

Agrivoltaic Feasibility in Washington State

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Lambert, M. R., Candib, A., Wu, G., Tinianov, R., Schoenbachler, K., Robertson, J., Altadonna, N., Khan, M. R. A., Rajagopalan, K., Yourek, M., Shapiro, L. F., Kinzer, A., and C. Kruger. 2025. Low hanging fruit for Washington's energy future? Agrivoltaic feasibility for agricultural and energy resilience in the Evergreen State. Report to the Washington Department of Commerce, Olympia, WA. <https://www.nature.org/en-us/about-us/where-we-work/united-states/washington/stories-in-washington/washington-agrivoltaics/>

What is Agrivoltaics?

Agrivoltaics means installing solar panels on farmland in ways that still allow crops or livestock to be raised underneath or between them.

- Produces clean energy while keeping farmland productive.
- Offers extra income for farmers.
- Can reduce heat stress and improve water efficiency for certain crops.

What Works Best

Crops with Strong Potential in WA:

- Apples – reduced sunburn, marketable quality retained.
- Berries – some varieties yield more under partial shade.
- Leafy greens – can tolerate shade with minimal yield loss.
- Pasture – supports livestock grazing under panels.

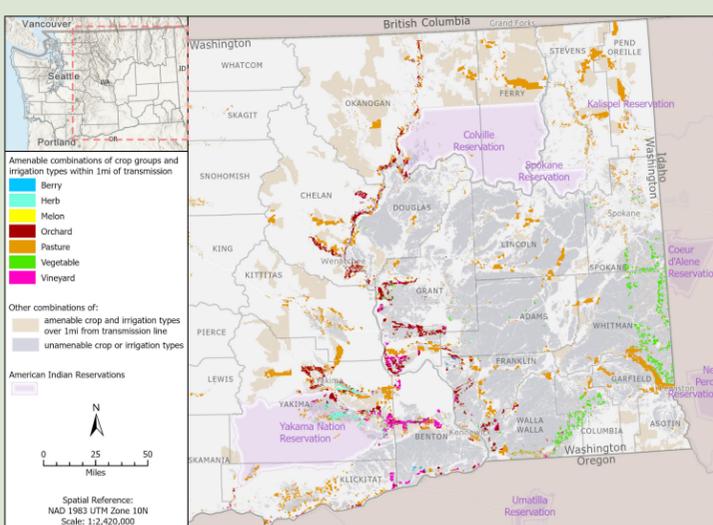
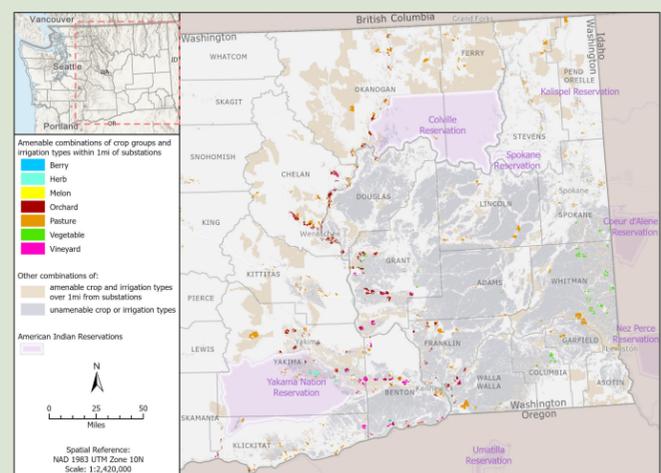
Less Suitable Without Adaptation:

- Mechanized cereal grain and hay production.

Why It Matters

Washington needs over 20 GW of new solar power in the next 20 years to meet clean energy goals.

- Conventional solar often takes farmland out of production.
- Agrivoltaics preserves farmland, supports rural economies, and reduces conflicts over land use.
- Potential: 87,000 acres feasible under current conditions = 8.7–17.4 GW of solar capacity.

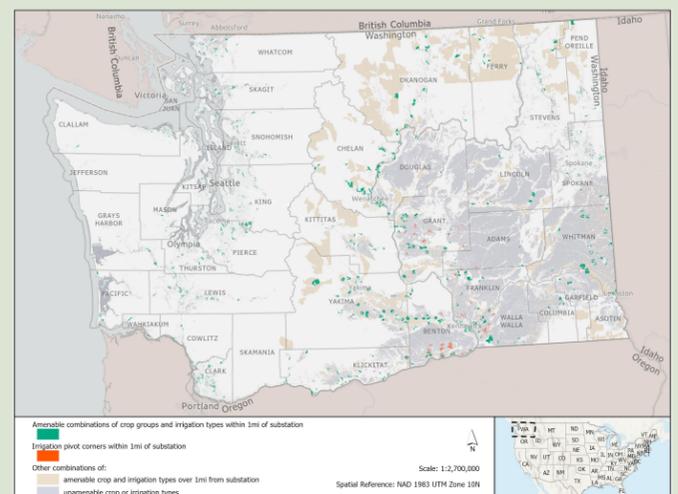


Key Benefits

- Dual use: Food + Energy from the same land.
- Climate resilience: Shade lowers crop stress from heat and drought.
- Economic opportunity: New revenue streams for farmers.
- Local power: Generates renewable electricity near communities.

Next Steps for Washington

1. Research & demonstration sites.
2. Farmer education & technical support.
3. Policy incentives for agrivoltaics.
4. Collaboration between farmers, solar developers, and agencies.



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