

# Tracking Parcelization in Forests to Inform Policy and Planning

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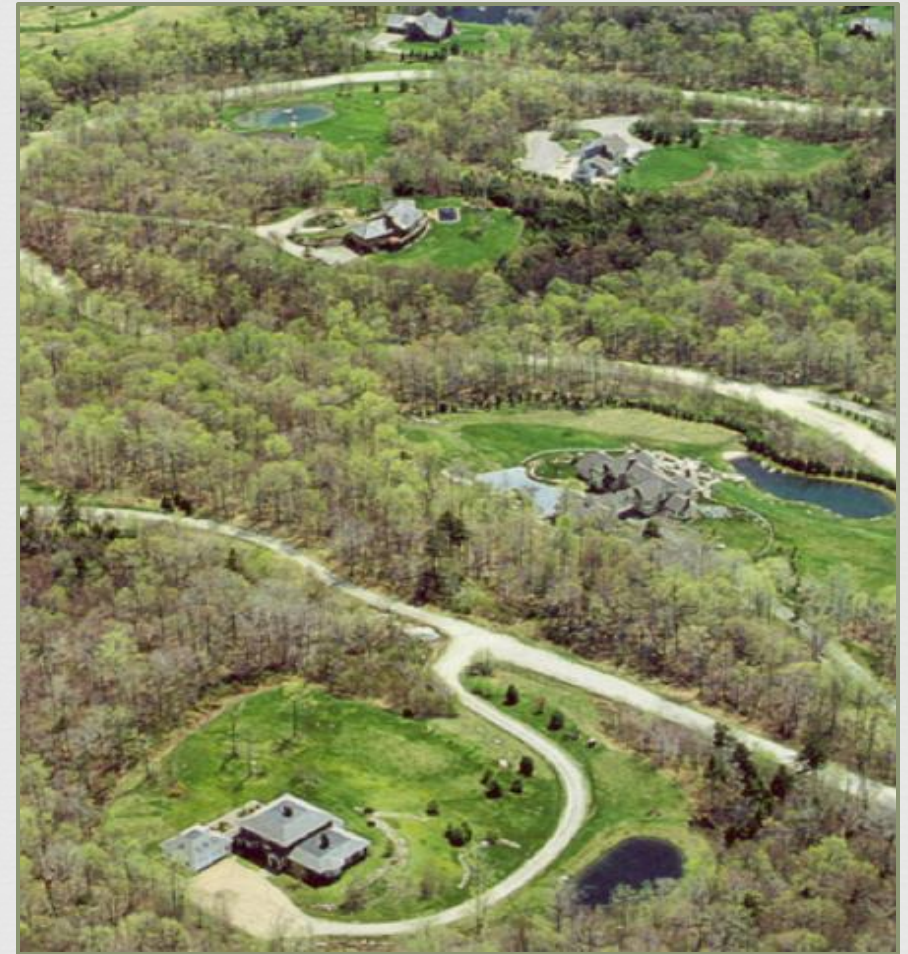


# Parcelization

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The breaking up of land into smaller and smaller parcels, usually through subdivision.

- Increased, potentially disjointed ownership of parent parcel;
- Step toward new development, housing and infrastructure that may fragment natural resources and intact forests depending on how it occurs;
- Less viable tracts for forestry; and
- Potential negative ecological impacts.



A. Blake Gardner



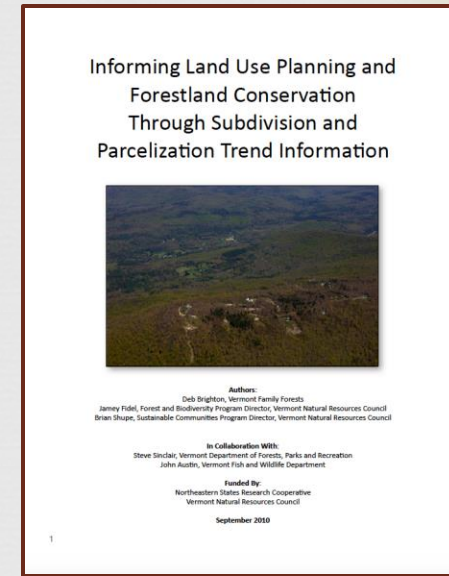
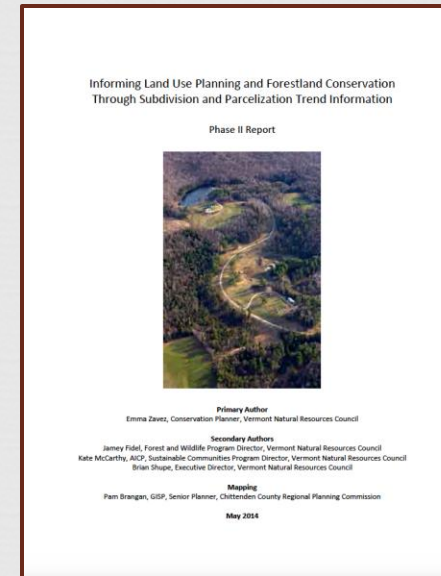
# Background on VNRC Research

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*Phase 1 (2010)*      Statewide parcelization trends based on Grand List data, 2003-2009.

*Phase 2 (2014)*      Subdivisions in 22 case study towns.

*Phase 3 (2018)*      Parcelization trends, 2004-2016  
(state, regional planning commission, county, & town levels).



*Funded by the Forest Ecosystem Monitoring Cooperative, the Northeastern States Research Cooperative (NSRC), a partnership of Northern Forest states (New Hampshire, Vermont, Maine, and New York) in coordination with the USDA Forest Service, and other partners*

# Background on VNRC Research

*Phase 4 (2023)* Updated trends through 2020.  
Examined new data such as property  
transfer tax returns.

This phase was funded by the Forest Ecosystem Monitoring Cooperative and Vermont Natural Resources Council.

Key contributors and partners included:

Jamey Fidel, Deb Brighton, Brian Voigt, Kayla Patel, Mary Perchlik, Vermont Agency of Natural Resources, Vermont Department of Taxes – Division of Property Valuation and Review, Vermont Center for Geographic Information, and Bindu Panikkar and Jarlath O’Neil of the University of Vermont.

## Tracking Parcelization Over Time to Inform Planning and Policy

Phase IV: Executive Summary – By Vermont Natural Resources Council

### Background and Methods

Parcelization, or the breaking up of land into smaller and smaller parcels, typically occurs through subdivision. Parcelization is gaining momentum, and development that often occurs as a result is causing forest cover to decline in Vermont. According to the U.S. Forest Service, up to an estimated 12,469 acres are being converted on an annual basis to development.<sup>1</sup>

Depending on how parcelization and development occurs on the landscape, the following impacts can result:

- Forest fragmentation and land conversion, which can negatively affect plant and animal species, wildlife habitat, water quality, recreational access, and the ability of forests to sequester and store carbon.
- The loss of large ownership and management of forest parcels, which can reduce their productivity and contribution to the working lands economy.
- An increase in the number of parcel owners, which may result in new housing, and infrastructure (roads, septic, utility lines, etc.), which can diminish the economic and ecological viability of forests depending on how it is designed.



A. Blake Gardner

To minimize forest loss and fragmentation, and to promote smart growth housing opportunities, it is necessary to understand where parcelization and subdivision are occurring, and the rate at which they are occurring. This project responded to this need by building a database to examine trends on private land in Vermont by using Grand List (tax) land classification and Use Value Appraisal Program data from 2005 to 2020. In addition, we created a [parcelization website](#) to examine trends at the town, county, regional planning commission, and state level to inform land use planning and state policy.

The key findings in this Executive Summary are based on trends that were calculated from 2005 to 2020, and in some circumstances, 2010 to 2020 to provide a more recent snapshot. This Executive Summary builds on three previous parcelization studies, which can be found on the parcelization website. A glossary of terms can be found in the [Phase III Report](#) of this project.

### Key Findings

- *The number of acres in the “residential” category is increasing, while “farm” and “woodland” acreage is decreasing, with “woodland” parcel acreage decreasing the fastest.*

<sup>1</sup> USDA Forest Service. 2021 Forests of Vermont, 2020. Resource Update FS-227. Madison, WI: U.S. Department of Agriculture, Forest Service. 2p. <https://doi.org/10.2737/FS-RU-337>. It is important to note that an estimated, 3,439 acres of ~~open~~ revert back to forest annually so there some gain in forestland acknowledged in the Forest Service FIA data.

# Private Land Trends

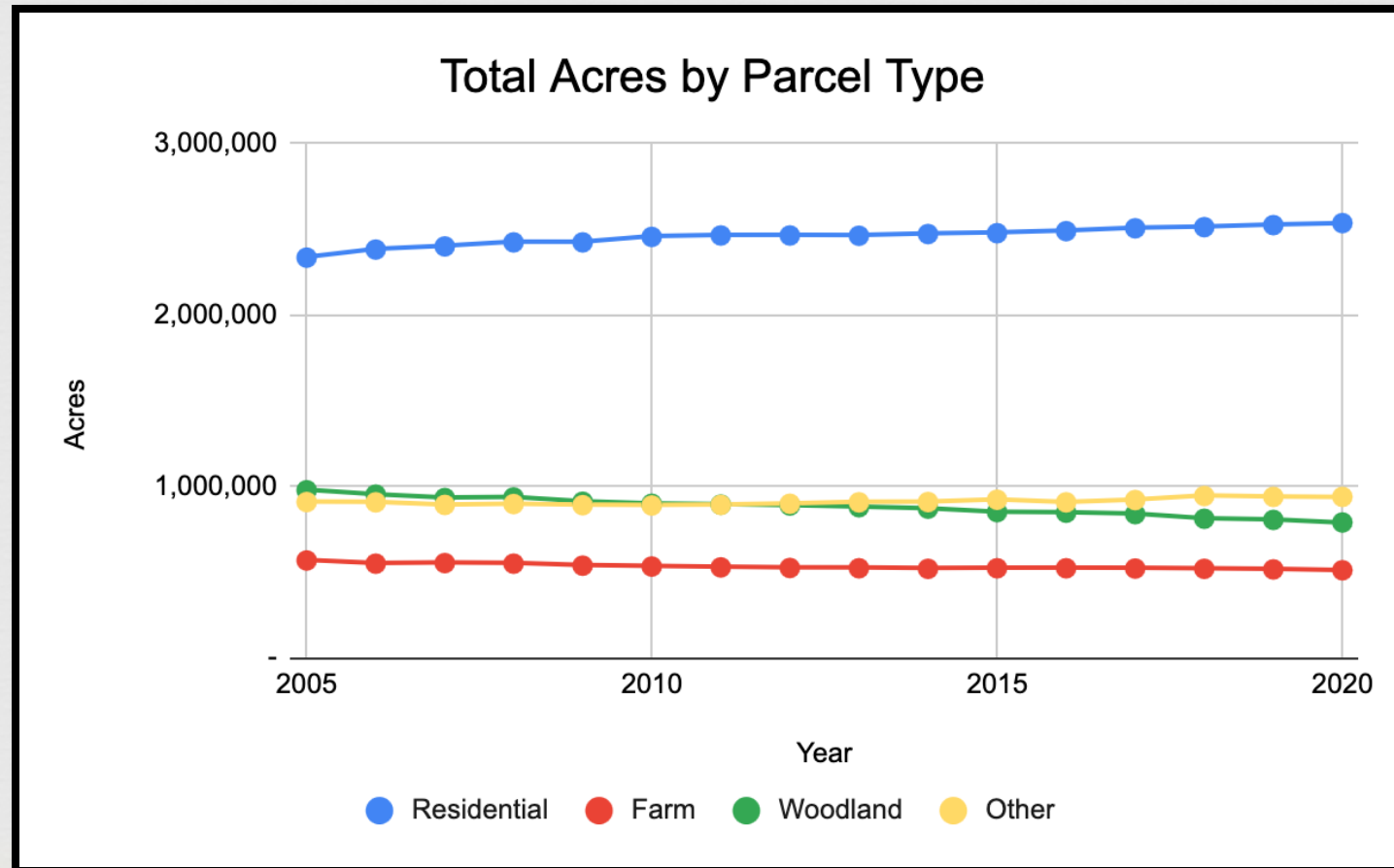
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In 2020, just over 70% of the privately owned acreage in Vermont is still represented in parcels over 50 acres.



# Acres by Parcel Type - Phase 4 - 2020

The number of acres in the “residential” category is increasing, while “farm” and “woodland” acreage is decreasing, with “woodland” acreage decreasing the fastest.



Residential  
increased by  
8.64%



Woodland  
decreased  
by 19.32 %



# Acreage by Parcel Type

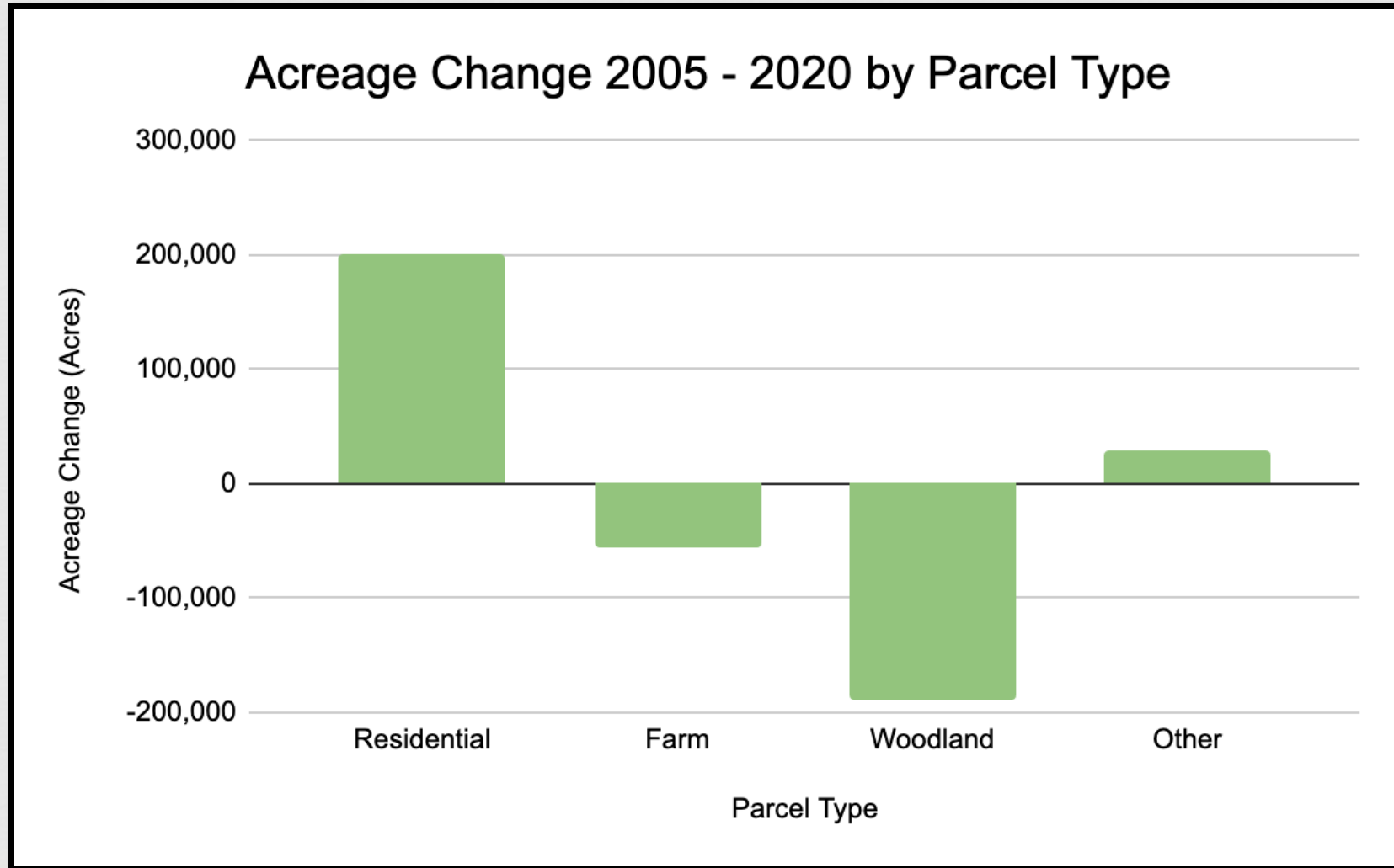
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The number of acres in the “residential” category is increasing, while “farm” and “woodland” acreage is decreasing, with “woodland” acreage decreasing the fastest.

Parcel Type	Acreage Change	2005 Acreage	2020 Acreage	Percent Change
Residential	201,804.56	2,334,333.38	2,536,137.94	8.64
Farm	-55,940.18	566,652.45	510,712.27	-9.87
Woodland	-189,003.18	977,956.97	788,953.79	-19.32
Other	30,020.30	908,674.92	938,695.22	3.30

# VNRC Subdivision Study - Phase 4

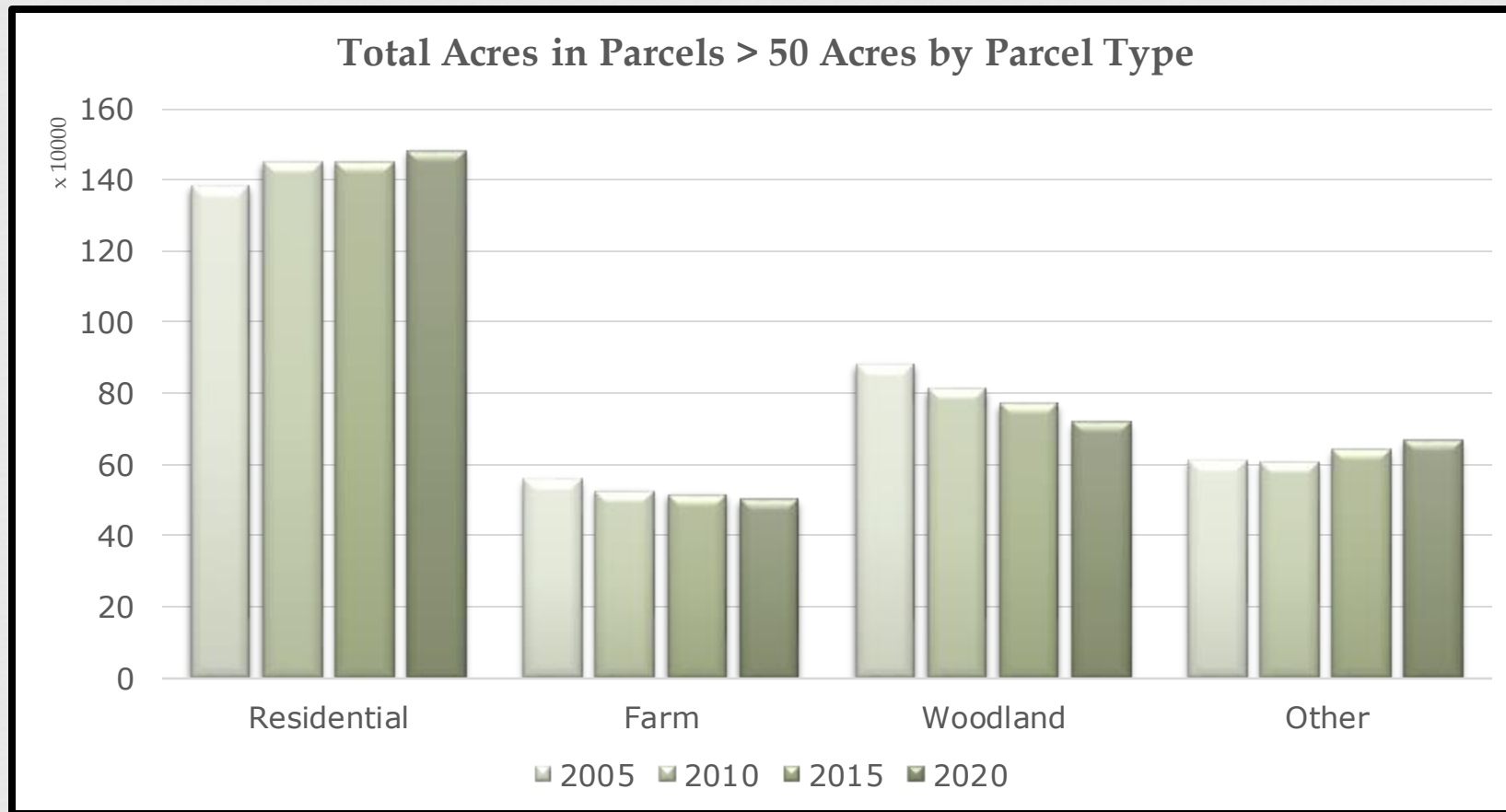
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# Acres by Parcel Type - Large Parcels

The number of acres in the “residential” category is increasing, while “farm” and “woodland” acreage is decreasing, with “woodland” acreage decreasing the fastest.

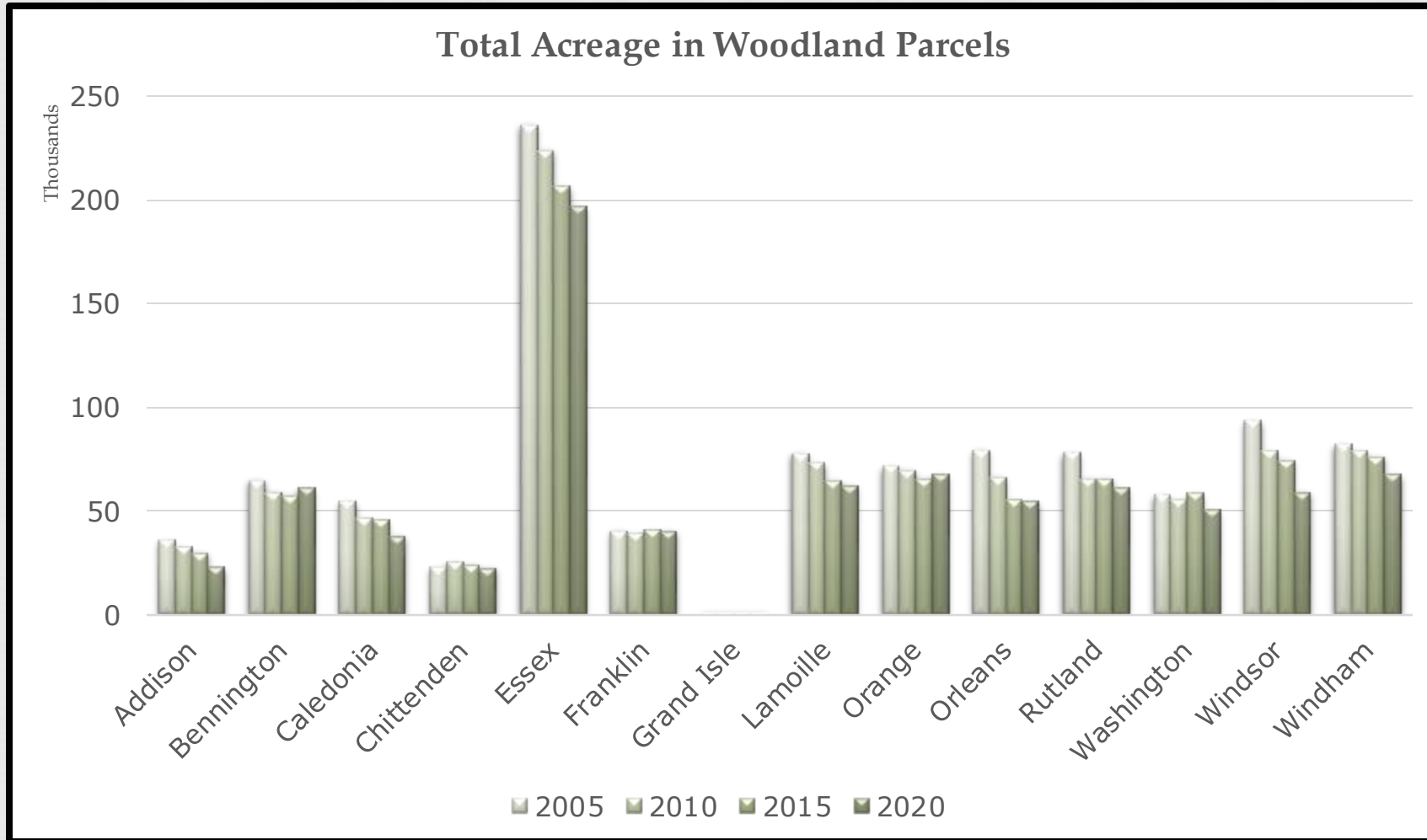


# Acreage by Parcel Type - Large Parcels

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Acreage in 50+ Acre Parcels	Residential	Farm	Woodland	Other
2005	40.29%	16.26%	25.65%	17.80%
2020	43.97%	14.89%	21.37%	19.77%

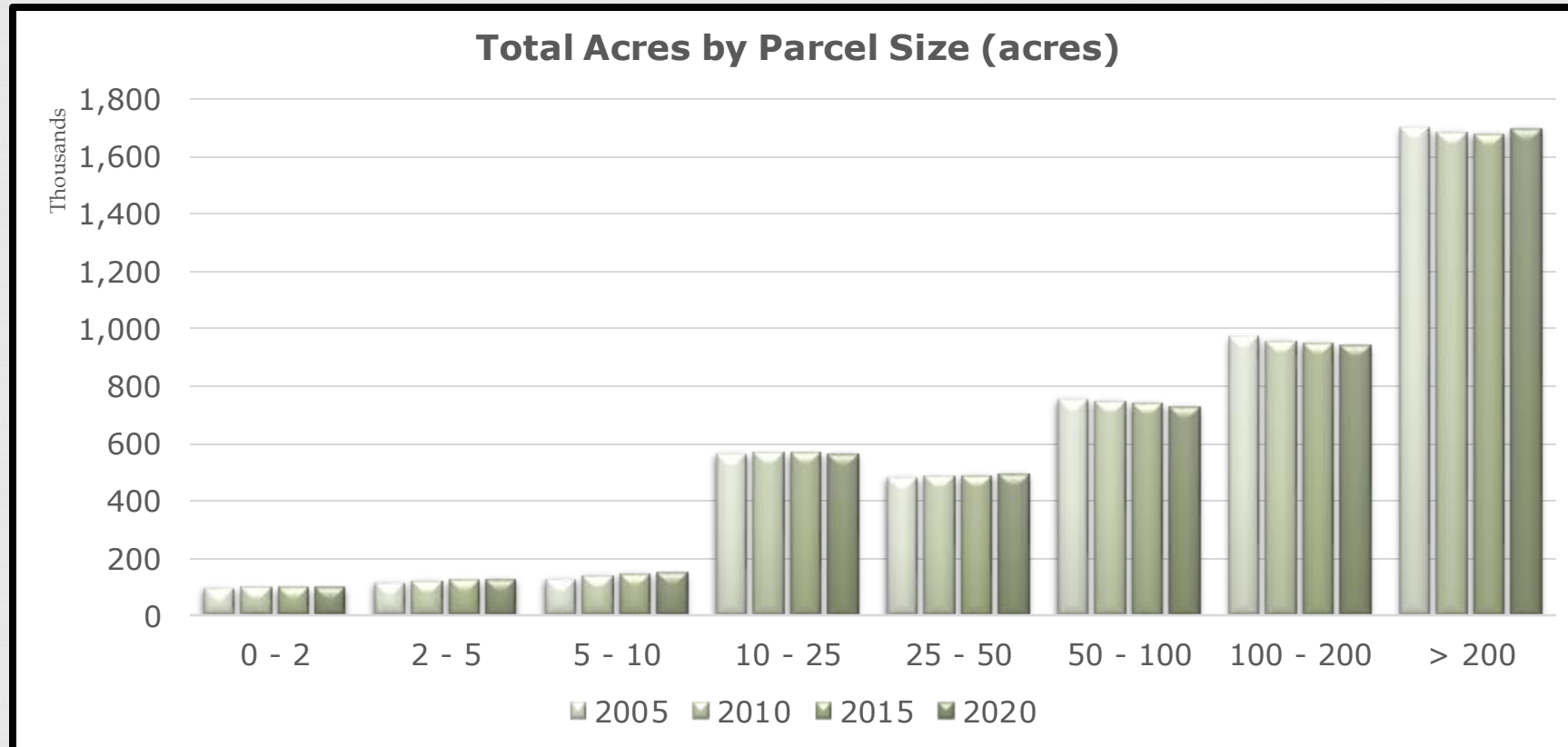
# Acreage by Parcel Type - Woodland





# Acreeage by Parcel Size

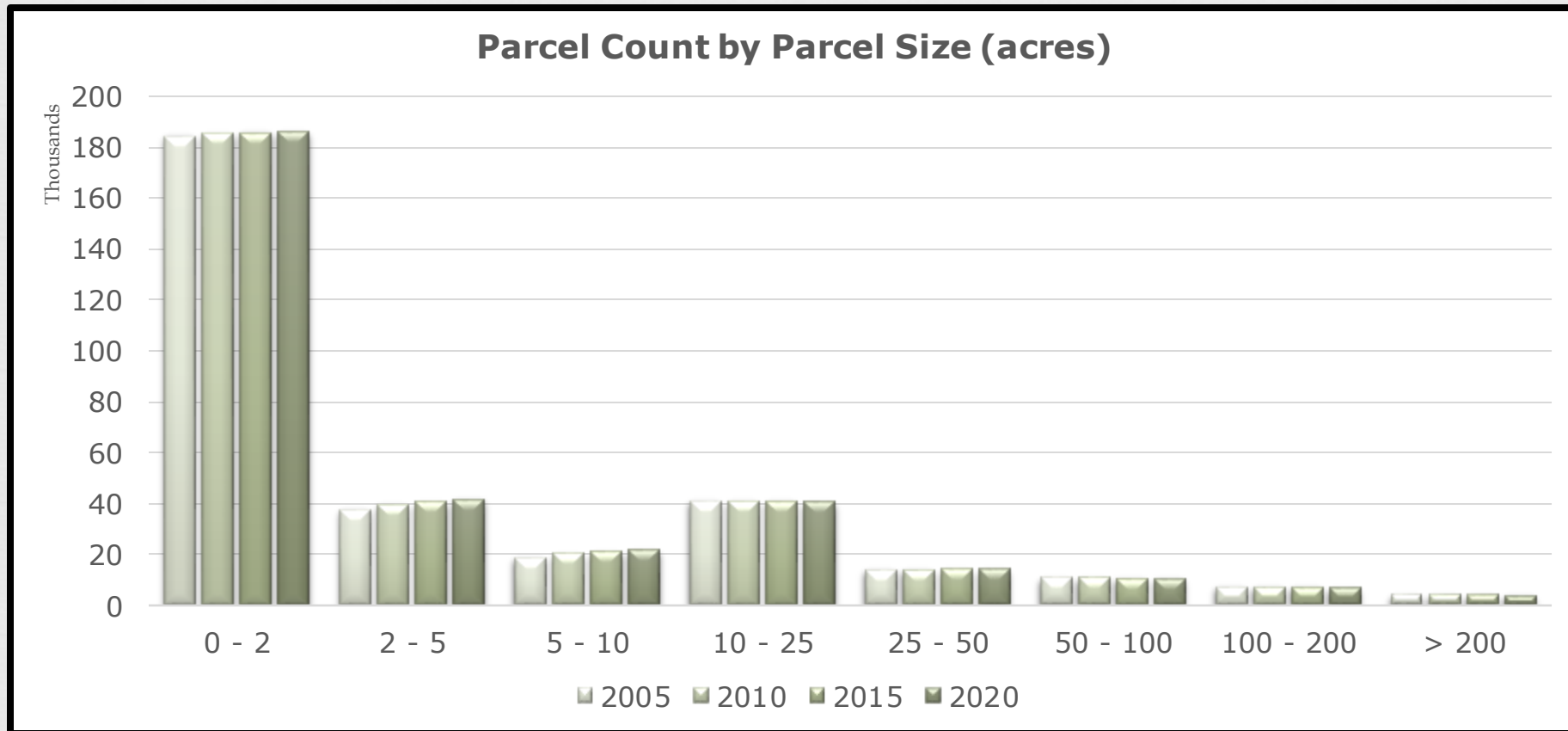
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# Parcel Count by Parcel Size

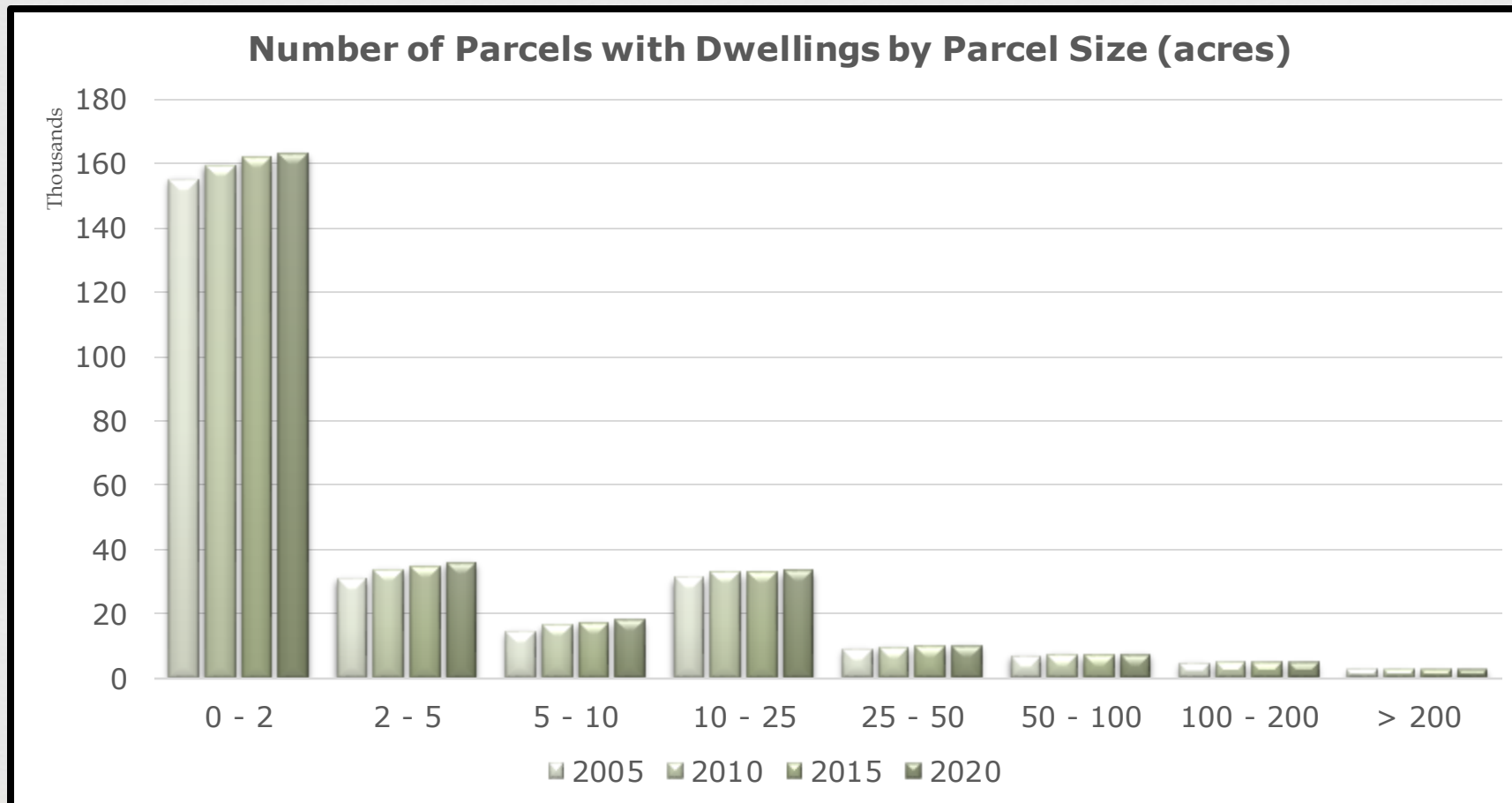
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The number of parcels in the 2-5 and 5-10 acre size categories increased by 11.2% and 16.3% respectively.



# Parcels with Dwellings

Parcels less than 50 acres in size with dwellings increased by 19,612 parcels from 2005 to 2020, which is an increase of 8.2% over the study period.

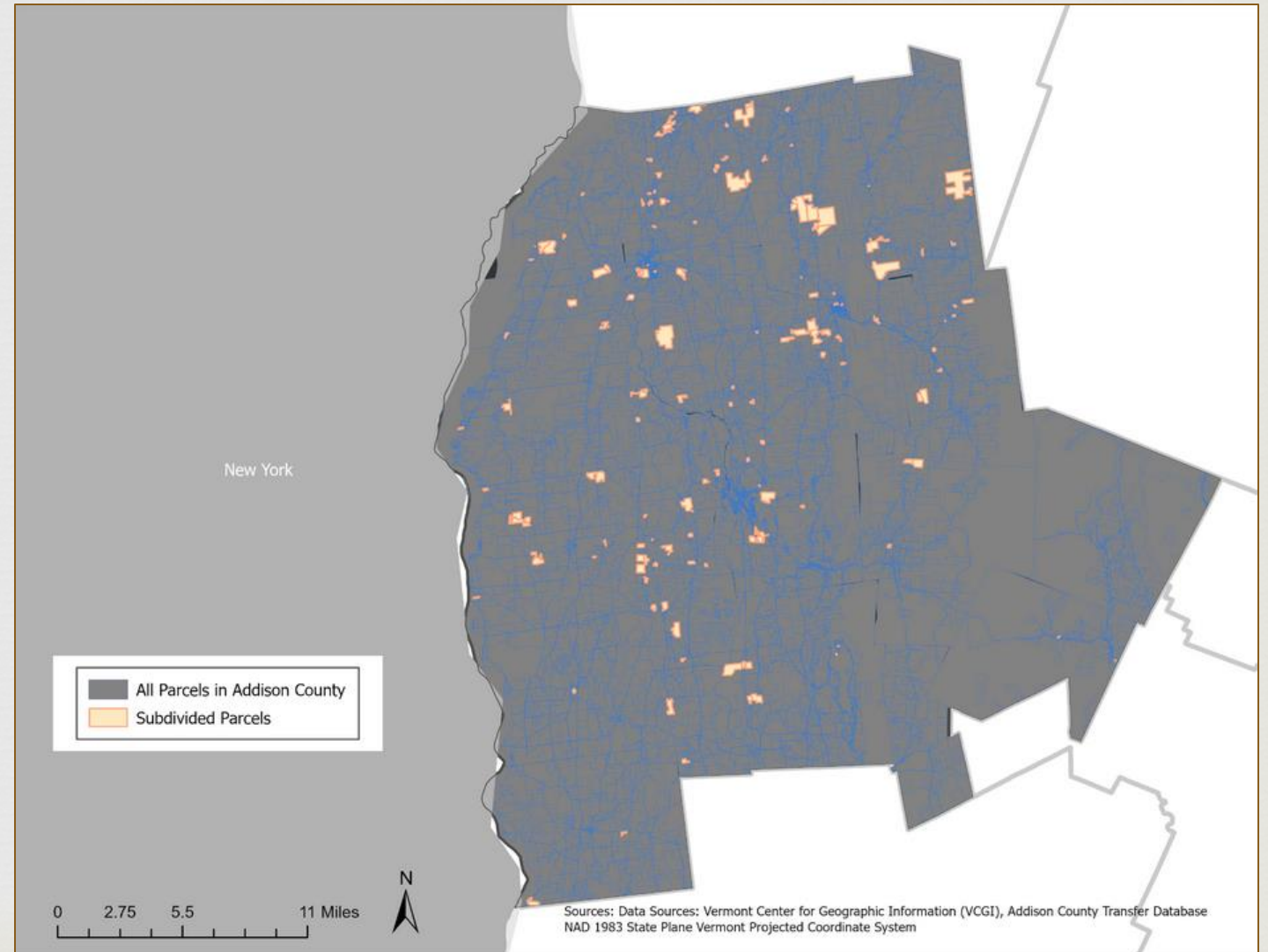




# VNRC Subdivision Study – Phase 4

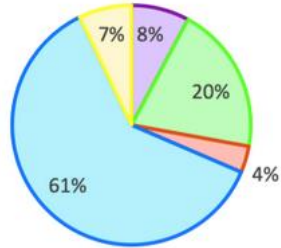
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There are 18,678 Parcels in Addison County and 125 parcels subdivided from 2018 through 2021 (about 0.5% Parcels).



# VNRC Subdivision Study – Phase 4

Parcel Count by Land Use



- Forestland and Conservation/Floodplain
- High Density Residential
- Regional Center with Mixed Res/Com
- Rural and Agriculture
- Village with Mixed Res/Com

Proposed Land Use Designations of Subdivided Parcels in Addison County, VT 2018-2021

Proposed Future Land Use

- Forestland and Conservation/Floodplain
- High Density Residential
- Regional Center with Mixed Res/Com
- Rural and Agriculture
- Village with Mixed Res/Com

Parcel Count by Land Use



- Forestland and Conservation/Floodplain
- High Density Residential
- Regional Center with Mixed Res/Com
- Rural and Agriculture
- Village with Mixed Res/Com

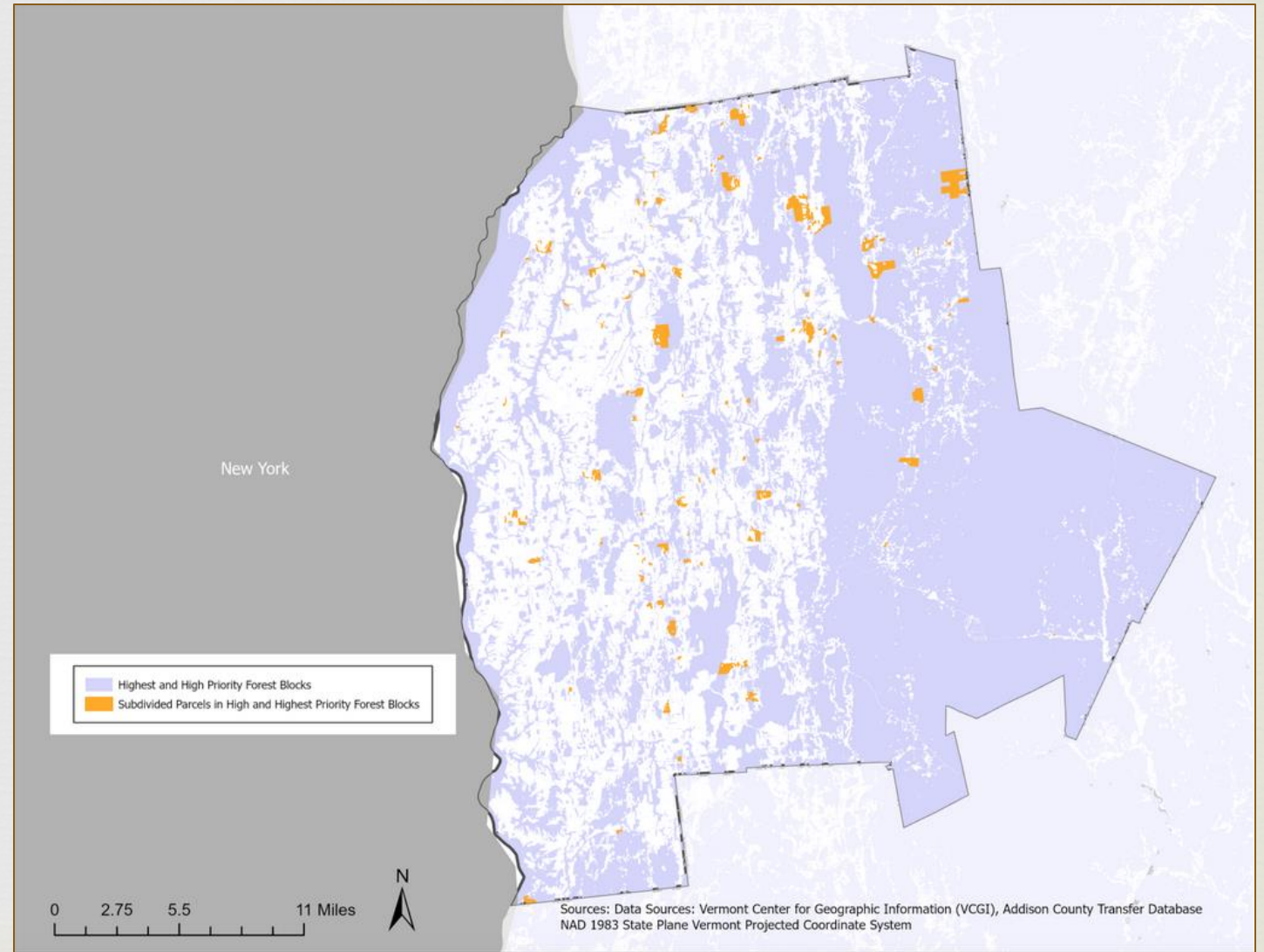
0 2.75 5.5 11 Miles



Sources: Data Sources: Vermont Center for Geographic Information (VCGI), Addison County Transfer Database  
NAD 1983 State Plane Vermont Projected Coordinate System

# VNRC Subdivision Study – Phase 4

This map shows that 114 of 125 subdivided parcels (91%) intersect with areas designated as forest blocks.

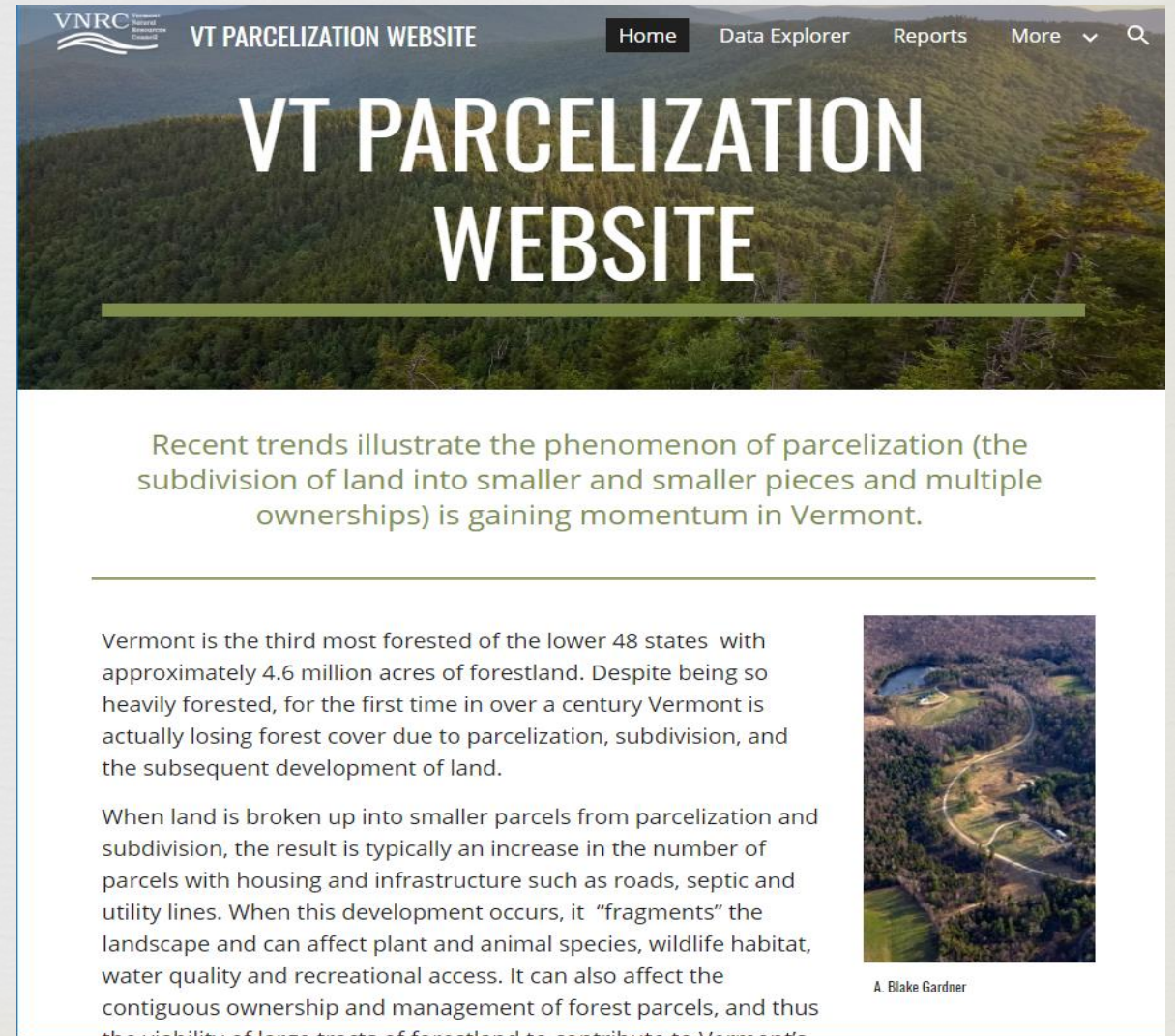




# VNRC Parcelization Website

- To make parcelization data more accessible
- To visualize change spatially.
- To generate geographically-specific reports

Visit <https://vtforettrends.vnrc.org> for interactive data tools, parcelization reports, a glossary of terms, and additional info about this project.



The screenshot shows the homepage of the VNRC VT Parcelization Website. The header includes the VNRC logo, the site title 'VT PARCELIZATION WEBSITE', and navigation links for 'Home', 'Data Explorer', 'Reports', and 'More'. The main heading is 'VT PARCELIZATION WEBSITE' over a background image of a forested hillside. Below the heading is a paragraph: 'Recent trends illustrate the phenomenon of parcelization (the subdivision of land into smaller and smaller pieces and multiple ownerships) is gaining momentum in Vermont.' A horizontal line separates this from the next section. The next section contains a paragraph: 'Vermont is the third most forested of the lower 48 states with approximately 4.6 million acres of forestland. Despite being so heavily forested, for the first time in over a century Vermont is actually losing forest cover due to parcelization, subdivision, and the subsequent development of land.' To the right of this paragraph is an aerial photograph of a golf course with a winding path and a small pond. Below the photograph is the caption 'A. Blake Gardner'. The final paragraph on the page reads: 'When land is broken up into smaller parcels from parcelization and subdivision, the result is typically an increase in the number of parcels with housing and infrastructure such as roads, septic and utility lines. When this development occurs, it "fragments" the landscape and can affect plant and animal species, wildlife habitat, water quality and recreational access. It can also affect the contiguous ownership and management of forest parcels, and thus the viability of large tracts of forestland to contribute to Vermont's

# VNRC Parcelization Website



## EXPLORE CHANGE OVER TIME - BAR GRAPH

### Geography

- 1) TOWN
- 2) COUNTY
- 3) RPC
- 4) STATE

### Town | County | Region

Windham

### Metric

Acreeage in parcels greater than 50 acres by type

### Years

- 2005
- 2018
- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010
- 2009
- 2008
- 2007
- 2006
- 2005

