

**UNITED STATES DEPARTMENT OF AGRICULTURE  
NATIONAL COOPERATIVE SOIL SURVEY**

**MEMORANDUM OF UNDERSTANDING**

between the

**U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE**

and the

**U.S.D.A. FOREST SERVICE**

and the

**INDIANA AGRICULTURAL EXPERIMENT STATION  
PURDUE UNIVERSITY**

and the

**OFFICE OF RESEARCH  
COLLEGE OF AGRICULTURAL, CONSUMER, AND ENVIRONMENTAL SCIENCES  
UNIVERSITY OF ILLINOIS at Urbana Champaign**

and the

**IOWA AGRICULTURE AND HOME ECONOMICS EXPERIMENT STATION; IOWA COOPERATIVE  
EXTENSION SERVICE, IOWA STATE UNIVERSITY; AND DIVISION OF SOIL CONSERVATION,  
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP  
IOWA STATE UNIVERSITY, at Ames**

and the

**MICHIGAN AGRICULTURAL EXPERIMENT STATION  
MICHIGAN STATE UNIVERSITY**

and the

**MICHIGAN SCHOOL OF FORESTRY AND WOOD PRODUCTS  
MICHIGAN TECHNOLOGICAL UNIVERSITY**

and the

**MICHIGAN DEPARTMENT OF AGRICULTURE**

and the

**MICHIGAN COOPERATIVE EXTENSION SERVICE  
MICHIGAN STATE UNIVERSITY**

and the

**MISSOURI AGRICULTURAL EXPERIMENT STATION  
UNIVERSITY OF MISSOURI**

and the  
**MISSOURI DEPARTMENT OF NATURAL RESOURCES,  
DIVISION OF CONSERVATION**

and the  
**OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER  
UNIVERSITY OF OHIO**

and the  
**OHIO DEPARTMENT OF NATURAL RESOURCES**

and the  
**WISCONSIN AGRICULTURAL EXPERIMENT STATION**

*RELATIVE TO THE MODERNIZATION OF ALL SOIL SURVEYS WITHIN MAJOR LAND RESOURCE AREA REGION 11 – EASTERN GLACIATED REGION*

**AUTHORITY:** Public Law 74-46, 49 Stat. 163 (16 U.S.C. 590 a-f) and Public Law 89-560, 80 Stat. 706 (42 U.S.C. 3271-3274).

**PURPOSE:** The Natural Resources Conservation Service (NRCS) and National Cooperative Soil Survey partnership are a part of the Board of Directors for this region. This group has a common objective of providing service to soil survey program participants in an effective and efficient manner.

- Purpose of this Memorandum of Understanding (MOU) is to encourage cooperation and to outline how the board of directors will work together. Effective cooperation among the board will improve their respective abilities to provide service to the soil survey program participants, as well as significantly advance the individual partnership mission.

**BENEFITS:** This MOU serves as a blanket for the Major Land Resource Area Soil Survey Region 11 office. The MLRA office will be able to conduct business, such as the coordinating and continued modernization efforts of the 350 soil surveys within the business area.

- It will be based on the rapid rates of agricultural land conversion in accordance with National Cooperative Soil Survey (NCSS) Standards at a scale of 1:12,000.
- Study and refine the Major Land Resource Area (MLRA) boundary line placement and align it's relation with other natural resource boundaries, such as physiography, climate, precipitation, landform, geology, landscape, and hydrologic unit, boundaries between and within the MLRA region.

**MISSION:** The cooperative soil survey mission is to assist humankind in understanding and wisely using soil resources to achieve and sustain a desirable quality of life.

- Provide regional coordination, technical leadership and support in the development, production, quality assurance and delivery of scientifically based soil information.
- This mission is achieved by maintaining a strong scientific basis for defining and describing soil landscape relationships important to the use and management of soils.
- By providing scientific expertise to identify, classify, characterize, modernize, correlate, and interpret soils; by making field investigations, remote sensing and laboratory information and its interpretation

readily available through texts, maps, digital products, and other databases; and by assisting people in the use of soil survey information.

- This MOU supersedes all MLRA MOU's within this region upon the signature of the last person signing the document.

**DESCRIPTION OF THE WORK AREA:** Soil Survey Region 11 is 113.5 million acres in size, (Major Land Resource Area (MLRA) Soil Survey Region 11 has responsibility for three Land Resource Regions (LRR): (K) Northern Lake States Forest and Forage Region; (L) Lake States Fruit, Truck, and Dairy Region; and (M) Central Feed Grains and Livestock Region). These LRR's include portions of six states: Illinois, Indiana, Michigan, Missouri, Ohio, and Wisconsin. The major crops in this region are corn, soybeans, and small grains. Other areas are urban land, pastureland, forestland, strip mine land, and hayland. A few areas are orchards, vineyards, and wildlife habitat. The average age of the soil surveys in this region is 20 years. This region includes a total of 23 MLRA units.

In 1992, this region had about 74,560,000 acres of land in farms. This acreage represents 65 percent of the land area in the Region (113.5 million acres). The number of farms in this area decreased by 72,400 between 1980 and 1990. The land in farms decreased by approximately 5.6 million acres. The region produces 17 percent of the agricultural products sold in the United States. Of the 35 million people living in the region, 98 percent are classified as urban and rural non-farm. Urban populations are expected to increase by at least 650,000 between 1992 and 2002. This will place continued development pressure on agricultural lands as demands for services and living space grow. It is anticipated that an additional 2 million acres of agricultural land will be converted to non-agricultural uses between 1992 and 2002. Of this, 100 percent of the cropland converted is likely to be prime farmland.

The existing MLRA boundaries will be altered during the project to coincide with the General Soil Map, which will use the STATSGO map as a base map.

**LAND AREA  
ACREAGE TOTALS <sup>1/</sup>**

	LAND AREA			
	Private	State & Federal	Census Water	Total
ILLINOIS	29,657,100	461,100	308,100	30,426,300
INDIANA	20,513,408	487,644	157,115	21,158,167
IOWA	871,469	5,258	47,322	924,049
MICHIGAN	22,345,927	2,095,000	699,300	25,139,727
MISSOURI	9,089,048	124,832	337,998	9,551,878
OHIO	15,676,692	0	323,267	15,999,959
WISCONSIN	9,853,365	57,117	357,746	10,268,228
Total				113,468,308

<sup>1/</sup> Acreage adjusted to coincide with MLRA Soil Survey Region - 11 boundary. Acreage values are close approximations.

## **RESPONSIBILITIES:**

The Board of Directors will cooperate in the conduct of this project in accordance with the Memoranda of Understanding governing soil surveys in the designated states. Technical responsibilities are identified in this section. Administrative responsibilities for the acquisition of such things as financial resources, human resources, equipment, office space, vehicles, and other in-kind service are also indicated. However, the Board of Directors commitment is contingent upon cooperative agreements and trust fund agreements developed by states with local units of government or members such as the private sector.

The Management Team will review and approve annual plan of operation, project plan and long range plan, manage project activities and resources, build quality assurance standards, and coordinate the work flow. The State Soil Scientist / MO Leader for Region 11 from Indiana will chair the Management Team. The Management Team will be composed of the State Soil Scientist and one or two representatives from each state within the region, Senior Regional Soil Scientist, and a representative from the University.

The technical team will develop annual plan of operation, project plan, and long range plan, direct project activities and resources, build quality control standards, and coordinate the surveys. The MLRA Soil Survey Leader will chair these technical teams. The team will be composed of the Soil Data Quality Specialist Scientist, Resource Soil Scientist, and other Specialists or disciplines within assigned MLRA for the survey area.

### **I. It is agreed by the United States Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS) that:**

- a. The State Conservationist will furnish the staff, equipment, office space, and vehicles.
- b. Will work with local and state units of government to develop cost-sharing agreements for modernized project soil surveys.
- c. Will be the lead agency for this modernization project soil survey proposed herein.
- d. Will provide the controlled base imagery and supporting cartographic materials for field mapping and publication.
- e. NRCS staff will characterize the soils by laboratory analyses.
- f. Develop sampling plans and conduct soil investigations with assistance from cooperating agencies.
- g. NRCS soil survey project staff will prepare the soil survey manuscript(s).
- h. NRCS staff will complete the map compilation, digitizing, and digital map finishing for all soil surveys in the region.
- i. Will conduct field reviews, prepare trip reports, field review reports, correlation documents, and provide field assistance.
- j. Will ensure quality control and provide quality assurance throughout the survey area.
- k. Will cooperate with other agencies in providing public relations regarding progress of the survey, uses of soil survey information, and distribution of the published report.
- l. Will provide technical leadership for Geographical Information System development.
- m. Will coordinate all soil survey activities across the region and between other regions for prefect/exact joins.

### **II. It is agreed by the United States Department of Agriculture (USDA) – Forest Service (FS) that:**

- a. Cooperate in making soil surveys and interpretations and in carrying out any special studies.
- b. Cooperate in developing work plans and schedules.
- c. On National Forest lands provide leadership, and cooperate with the other cooperators, in the development and amendment of the mapping legends, within the standards of the National "Cooperative Soil Survey.

- d. Carry out the field reviews in each survey area for which they have leadership, in cooperation with other interested parties.
- e. Cooperate with other parties in this Memorandum in all other aspects of soil survey operations including the preparation of soil survey manuscripts, and soil correlation.

**III. The Michigan Department of Agriculture, the Department of Natural Resources, Missouri (MDNR), Division of Soil Conservation, Iowa Department of Agriculture and Land Stewardship, and the Ohio (ODNR) will:**

- a. Participate in quality assurance reviews as schedules allow.
- b. Cooperate in educational and informational programs regarding the correct use of soil resources.
- c. Contribute necessary human and financial resources to priorities and complete fieldwork of project soil survey and SSURGO products as agreed upon by all parties in a separate agreement.

**IV. The Agricultural Experiment Stations at Michigan State University, Michigan, Technological University, Purdue University, University of Illinois, University of Missouri, University of Wisconsin, The Ohio Agricultural Research and Development Center at The University of Ohio, and the Iowa State University will:**

- a. Perform research in genesis, morphology, and classification.
- b. Participate in quality assurance reviews and soil correlation conferences.
- c. Guide and assist in other phases of the project.
- d. Participate and attend in the Region 11 Annual Board of Director management information meeting.

**STAFFING AND OTHER PROGRAM NEEDS**

- Individual states will work with their partnership to develop a soil survey modernization plan that determines staff needs, position types, project starting and completion dates, and the life of projects.
- Currently most of the states in this region have already developed or established many of the items listed above. Therefore, we will not be required to duplicate efforts where they are still in the developmental or implementation phases of the MLRA approach. With some re-adjustment and/or re-alignment of staff, office space, and location, we hope that these states can simply re-package what is already existing in those states that have moved ahead with their implementation of MLRA Soil Survey Offices.

**COOPERATING AGENCIES WILL:** Develop and implement laboratory and field investigative techniques and studies as required from a MLRA perspective. Such studies could include analyzing surface horizons by land use, eroded soils, drainage classes, ground water quality, temperature and moisture regimes, water table depths and duration, and the MLRA boundary. Resource soil scientists will assist as needed for special field studies, data collection, and project coordination.

**CORRELATION DOCUMENTS:** The Soil Survey Region 11 MO Leader and the State Conservationist from applicable states will sign the correlation documents for the MLRA survey area, and for subsets within this Region.

**SPECIFICATIONS:** The product expected of the update is a coordinated, joined, digitized soil survey at 1:24,000 or 1:12,000 scales with accompanying attribute soils data in the National Soil Information System (NASIS). All digital data development will be done in accordance to the National Soil Survey Handbook part 647. Digitized data will not be copyrighted. NRCS reserves the right to archive and distribute data generated under the terms of this Memorandum of Understanding.

- Map units will be consociations and some complexes, undifferentiated groups with a minimum size delineation of about 5.25 acres at 1:24,000 and 1.2 to 3 acres at 1:12,000 scales.
- The project will minimize the impact of political and administrative boundaries in the fieldwork, data collection, and data presentation.
- The survey area is the MLRA Region 11. Sufficient field documentation will be collected to characterize and describe the map unit concepts as to name, composition, setting, and interpretation. Sufficient field checking of map units in the survey area will be made to ensure that delineation's meet the map unit criteria-i.e., the map unit delineation's are as described and will interpret as stated in the map unit descriptions and tables. The taxonomic classes selected to name map units will be represented by a typical pedon within the survey area.

**INFORMATION NECESSARY TO ORGANIZE AND PLAN THE WORK:** Specific dates for planning and managing the work will be maintained in the Soil Survey Scheduler. Refer to section number 4, (Estimated staff years to complete the project) above. Plans are contingent on funding. Some special studies may extend beyond this date. Modernization of soil surveys is currently in progress for county subsets by MLRA throughout the Region.

**PUBLICATION PLANS:** The Natural Resources Conservation Service, unless specified otherwise by amendment to this Memorandum of Understanding, will be responsible for preparing the manuscript materials, text, maps, and interpretations for the update soil survey. Publication media's will be the Web Soil Survey, but states will still have the option of a limited number of hard copies and CD-ROM copies. States reserves the right to publish their soil surveys as a single county or multi-county report.

**CONTRIBUTION AGREEMENTS:** Individual contribution agreements and or Memorandum of Understanding may be developed by states with a county or group of counties, recognized tribes and other partners as needed to identify special needs or clarify reimbursable, cost share, or other working agreements.

**NON-FUND OBLIGATING DOCUMENT:** Nothing in this MOU shall obligate either the Department of Agriculture or other cooperators to obligate or transfer any funds. Specific work projects or activities that involve the transfer of funds, services, or property among the various agencies and offices of the Department of Agriculture and other parties will require execution of separate agreements and be contingent upon the availability of appropriated funds. Such activities must be independently authorized by appropriate statutory authority. This MOU does not provide such authority. Negotiation, execution, and administration of each such agreement must comply with all applicable statutes and regulations.

**LIFE OF AGREEMENT:** This MOU will remain in effect so long as all parties or individual states have an active soil survey programs.

**PROVISION TO RENEW, TERMINATE, AND SUSPEND:** This MOU supplements all previous work plans. This agreement may be amended, extended or modified by a written amendment to the agreement through an exchange of correspondence between authorized officials provided such amendment does not extend this agreement beyond the close of the fiscal year in which the work is completed.

#### **NON-DISCRIMINATION STATEMENT**

The program or activities conducted under this memorandum of understanding will be in compliance with the non-discrimination provisions contained in the Titles VI and VII of the Civil Rights Act of 1964, as amended; the Civil Rights Act Restoration Act of 1987 (Public Law 100-259); and other non-discrimination statutes: namely, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, and the Age Discrimination Act of 1975. They will also be in accordance with regulations of the Secretary of Agriculture (7 CFR-15, Subparts A & B), which provide that no person in the United States shall on the grounds of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs,

reprisal, or because all or apart of an individual's income is derived from any public assistance program be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance from the Department of Agriculture or and agency thereof.

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Signatures page for Indiana

Signed \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

\_\_\_\_\_ Date

Signed \_\_\_\_\_  
Director, Indiana  
Agricultural Experiment Station  
Purdue University

\_\_\_\_\_ Date

Signed \_\_\_\_\_  
Forest Supervisor  
USDA, Forest Service  
Bedford, Indiana

\_\_\_\_\_ Date

Signed \_\_\_\_\_  
MLRA Region – 11 Team Leader  
USDA Natural Resources Conservation Service

\_\_\_\_\_ Date

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Signatures page for Illinois

Signed \_\_\_\_\_ Date \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Associate Dean, Office of Research  
College of Agricultural, Consumer and  
Environmental Sciences  
University of Illinois at Urbana – Champaign

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Signatures page for Iowa

Signed \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

\_\_\_\_\_ Date

Signed \_\_\_\_\_  
Dean,  
Iowa Agriculture and Economics Experiment  
Station  
Iowa State University

\_\_\_\_\_ Date

Signed \_\_\_\_\_  
Director,  
Iowa Cooperative Extension Service

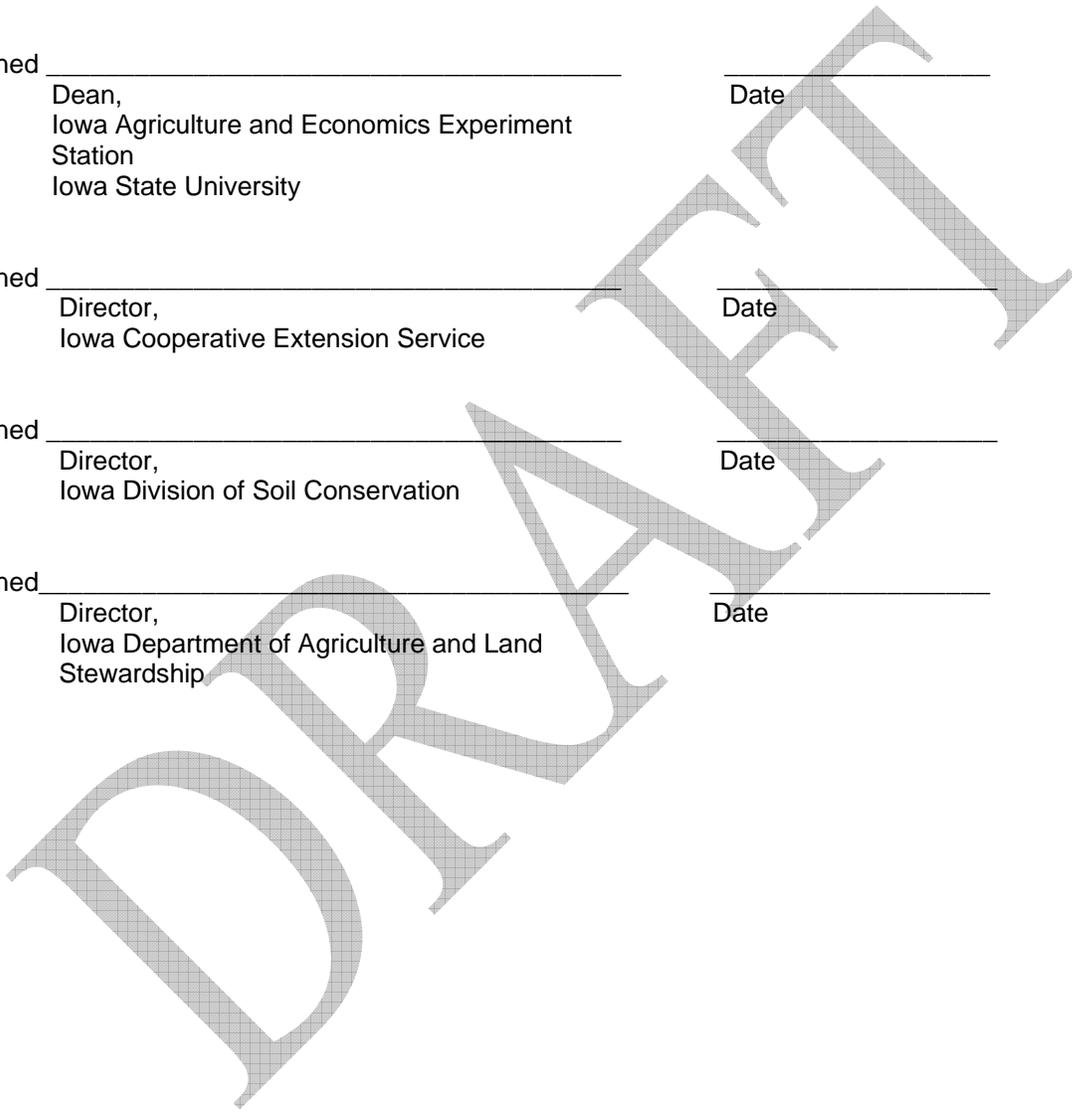
\_\_\_\_\_ Date

Signed \_\_\_\_\_  
Director,  
Iowa Division of Soil Conservation

\_\_\_\_\_ Date

Signed \_\_\_\_\_  
Director,  
Iowa Department of Agriculture and Land  
Stewardship

\_\_\_\_\_ Date



Signatures page for Michigan

Signed \_\_\_\_\_ Date \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

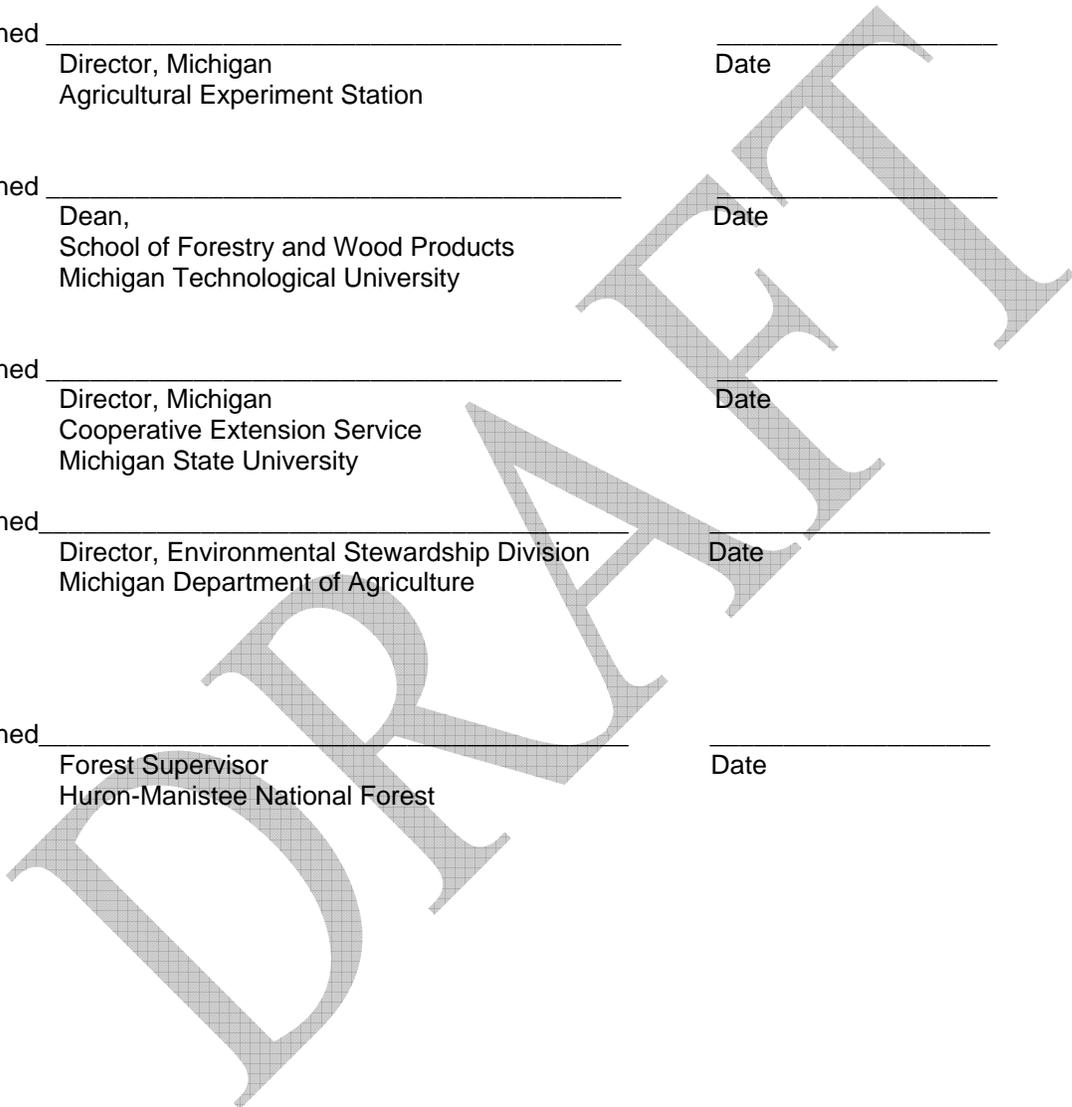
Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Michigan  
Agricultural Experiment Station

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Dean,  
School of Forestry and Wood Products  
Michigan Technological University

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Michigan  
Cooperative Extension Service  
Michigan State University

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Environmental Stewardship Division  
Michigan Department of Agriculture

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Forest Supervisor  
Huron-Manistee National Forest



Signatures page for Missouri

Signed \_\_\_\_\_ Date \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Missouri  
Agricultural Experiment Station  
University of Missouri

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Missouri  
Department of Natural Resources

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Signatures page for Ohio

Signed \_\_\_\_\_ Date \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Ohio  
Agricultural Research and Development Center  
University of Ohio

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Ohio  
Ohio Department of Natural Resources

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Signatures page for Wisconsin

Signed \_\_\_\_\_ Date \_\_\_\_\_  
State Conservationist  
USDA Natural Resources Conservation Service

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Director, Wisconsin  
Agricultural Experiment Station

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