UMass Cranberry Station
Research & Extension

Cranberry Research Proposal

PROJECT ADVISORY COMMITTEE

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Acknowledgements

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- U.S. Department of Energy, Solar Energy Technologies Office
- Pinegate Renewables
- Greenbacker Capital
- NextSun Energy
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About the Solar Energy Technologies Office

The U.S. Department of Energy Solar Energy Technologies Office supports early-stage research and development to improve the affordability, reliability, and domestic benefit of solar technologies on the grid. Learn more at energy.gov/solar-office.

Solar developer partners

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PINEGATE RENEWABLES

- 3 trials
- Carver, MA

Greenbacker CAPITAL

- 2 trials
- Kingston / Plympton, MA

Research sites

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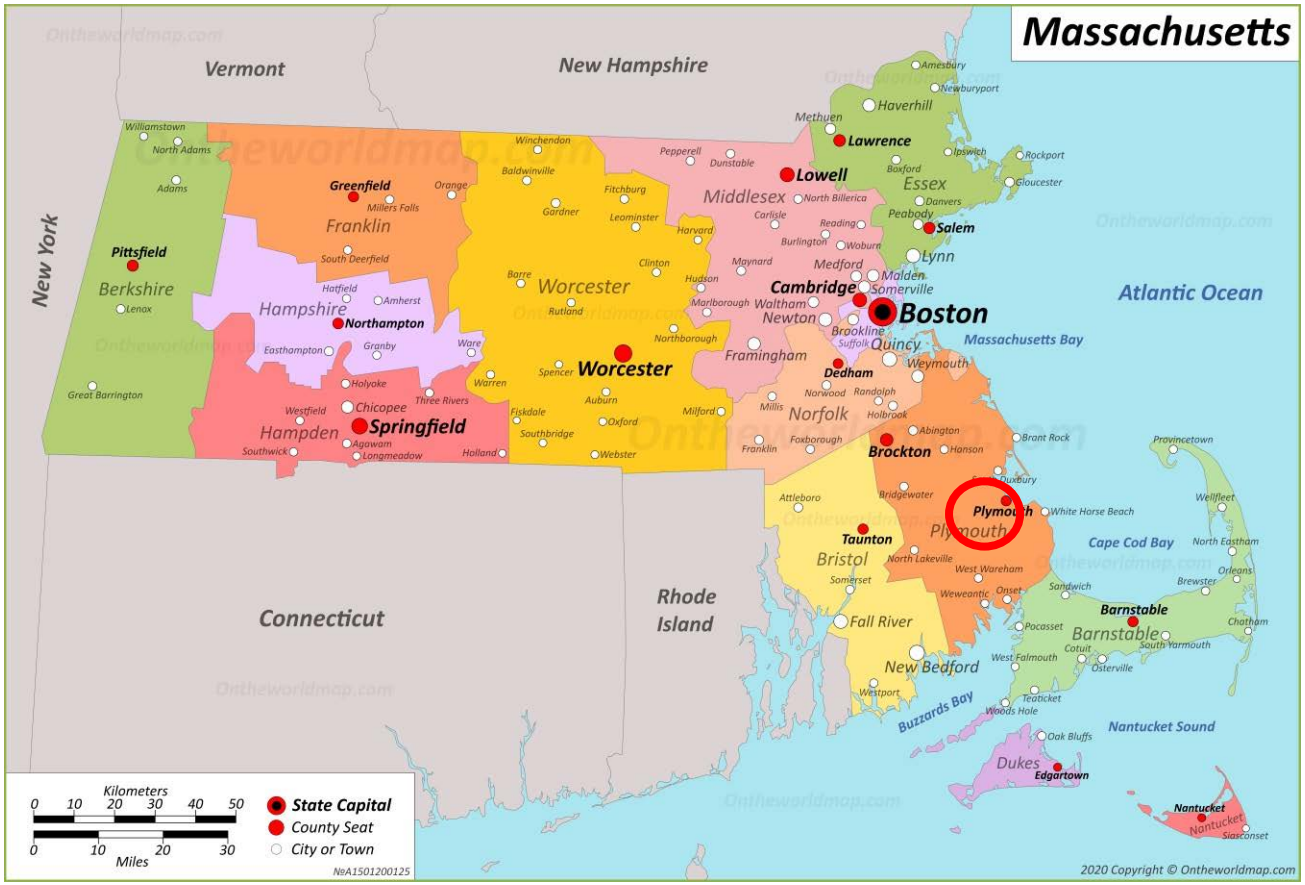
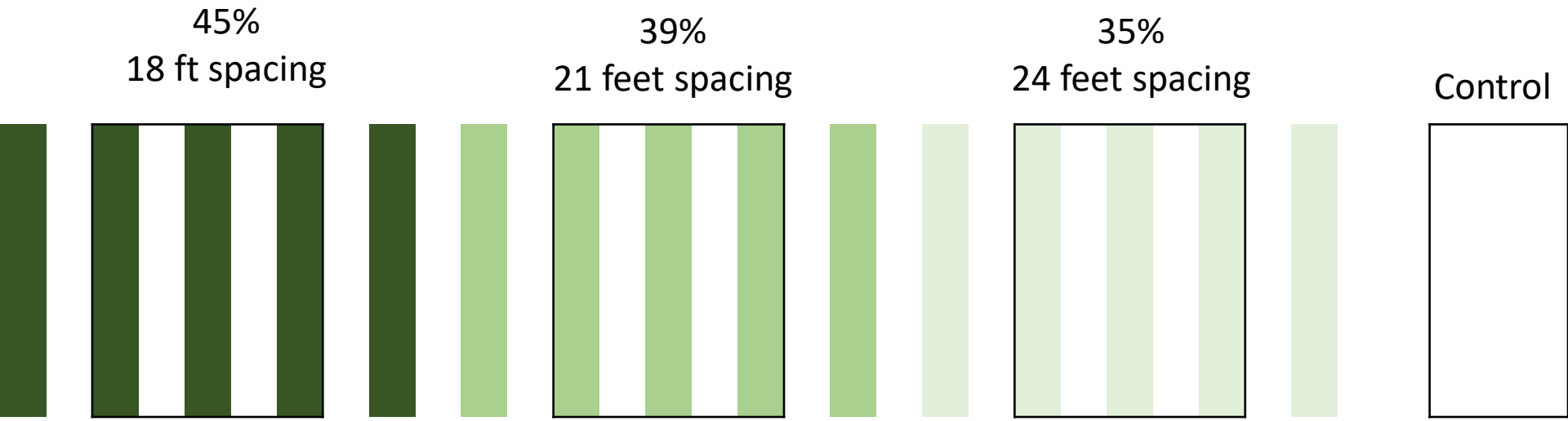


Cultivar	Site 1	Site 2	Site 3
‘Stevens’	Tremont St, Carver	Rochester Rd, Carver	Dunham, Kingston/Plympton
‘Howes’		Rochester Rd, Carver	Correira Kingston/Plympton

Research design



- 3 treatments (35%, 39%, and 45% shading) and an uncovered control without solar panels
- Each treatment will be represented by 5 arrays of solar panels, approximately 180 foot long

Data collection

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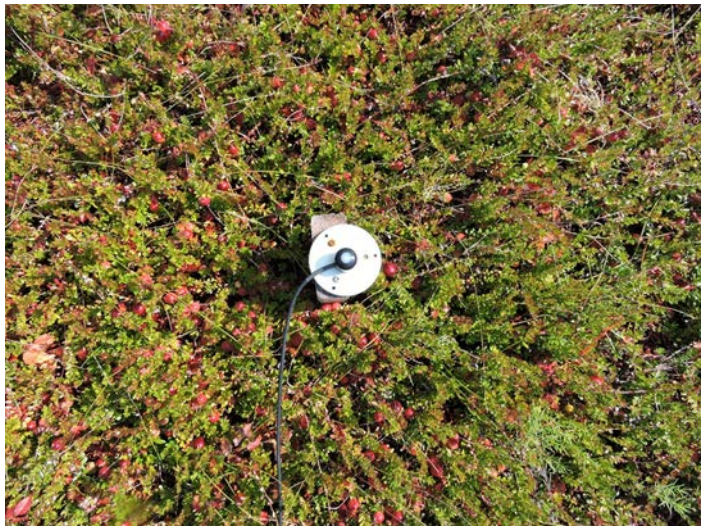
Microclimatic conditions

- ✓ Photosynthetically active radiation
- ✓ Temperature and relative humidity
- ✓ Soil moisture and temperature
- ✓ Rainfall
- ✓ Wind speed



Data collection

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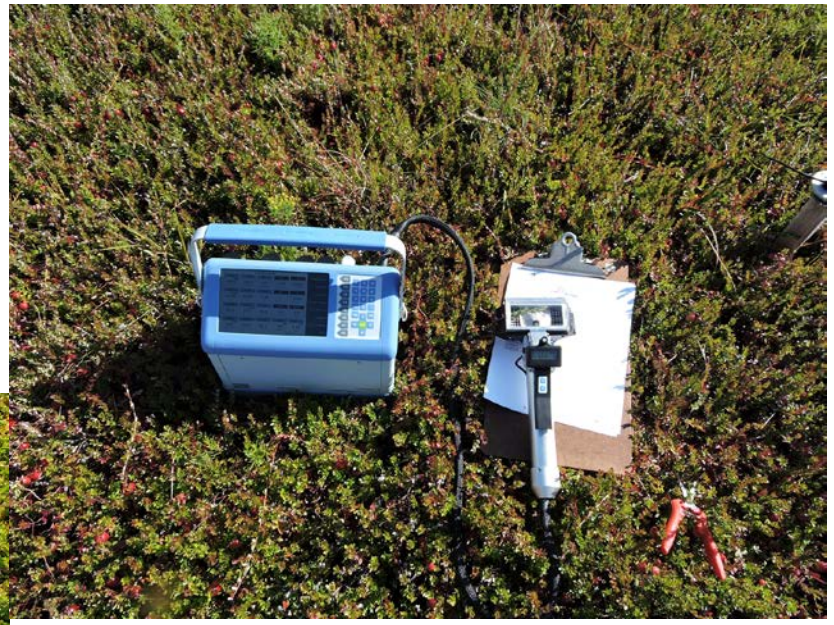
Plant ecophysiology & biomass

- ✓ Leaf gas exchange measurements
- ✓ Rapid light curves
- ✓ Light interception
- ✓ Biomass samples



Data collection

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Yield and fruit quality

- ✓ Yield
- ✓ Fruit color
- ✓ Firmness
- ✓ Internal quality
- ✓ Fruit size

Data collection

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- Soil compaction
- Plant nutrient analysis

Expected outcomes

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- Research-based information about long-term shading effects on cranberry physiology, yield and fruit quality
- Develop best management practices for the cranberry industry when considering and/or implementing dual use
- Disseminate results of the project to stakeholders via grower meetings, newsletters, and extension fact sheets.