

Land development in New Jersey continues to slow

September 9 2020



Coastal flooding in Tuckerton, New Jersey, from a storm off the East Coast in October 2019. Such flooding, which occurred during a high tide, is expected to increase as a result of sea-level rise. Credit: Life on the Edge Drones

Land development in New Jersey has slowed dramatically since the 2008 Great Recession, but it's unclear how the COVID-19 pandemic and efforts to fight societal and housing inequality will affect future trends, according to a Rutgers co-authored report.

Between 2012 and 2015, 10,392 acres in the Garden State became [urban land](#). That's 3,464 acres a year—far lower than the 16,852 acres per year in the late 1990s and continuing the trend of decreasing [urban development](#) that began in the 2008 Great Recession.

While the rate of farmland converted to urban land decreased dramatically in recent years, the conversion of upland and wetland forests increased, according to the report.

That's concerning since these ecosystems play a critical role in removing carbon dioxide, a greenhouse gas linked to [climate change](#), from the atmosphere and storing it in wood and forest soils.

New Jersey also lost nearly 4,400 acres (almost 7 square miles) of coastal [salt marshes](#) from 1986 to 2015 due to rising sea levels and coastal erosion. Such marshes are important fish and wildlife habitat and serve as important buffers against coastal storms.

"We have been tracking changes across the New Jersey landscape for nearly three decades and observed as the state transitioned from sprawling development through the 1980s and 1990s toward more concentrated urban redevelopment in the 2000s," said co-author Richard G. Lathrop Jr., director of the Center for Remote Sensing & Spatial Analysis and a professor of environmental monitoring in the Department of Ecology, Evolution, and Natural Resources in the School of Environmental and Biological Sciences at Rutgers University-New Brunswick. "Six months ago, I would have said that we could expect this pattern to continue over the coming decade. However, given the scope of recent and ongoing events, predicting how New Jersey's land use and development patterns will change is much more uncertain."

The report analyzes change in the state's land use/land cover between spring 2012 and spring 2015, based on N.J. Department of

Environmental Protection data. The research, co-authored by Professor John Hasse at Rowan University, is part of an ongoing series of collaborative Rutgers and Rowan studies examining New Jersey's urban growth and land use change since 1986.

Between 2012 and 2015, the residential piece of the development pie dropped dramatically, becoming 40 percent of the urban development footprint. But as the economy began recovering post-2011, more housing units were built on less land, signaling a significant shift toward denser residential development. A trend toward urban redevelopment was also evident in Hudson, Union and Bergen counties.

Here are some of the report's other findings:

- **Sea-level rise:** In some locations, the shoreline in New Jersey retreated more than 1,000 feet in 29 years. By 2050, about one-fifth of the state's salt marshes are highly vulnerable to transitioning to tidal mud flat or open water, or facing greater "drowning" stress. That's about 44,000 acres, or nearly 70 square miles, of salt marshes. If [sea-level](#) rise accelerates as some studies suggest, more salt marshes may be vulnerable.
- **Salt marsh retreat or migration zones:** Some of the expected loss of salt marshes due to erosion and drowning may be balanced by new marshes forming as upland/wetland forests. Abandoned croplands may also become salt marsh. New Jersey has more than 66,000 acres of potential marsh retreat zones, which should be a high priority for conservation to allow salt [marshes](#) to "migrate." That would partly compensate for expected losses from [sea-level rise](#).
- **Pinelands land use:** From 1986 to 2015, land use change and development in the Pinelands occurred at half the rate in the rest of New Jersey. Pinelands development was more compact and consumed less land compared with the state overall and generally

took place in designated growth zones, which typically have the infrastructure to accommodate growth. The slower development rate in conservation zones has maintained most of the rural lands over the decades, giving more time for conservation actions.

More information: Richard G. Lathrop, John E. Hasse. Changing landscapes in the Garden State: land use change in New Jersey 1986 through 2015 (2020)

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Provided by Rutgers University

Citation: Land development in New Jersey continues to slow (2020, September 9) retrieved 11 May 2024 from <https://phys.org/news/2020-09-jersey.html>

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