

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.¹

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

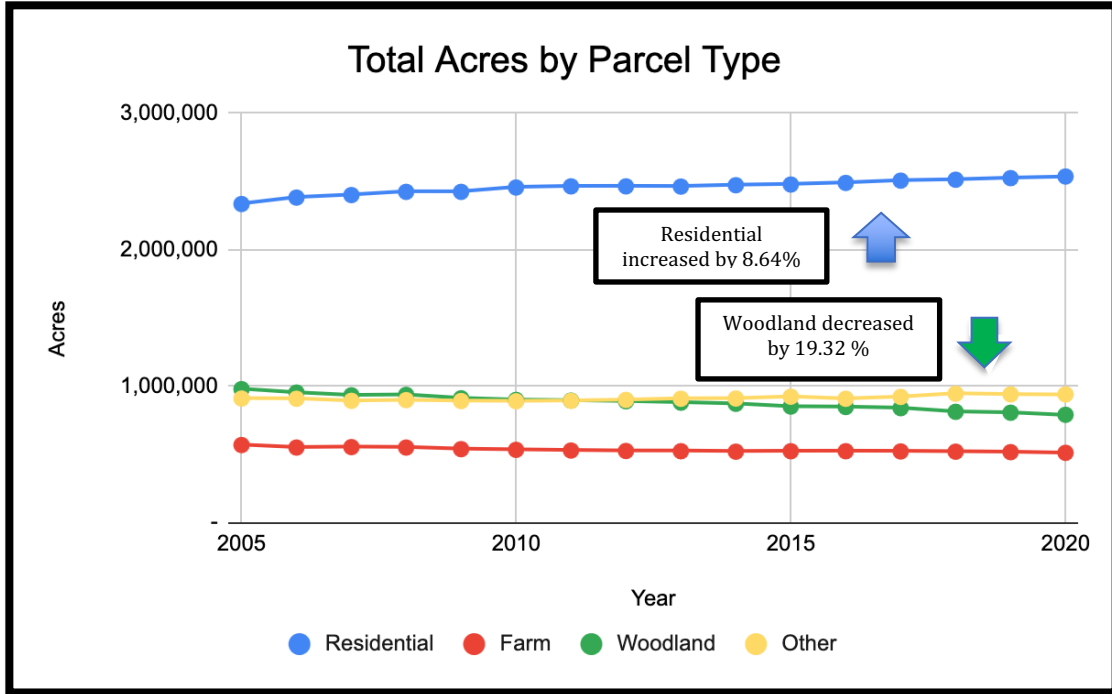
To minimize forest loss and fragmentation, and to promote smart growth housing opportunities, it is necessary to understand where parcelization and subdivision are occurring, and the rate at which they are occurring. This project responded to this need by building a database to examine trends on private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

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 are available in the [Reports Section](#) of the Parcelization Website. A glossary of terms for this Executive Summary can be found in the [Phase III Report](#) at the Parcelization Website.

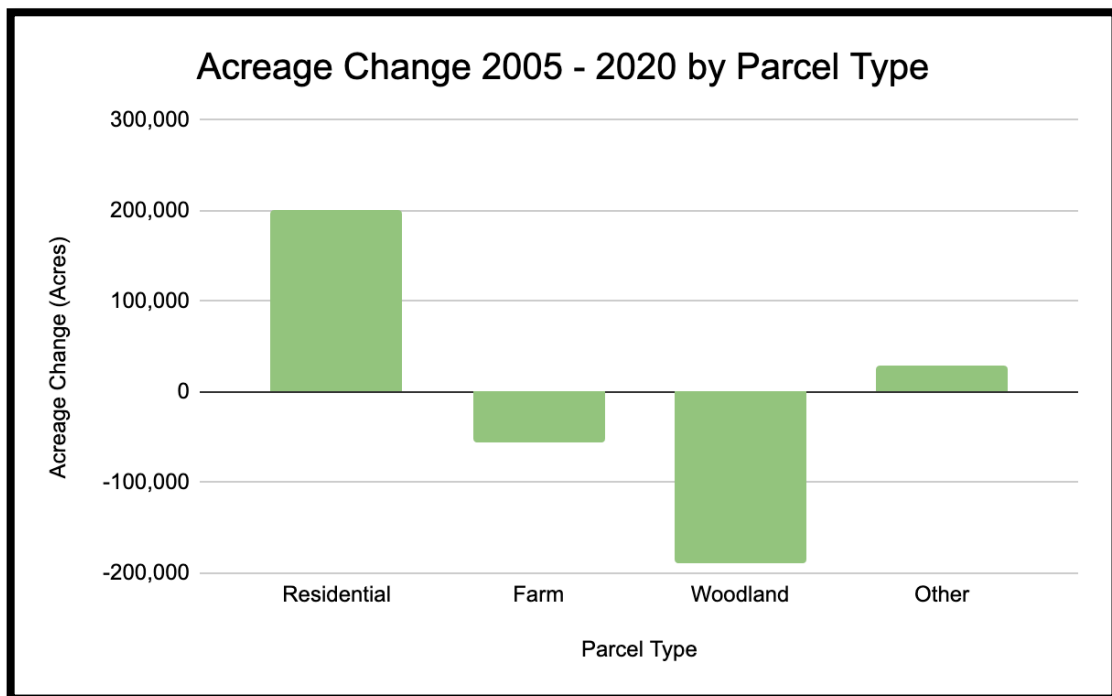
Key Findings

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

¹ 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 nonforest revert back to forest annually so there is some gain in forestland acknowledged in the Forest Service FIA data.



From 2010 to 2020, the amount of land classified as residential increased by 79,201 acres, which is a 3.2% increase over the study period. The amount of land in “woodland” parcels, which is land classified as mostly undeveloped forestland (there may be a seasonal camp), decreased by 108,770 acres, or approximately 12% over this time period (a portion of this was likely due to land shifting to public ownership). Land categorized as farmland decreased by almost 4% over the same period.



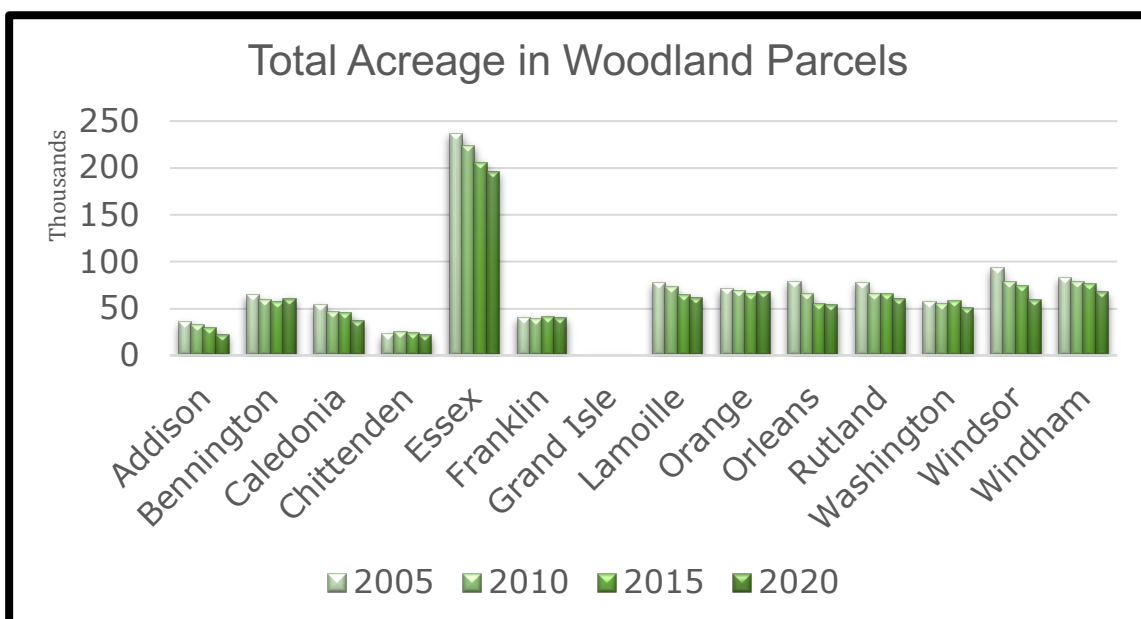
Over a longer trend period, from 2005 to 2020, the amount of land classified as residential increased by 201,805 acres, which represents an 8.6% increase. The amount of land in “woodland” parcels decreased by 189,003 acres, or approximately 19.3% over this period (a portion of this was likely due to land shifting to public ownership), while land categorized as farmland decreased by 9.9%.

It is important to note that when a woodland parcel changes to a residential classification, it does not mean that there is no longer forest present on a parcel. It means that there is likely a house and associated infrastructure on the property, which may cause forest fragmentation, but this study was not able to measure the extent to which there was forest loss from a classification change.

Parcel Type	Acreage Change	2010 Acreage	2020 Acreage	Percent Change
Residential	79,201.46	245,6936.48	253,6137.94	+3.22
Farm	-21,197.98	531,910.25	510,712.27	-3.98
Woodland	-108,770.12	897,723.91	788,953.79	-12.11
Other	49,827.53	88,887.69	938,695.22	+5.60

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

At the county level, certain regions saw significant reductions in the amount of land categorized as woodland acreage. For example, Windsor County, Addison County, Orleans County, and Caledonia County saw 37.0%, 36.8%, 31.4%, and 30.9% reductions in land classified as woodland from 2005 to 2020.



The trends are similar in large parcels greater than 50 acres in size. From 2005 to 2020, the amount of acreage in woodland parcels over 50 acres in size decreased by 18.2% (a portion of this was likely due to land going into public ownership), and the amount of acreage in farmland parcels over 50 acres decreased by 10.1%.

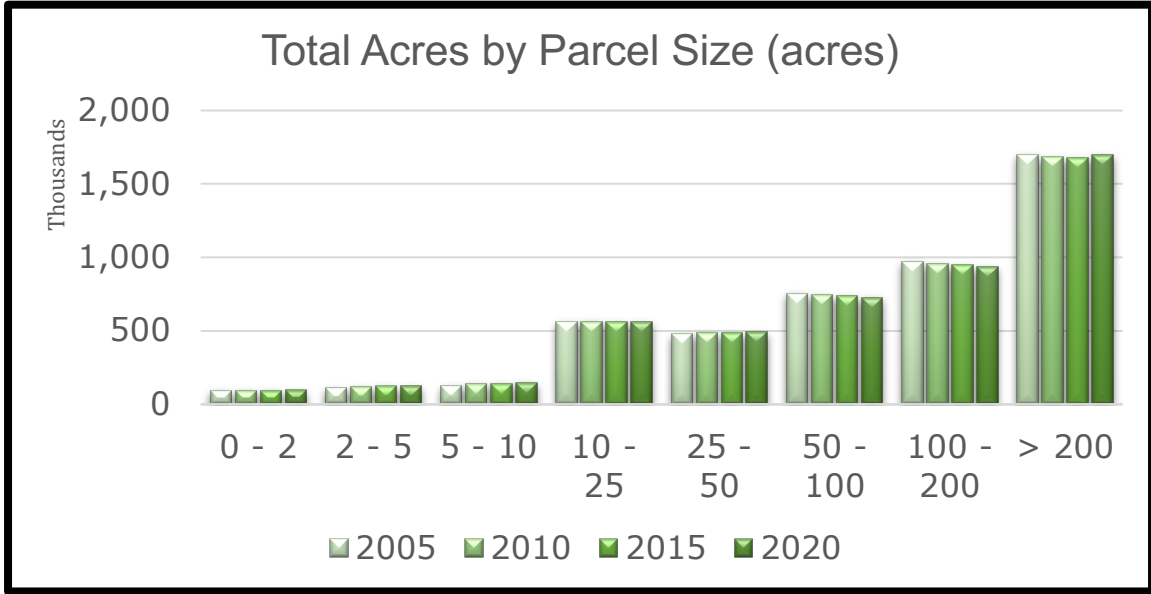


Across the four categories in the Grand List that were compiled for this study, farm and woodland acreage in large parcels over 50 acres in size decreased in overall representation across the state, while residential and the catchall “other” category increased overall.

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%

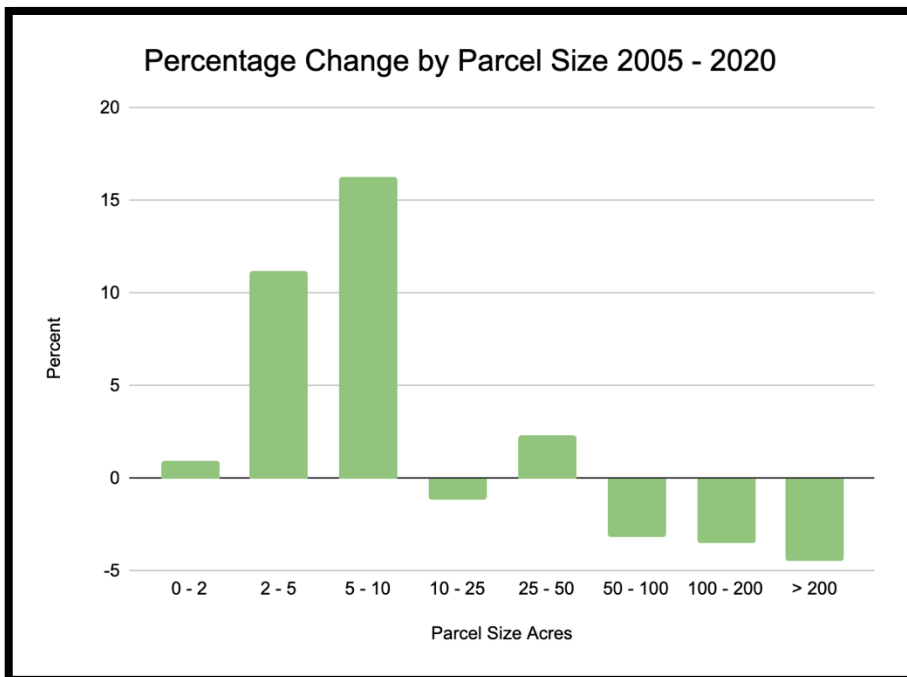
- ***The amount of land in larger parcels is shrinking, while the amount of land in smaller parcels is increasing.***

While the amount of land in large parcels is shrinking due to subdivision, just over 70% of the privately owned acreage in Vermont is still represented in parcels over 50 acres.



Despite a large amount of acreage being represented in large parcels, from 2010 to 2020, the number of parcels 50 acres or larger decreased, as did the amount of land in large parcels. At the same time, the number of parcels under 50 acres, and the amount of land in smaller parcels, increased.

More specifically, the number of parcels in the 2-5 and 5-10 acre size categories, a size often used for “rural residential” house lots, increased by 5.1% and 7.5%, respectively. Longer trends from 2005 to 2020 demonstrate that the number of parcels in the 2-5 and 5-10 acre size categories increased by 11.2% and 16.3% respectively.

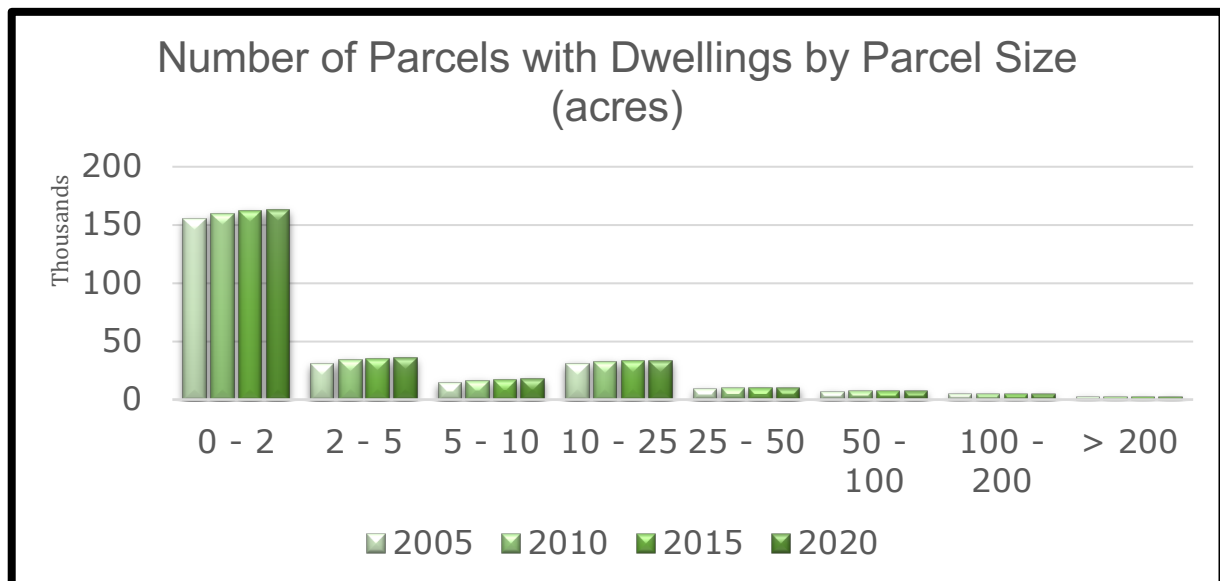


At the county level, almost all counties experienced a decline in the amount of acreage in parcels over 50 acres in size, and certain regions saw significant reductions. For example, Addison and Grand Isle Counties saw 8.3% and 7.6% reductions, respectively, from 2005 to 2020.

County	Change in Acreage in 50 + Acre Parcels	2005 Acreage	2020 Acreage	Percent Change
Addison	-22,906.81	275,225.39	252,318.58	-8.32
Bennington	565.24	187,266.26	187,831.50	+0.30
Caledonia	-2,916.97	251,252.47	248,335.50	-1.16
Chittenden	-4,841.49	158,369.47	153,527.98	-3.05
Essex	-1,247.41	296,743.44	295,496.03	-0.42
Franklin	-4,802.22	289,871.01	285,068.79	-1.65
Grand Isle	-1,895.36	24,916.55	23,021.19	-7.60
Lamoille	-3,377.77	171,142.71	167,764.94	-1.97
Orange	-5,654.57	319,857.13	314,202.56	-1.76
Orleans	-5,765.82	317,456.66	311,690.84	-1.81
Rutland	-6,935.00	331,542.87	324,607.87	-2.09
Washington	-10,396.54	245,213.11	234,816.57	-4.23
Windsor	-3,346.15	291,508.55	288,162.40	-1.14
Windham	10,350.20	335,090.40	345,440.60	3.08

- **Most dwellings are built on smaller parcels compared to larger parcels.**

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. More specifically, the number of parcels with dwellings in the 2-5 and 5-10 acre size categories, a size often used for “rural residential” house lots, increased by 16.1% and 24.2%, respectively.



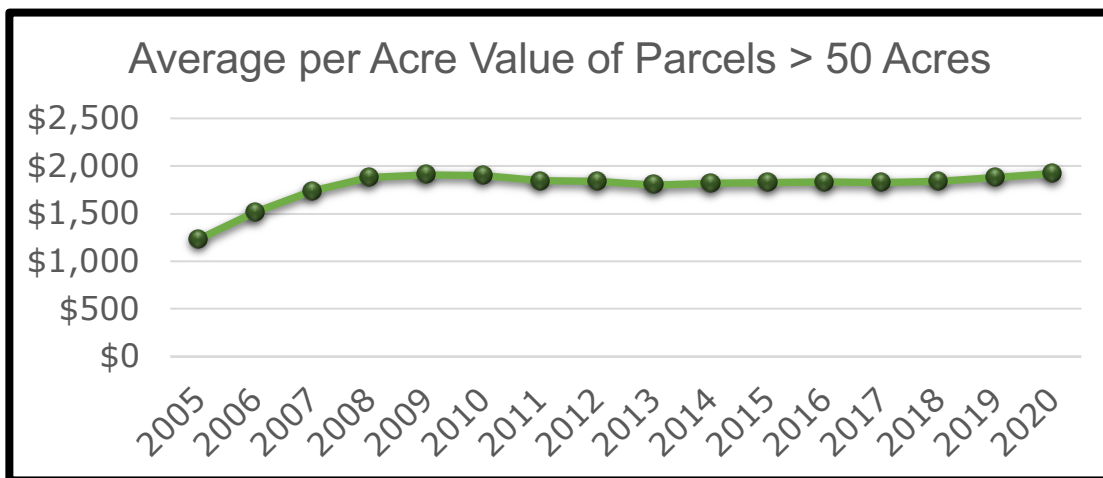
- **The Use Value Appraisal (UVA) Program is playing a role in protecting large woodland parcels.**

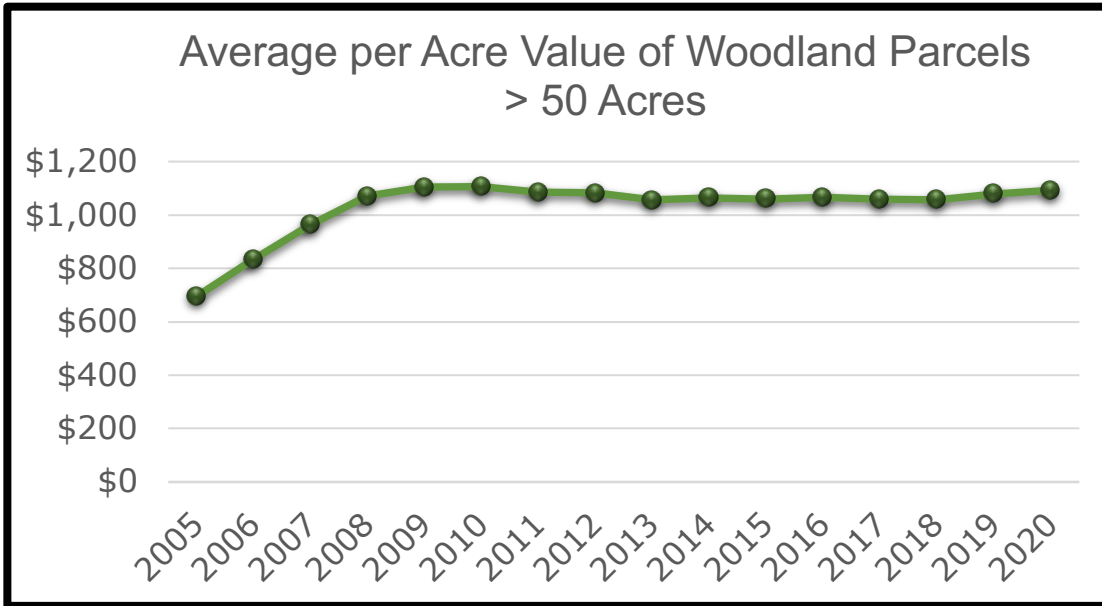
The study found that woodland parcels enrolled in UVA in 2005 were more likely to remain as “woodland” (which means they were not developed) in 2020, compared to woodland that was not enrolled in the UVA Program. For example, of the woodland in parcels over 50 acres, 71% of the acres in parcels that were enrolled in the UVA Program remained in woodland. By contrast, only 60% of woodland acres in parcels that were not enrolled in UVA remained in the woodland category, and only 54% of the available parcels remained in the woodland category.

- **Land values for large parcels continue to rise.**

During the study period, land values continued to rise on parcels greater than 50 acres in size. This was true for parcels classified as woodland as well. However, the rise in value was less for larger parcels than it was for smaller land parcels. In the most recent five years, between 2016 and 2020, the average value of a woodland parcel 50 acres or larger increased by only 2%, while woodland parcels with 10 acres or fewer increased by 7%. An increased value for small lots means it may be lucrative for forestland owners to subdivide their land versus keeping it intact.

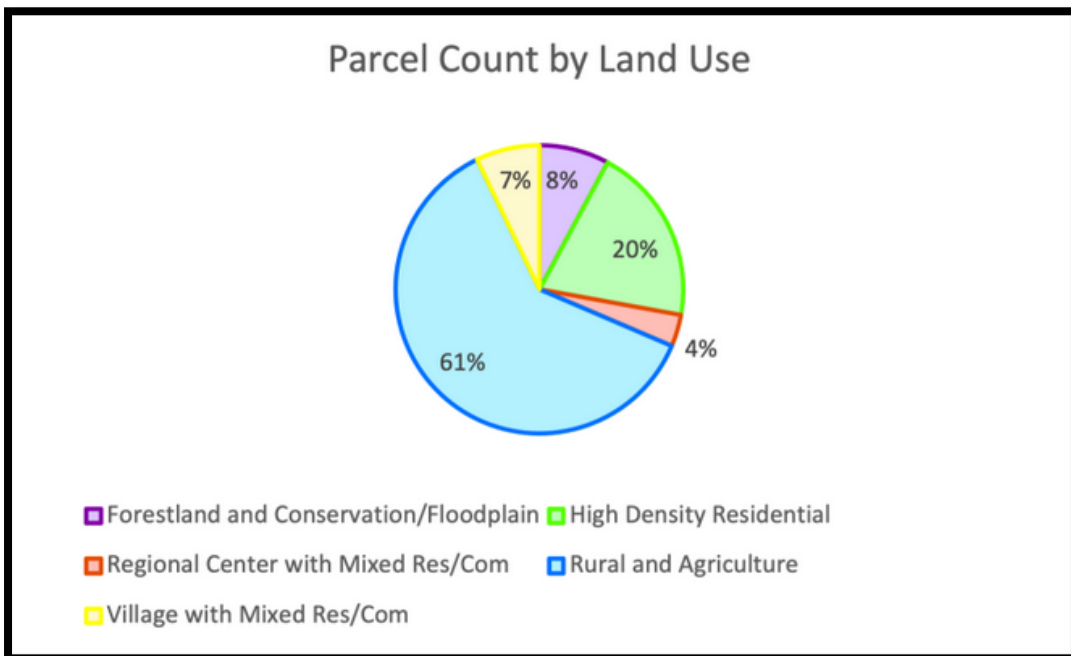
The land values calculated below represent an average per acre value of the parcels over 50 acres in size that were examined, versus the average value of all the acres. For example, if there was a 200-acre parcel valued at \$1000/acre and a 50-acre parcel valued at \$2000/acre, the average value per acre of the parcels would be the average of \$1,000 and \$2,000 = \$1,500/acre. (While the average value of the acres would be \$1,100).



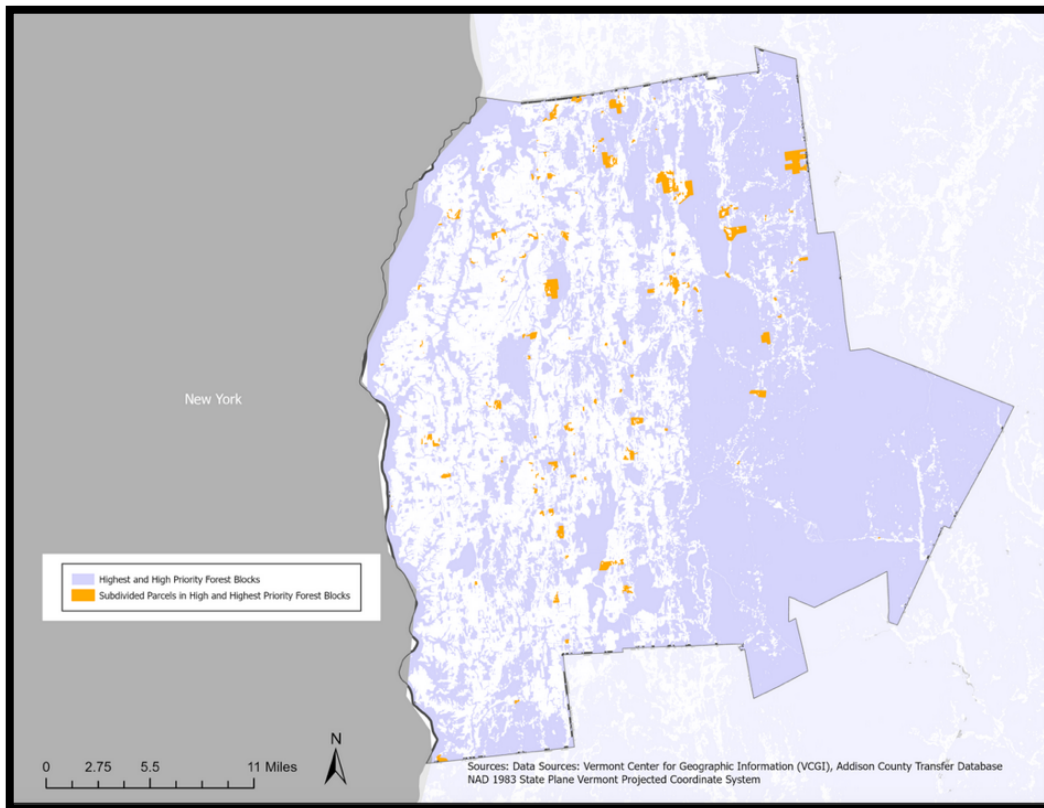


- ***Spatial examination using Property Transfer Tax data suggests subdivisions are occurring in intact forest blocks and rural or natural resource land use areas.***

Understanding where parcel subdivisions are occurring can help inform housing and conservation policy in Vermont. This project conducted a GIS spatial analysis in Addison County as a case study utilizing Vermont Property Transfer Tax data from 2018-2021. Of the 125 subdivisions that occurred during this time period, a majority of them (68%) were located in rural or natural resource-oriented land use areas in municipal plans as compiled in the Addison County Regional Plan’s Future Land Use Map.



Furthermore, 91% of the subdivided parcels in Addison County intersected with intact forest blocks as delineated by the Vermont Agency of Natural Resources. Of these parcels, at least 43% were partially located within the highest ranking priority blocks, highlighting the increasing challenge of maintaining overall forest integrity as subdivision occurs.



Conclusion:

As would be expected, as subdivision occurs in Vermont, smaller parcels are created, and the amount of land represented in larger parcel sizes declines. Since the greatest growth occurred in parcels that were in the 2-5 and 5-10 acre size range, this suggests subdivision is happening in rural residential districts that have minimum lot sizes in this range.

While just over 70% of the acreage in Vermont is still represented in parcels over 50 acres, from 2005 to 2020, the amount of acreage in large parcels declined across the state, and this correlated with a significant reduction in the amount of land classified as woodland. The majority of the loss of woodland was due to parcels shifting to the residential category in the Grand List, although some land transferred to public ownership preserving the integrity of undeveloped forestland. Land values continued to rise over the study period, especially for smaller parcels. This study highlights that the Current Use Program is effective in maintaining undeveloped forestland, underscoring the importance of supporting landowners' ability to maintain woodland as land values continue to rise.

Moving forward, as smaller parcels are created with dwellings, whether full time or seasonal, it is important to understand where housing is being located, and whether development is happening in smart growth locations to meet increasing demand for housing in Vermont, or rural areas, such as intact forest blocks, leading to increasing land fragmentation. Vermont Natural Resources Council is currently working with partners in the state to develop effective tools to spatially examine where subdivision is happening to assist land use planning and state policy. A case study in Addison County suggests using property transfer tax return data shows promise as a tool to examine spatial trends.

Key Recommendations

Recommendations for state policy and investments

- Support diversified strategies to reduce the pressures on landowners to subdivide land.
- Boost investment in land conservation and landowner incentives for conservation easements.
- Support statewide efforts to conserve 30% of Vermont's land by 2030, and 50% by 2050.
- Increase support to woodland landowners for succession planning to minimize the subdivision of land.
- Continue to support working forests by funding the Current Use Program and the administration of new forestland enrollment.
- Provide full statutory funding for the Vermont Housing and Conservation Board (VHCB), and adequate funding for the Working Lands Enterprise Initiative.
- Support outreach efforts and public policy to encourage the aggregation of land for conservation purposes.
- Support incentives and policies to encourage housing in smart growth locations.
- Modernize Act 250 to support housing development in smart growth locations, while strengthening it to play a more meaningful role in reviewing the impacts of development on forestland.
- Support funding to develop water and sewer infrastructure in smart growth locations.

Recommendations for local actions

- Strengthen policies to reduce forest fragmentation in municipalities that have zoning and subdivision regulations, with a particular focus on reducing fragmentation in conservation and rural residential districts.
- Support the adoption of subdivision regulations in municipalities that do not have land use regulations to minimize the fragmenting impacts of subdivision on forestland.
- Encourage the establishment of municipal conservation funds to leverage state and federal dollars to conserve forest land and create/expand town forests.

Data and process recommendations

- Support local listers and trainings in order to ensure data quality and consistency across municipalities.
- Standardize approaches to parcel data collection and improve the connection of the Grand List to land use parcelization trends, land transfer data, and GIS parcel data to examine spatial trends.

General recommendations

- Maintain a publicly accessible database of all public lands, as well as conserved lands.
- Promote the use of parcelization data for planning, outreach, technical assistance, and investment.
- Utilize digital parcel maps, future LIDAR and other remote sensing data, and available modeling to better understand the relationships between subdivision and development.

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



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Jamey Fidel, Kayla Patel, and Mary Perchlik, Vermont Natural Resources Council
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John Adams, Vermont Center for Geographic Information
Bindu Panikkar and Jarlath O'Neil, University of Vermont

Please contact Jamey Fidel jfidel@vnrc.org for more information.

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