

Maryland Agriculture Climate Vulnerability Assessment

2022 Maryland Land Conservation Conference



Harry R. Hughes
CENTER FOR AGRO-ECOLOGY

Impact of Maryland Agriculture

- Maryland agriculture is diverse
- Food, feed, fiber and equine is a \$20.9 billion industry, supporting 105,151 jobs
- 12,400+ farms on approximately 2 million acres of land

Top commodities

Poultry
Grain
Greenhouse/nursery
Dairy
Livestock
Vegetables

Recent trends include:

Aging farmer population
Increasing female producers
Expansion of urban agriculture efforts
Increased interest in beginning farmer programs

Why a Climate Assessment for Agriculture is Needed

Climate Impacts ...



Crops



Pollinators



Invasive Species



Soil



Pests



Livestock

But Also:

- Disease
- Biodiversity
- Water
- Infrastructure
- Insurance
- Farm worker health
- Rural communities

Business as usual will not be enough

Study in Preparation

Scientific consensus predicts climate change impacts are expected to:

- Continue and intensify
- Impact both in-land and coastal agriculture and many, if not all, agricultural sectors
- Be compounded by sea-level rise
- Necessitate enhanced management of farm operations

Request:

- 2021 General Assembly Joint Chairmen's Report budget narrative
- Study in preparation for a Maryland agriculture climate vulnerability assessment – go.umd.edu/AgClimateVA
 - Hughes Center, MDA and MDE
 - What we know (data, experts, expected threats)
 - Who is impacted
 - What are the resources needed for a full study?
- Worked with Project Leadership Team:
 - UMD AGNR and Extension
 - DNR
 - Chesapeake Bay Commission
 - USDA Northeast Climate Hub
 - Farmer stakeholders/representatives

What Producers Told Us

Concern for:

- Farmers are already experiencing impacts on their operations
- Conditions may change quickly and the ag community must be prepared to adapt quickly
- Drought followed by extensive rainy periods and varying storm intensities
- Impact from increases in major weather events like hurricanes
- Pest and wildlife pressure
- Investment in costly equipment and infrastructure to face a changing climate
- General loss of agricultural land (saltwater intrusion, development, etc.)

Stated needs include:

- Fine-resolution climate data
- New tools, but maintain current ones
- Research that can be practically applied and easily understood
- Adaptable and resilient crops and tree species
- Economic impact estimates
- Funding for a variety of mitigation strategies and technologies
- Predictive and accurate weather forecasting
- Climate adaptation and mitigation strategies
- Address research gaps

Maryland Ag Vulnerability Assessment

Vulnerability Assessment Process:

- \$500,000 provided in Maryland 2022 supplemental budget
- Led by Hughes Center, in collaboration with MDA, MDE and guided by Project Leadership Team and project coordinator
- Scientific experts identified and convened
- Open RFP solicitation for assessment
- Robust, broad and diverse stakeholder engagement;
- Work with Maryland Commission on Climate Change (MCCC) to ensure timely response to resulting recommendations

Outcomes:

- Improvements in policies and programs that support the farming industry's resiliency over time, mitigate impacts and provide environmental benefits and ecosystem services to Maryland.
- Position Maryland and the state's top industry to prepare and adapt to issues resulting from climate change

Maryland Ag Vulnerability Assessment

Vulnerability Assessment Deliverables:

- Science-based knowledge of how the state's changing climate will likely affect A) The production of crops and livestock, and soil health statewide; and B) Weed, insect, pest and disease pressure for production statewide;
- A review of the state of research, policy and programs that address the impacts of climate change on Maryland's agricultural industries;
- Recommendations to enhance policies and procedures relevant to climate change adaptation and mitigation;
- Recommendations on future research;
- A network of experts who will continue to explore observed and projected climate impacts to agriculture and generate solutions;
- A network of stakeholders to provide feedback on their experiences and identify needs to address climate change impacts.

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