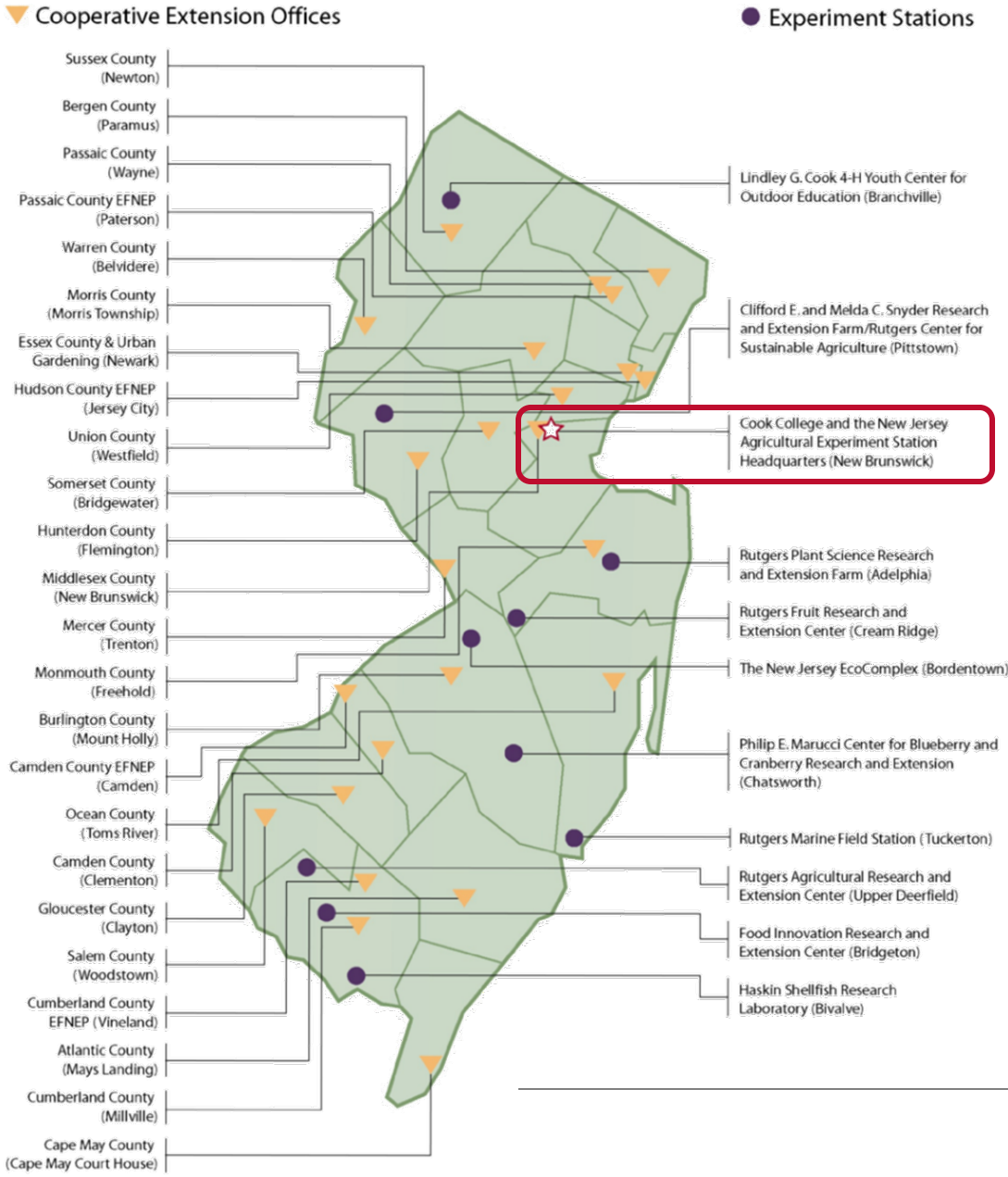
RUTGERS
THE STATE UNIVERSITY OF NEW JERSEY

Climate Change and Agriculture

New Jersey Agricultural Experiment Station

Bob Goodman, Executive Director
Brad Hillman, Director of Cooperative Research
Larry Katz, Director of Cooperative Extension

RUTGERS The New Jersey Agricultural Experiment Station



- Established in 1880 by the NJ Legislature
- Based at Rutgers University
- Active in all 21 NJ counties
- Operates research stations throughout the state
- Delivers **outreach**, **education**, and **research** to all NJ residents

Brief History of Rutgers NJAES and SEBS

- **1862** – **Morrill Act passed**, providing grants of federal lands to create public institutions for teaching agriculture and mechanical arts.
- **1864** – **The Rutgers Scientific School** founded, George H. Cook is head.
- **1880 – NJAES established** by New Jersey legislature.
- **1887 – Hatch Act passed**; established federal agricultural experiment stations at land-grant institutions.
- **1889** – **New Jersey Hall completed**, first experiment station lab building.
- **1914** – **Smith-Lever Act is passed**, establishing the Agricultural Extension Service at each land-grant institution.
- **1973 – Cook College** born from the College of Ag and Environmental Sciences
- **2007 – School for Environmental and Biological Sciences** born from Cook College; **NJAES** remains separate state and federally funded entity

Partnership between USDA, State of New Jersey and County Boards of Chosen Freeholders

Priority Areas:

1. Commercial Agriculture
2. Environment and Natural Resources
3. Fisheries and Aquaculture
4. Food, Nutrition and Health
5. Home, Lawn and Garden
6. Youth Community
7. Economic Development

28 Centers, Institutes, and Farms, 21 Cooperative Extension county offices throughout the state

- **How is NJAES incorporating climate change considerations into NJ Ag (innovation)?**
  - —Research projects and extension/outreach efforts in all seven of our focus areas have a climate change component
  - —Provides resources to climate scientists for projects throughout the state
  - —Supports the Office of the State Climatologist
  - —Initiating interactive retrospective and prospective analysis of forests and agriculture in New Jersey, with graphical interface

- **Some NJAES-sponsored projects:**
  - —Plant breeding for drought, heat, salt tolerance
  - —Effects of climate change on native and invasive plants
  - —Changing populations of invasive insect pests and pathogens of plants and animals, including aquatic
  - —Climate change driving expansion of invasive mosquito species
  - —Changes in populations of wild pollinators
  - —Restoration ecology at several New Jersey sites

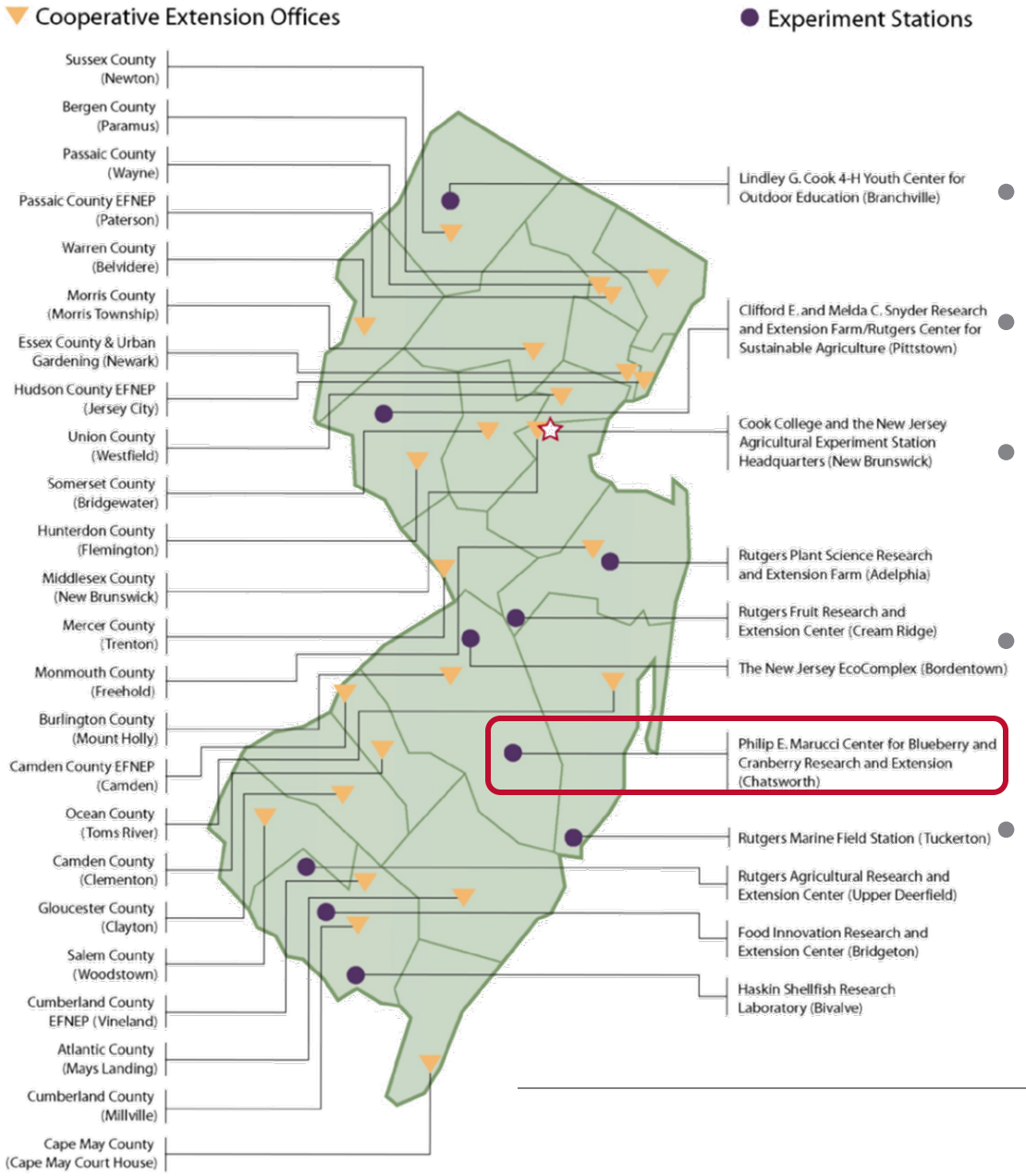
New Jersey Agricultural Experiment Station

RUTGERS
New Jersey Agricultural Experiment Station

Lathrop, Richard D	Professor Department of Ecology Evolution and Natural Resources, Director, Center for Remote Sensing & Spatial Analysis	"Hazardous Fuels and Wildland Urban Interface"	Developed and tested an objective, consistent approach to characterizing hazardous fuels in WUI at the scale of individuals structures by integrating aerial photography and LiDAR imagery into a risk assessment framework.
McDonnell, Janice	Associate Professor Department of 4-H Youth Development Rutgers University	4-H Climate and Environmental Change Teen Summit	Science Technology Engineering and Mathematics (STEM) program for middle and high school students designed to increase knowledge and understanding of climate change sciences through interaction with Rutgers University scientists.
Oudemans, Peter	Professor Department of Plant Biology and Pathology Rutgers University	Cranberry Research	Using Thermal IR to assess stress tolerance of cranberry plants to develop degree day models to map the threat of diseases.
Shwom, Rachael	Assistant Professor, Department of Human Ecology	Public Perception of the Impacts of Climate Change On Forests	Investigates how the US sees issues of forests and cc and their role in it. Survey of US citizens w/ more respondents in forested areas: what do American's value about their forests? What do they use them for? Threats they perceive cc poses to forests? Level of public acceptance of forest adaptation and mitigation management policies and what factors influence these levels?

- **What else should NJAES be doing to incorporate climate considerations into NJ Ag (needs)?**
  - Serve as an organized resource for stakeholders providing the most useful information about climate and agriculture
  - Provide general and site-specific predictive tools for farmers
  - Support research specifically addressing effects of climate change on agriculture, forestry, and aquaculture in NJ
  - Protect our research and extension facilities

Blueberry and Cranberry Research Center



- Located in the New Jersey pine barrens
- 5 faculty, 20 staff and farm
- Breeding, Entomology, Health Benefits, IPM, Pathology
- Supported by state, federal, industry, grants, IP royalty
- Delivers outreach, education, and research focused on blueberry and cranberry

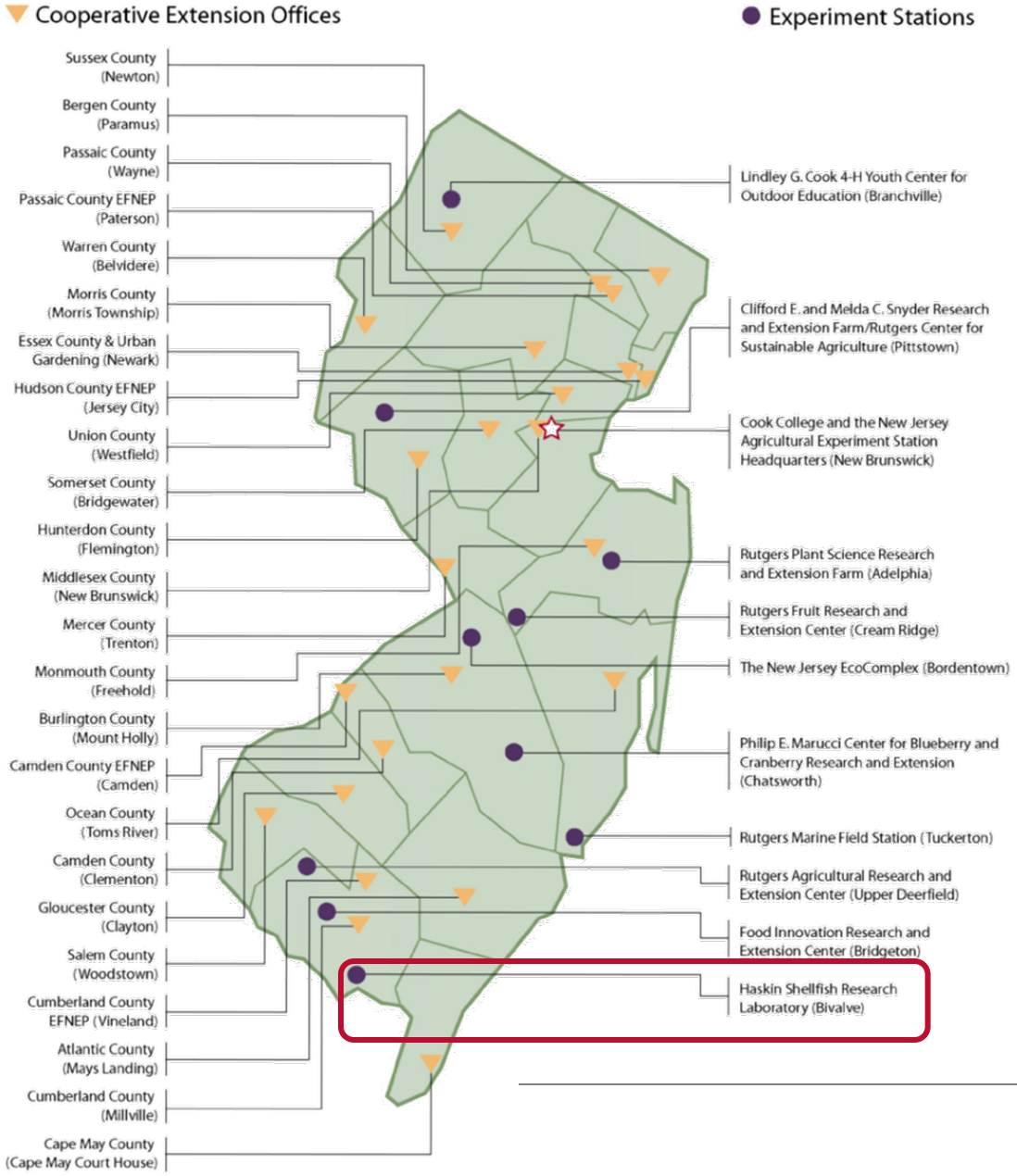
National Center for Vaccinium Research

- New Jersey Pine Barrens covers over 2000 square miles
- Landscape is flat coastal plain
- Soils are sandy, acidic and low in nutrients

Harvest of Crimson Queen, a new Rutgers cranberry variety Chatsworth, New Jersey, October 18, 2010

- Breeding
- Nutrition
- Plant Products
- Genomics
- Intellectual Property
- USDA/ARS involvement
- Pathology
- Entomology
- Integrated Pest Management
- Broad competitive support
- Stakeholder Relationships
- Fundraising

Haskin Shellfish Research Laboratory



- Established in 1888
- At the mouth of the Delaware River Bay
- Three facilities: one for shellfish research (Bivalve), one for oyster breeding and hatching (Cape Shore); one for oyster, finfish, and research demonstration (Aquaculture Innovation Center)

Haskin Shellfish Research Laboratory