Pacific Coast Range, Foothills, and Valleys	5	37	14
101	69	Upper Arkansas Valley Rolling Plains	5	30	16
102	142	St. Lawrence-Champlain Plain	5	29	16
103	6	Cascade Mountains, Eastern Slope	5	16	29
104	143	Northeastern Mountains	5	57	8
105	109	Iowa and Missouri Heavy Till Plain	5	6	74
106	42	Southern Desertic Basins, Plains, and Mountains	4	141	3
107	9	Palouse and Nez Perce Prairies	4	2	191*
108	41	Southeastern Arizona Basin and Range	4	72	5
109	5	Siskiyou-Trinity Area	4	24	17
110	15	Central California Coast Range	3	70	4
111	47	Wasatch and Uinta Mountains	2	18	12
112	26	Carson Basin and Mountains	2	22	8
113	74	Central Kansas Sandstone Hills	2	2	96
114	58A	Northern Rolling High Plains, Northern Part	2	28	9
115	55C	Southern Black Glaciated Plains	2	4	35
116	27	Fallon-Lovelock Area	2	4	45

Table 10 Cont.

Rank	ID	MLRA Name	Prime or Unique Farmland Converted to Urban (1982-1992) (000 acres)	Land Developed Between 1982-1992 (000 acres)	Percentage of Developed Land That Was Prime or Unique (%)
117	36	New Mexico and Arizona Plateaus and Mesas	2	22	8
118	82	Texas Central Basin	1	7	7
119	71	Central Nebraska Loess Hills	1	(1)	NA
120	29	Southern Nevada Basin and Range	1	34	3
121	52	Brown Glaciated Plain	1	0	0
122	70	Pecos-Canadian Plains and Valleys	1	37	1
123	20	Southern California Mountains	0	45	1
124	32	Northern Intermountain Desertic Basins	0	10	0
125	156B	Southern Florida Lowlands	0	38	0
126	37	San Juan River Valley Mesas and Plateaus	0	9	3
127	46	Northern Rocky Mountain Foothills	0	14	1
Totals for the 127 Threatened MLRAs.			4,205	13,055	32

* In unusual cases, developed land is returned to other land uses. In these cases it is possible for the net amount of land developed to be less than the amount of prime or unique farmland converted to urban land.

Table 11

**MLRA Regions Ranked by Percentage of Land that
is Prime or Unique Farmland (1992)**

Rank	ID	MLRA Name	Prime or Unique Farmland (1992 000 acres	Total Land (000 acres)	Percentage of Land That Is Prime or Unique (%)
1	104	Eastern Iowa and Minnesota Till Prairies	4,403	5,979	74
2	111	Indiana and Ohio Till Plain	15,107	21,884	69
3	75	Central Loess Plains	6,657	9,672	69
4	103	Central Iowa and Minnesota Till Prairies	12,194	17,949	68
5	110	Northern Illinois and Indiana Heavy Till Plain	4,327	6,560	66
6	56	Red River Valley of the North	6,243	9,641	65
7	131	Southern Mississippi Valley Alluvium	14,629	23,645	62
8	108	Illinois and Iowa Deep Loess Hills	12,688	21,178	60
9	74	Central Kansas Sandstone Hills	1,521	2,632	58
10	113	Central Claypan Areas	3,622	6,669	54
11	112	Cherokee Prairies	8,145	15,130	54
12	73	Rolling Plains and Breaks	8,249	15,365	54
13	83D	Lower Rio Grande Plain	1,110	2,092	53
14	99	Erie-Huron Lake Plain	4,009	7,521	53
15	102A	Rolling Till Prairie	4,956	9,360	53
16	80A	Central Rolling Red Prairies	6,674	13,015	51
17	102B	Loess Uplands and Till Plains	5,466	10,961	50
18	95B	Southern Wisconsin and Northern Illinois Drift Plain	3,527	7,050	50
19	150A	Gulf Coast Prairies	5,289	10,551	50
20	114	Southern Illinois and Indiana Thin Loess and Till Plain	3,820	7,840	49
21	135	Alabama, Mississippi, and Arkansas Blackland Prairie	2,011	4,390	46
22	107	Iowa and Missouri Deep Loess Hills	5,979	13,155	45
23	152B	Western Gulf Coast Flatwoods	1,587	3,502	45
24	55B	Central Black Glaciated Plains	5,466	12,404	44
25	55A	Northern Black Glaciated Plains	3,336	7,596	44
26	134	Southern Mississippi Valley Silty Uplands	8,732	19,804	44
27	95A	Northeastern Wisconsin Drift Plain	1,372	3,361	41
28	17	Sacramento and San Joaquin Valleys	4,941	12,390	40
29	106	Nebraska and Kansas Loess-Drift Hills	2,607	6,702	39
30	115	Central Mississippi Valley Wooded Slopes	6,953	17,732	39
31	139	Eastern Ohio Till Plain	1,558	4,022	39
32	97	Southwestern Michigan Fruit and Truck Belt	572	1,521	38
33	83A	Northern Rio Grande Plain	2,249	6,200	36
34	86	Texas Blackland Prairie	4,410	12,461	35
35	98	Southern Michigan and Northern Indiana Drift Plain	4,222	12,114	35
36	153C	Mid-Atlantic Coastal Plain	932	2,719	34

Table 11 Cont.

Rank	ID	MLRA Name	Prime or Unique Farmland (1992 000 acres	Total Land (000 acres)	Percentage of Land That Is Prime or Unique (%)
37	101	Ontario Plain and Finger Lakes Region	2,363	6,916	34
38	118	Arkansas Valley and Ridges	1,755	5,247	33
39	109	Iowa and Missouri Heavy Till Plain	2,938	8,844	33
40	90	Central Wisconsin and Minnesota Thin Loess and Till	5,086	15,505	33
41	71	Central Nebraska Loess Hills	1,615	4,992	32
42	120	Kentucky and Indiana Sandstone and Shale Hills and Valleys	2,214	6,907	32
43	31	Imperial Valley	360	1,180	30
44	100	Erie Fruit and Truck Area	254	838	30
45	133B	Western Coastal Plain	9,675	33,684	29
46	133A	Southern Coastal Plain	19,468	67,860	29
47	78	Central Rolling Red Plains	10,255	34,942	29
48	77	Southern High Plains	8,681	31,227	28
49	11A	Central Snake River Plains	1,015	3,727	27
50	122	Highland Rim and Pennyroyal	3,930	14,613	27
51	85	Grand Prairie	2,016	7,708	26
52	84B	West Cross Timbers	859	3,257	26
53	123	Nashville Basin	791	3,406	23
54	84A	Cross Timbers	1,143	4,942	23
55	121	Kentucky Bluegrass	1,524	6,977	22
56	116B	Ozark Border	1,653	7,480	22
57	148	Northern Piedmont	1,647	7,596	22
58	136	Southern Piedmont	8,469	40,798	21
59	156B	Southern Florida Lowlands	201	1,004	20
60	11	Snake River Plains	618	3,040	20
61	105	Northern Mississippi Valley Loess Hills	2,444	12,202	20
62	11B	Upper Snake River Plains	714	3,573	20
63	84C	East Cross Timbers	199	1,034	19
64	7	Columbia Basin	848	4,402	19
65	2	Willamette and Puget Sound Valleys	1,829	10,306	18
66	14	Central California Coastal Valleys	471	2,762	17
67	129	Sand Mountain	773	4,868	16
68	149A	Northern Coastal Plain	791	5,031	16
69	96	Western Michigan Fruit and Truck Belt	356	2,175	16
70	87	Texas Claypan Area	1,037	6,755	15
71	145	Connecticut Valley	224	1,597	14
72	91	Wisconsin and Minnesota Sandy Outwash	941	6,757	14
73	9	Palouse and Nez Perce Prairies	774	5,677	14
74	147	Northern Appalachian Ridges and Valleys	1,644	11,913	14
75	128	Southern Appalachian Ridges and Valleys	2,248	17,737	13
76	153A	Atlantic Coast Flatwoods	2,832	21,308	13

Table 11 Cont.

Rank	ID	MLRA Name	Prime or Unique Farmland (1992 000 acres	Total Land (000 acres)	Percentage of Land That Is Prime or Unique (%)
77	140	Glaciated Allegheny Plateau and Catskill Mountains	1,974	16,531	12
78	142	St. Lawrence-Champlain Plain	442	3,932	11
79	8	Columbia Plateau	1,344	12,557	11
80	153B	Tidewater Area	861	8,657	10
81	137	Carolina and Georgia Sand Hills	546	5,217	10
82	116A	Ozark Highland	1,798	18,489	10
83	55C	Southern Black Glaciated Plains	404	4,699	9
84	149B	Long Island-Cape Cod Coastal Lowland	148	1,672	9
85	82	Texas Central Basin	146	1,649	9
86	144A	New England and Eastern New York Upland, Southern Part	1,055	13,388	8
87	127	Eastern Allegheny Plateau and Mountains	893	10,575	8
88	81	Edwards Plateau	1,777	23,049	8
89	13	Eastern Idaho Plateaus	332	4,718	7
90	19	Southern California Coastal Plain	242	3,280	7
91	125	Cumberland Plateau and Mountains	1,019	14,969	7
92	126	Central Allegheny Plateau	991	13,403	7
93	154	South-Central Florida Ridge	363	5,456	7
94	152A	Eastern Gulf Coast Flatwoods	479	6,680	7
95	67	Central High Plains	1,102	18,312	6
96	155	Southern Florida Flatwoods	728	12,589	6
97	144B	New England and Eastern New York Upland, Northern Part	720	12,578	6
98	44	Northern Rocky Mountain Valleys	442	8,931	5
99	51	High Intermountain Valleys	134	2,718	5
100	10	Upper Snake River Lava Plains and Hills	502	9,288	5
101	40	Central Arizona Basin and Range	483	12,599	4
102	28A	Great Salt Lake Area	626	22,079	3
103	130	Blue Ridge	310	11,485	3
104	69	Upper Arkansas Valley Rolling Plains	286	9,240	3
105	41	Southeastern Arizona Basin and Range	176	9,725	2
106	156A	Florida Everglades and Associated Areas	93	4,865	2
107	20	Southern California Mountains	106	4,543	2
108	32	Northern Intermountain Desertic Basins	111	4,976	2
109	143	Northeastern Mountains	464	22,928	2
110	1	Northern Pacific Coast Range, Foothills, and Valleys	197	8,670	2
111	15	Central California Coast Range	124	10,677	1
112	26	Carson Basin and Mountains	57	4,929	1
113	27	Fallon-Lovelock Area	75	7,877	1
114	6	Cascade Mountains, Eastern Slope	88	9,640	1
115	46	Northern Rocky Mountain Foothills	128	12,766	1
116	5	Siskiyou-Trinity Area	136	11,667	1

Table 11 Cont.

Rank	ID	MLRA Name	Prime or Unique Farmland (1992 000 acres	Total Land (000 acres)	Percentage of Land That Is Prime or Unique (%)
117	34	Central Desertic Basins, Mountains, and Plateaus	365	29,992	1
118	58A	Northern Rolling High Plains, Northern Part	393	28,990	1
119	42	Southern Desertic Basins, Plains, and Mountains	302	36,479	1
120	52	Brown Glaciated Plain	185	14,758	1
121	47	Wasatch and Uinta Mountains	90	13,596	1
122	70	Pecos-Canadian Plains and Valleys	42	21,267	0
123	30	Sonoran Basin and Range	209	44,791	0
124	29	Southern Nevada Basin and Range	17	18,467	0
125	39	Arizona and New Mexico Mountains	105	27,486	0
126	37	San Juan River Valley Mesas and Plateaus	21	4,515	0
127	36	New Mexico and Arizona Plateaus and Mesas	27	16,100	0
Totals for the 127 Threatened MLRAs.			319,876	1,463,998	22

G l o s s a r y

Census of Agriculture: The Census of Agriculture is periodically conducted by the U.S. Department of Commerce Bureau of the Census. The census includes all operators of United States farms or ranches that sold or normally would have sold \$1,000 worth of agricultural products during the census year. In 1992, some 1.9 million operators produced \$162 billion in crops and livestock. Every five years since 1982, the census has been conducted for years ending in two and seven. Data collection begins in December of the census year and responses are due the following February. A mail-out/mail-back census of operators using a stratified random sampling procedure is utilized. Geographic data are cross-tabulated by various farm classifications, such as size, tenure of the operator, type of organization, type and market value of products sold, operator characteristics and government payments. Census data is available at: <http://www.census.gov/econ/www/ag0100.html> [source: Census of Agriculture, U.S. Census Bureau, 1996]

conservation easements: A legally binding recorded interest in property that gives a qualified public or private agency the right to prohibit any practice, use, subdivision or development that is contrary to the conservation purposes spelled out in the easement deed. Conservation easements are used to protect agricultural land, land of

ecological importance and open space. Landowners may be permitted to deduct the fair market value of easements from their income for tax purposes. [source: AFT Farmland Information Library, 1996]

cropland: Land used for the production of adapted crops for harvest, alone or in rotation with grasses and legumes. Adapted crops include row crops, small grain, hay, nursery crops, orchard and vineyard crops, and other specialty crops. Cropland is classified as irrigated, nonirrigated, cultivated or noncultivated acreage. Cropland is an important land use in all regions, making up more than 10 percent of the non-federal land in all regions except the Mountain states. Major limitations to use of cropland are erosion (52 percent), excess wetness (25 percent), shallow, stony or saline soils (10 percent) and climate (6 percent). [source: USDA-SCS 1982 NRI]

farmland: Agricultural land or farmland can include cropland, rangeland, pastureland, forestland and other rural land. Acres enrolled in the Conservation Reserve Program are included in the category "other rural land." Between 1982 and 1992, cropland acreage nationally decreased by 39 million acres (most went into the CRP), rangeland by 10 million acres and pasture land by 6 million acres. The total acreage of non-federal rural land decreased from 1,408,936,000 acres in 1982, to 1,390,774,000 acres in 1992. Of that, 334 million acres were prime

farmland. [source: USDA-SCS 1992 NRI]

farmland of local importance: In some local areas, there is a need for certain additional farmlands for the production of food, feed, fiber, forage and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local agency or agencies concerned. In places, additional farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance. [source: USDA-SCS Soil Survey Land Classification and Interpretive Groups, November 1993]

farmland of statewide importance: Land, in addition to prime and unique farmland, that is of statewide importance for the production of food, feed, fiber, forage and oilseed crops. Criteria for defining and delineating this land is to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that produce high yields of crops in an economic manner when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law. [USDA-SCS Soil Survey

Land Classification and Interpretive Groups, Nov. 1993]

forage crops: Forage crops can be used for grazing or hay. They include legume groups such as alfalfa and sweet clover, true clovers (such as red, ladino, white and alsike), peas and vetch (such as field pea, garden pea and hairy vetch), beans (such as garden and pinto), cowpeas and lespedeza, soybeans and lupines, and grasses. Grasses include cool-season perennials such as timothy, smooth brome grass, orchard grass, reed canary grass and tall fescue; warm-season annuals such as sudangrass, sorghum-sudangrass hybrids and millets; and warm-season perennials such as switchgrass, big bluestem and indiangrass.

forestland: Land at least 10 percent stocked by forest trees of any size, or formerly having had such tree cover and not currently developed for non-forest use. The minimum area for classification of forestland is one acre and must be at least 100 feet wide. Forestland is distinguished from rangeland in transition vegetation types if the tree canopy cover exceeds 10 percent. Forestlands include cut over areas temporarily unstocked as well as young stands and plantations established for forestry purposes which do not yet have 10 percent crown cover. [source: USDA-SCS 1982 NRI]

Geographic Information Systems: GIS technology is used to develop overlay maps that depict resources or features such as soil types,

population densities, land uses, transportation corridors, waterways, etc.

high development: Defined in this report as mapping units that experienced a rate of development greater than their statewide mapping unit average and had at least 1,000 acres of urban conversion between 1982 and 1992.

high quality farmland: Defined in this report as farmland that is either prime farmland, unique farmland or both.

Major Land Resource Areas: MLRAs are geographic areas that have relatively homogeneous patterns of soil, climate, water resources, land use and type of farming. MLRAs can be one continuous area or several separate nearby areas. MLRAs are designated by Arabic numbers and identified by a descriptive geographic name. Some MLRAs are designated by an Arabic number and a letter because previously established MLRAs have been divided into smaller, more homogeneous areas. [source: USDA-SCS 1982 NRI]

market value: Market values of crops are based on market receipts. Receipts are larger on irrigated land because yields are higher or quality is higher or because different crops are grown. For the nation as a whole, crop sales average about \$145 per acre from non-irrigated land and about \$280 per acre from irrigated land. Net profits average about \$25 per acre

higher on irrigated farms than on non-irrigated farms. Vegetable, orchard, vineyard and nursery crops are high value crops that return higher profits per acre. [from: USDA-SCS 1982 NRI]

National Resources Inventory: The NRI is a series of inventories conducted by the USDA Natural Resources Conservation Service. It provides updated information on the status, condition and trends of land, soil, water and related resources on the nation's non-federal land (74 percent of the nation's land area). The 1992 NRI is unique in that it provides a nationally consistent database constructed specifically to estimate five- and 10-year trends for natural resources from 1982 to 1992. The 1992 NRI covers the 48 conterminous states, Hawaii, Puerto Rico and the U.S. Virgin Islands but excludes Alaska. Data were collected for more than 800,000 locations by NRCS field personnel and resource inventory specialists. NRI data are statistically reliable for national, regional, state and substate analysis. The NRI was scientifically designed and conducted and is based on recognized statistical sampling methods. Data from other sources can be integrated with the NRI through spatial linkages in a Geographic Information System. [USDA-SCS 1992 NRI]

pastureland: Land used primarily for the production of adapted, introduced or native species in a pure stand, grass mixture or a grass-legume mixture. Cultural

treatment in the form of fertilization, weed control, reseeding or renovation is usually a part of pasture management in addition to grazing management. In 1982, 32 percent of pastureland in the United States was considered good, 40 percent fair and 19 percent poor. [source: USDA-SCS 1982 NRI]

prime farmland: Prime farmland is land on which crops can be produced for the least cost and with the least damage to the resource base. Prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation and favorable temperature and growing season. The soils have acceptable acidity or alkalinity, acceptable salt and sodium content, and a few rocks. They are not excessively eroded. They are flooded less often than once in two years during the growing season and are not saturated with water for a long period. The water table is maintained at a sufficient depth during the growing season to allow cultivated crops common to the area to be grown. The slope ranges mainly from 0 percent to 5 percent. To be classified as prime, land must meet these criteria and must be available for use in agriculture. Land committed to non-agricultural uses is not classified as prime farmland. [Source: USDA-SCS, 1982 NRI]

productive farmland: In this report, productive farmland is used interchangeably with prime and unique or high quality farmland.

purchase of agricultural conservation easements (PACE): PACE programs pay farmers to keep their land available for agriculture. Land owners sell an easement to a government agency or private conservation organization that is responsible for preventing development. Land owners retain full ownership and use of their land for agricultural purposes. PACE is also known as purchase of development rights (PDR), and as agricultural preservation restrictions (APR) in Massachusetts. [source: AFT Farmland Information Library, 1996]

purchase of development rights (PDR): A program under which a government agency buys "development rights," or a conservation easement that permits it to prohibit practices, uses and development of the land in violation of the terms of the development right document. The program does not give the government agency the right to develop the land. It simply permits it to extinguish those rights in return for appropriate compensation. Land owners retain full ownership and control of their land (also known as PACE or APR, see above). [source: AFT Farmland Information Library, 1996]

rangeland: Land on which the climax vegetation (potential natural plant community) is predominantly grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing. It includes natural grasslands, savannas,

many wetlands, some deserts, tundra and certain forb and shrub communities. It also includes areas seeded to native or adapted introduced species that are managed like native vegetation. [source: USDA-SCS 1982 NRI]

rural residence: The USDA defines rural residences or hobby farms as farmsteads that gross less than \$10,000 a year. Approximately 50 percent of the farms in the United States are classified as rural residence farms.

small grains: Small grains include winter wheat, spring wheat, rye, triticale, spring oats, winter oats, spring barley and winter barley.

specialty crops: Specialty crops include crops grown in small amounts for niche markets such as peppermint, horseradish and watercress.

strategic farmland: "Strategic farmland" refers to farmland which has been defined both by its importance and by its vulnerability to development. Some of the criteria which can be used to define strategic farmland include: agricultural characteristics or those characteristics that make the land strategic from a food production standpoint; environmental characteristics or those characteristics that make it strategic from the standpoint of protecting environmental quality and amenities valued by the public; and economic characteristics or those characteristics of farmland that are responsible for its contribution to the economy.

truck crops: Truck crops include those crops that are not processed before selling and directly used or sold fresh such as lettuce, celery and flowers.

estimate of urban and built-up land is lower than the Census of Agriculture, which does not count all land the NRI includes as agricultural land.

unique farmland: According to the USDA definition, unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce a sustained high quality and/or high yields of a specific crop in an economic manner when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit and vegetables. In this report, we define unique farmland as farmland used to grow vegetables, grapes and horticultural crops including fruits, nuts and berries that have unique soil and climatic requirements.

urban land/urban development:

The Bureau of the Census and USDA National Resources Inventory have different definitions of "urban land." The census counts as urban land central cities, adjacent urbanized areas and unincorporated or incorporated areas of 2,500 or more people. USDA also counts built-up areas of fewer than 2,500 people. Starting with the 1982 National Resources Inventory, land is not considered "urban and built-up" unless it is completely developed. Despite counting built-up areas of fewer than 2,500 people, the NRI

