

AGROVOLTAIC RESOURCES, STUDIES & REFERENCES

WEBINAR & VIDEO RESOURCES:

Short Overview Video from Now This news outlet, Sept 2020: [Agrivoltaics: Solar Panels Bring Life to Struggling Farms | NowThis https://youtu.be/u_hRm-WFM1M](https://youtu.be/u_hRm-WFM1M)

NREL Webinar, Jan 2017: [Co-Location of Solar and Agriculture](https://youtu.be/VVapBZUCiw8) This Department of Energy (DoE) National Renewable Energy Labs (NREL) sponsored webinar talks about studies underway across the US in the past few years. Talks about field research efforts at UMASS and other places.
<https://youtu.be/VVapBZUCiw8>

Germany Study Video, Nov 2017: [Agrophotovoltaic - Pilot Plant at Lake Constance Combines Electricity and Crop Production](#) Press release to study links below.

TED Talk - 2017: [This Unlikely 1960s Space Tech Can Help Save the Bees | Rob Davis | TEDxMinneapolis](#)

Virginia DNR Webinar, Apr 2020: [Pollinator-Friendly Landscapes for Solar Facilities and Beyond - April 1, 2020](#) Virginia DNR Webinar speaking to co-benefits to Ag, environment & energy production of pollinator friendly solar including reduced soil erosion and rain runoff and much more. "...nationwide, this is one of the fastest-growing trends in the country..."

Univ of Arizona Webinar, May 2020: [Groundswell Presents: Agrivoltaics: The Energy, Water, Food Nexus](#) Webinar about University of Arizona study of Agrivoltaics. Related study reference below

Virginia Tech Webinar, Jun 2020: [Exploring Agrivoltaic Project Experiences, Recorded Webinar 6/18/20; Dept. Bio Sys Eng, VT](#) Discusses Agrivoltaic projects in Virginia. Included speakers from Fraunhofer Institute for Solar Energy Systems, Europe's largest solar research institute and Virginia-based Secure Futures, LLC.

STUDIES/RESOURCES:

Oregon State University Study showing benefits to both Ag and Solar by co-locating on same acreage benefits both crops and panels:

Links to studies/research articles:

Nov 2018

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0203256>

Aug 2019

<https://www.nature.com/articles/s41598-019-47803-3>

Overview articles outlining conclusions from the studies:

Nov 2018

<https://today.oregonstate.edu/news/solar-arrays-could-be-used-resources-plant-productivity-study-shows>

and

Aug 2019

<https://today.oregonstate.edu/news/installing-solar-panels-agricultural-lands-maximizes-their-efficiency-new-study-shows>

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Study Author [Chad Higgins](#), an associate professor in the Department of Biological and Ecological Engineering, Oregon State University

STUDIES/RESOURCES continued:

Scientific American article, June 2018 [How Land Underneath Solar Panels Can Contribute to Food Security](#) contains embedded links to studies around the globe.

The article states: ‘Pilot projects in [Massachusetts](#), Arizona, Germany, [China](#), Croatia, [Italy](#), [Japan](#) and [France](#) look encouraging for mixing crops with solar panels, referred to as “dual use” farms because they offer both agricultural and electrical production. “So far, the pilots have been extremely successful in showing that you can grow crops and make electricity at the same time...”’

University of Arizona, Sept 2019: <https://www.nature.com/articles/s41893-019-0364-5>

Additional info from the speaker: <https://research.arizona.edu/stories/what-is-agrivoltaics>

Germany Agrivoltaic Study Press Release, 2017: [Harvesting the Sun for Power and Produce—Agrophotovoltaics Increases the Land Use Efficiency by over 60 Percent](#)

PennLive Article, 2012: Pennsylvania High School (my Alma Mater!) where they have a co-located Ag/solar project on the high school property. The Ag part supports an Ag Education program at the school (pics included): [Cumberland Valley School District installs alpacas, emu, sheep to keep grass down, enhance AG Education program](#)

Co-located grazing and solar: Resources and references for along with other Agrivoltaic research sources in general: www.solargrazing.com/resources

POLLINATOR-FRIENDLY SOLAR HABITAT RESOURCES:

Scientific Article, May 2018: [Examining the Potential for Agricultural Benefits from Pollinator Habitat at Solar Facilities in the United States](#) published in the Environmental Science & Technology journal.

From the discussion: “Increased insect pollination services are just one of several ecosystem benefits that could be provided through solar-pollinator habitat. Other ecosystem services resulting from the planting and development of pollinator habitat at USSE facilities may include, but are not limited to, improvements to local biodiversity, water control, and carbon storage.”

Environ. Sci. Technol. 2018, 52, 13, 7566–7576

Publication Date: May 28, 2018

<https://doi.org/10.1021/acs.est.8b00020>

DoE's Argonne National Laboratory, Aug 2018 article: <https://www.anl.gov/article/can-solar-energy-save-the-bees>

American Bee Federation Quarterly Article, Aug 2018: [Bees find Solar Sanctuary](#) an excellent overview, including background info, related to co-located Ag/Solar.

Expert Reference: Rob Davis, of Fresh Energy, is a Pollinator-friendly solar expert and consulted with the state of MD on their Pollinator-friendly Designation legislation. He can be reached at davis@fresh-energy.org

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Poolesville Solar Array retrofitted with Pollinator-Friendly habitat.
First bloom: May 2019
(Photo Credit: Wade Yost)



Sheep under solar Cumberland Valley HS Ag Ed program in Pennsylvania
(Photo Credit: Joyce Breiner, CC-P®)



Solar works with wildlife habitat
(Photo Credit: NREL)

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Photo Credit: NREL