



Climate Change and Preparedness in New Jersey

Leading Practices and Policy Priorities

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Climate Change and Preparedness in New Jersey Preparing our Communities: Agriculture

For today:

New Jersey Agriculture

Where we are now

Trends short term and long term

Strategies

Future



New Jersey Agriculture

Top Agriculture Products

Greenhouse/nursery

Blueberries

Horses

Corn

Peaches

Number of Farms

10,300

Land in Farms

730,000 acres with 201,327 preserved

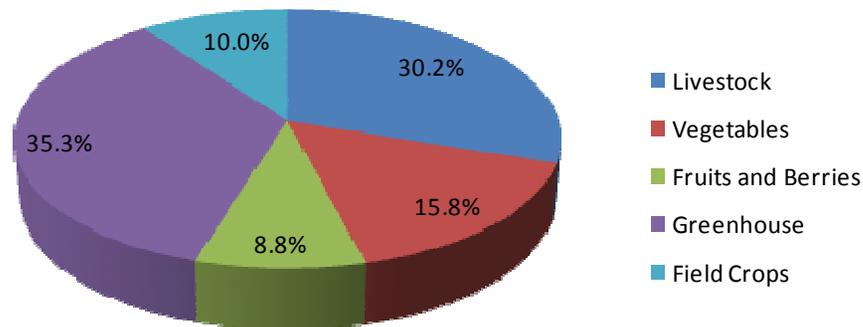
Average Farm Size

71 acres

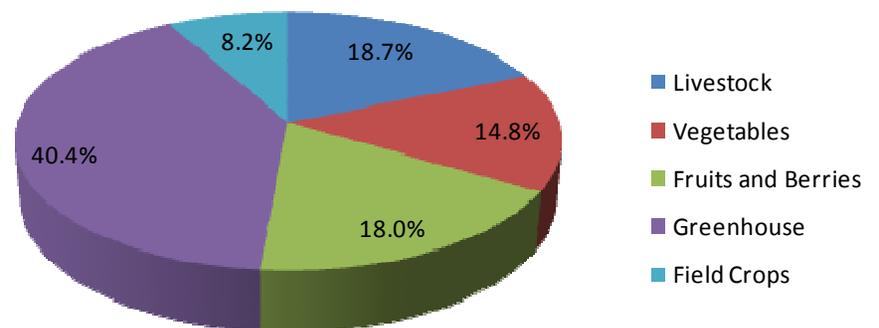
Food and agriculture are New Jersey's third largest industry. In 2011, the state's farms generated sales totaling \$1.12 billion. NJ Farmers produce more than 100 different kinds of fruits and vegetables, fresh or processed and sold in New Jersey and elsewhere in the Northeast, in Canada and in many countries around the world. In addition, growers also produced hundreds of thousands of dollars worth of specialty crops.

New Jersey Agriculture is Changing

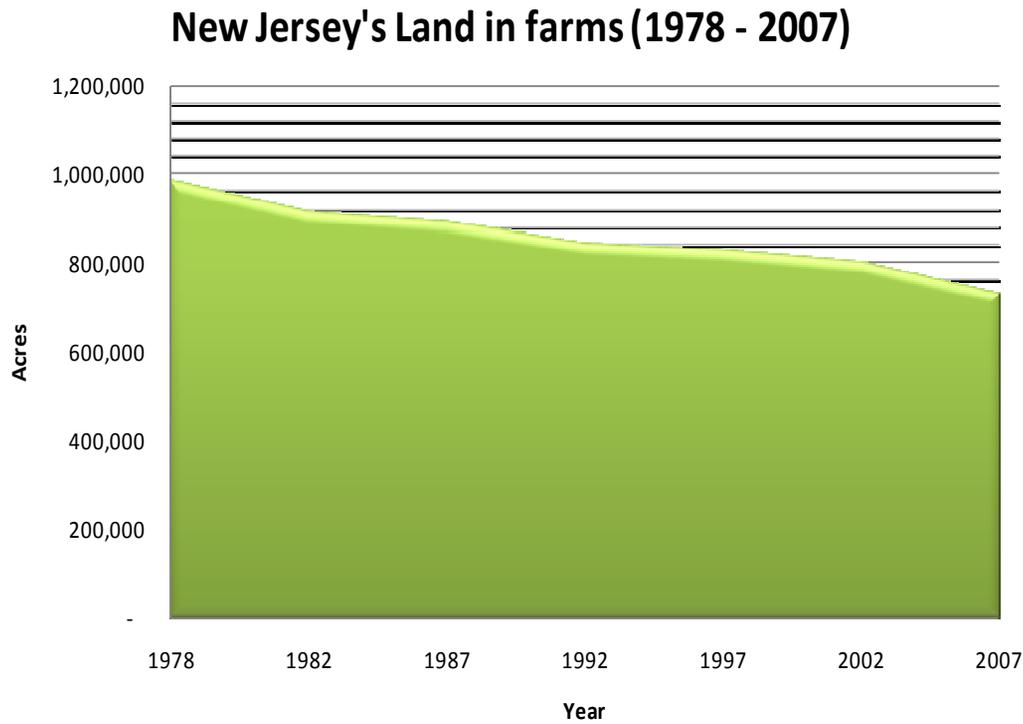
Proportion of Cash Receipts - 1990



Proportion of Cash Receipts - 2007



New Jersey Agriculture is Changing



Some observations by Rutgers Extension Scientists

- Climate change for the most part is going to allow more southern insect species to expand their range northward. Good examples of this are the range expansion we have seen for southern pine beetle into southern NJ and with fire ants moving into VA and MD. Of course there will be other effects, especially with herbivores. As plant ranges change, i.e., move northward from the south or restrict their range to more northern climates the insects that feed on them expand or restrict their ranges.
- Warmer springs resulted in our peaches being about 3 weeks ahead of schedule in their phenological development. Coincident with this early season, we had record high levels of both peach rusty spot and peach blossom blight, two diseases that occur early in the growing season.
- Definitely seeing certain disease problems like dollar spot showing up earlier in the year and persisting several weeks to a month or more later in the year. We have also identified species of *Rhizoctonia* (the cause of brown patch disease) in NJ over the last few years that previously have only been found in the SE US. I believe this can be attributed to hotter summers and more mild spring and fall weather. Also, we have seen the occurrence of several new diseases over the 5 yrs that now are very common in the northern tier of the US such as brown ring patch of annual bluegrass turf.

- There are sporadic reports on weeds (e.g., green kyllinga, dallisgrass) appearing in NJ that are common in the southeastern USA, but this is not widespread in NJ.
- Second is the re-appearance of tomato pinworm. This was a problem occasionally in the 70's when we imported many of our tomato transplants from Ga. and Fla. Once we grew our own, it ceased to be much of an issue. Three years ago it popped up in a high tunnel in Morris Co. Since then, I've had it in several high tunnels and last year, it was in a field of tomatoes in Somerset Co. All of these guys get there plants locally or grow their own.
- The northward expansion of beet armyworm. This pest, which is a gulf coast resident, pops up in south Jersey along the Bayshore at destructive levels (on pepper mostly) about 1 in 3 years. We've had it in Warren County for the past two summers and it's riddled pepper plantings. Not so hard to manage, but you have to know what it is, because many insecticides do not work.

Sometimes we forget that climate is the primary determinant of agricultural productivity

Agricultural systems are “managed ecosystems”

Short term we have changes in production practices

For example...temperature increases lead to higher respiration rates, shorter periods of seed formation and lower biomass...one can look at grain where we have shorter grain filling periods, smaller and lighter grain, and lower yields and lower grain quality (lower protein levels).

Long term we have technological changes

For example the way we irrigate...many farmers have very sophisticated monitoring and micro-irrigation systems that deliver the maximum water with no waste or misapplications.

There will be winner and loser in this process.

