SILVOPASTURE HANDBOOK

By Tyler Carlson, Silvopasture Lead, Sustainable Farming Association
SILVOPASTURE RESOURCE MANUAL

Introduction: Silvopasture intentionally integrates livestock, forage production, and trees into an intensely managed system.

This resource manual is designed to assist land managers and technical support staff on designing and implementing a Silvopasture system in woodlands. This is a starting place for you to quickly and easily connect with information and people to improve your understanding and implementation of Silvopasture.

This manual starts with a list of web-based resources to help you gain an understanding of silvopasture and its principles. Whether you are a beginner or advanced practitioner, farmer or resource consultant, you will find useful information within these videos, documents, handbooks, fact sheets, training manuals and modules, and assessment tools.

The next section offers a directory of resource professionals affiliated with universities, government agencies and nonprofit organizations working on silvopasture who can provide technical assistance and advice.

Section three lists organizations that support farmers, researchers, and/or rural communities in diverse ways related to land management. While their missions do not focus on silvopasture specifically, these organizations could offer support to your silvopasture projects.

The final section signals additional resources: farmer networking, grazing periodicals, funding (loans, grants, cost-share), as well as centers and certification programs.

In the appendices are tree stock suppliers, logging and forestry information, native grasses and forbs that work well in silvopasture, Minnesota native plant communities and historical vegetation types, and plants poisonous to livestock. The goal of this resource manual is to provide information; listing does not mean we endorse suppliers.

This handbook was compiled by the Sustainable Farming Association as part of a North Central Sustainable Agriculture Research and Education (NC-SARE) grant, with support from the Legislative-Citizen Commission on Minnesota Resources (LCCMR), Minnesota Extension, NRCS and farmers that practice Silvopasture.

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WEB RESOURCES ON SILVOPASTURE

YouTube video that introduces Silvopasture practices. (8 minutes)

WisCONTEXT – University of Wisconsin Extension – A deeper dive into the practice of silvopasture and farmer and resource concerns in Wisconsin. Includes a recording of WI resource professional panel on Silvopasture (31 minutes).

Produced by the University of Missouri – Center for Agroforestry, The Agroforestry Training Manual is designed for natural resources professionals and landowners and includes worksheets and exercises for use as an educational tool. The manual features descriptions of establishing and managing the five agroforestry practices, plus success stories of Midwestern landowners utilizing agroforestry on agricultural and forested lands. The direct link to the chapter on Silvopasture is here.

Excellent video series on silvopasture for beginners to more advanced practitioners.

Excellent compilation of resources from Cornell University. Much of this information is practical and useful to the Upper Midwest. Find fact sheets, assessment tools, case studies, work books, and Powerpoint presentations and a breadth of silvopasture systems and considerations.

An online self-directed learning resource for private landowners, agency resource personnel and others interested in Silvopasture. The course is the product of a USDA interagency collaboration between the US Forest Service, Natural Resource Conservation Service, the National Agroforestry Center, and the University of Georgia.

Find a wealth of information including downloadable documents. Information for landowners as well as those seeking land. Lots of other great information and resources can be found on these websites or by contacting the Savanna Institute.

Recorded webinar covering the five recognized agroforestry practices: Windbreaks, Alley cropping, Silvopasture, Forest Farming and Riparian Forest Buffers.
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<th>University</th>
<th>Contacts</th>
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<tbody>
<tr>
<td>University of MN – Extension</td>
<td>Jeff Jackson – Extension educator</td>
</tr>
<tr>
<td><a href="https://extension.umn.edu/forestry/agroforestry">https://extension.umn.edu/forestry/agroforestry</a></td>
<td>218-788-2696, <a href="mailto:Jeff@umn.edu">Jeff@umn.edu</a></td>
</tr>
<tr>
<td></td>
<td>Gary J. Wyatt – Extension Educator, Agroforestry</td>
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<tr>
<td></td>
<td>597-389-6748, <a href="mailto:wyatt@umn.edu">wyatt@umn.edu</a></td>
</tr>
<tr>
<td></td>
<td>Karl Hakanson – Extension Educator, Agriculture &amp; Natural Resources</td>
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<tr>
<td></td>
<td>612-624-7948, <a href="mailto:khakanso@umn.edu">khakanso@umn.edu</a></td>
</tr>
<tr>
<td>Center for Integrated Natural Resources &amp;</td>
<td>Dean Current – Program Director</td>
</tr>
<tr>
<td>Agricultural Management (CINRAM)</td>
<td>612-624-4299, <a href="mailto:curre002@umn.edu">curre002@umn.edu</a></td>
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<td><a href="https://www.cinram.umn.edu/">https://www.cinram.umn.edu/</a></td>
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<tr>
<td>University of WI – Extension</td>
<td>Diane Mayerfeld</td>
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<td><a href="https://fyi.extension.wisc.edu/smallfarms/?s=silvopasture">https://fyi.extension.wisc.edu/smallfarms/?s=silvopasture</a></td>
<td>Sustainable Agriculture Coordinator, UW Extension</td>
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<tr>
<td><a href="https://www.cias.wisc.edu/">https://www.cias.wisc.edu/</a></td>
<td>Center for Integrated Agricultural Systems (CIAS)</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:dbmayerfeld@wisc.edu">dbmayerfeld@wisc.edu</a></td>
</tr>
<tr>
<td></td>
<td>(608) 262-8188</td>
</tr>
<tr>
<td>University of Missouri – Center for Agroforestry</td>
<td>Ashley Conway, Ph.D. – Assistant Research Professor</td>
</tr>
<tr>
<td><a href="http://www.centerforagroforestry.org/">http://www.centerforagroforestry.org/</a></td>
<td>(573) 882-6304, <a href="mailto:acconway@missouri.edu">acconway@missouri.edu</a></td>
</tr>
<tr>
<td>Cornell University</td>
<td>Steve Gabriel</td>
</tr>
<tr>
<td><a href="https://www.cornell.edu/">https://www.cornell.edu/</a></td>
<td>Specialty Mushrooms &amp; Agroforestry Specialist</td>
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<tr>
<td></td>
<td><a href="mailto:sfg53@cornell.edu">sfg53@cornell.edu</a></td>
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<td></td>
<td>607-255-2102</td>
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<tr>
<td>Agency</td>
<td>Contacts</td>
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| **North Central – Sustainable Agriculture Research and Education (SARE)** | Rob Myers, Ph.D., Regional Director of Professional Development Programs, U of Missouri  
myersrob@missouri.edu  
573-882-1547  
Beth Nelson, Ph.D.  
Regional Director of Research and Education Programs  
bethnelson@umn.edu  
612-626-4436 |
| **Agency**                                                          | **Contacts**                                                             |
| MN Natural Resource Conservation Service (NRCS)                      | Celie Borndal – State Forester  
Celie.borndal@mn.usda.gov  
651-602-7869  
Jeff Duchene – Grazing Specialist (Central and NW MN)  
Jeff.duchene@mn.usda.gov  
218-346-4260 ext. 101  
Lance Smith – Resource Conservationist (SW MN)  
Lance.smith@mn.usda.gov  
507-537-0541  
Tom Gervais – Aitkin County District Conservationist –  
Thomas.gervais@mn.usda.gov  
218-927-2413 |
| MN Department of Agriculture                                         | Kelly Anderson, Ag Marketing and Development  
Kelly.Anderson@state.mn.us  
320-808-4424 |
| Minnesota Agricultural Water Quality Certification Program (MAWQCP)   | Brad Jordahl Redlin  
Pesticide & Fertilizer Management  
651-201-6489  
Brad.Redlin@state.mn.us |
| Fillmore County Soil and Water Conservation District                 | Dean Thomas – Soil Health Tech,  
Area 7 – 507-676-0407 |
<table>
<thead>
<tr>
<th>Nonprofit</th>
<th>Contacts</th>
</tr>
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| Sustainable Farming Association of Minnesota (SFA)  [https://www.sfa-mn.org/](https://www.sfa-mn.org/) | Tyler Carlson – Silvopasture & Agroforestry Project Lead  
tyler@sfa-mn.org  
1.844.922.5573 Ext. 702 |
|                                               | Kent Solberg – Livestock & Grazing Specialist  
kent@sfa-mn.org  
1.844.922.5573 Ext. 701 | Doug Voss – Soil Health Associate  
doug@sfa-mn.org  
1.844.922.5573 Ext. 703 |
|                                               | Wayne Monsen – Special Projects Coordinator  
wayne@sfa-mn.org  
1.844.922.5573 Ext. 712 | |
| Savanna Institute  
keefe@savannainstitute.org  
608-448-6432 ext. 100 | |
| Happy Dancing Turtle  
[https://www.happydancingturtle.org/](https://www.happydancingturtle.org/) | Jim Chamberlin – Program Manager  
jchamberlin@hugllc.com  
218-831-0528 | |
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<th>Entity</th>
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<td>Association for Temperate Agroforestry (AFTA)</td>
<td>The mission of AFTA is to promote the wider adoption of agroforestry by landowners in temperate regions of North America. With members in the US, Canada and overseas, AFTA pursues its mission through activities such as networking, information exchange, public education, and policy development. Their intended audience includes university researchers, educators and extensionists, private farm and forestry groups, public policy makers, and private landowners.</td>
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<td>Main Street Project</td>
<td>The Main Street Project is developing an alternative poultry centered food system to reverse the destructive trends of industrial agriculture. With a solid foundation of ecological, economic, and social principles, they ensure that farms and the regional economies that grow around them serve the entire community.</td>
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<td>Great River Greening</td>
<td>Great River Greening has ecological expertise in natural resource and water quality management, and in community building. They focus their work in locations and on activities that offer conservation impact, ecosystem services, and community benefits.</td>
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<td>MN Soil Health Coalition</td>
<td>The Minnesota Soil Health Coalition is a farmer led and driven organization dedicated to providing education, farmer to farmer mentoring, networking and plain language technical information.</td>
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<td>Green Lands Blue Waters</td>
<td>Green Lands Blue Waters and partners are conducting essential research, improving the genetics of old and new crops, translating knowledge into Continuous Living Cover farming systems, developing new extension and outreach capacity, working in farm fields, shaping policy, building profitable markets for new crops, and changing the narrative around what’s possible through agriculture.</td>
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| **Dovetail Partners**  
| https://www.dovetailinc.org/team.php | Dovetail is a highly skilled team that fosters sustainability and responsible behaviors through collaboration to develop unique concepts, systems, models, and programs. Dovetail excels at solving complex problems and helping responsible organizations succeed. We also help design programs that increase the job creation and the job quality of resource-based industries. |
| **Land Stewardship Project (LSP)**  
| https://landstewardshipproject.org/ | Fostering an ethic of stewardship for farmland, promoting sustainable agriculture and developing healthy communities. |
| **Dairy Grazing Apprenticeship (DGA)**  
| https://www.dga-national.org/ | Dairy Grazing Apprenticeship links experienced dairy graziers with those who want to farm and provides a guided pathway to independent farm ownership. |
| **Renewing the Countryside**  
| https://www.renewingthecountryside.org/ | Renewing the Countryside strengthens rural areas by championing and supporting rural communities, farmers, artists, entrepreneurs, educators, activists and other people who are renewing the countryside through sustainable and innovative initiatives, businesses, and projects. |
| **GrassWorks**  
| https://grassworks.org/ | GrassWorks is a Wisconsin grassroots membership organization that provides leadership and education to farmers and consumers for the advancement of managed grass-based agriculture to benefit present and future generations. |
| **Practical Farmers of Iowa**  
| https://practicalfarmers.org/ | Practical Farmers of Iowa is an open, supportive and diverse organization of farmers and friends of farmers, advancing profitable, ecologically sound and community-enhancing approaches to agriculture through farmer-to-farmer networking, farmer-led investigation and information sharing. |
ADDITIONAL RESOURCES

FARMER-TO-FARMER NETWORKING

Sustainable Farming Association of Minnesota (SFA) – To connect with a farmer near you or with similar operational characteristics and goals please contact SFA or visit our Silvopasture Homepage.

Designed to assist the beginning grazier in designing and implementing a grazing system, SFA’s Beginning Grazier Handbook is a starting place to quickly and easily find pertinent information. Most of the resources listed include website links for additional interest-specific grazing information.

silvopasture.ning.com – A social network of people interested in sharing information on Silvopasture.

Cropland Grazing Exchange (MN Department of Agriculture) – The Cropland Grazing Exchange (CGE) matches livestock farmers with crop farmers who have forage (crop residues, cover crops, etc.) to harvest.

GRAZING PERIODICALS

On Pasture – On Pasture is a free, weekly, online magazine for graziers. Contains useful information for pastured livestock production including silvopasture.

Graze – Graze is a print magazine devoted to management-intensive rotational grazing and family-scale livestock farms.

The Stockman Grass Farmer Magazine – The Stockman Grass Farmer brings its readers the latest information on high profit grassland ideas from all over the world.

FUNDING -- LOANS, GRANTS, COST SHARE

North Central Sustainable Agriculture Research and Education (NC-SARE) Farmer Rancher Grant Program. The NC-SARE offers competitive grants through the Farmer Rancher Grant Program to producers exploring sustainable agriculture in the Midwest.

Minnesota Department of Agriculture Best Management Loan Program (AgBMP): The AgBMP Loan Program is a water quality program that provides low-interest loans to farmers, rural landowners, and agriculture supply businesses. The purpose is to encourage agricultural Best Management Practices that prevent or reduce runoff from feedlots, farm fields and other pollution problems identified by the county in local water plans.
Minnesota Department of Agriculture AGRI Livestock Investment Grant: The AGRI Livestock Investment Grant encourages long-term industry development for Minnesota livestock farmers and ranchers by helping them improve, update, and modernize their livestock operation infrastructure and equipment.

Minnesota Department of Agriculture Sustainable Agriculture Demonstration Grant Program: This grant supports innovative on-farm research and demonstrations. It funds projects that explore sustainable agriculture practices and systems that could make farming more profitable, resource efficient, and personally satisfying.

NRCS Environmental Quality Incentive Program: The Environmental Quality Incentive Program (EQIP) is a cost share program that helps producers with installing infrastructure needs and practices. Cost share is available for Silvopasture practices such as fencing water systems, forage planting, grazing, and planning. Check with your local NRCS office for details.

NRCS Conservation Stewardship Program: The Conservation Stewardship Program is a voluntary conservation program that encourages producers to address resource concerns in a comprehensive manner by undertaking additional conservation activities and improving, maintaining, and managing existing conservation activities. CSP is available on Tribal and private agricultural lands and non-industrial private forest land in MN.

CENTERS AND CERTIFICATION PROGRAMS

USDA National Agroforestry Center: The mission of the USDA National Agroforestry Center is to advance the health, diversity, and productivity of working lands, waters, and communities through agroforestry.

Agroforestry Research Unit at North Carolina State University: The Agroforestry Research Unit conducts research and demonstrations on Silvopasture practices.

MN Office for Soil Health (Water Resources Center): The Minnesota Office for Soil Health is a collaborative created by the Board of Water and Soil Resources (BWSR) and the Water Resources Center (WRC), with the mission of building local expertise to promote soil health and soil and water conservation. Research and outreach will expand the tools and skills of Minnesota’s local conservation delivery community and promote understanding of the economic impacts of soil and water management practices

Minnesota Agricultural Water Quality Certification Program: MAWQCP is a voluntary opportunity for farmers and agricultural landowners to take the lead in implementing conservation practices that protect our water. Those who implement and maintain approved farm management practices will be certified and in turn obtain regulatory certainty for a period of ten years.
APPENDICES

TREE STOCK SUPPLIERS

Minnesota DNR State Forest Nursery

County Soil and Water Conservation District Tree Sales Programs – contact your county office.

Private nurseries – MN Nursery and Landscape Association

LOGGING AND FORESTRY INFORMATION

Minnesota Forest Industries – Choosing a Quality Logger

My Minnesota Woods – UMN

NATIVE GRASSES AND FORBS THAT WORK WELL IN SILVOPASTURE

Depending on producer goals, most any hardy, perennial grasses, legumes, and forbs can work well in silvopasture systems with cool-season species being better adapted to higher shade growing conditions. Working through your goals and working with a knowledgeable resource professional or mentor farmer can get you on the right path to finding an appropriate forage mixture.

Minnesota Board of Water and Soil Resources Seed Mixes

MN Department of Transportation Native Seed Mix Design Manual

Minnesota Native Plant Communities and Historical Vegetation Types and separate Index

PLANTS POISONOUS TO LIVESTOCK

Cornell List

U. of Minnesota List specific to horses

Plants Poisonous or Harmful to Horses in the North Central United States