CANNON
VALLEY
GRAZIERS

March 31, 2025

Chairs Acomb, Swedzinski, and Members of the Committee:

I'm writing in support of HF 2297. For the past six years, my business, Cannon Valley Graziers, has been dedicated to advancing targeted grazing systems, known as solar grazing, to support the ecological stewardship of sites enrolled in a program operated, without dedicated funding, by Minnesota's Board of Water and Soil Resources.

Using seed mixtures which cost less than 0.1% of the overall project budget, the flexible and science-based standard is the result of bipartisan legislation passed in 2016 that established minimum requirements for solar site owners to implement in order to claim that solar projects "provide habitat beneficial to pollinators, songbirds, or game birds."

While managing sheep in the field, I frequently see how quail, pheasant, turkey and numerous songbirds are using these sites for both nesting and foraging habitat. By integrating pollinator-friendly ecosystems and implementing grazing practices that support those ecological function on solar sites, we not only generate clean electricity but also keep farmland in agricultural production, enhance soil health and water quality, expand habitat for keystone species, and foster rural employment opportunities.

Use of prime farmland for solar is a perennially divisive and controversial topic here in Minnesota, but promoting adoption of farm- and conservation-friendly management practices, and dual-use solar enjoys overwhelming support. I urge Minnesota legislators to send this bipartisan bill, HF 2297, to the Governor's desk this year.

Best Regards,

Arlo Hark
Cannon Valley Graziers

Audubon | UPPER MISSISSIPPI RIVER

2355 Highway 36 West
Suite 400
Roseville MN 55113
651.739.9332
umr.audubon.org

March 31, 2025

Re: Support of House File 2297 / Senate File 2653

Dear Chairs Acomb and Swedzinski and Members of the Committee:

We support the vital financing of the successful but underfunded Habitat Friendly Solar Program and the expanded use of agrivoltaics across Minnesota as outlined in H.F. 2297/S.F. 2653. Both approaches reflect necessary multi-benefit strategies to accelerate the clean energy deployment needed to combat climate change while minimizing negative impacts on birds, wildlife, and people.

The National Audubon Society's Survival by Degrees report paints a dire picture for the future of birds: more than 150 species in Minnesota are threatened by impacts of changes to the state's weather patterns. A recent study from the Cornell Lab of Ornithology also found a staggering loss of birds. North American bird populations have declined by 29%, and grassland bird populations have declined by 53% since 1970. To address the dual crises of climate change and biodiversity loss, we must rapidly deploy well-sited solar projects while minimizing impacts to habitat. Strategies such as agrivoltaics and the Habitat Friendly Solar Program enable Minnesota to do both.

By prioritizing native plants at solar sites, Minnesota can meet critical clean energy goals while restoring pockets of lost habitat. Audubon was a proud partner in the broad coalition of energy, agriculture, and conservation organizations that worked to pass the Pollinator-Friendly Solar Act in 2016, the nation's first ground cover standard for solar facilities. Using seed mixtures that cost less than 0.1% of the overall project budget, the flexible and science-based standard established minimum requirements that solar site owners must implement before claiming the projects "provide habitat beneficial to pollinators, songbirds, or game birds.[1]"

The Habitat Friendly Solar Program, a cost-effective, successful program[2] managed by Minnesota's Board of Water and Soil Resources, operates at limited capacity without consistent, adequate funding. This lack of funding will prove more challenging as Minnesota's implementation of ambitious renewable energy and carbon-free electricity goals result in significantly more solar projects throughout the state. By creating the nation's first license plate featuring a solar facility,[3] this bill establishes a voluntary and dedicated funding mechanism without impacting Minnesota's general fund.

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[1] Minn. Stat. 216B.1642

[2] According to a longitudinal field study led by Argonne National Lab from 2018–2022 on solar projects that meet Minnesota's Habitat Friendly Solar ground cover standard, insect communities respond positively to newly established habitat on solar energy facilities in agricultural landscapes. The study also indicates a 20x increase in native bee abundance. From the Argonne report: Our observations highlight the relatively rapid (<4 year) insect community responses to grassland restoration activities and provide support for solar-pollinator habitat as a feasible conservation practice to safeguard biodiversity and increase food security in agricultural landscapes.

[3] License plate artwork by REPLACE design studio, commissioned by Natural Resources Services with contributions from Connexus Energy and employees of US Solar and Bare Honey.

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Minnesota must deploy renewable energy while minimizing negative impacts. Multi-benefit strategies such as agrivoltaics and the Solar Pollinator Habitat Program support the rapid, well-sited deployment of needed renewable energy while benefiting and/or reducing detrimental impacts on Minnesota's birds.

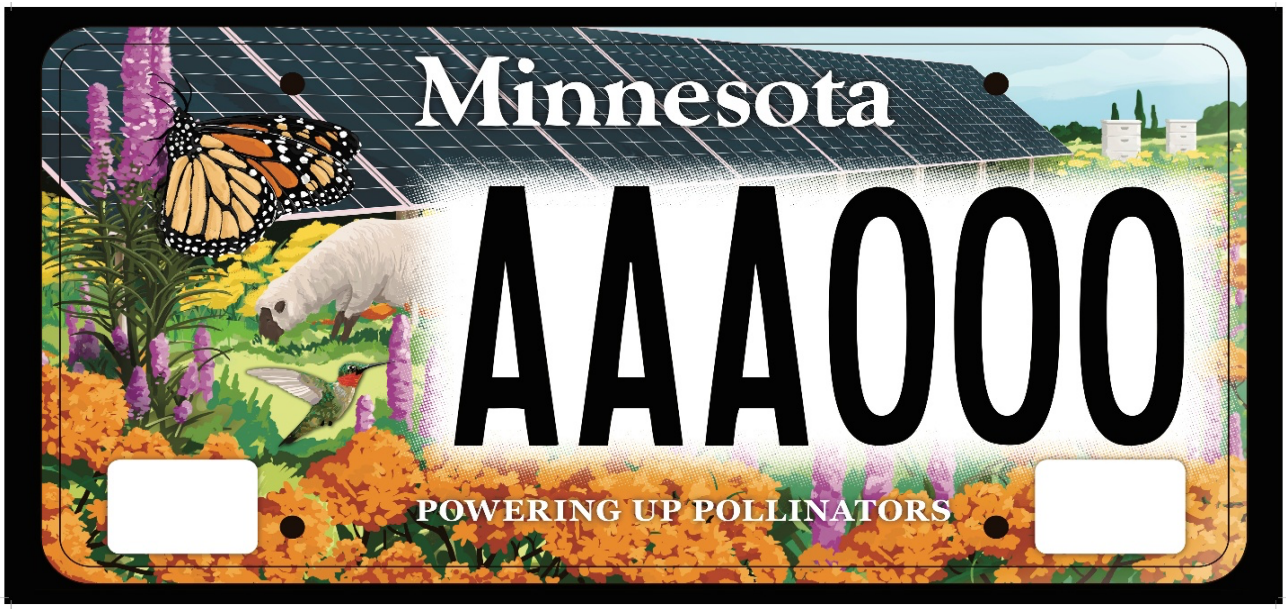
Sincerely,

Rob Schultz, Vice President

Audubon Upper Mississippi River, a regional office of the National Audubon Society

Alongside the following independent organizations across Minnesota:

Austin Audubon Society
Central Minnesota Audubon Society
Land of Lakes Bird Alliance
Minnesota River Valley Audubon Chapter
Mississippi Headwaters Audubon Society
Prairie Lakes Audubon Chapter
Saint Paul Bird Alliance
Wild River Audubon Society
Zumbro Valley Audubon Society
Alliance for Sustainability
Land Stewardship Project
Minnesota Ornithologist's Union
MN Division Isaak Walton League of America
Roots Return Heritage Farm, LLC
Vote Climate



What is Agrivoltaics?

The practice of combining both solar energy production and agricultural production (such as growing crops, raising livestock, or cultivating pollinator habitats) on the same land.

Why adopt a definition of Agrivoltaics into Minnesota law?

For the same reason that Minnesota adopted a definition of habitat/pollinator friendly solar. To quantify and encourage the benefits of habitat and agriculture friendly solar.

- Minn Stat. 216B.1642 (2016) has proven successful in steering MN solar developers towards installing pollinator friendly habitat between, under and around panel rows.
- The proposed Agrivoltaics definition uses the same voluntary opt-in dynamic without specifically mandating the use of agrivoltaics or providing any incentive.

How many Agrivoltaics projects are there currently in Minnesota?

NREL tracks the number of Agrivoltaic projects nationally, broken down by primary agrivoltaic use. *See* NREL InSPIRE Agrivoltaics Map. According to NREL's data, Minnesota already has more Agrivoltaic projects than any other state, and over 43% of all Agrivoltaic project sites in the country.

Active AGV Sites (per NREL InSPIRE)	in Minnesota	entire U.S.
Habitat alone or with Grazing	247	408
Grazing alone[1]	9	143
Crop Production alone	0	26
Crop Production with Habitat (/Grazing)	2	13
	258	**590**

What are the benefits of Agrivoltaics?

Pollinator Habitat	The vast majority of Minnesota's early AGV projects are focused on pollinator-friendly habitat, and are thus already covered by BWSR solar site management guidance under Minn. Stat. 216B.1642.
Rotational or Conservation Grazing	Many early projects have now started running sheep through once a year after the bloom season to reduce thatch while also stimulating the soil.
Crop Production	Over time and in partnership with farmers, many new agrivoltaics projects sites could be sited, designed, and operated with crop production in mind.
Economic Opportunities	Developers will need to contract with farmers, graziers, and/or habitat restoration specialists to perform the agricultural and/or conservation elements of the AGV project.
Self Funded	The Pollinator-Friendly Solar license plate provides a voluntary self funding mechanism with no general fund impact - and would be the first license plate in the country to include a solar panel.

[1] One of these is UofM Morris' famous dairy cow agrivoltaics project, led by Brad Heins (*see* Twin Cities PBS, *Can Solar Panels and Cows Coexist? Cutting-Edge Agrivoltaics Research in Minnesota*).

MnSEIA

Dear Chairs and members of the Committee,

We support House File 2297/Senate File 2653 and its efforts to expand the innovative and environmentally responsible use of agrivoltaics in Minnesota and to finance the successful but underfunded Board of Soil & Water Resources Solar Pollinator Habitat Program. The bill establishes a statutory definition of "agrivoltaics," which is crucial for steering solar development in Minnesota toward this beneficial dual-use approach to solar site management. The bill is supported by a voluntary funding mechanism with no general fund impact by creating the first license plate in the country to include a solar panel, and to depict pollinator-friendly solar site management (as previously defined in 2016, at Sect. 216B.1642), a related best practice in which Minnesota leads the nation. The license plate artwork, executed beautifully by REPLACE design studio, was commissioned by Natural Resources Services.

Allowing ground-mounted solar projects to opt-in to agrivoltaic best practices offers numerous benefits such as:

- **Economic Opportunities:** Encouraging solar projects to keep the land under and between panels rows in use creates new and additional economic opportunities for farmers and others in rural communities.
- **Crop Production:** Allows for the continued use of land for agricultural production while generating clean energy.
- **Rotational or Conservation Grazing:** Integrating animal grazing can enhance soil health and support local agriculture.
- **Pollinator Habitat:** Establishing perennial vegetation for pollinator habitat supports biodiversity and provides vital soil, water, and agricultural ecological benefits, including natural crop pollination services.

Minnesota is already a leader in agrivoltaics, thanks to the 2016 pollinator-friendly definition statute (216B.1642) and BWSR's pioneering work to document and establish best practices thereunder. According to the National Renewable Energy Laboratory, Minnesota currently has more agrivoltaic projects than any other state in the country. This bill expands and supports this work, through the inclusion of livestock grazing and crop production as dual use options for these sites. This addition offers potential for agrivoltaics to evolve into an even bigger win-win through partnerships between ground-mounted solar projects, local farmers, and conservation specialists.

The proposed legislation is designed to be flexible and adaptable to site-specific conditions. It enables a voluntary opt-in approach, encouraging project owners to implement agrivoltaics practices while enabling oversight by the Board of Soil and Water Resources through project reporting requirements. Furthermore, the dedicated yet voluntary funding generated by the special license plates provides much-needed resources to support and expand BWSR's work in this important area.

We urge you to support House File 2297/Senate File 2653 to advance agrivoltaics in Minnesota. Thank you for your support and leadership.

Sincerely,

American Solar Grazing Association

Bare Honey

Clean Energy Economy Minnesota

Center for Rural Affairs

Great Plains Institute

Monarch Joint Venture

Minnesota Solar Energy Industries Association

Minnesota Conservative Energy Forum

Minnesota Native Landscapes

Natural Resource Services

The Food Group

US Solar

: from the design desk of :

Jeffrey K. Johnson

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03.31.25
To: MN House Energy Finance and Policy
Energy Finance and Policy Meeting
Tuesday, April 1, 2025, at 1:00 PM
Co-Chair: Rep. Patty Acomb
Co-Chair: Rep. Chris Swedzinski
Agenda: HF2928

From: Jeffrey K. Johnson
Owner, Creative Director, Replace Inc.
Creator and Author of MN Invents
Mobile Phone: 612.644.4304
Email: jeff@designreplace.com
designreplace.com
MNinvents.com

Hello to all of the awesome folks at the Minnesota House of Representative!

For nearly 30 years, I have been lucky enough to bring my design talents to bear on the success of great Minnesota progressive organizations. The list is long, made with pride, and all with the same goal: Use design to advocate for the global growth of Minnesota initiatives. Brands like Geek Squad, Jonny Pops, Minnesota State Fair, and Travelers have partnered with me and our company to use design as key leveraging tool toward growth.

I was sincerely honored last year when I was asked to design and illustrate the proposed Minnesota State License Plate to advocate for agriculture and the opportunity for solar arrays to make productive use of the land under and around the panels. The license plate we designed was specifically made to allow people to show their support for dual uses of Minnesota's rich and productive soils. Agricultural producers including sheep graziers, beekeepers, and specialty crop farmers can work with solar project developers to help these sites further contribute to rural economies.

As I tell my clients, students, and pretty much anyone that will listen: All design is an invitation. This License Plate design is created to invite the future of diverse energy/agribusiness solutions that will make Minnesota more competitive on a national and global scale. I would like to volunteer my voice for the advocacy for this initiative. In addition to my design experience, I was also lucky enough to own and oversee my small family farm for 25 years. I was raised on a small farm in North Dakota, and this expanding industry of Solar Agriculture speaks dearly to my heart.

Many thanks to all the members of the Minnesota House for the support this great new expanding industry.

Jeffrey K. Johnson
• Founder and Owner of Replace Inc.
• Creator and Author of MN Invents
• Founder of ReplaceEverything.com