Cornell University
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Solar, Land Use and NY Agriculture: Challenges and Opportunities

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Introduction

- Applied research and outreach on issues affecting U.S. and NYS farm viability
  - Farmland markets
  - Farm labor
  - Risk management
- Broader engagement of Cornell researchers on implications of scaling up renewable energy production in NYS
  - Land use
  - Agriculture impacts
  - Local concerns (opposition)
  - Multiple levels of government
  - Many others…

Renewable energy is growing in NYS

- The Clean Energy Standard mandates that 50 percent of all electricity consumed in New York by 2030 result from clean and renewable energy sources, more than doubling 2013's level.
- Theoretically, (marginal) land for solar (or other renewable energy) development is abundant in NYS
  - Land use requirements could be substantial
- Social, environmental, legal and economic considerations will inevitably have a significant influence on the pace and scale of solar deployment
- The potential for decisions about renewable energy to become culturally polarized is large (Kahan, 2012), especially given associations with climate change.

Solar is poised to grow rapidly

- Currently only 0.05% of the state's electricity
  - Nationally, the EIA has projected a dramatic 28% increase in utility scale solar for 2016
- Nationally, large-scale solar may be a small share of total land, but unclear what types of land and impacts
  - In CA, almost 30% of solar installations on pasture or cropland
- Rural landowners in NY have been approached by solar developers with a request to sign long term leases of their land
- Raises multiple concerns for agriculture, land trust community, others
  - Compete or compliment?

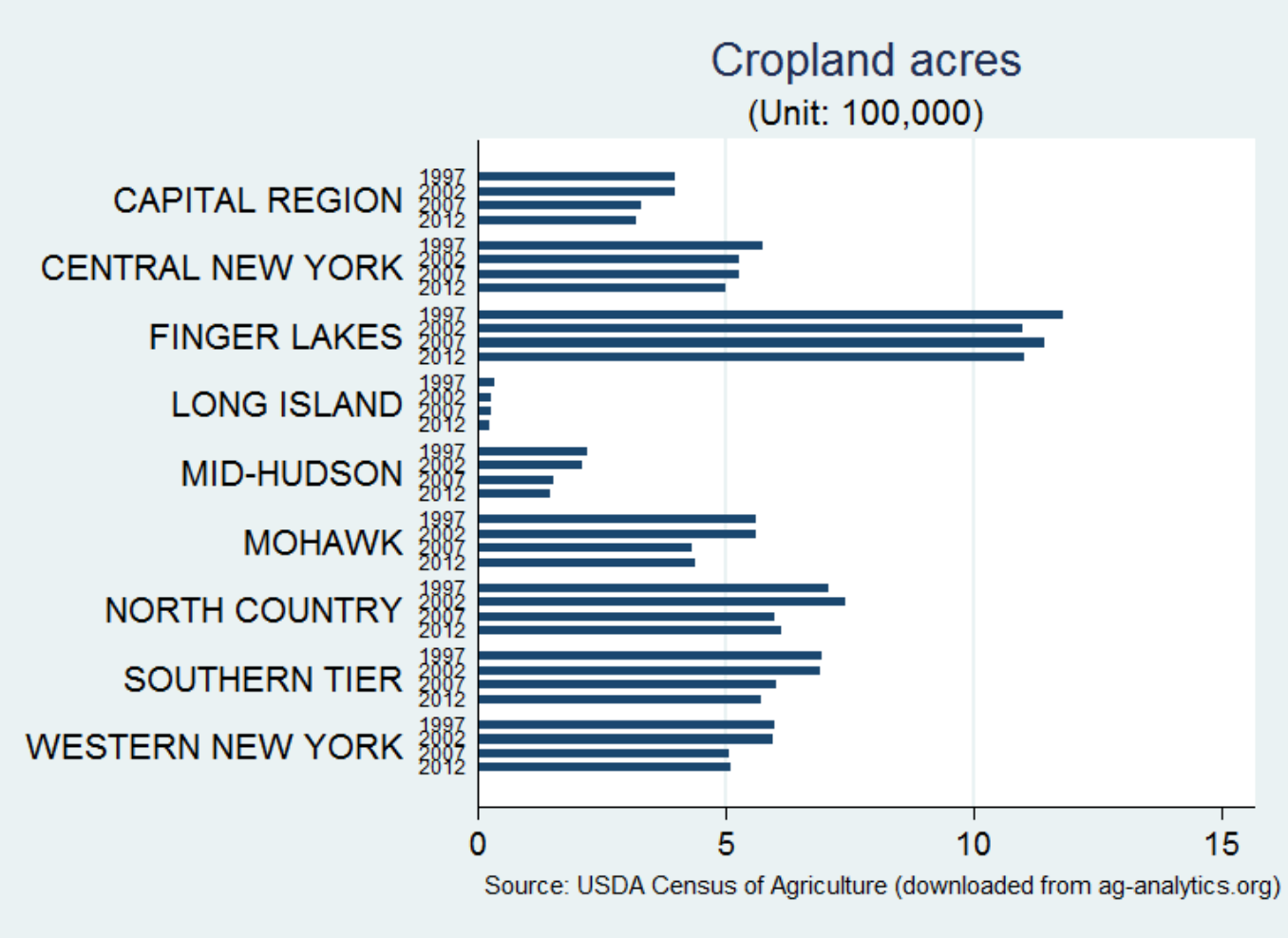
Potential benefits and concerns for agriculture

- Opportunity for additional revenue as well as improved stewardship of resources
  - Electricity costs substantial for some operation types
- Tax implications – agricultural assessment
- Colocation?
- Land under conservation easements
- Competition for rented farmland
  - Will solar locate on "prime farmland" due to slope, access roads, etc. or take advantage of more marginal land?
- Farmland values could increase, affecting farmland affordability and accessibility

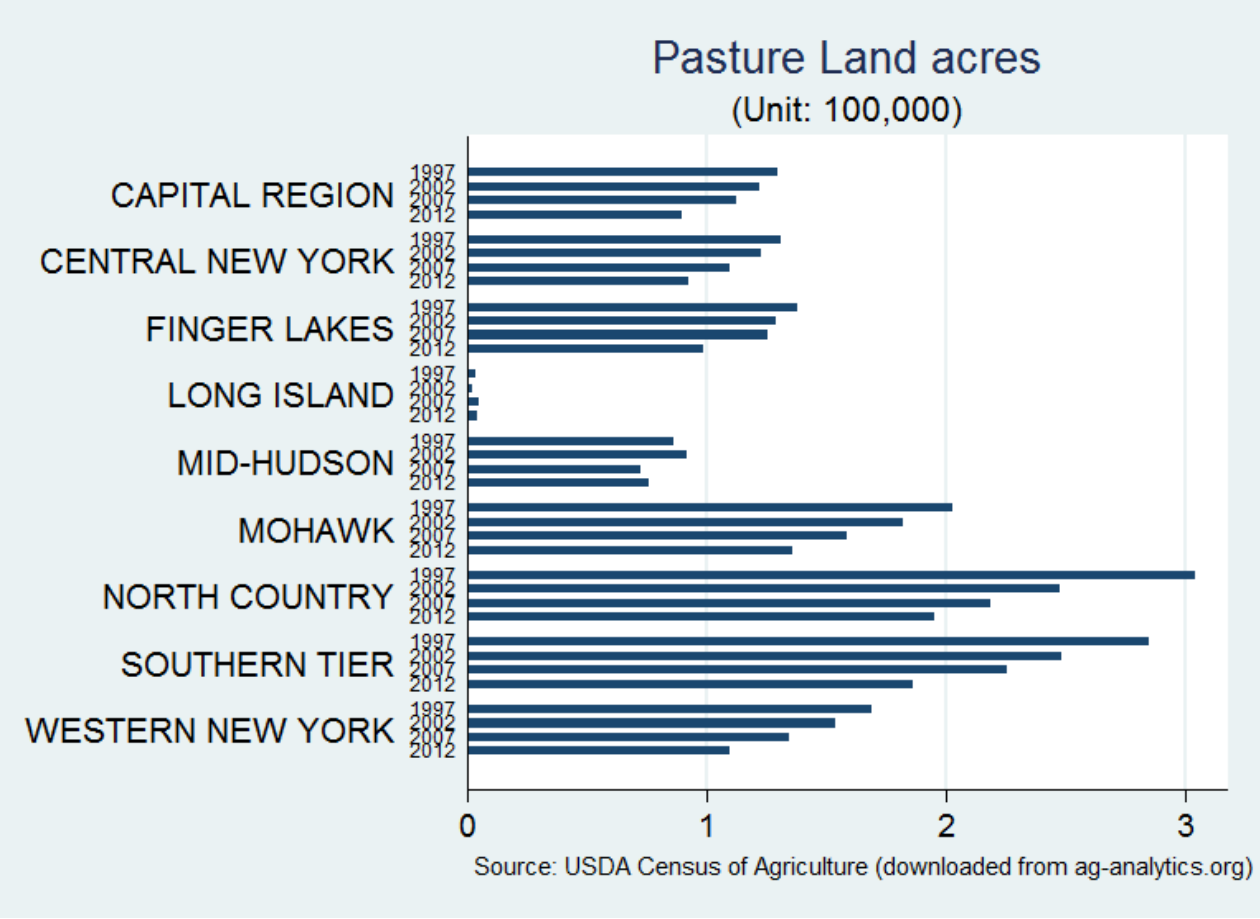
Competing uses for farmland

- Vibrant and diverse farm sector: dairy sector, specialty crops, field crops, local foods, etc.
- Farm income and interest rate are fundamental drivers of farmland values, but many non-agricultural influences are also important
- Urban influence is substantial
  - New York City, several other large urban areas
- Recreational uses
- Energy: oil drilling, wind….
- Growing plain people settlements (Amish etc.)
- Part-time farming
- Agricultural assessment

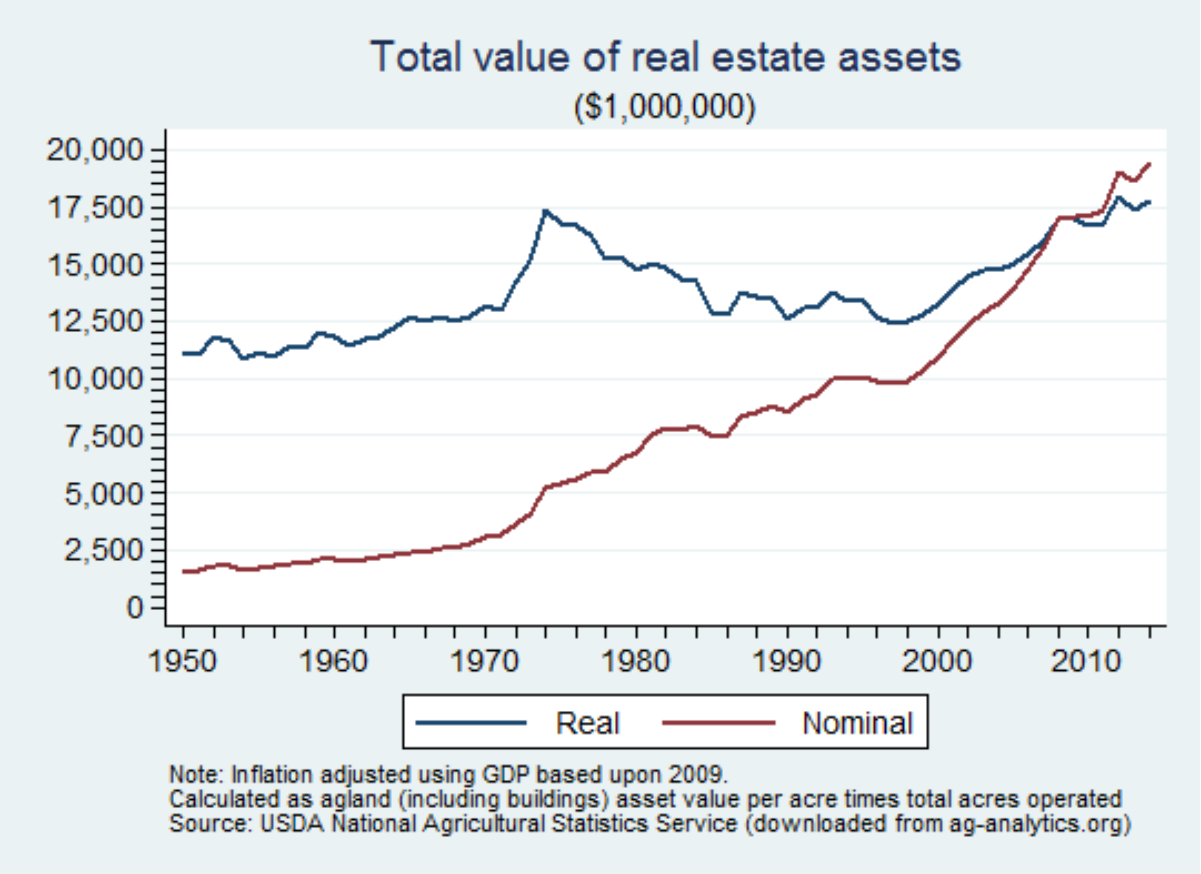
NY total cropland has been declining in many areas



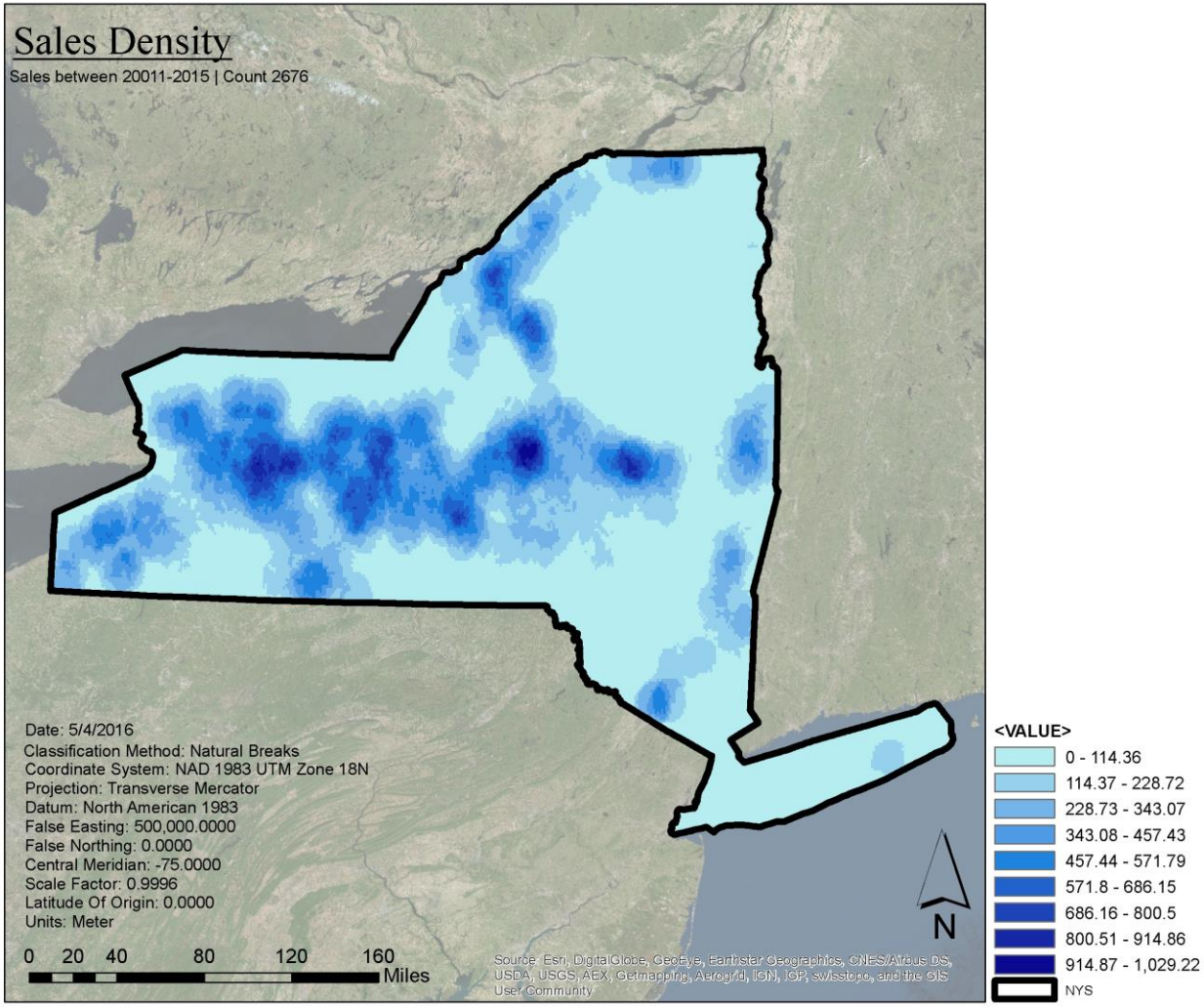
Pasture land has been steadily declining across New York



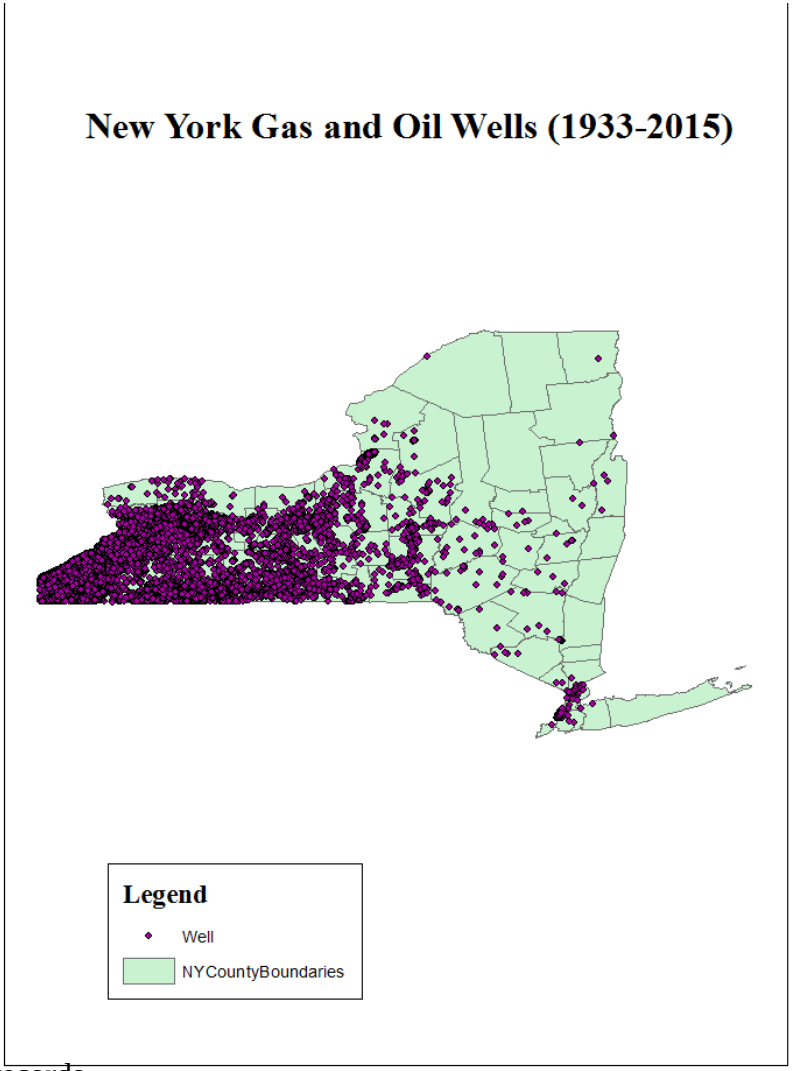
Total farm real estate values (wealth) continue to increase



Location of farmland sales, 2011-2015



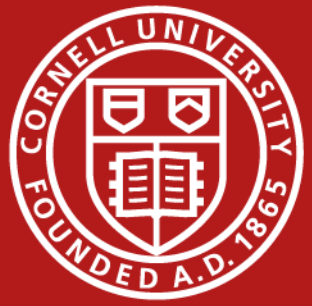
Farmland value drivers



Source: OPRTS farmland sales records

Conclusions

- Many important questions about land use and agricultural impacts of large-scale solar installations
- Physical, economic, social dimensions
- Agriculture should be able to benefit but there is a need to be proactive about anticipating key challenges
  - What are legal and policy implications?
  - Can we predict area or farm types that may need to be more proactive about complimentary development?



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