LAND STEWARDSHIP PROJECT

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Minnesota Public Policy Recommendations

Highlighted funding priorities for Minnesota to advance managed rotational grazing

The state of Minnesota can advance managed rotational grazing through the priorities listed below. There should be a robust state effort to advance soil health-building practices on existing pastures and establishment of new perennials on marginal land currently in row crops. Building on EQB recommendations from the 2016 Climate Action report, Minnesota policymakers should:

- Expand cost-share money to finance fencing, watering, and animal handling systems for managed rotational grazing. *($1 million per biennium; see C below)*
- Fund grazing technical assistance consultants (could be private people, nonprofit farm group staff, agency, or Soil and Water Conservation District staff to complement existing Natural Resources Conservation Service (NRCS) grazing specialists. This would also include high-quality training for technical assistance providers, along with certification. *($0.75 million per biennium; see A below)*
- Provide money for farm groups to promote shifts from continuous to managed rotational grazing, shifting marginal cropland to working lands perennials, and adding cover crops on summer annual cropland *($1.5 million per biennium. See C below)*
- Support a statewide Minnesota Department of Agriculture public relations campaign to promote managed rotational grazing. *($1 million; see D below)*
- Require MPCA to include advanced managed rotational grazing in calculations to estimate climate change solutions to meet Next Generation Energy Act goals for 2030 and 2050. *($0.25 million; see B below)*
- Incorporate bonding funding for infrastructure at University of Minnesota West Central Research and Outreach Center for organic and pasture-based dairy research (*$6 million; see A below*)
- Expand funding for Forever Green Initiative, including for forage germplasm *($10 million per biennium; see A below)*

Comprehensive policy recommendations to improve soil health through more continuous living cover, including managed rotational grazing, from Land Stewardship Project

A. Fund research/education on continuous living cover systems and managed rotational grazing:

- Support pasture-based infrastructure improvements at the University of Minnesota's West Central Research and Outreach Center. (*$6 million through bonding or other funding*)
- Fully fund the state's investment in the University of Minnesota's Forever Green Initiative at *$10 million per biennium* to develop new germplasm and markets for continuous living cover and managed rotational grazing systems.
- Expand managed rotational grazing beef work at the North Central Research and Outreach Center to study soil health impacts of high-density managed rotational grazing systems.
- Conduct research on measuring carbon sequestration and greenhouse gas emissions from managed rotational grazing and continuous living cover in summer annual crops through the Minnesota State Soil Health office at the University of Minnesota. (*$1 million*)
- Contract with managed rotational grazing technical assistance consultants to work directly with farmers and landowners to help develop managed rotational grazing plans and troubleshoot shifts to managed rotational grazing to improve pasture productivity and soil health. Fund the Minnesota Office of Soil Health to hold three one- or two-day on-farm training sessions annually on grass-based production for Extension, Soil and Water Conservation District, and NRCS conservation staff. Trainings to be led by Eric Mousel, Brad Heins, Kent Solberg, Land Stewardship Project and/or NRCS grazing specialists, working with farmers/ranchers using managed

rotational grazing systems. Assist non NRCS people to become certified in developing grazing plans through the NRCS system. Promote this system to farmers/ranchers in Minnesota. (*$0.75 million*)

- Collect voluntary data from farmers already using managed rotational grazing and cover crop systems to assess the degree of soil health improvement and financial risk reduction. Use data to inform state and federal programs on climate change, incentives, and federally subsidized insurance.

B. Make continuous living cover and managed rotational grazing critical components of the Minnesota's climate change efforts, Green New Deal and other climate change policy proposals.:

Minnesota Pollution Control Agency and other state agencies

- Convene a managed rotational grazing panel (MRG/CLC panel) to set rates for carbon sequestration and greenhouse gas emission reductions from well-managed rotational grazing in the temperate moist areas of Minnesota. LSP proposes a workshop be led by University of Minnesota professors Brad Heins and Eric Mousel that includes dairy, beef, and sheep producers actively using managed rotational grazing. This workshop should also include researchers, agency staff, and nonprofit staff who are engaging farmers on adaptively managed rotational grazing and continuous living cover. This group could both define a research agenda for Minnesota and determine the basis for setting a tier of high carbon sequestration rates at this point in time. Research parameters would include models that fully account for MRG grassland health and ruminants managed with high quality pasture and warm season grasslands, along with cover crops and stored feeds over winter *($.25 million)*. See Appendix A in white paper for a proposed list of expert organizations and individuals.
- Use results from the panel to expand and amend the "Greenhouse Gas Reduction Potential of Agricultural Best Management Practices" to include avoided greenhouse gases and carbon sequestration from the managed rotational grazing continuum and well-managed rotationally grazed grasslands. Include in this assessment winter cover crops planted into row crops during the growing season, as well as after harvest.
- Set, track and report goals for agricultural greenhouse gas emissions consistent with Next Generation Energy Act goals and milestones. Include shifts of acres consistent with nutrient reduction strategies for continuous living cover and managed rotational grazing on marginal row crop lands, good row crop lands, and pastures. Use results of MRG panel to guide this activity. Use modeling as needed.
- Consult with COMET-Farm resources to determine best rates and model parameters for Minnesota, using the panel results above to modify parameters as needed.
- Track other programs related to greenhouse gas emissions such as wellhead protection areas.
- To tackle climate change and enable more small- and medium-sized farmers, managed rotational grazing systems must become the default for new or expanded ruminant livestock systems. Agencies should use the results from West Central Research and Outreach Center organic dairy pasture research to help operators adapt existing confinement systems so that they utilize more diversified feeds from continuous living cover on cropland, and, if possible, graze herds for at least a portion of the time, e.g., dairy heifers. Additional options are to encourage more small grains in feed for hogs.
- Monitor and assess the effectiveness, and impacts of new ecosystem markets like Indigo Ag Marketplace and Nori.

C. Enhance Minnesota state program requirements to emphasize building soil health through managed rotational grazing and other continuous living cover systems, and limit mega factory farms:

Minnesota Department of Agriculture

- Expand technical assistance and cost-share money for establishing fencing, watering, and animal handling systems for managed rotational grazing. *($1.5 million per biennium*)
- Expand technical assistance and cost-share for cover crops in summer annual cropping systems, especially for multispecies cover crops and managed rotational grazing of cover crops and pastures**.** Funding may be shared with BWSR and SWCDs. *($1.5 million*)
- Fund technical assistance and organizing for farm groups engaging farmers on improving soil health through managed rotational grazing and continuous living cover — including LSP's Soil Health and Farm Beginnings programs — to engage farmers to adopt soil health-building practices. Other groups that could provide this support include the Sustainable Farming Association, Minnesota Soil Health Coalition, the Hmong American

Farmers Association, the Latino Economic Development Center, and the Minnesota Farmers Union. *($1.5 million per biennium*)

- Focus Agri Livestock Investment Grants program to better assist small- and mid-sized farmers who own and operate livestock operations to maintain, expand, or improve managed rotational grazing and other systems with livestock on the land by paying up to 50% of the cost of the first $10,000 for fencing, watering, and livestock sorting and handling equipment and other needs, and 10% for amounts above that up to the program maximum.
- Continue the Cropland Grazing Exchange and expand publicity.
- Continue the Beginning Farmer Tax Credit carve-out for farmers of color, indigenous farmers, women farmers, and farmers with disabilities (as in 2019 Minnesota House File 1546). This program can help shift land into managed rotational grazing and bring in beginning farmers to manage the operations.

Board of Water and Soil Resources

- Expand funding for perennials and managed rotational grazing in Clean Water Fund Projects and allow projects to be approved that provide ecosystem and public services that are tied to approval from NRCS.
- Significantly expand funding for Accelerated Implementation Grants, Cover Crop Demonstration or other programs that seek to improve water quality through adoption of soil health-building continuous living cover by organizing soil health hubs and managed rotational grazing circles. This builds the capacity of local governments working with nonprofits and farm groups to accelerate on-the-ground projects that improve or protect water quality and perform above and beyond existing standards.
- Change RIM easement law to allow more grazing activity managed for wildlife benefit to qualify and manage the lands on an ongoing basis.
- Provide support for SWCDs to advance CLC and MRG (see Minnesota Department of Agriculture above).

Minnesota Pollution Control Agency and Minnesota Department of Natural Resources

- Conduct a comprehensive study on incentives provided to concentrated animal feeding operations (CAFOs); conduct a study on adequacy and enforcement of permitting for water quality, water use and greenhouse gas emissions (*$.05 million*)
- Enact a moratorium on new CAFOs over 1,000 Animal Units (AU). Encourage existing dairy CAFOs to rotationally graze heifers. Also incentivize hog CAFOs to diversify feed sources by including small grains in their rations.
- Enforce stricter permitting and monitoring for water withdrawals by mega-CAFOs.
- Train middle managers in the Minnesota Department of Natural Resources on the benefits of MRG for wildlife and the public; train middle managers in the MPCA water and feedlot divisions on the benefits MRG provides water quality and soil water storage.

D. Enhance markets for products produced by small- and mid-sized farm operations that use managed rotational grazing:

Minnesota Department of Agriculture

- Enhance markets for grass-fed beef cattle, as well as pasture-raised milk cows, bison, goats, and sheep with several statewide public relations campaigns connected to water quality and climate change and the health benefits of products resulting from managed rotational grazing systems. For example, utilize a local foods marketing initiative to build new institutional markets by expanding purchasing support for Minnesota schools that buy local foods, including products from managed rotational grazing systems *($1 million per biennium*).
- Advocate federal policy changes to define grass-fed and a new version of Country of Origin Labeling (COOL) that meets international standards.
- Fund the MN DAIRI program into future years. Change to restrict program eligibility to farms that produce less than 12 million pounds of milk per year. Keep the cap on payments of 50,000 pounds hundredweight. Adjust to pay higher rates for production from the first 1.5 million pounds, if using managed rotational grazing system for dairy and/or heifer herds for most of their feed during the growing season.

E. Design a Payment For Ecosystem Services Program with true cost accounting to help farmers shift marginal fields in summer annual crops to perennials and maintain and expand managed rotational grazing:

Design a state "Payment for Ecosystem Services (PES)" program in conjunction with a soil health working lands program. Payments should be based on outcomes and integrate a true-cost accounting framework for carbon sequestration and ecosystem services from working lands managed with CLC and MRG systems. If successful and there is support from farmers to implement such a program, a portion of the annual funding from the Clean Water Fund should pilot this innovation to help meet water quality goals and Next Generation Energy Act goals.

Outcomes would have to be spot monitored to verify modeling. The program should pay more for shifting row crops to long-term perennial systems on marginal lands, shifting to managed rotational grazing, using multiple species cover crops, and longer crop rotations such as organic rotations integrated with animals on the land. It should also consider avoided externalities from converting grassland to row crops. Payments and monitoring or modeling to predict outcomes should be modifiable so they can adapt to with new science as it advances in the future.

Approaches could include the following:

1) Establish a commission to develop the program and payments system using the process developed in Minnesota H.F. 1662 during the 2019 session, led by William Lazarus of the University of Minnesota, the MDA Minnesota Agricultural Water Quality Certification Program staff, and others.

2) Two models in Minnesota have been developed that could be considered for payments for ecological services on working farmlands.
   - The Working Lands Watershed Restoration and Protection Program developed a system for identifying marginal lands and estimated payments needed to shift marginal lands from corn and soybeans into perennial systems that include, among other things, managed rotational grazing. This program also models water quality benefits from such shifts. Carbon sequestration and greenhouse gas modeling could be added.
   - The RIM Clean Energy Program statute (§103F.518) establishes priorities for selection of land as a producer of "bioenergy crop production, water quality, soil health, reduction of chemical inputs, soil carbon storage, biodiversity, and wildlife habitat." It limits agricultural crop production and harvest to "native, perennial bioenergy crops." The statute could be revised to encompass the full range of perennial and cover crops discussed in this report, as well as other crops still under development, and to establish the other parameters of a "RIM-Working Lands" program.

3) Review the Nori system of transactions as a transparent model where farmers set the price in relation to buyers.

4) A program based on true costs should recognize the value that farms and ranches with cattle on the land using MRG systems and other diverse continuous living cover systems provide for carbon sequestration and other public services. Transparency is key. Programs should not advantage large industrial crop operations or mega-CAFOs over small- and mid-sized farm and ranch operations. Paying higher rates for the first increment of services and caps on total payments would better support small- and medium-sized farmers. The program should include a penalty or reduction in payment for negative externalities or switching to practices that increase negative externalities such as erosion, nutrient runoff, loss of habitat, or reduction in organic matter for those participating
   - Evaluate the use of the Genuine Progress Indicator as one way of analyzing full costs and benefits related to negative externalities, increases and decreases in natural, built, social, human, and financial capitals, as well as social equity and wellbeing. In 2019, this was proposed for the state of Minnesota in H. F. No. 1662, and has been enacted in Maryland, Vermont, and Oregon as a way of understanding the impacts of GDP growth or lack thereof on wellbeing.
   - Evaluate how future Farm Bill programs for conservation, insurance or commodities could be structured to reduce payments related to negative externalities from the farm.