



VERMONT FOREST FUTURE STRATEGIC ROADMAP

REPORT 1 - CURRENT CONDITIONS

BACKGROUND RESEARCH AND
STAKEHOLDER PERSPECTIVE

MAY 2023





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Report 1 – Current Conditions, outlines the summary results from a review of existing research, and insights from a series of initial stakeholder engagements including industry roundtables, survey and Advisory Panel discussions and interviews.

This is the first report in the Vermont Future Forest Strategic Roadmap planning process. This report summarizes previous research work and explores stakeholder perceptions of the future drawn from the engagement sessions. This helps understand the current industry context and sets the framework for subsequent planning steps.

This report has been prepared by the project consultant, Future iQ to summarize the initial stakeholder engagements held between November 2022 and March 2023.

Full details of these sessions and the associated data analysis are available on the project portal:

lab2.future-iq.com/vermont-forest-future



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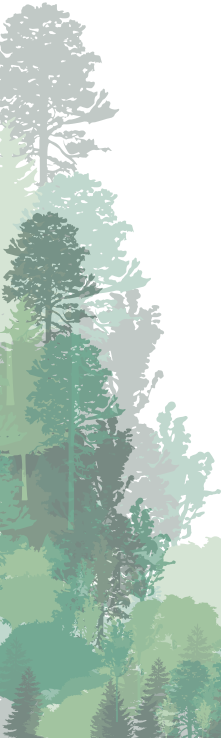
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This report is part of the Vermont Future Forest Strategic Roadmap planning process. It has been prepared by the project consultant, Future iQ to analyze relevant research studies, and summarize the initial stakeholder engagements held between November 2022 and March 2023.

HIGHLIGHTS – REPORT 1 – CURRENT CONDITIONS



SOLID FOUNDATION OF INDUSTRY RESEARCH

The research scan shows a solid foundation of technical research that has clearly documented the challenges facing the forest industry, and what are the key future drivers. This research has resulted in some significant progress on some topics. The Vermont Future Forest Strategic Roadmap provides an opportunity to build on this work and create a focused and aligned roadmap to ‘move the needle’ on some of the key opportunities and challenges.



HIGH LEVEL OF STAKEHOLDER ENGAGEMENT

Stakeholder engagement has been substantial in these early stages of the process. Over 650 people participated in the survey and nearly 100 people attended the Industry Roundtables. This level of interest and engagement offers the promise of building a truly stakeholder driven roadmap.



SIGNIFICANT AREAS OF OPTIMISM AND CHALLENGE

In the initial engagement work, there were areas of significant opportunity and challenges identified. For many people, the traditional forest products sector faces a ‘fork in the road’, where it can either reinvent and find new prosperity, or it declines in the face of insurmountable economic, market and workforce challenges. There are also emerging areas such as recreation and novel forest products and uses, that are offering great promise, but need to scale up to make a sustained economic impact.



IDENTIFIED KEY CONTEXTUAL CHALLENGES

The initial engagement and research work has identified a series of key contextual challenges, which will be the focus of further discussion in the roadmap development. These challenges get to the heart of the strategic positioning of the forest economy within the context ecosystems, industry and society.

This report summarizes survey data that can be found in full on the project portal at:

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1.0 | INTRODUCTION

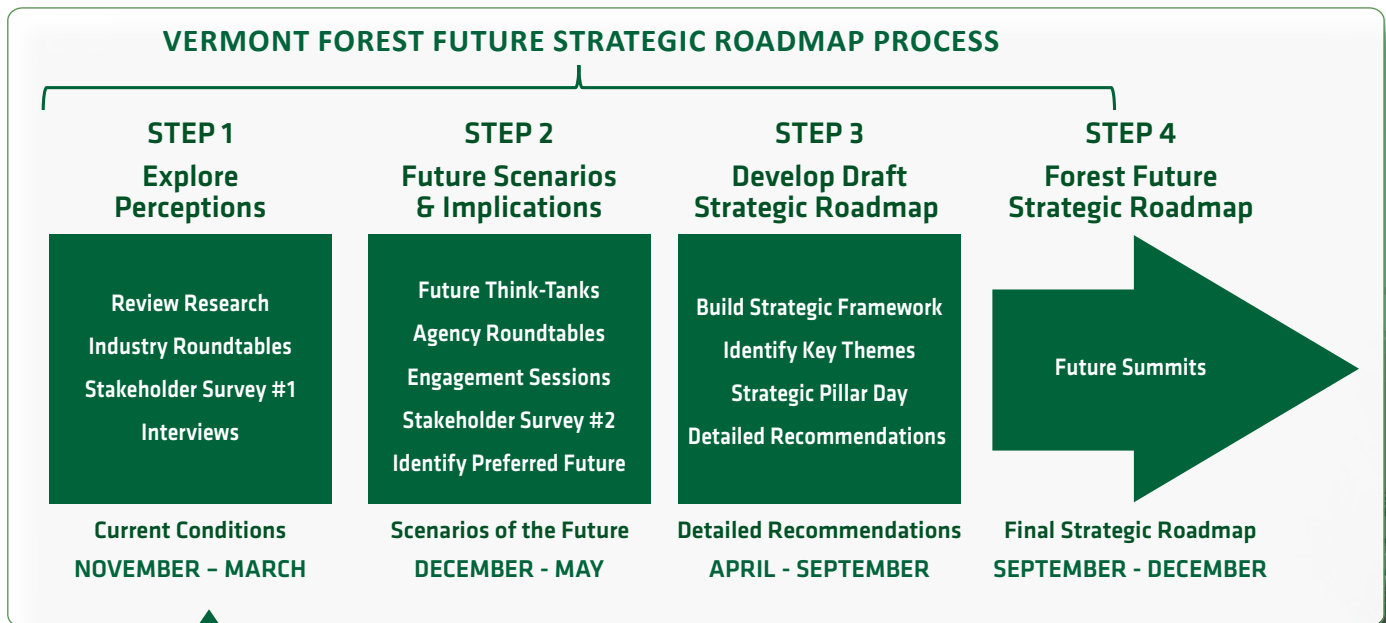
This is first report in the Vermont Future Forest Strategic Roadmap planning process.

This report explores perceptions of the future, drawn from the initial engagement sessions and stakeholder survey. It also includes the summary results from a review of existing research. This helps stakeholders to understand the current industry context and sets the framework for subsequent planning steps.

VERMONT FUTURE FOREST STRATEGIC ROADMAP

The overall goal of the Vermont Forest Future Strategic Roadmap project is to evaluate the current state of Vermont’s forest economy and to identify the opportunities to strengthen, modernize, promote, and protect the forest economy into the future. This planning process is engaging users of Vermont’s forests in a robust public engagement process and will develop a 10-year plan of recommended actionable strategies to protect the long-term viability of forest-based businesses via the Vermont Forest Future Strategic Roadmap.

Vermont’s forest economy provides more than 13,000 jobs, more than \$2 billion in direct economic output, and supports the growing outdoor recreational and tourism sectors. The relationship between the forest economy and Vermont’s forest landscape is a balancing act of benefits and costs. Vermont’s forest economy relies on access to forestlands, while forest landowners rely on the support and benefits of a vibrant forest economy to maintain intact forestland.



THIS REPORT

2.0 | BACKGROUND RESEARCH SCAN – OVERVIEW

The research overview indicates that Vermonters have a strong grasp on their forests. It shows that key stakeholders understand the entirety of industries involved and their importance to the state economy.

The background research scan reviewed over 30 current and recent reports and focused on approximately 10 particularly important studies.

Each of the examined strategic areas (forest landscape and management, wood harvesting and processing, wood products and markets; and workforce and investment) all play a critical role and are interconnected.

- The **forest landscape and management** area is supported by a strong background of data highlighting the changes to the forest over the past twenty years. Some of these changes include land ownership trends, climate change challenges, and opportunities to improve upon policies (i.e. Current Use) to help encourage better management of intact forestland.
- The **wood harvesting and processing** area has been visibly impacted by market changes impacting numerous industries (i.e. the closure of papermills) over the past 20 years. Wood harvesting and processing is dependent on numerous large-scale markets, such as housing/construction, which presents great opportunities during market expansions but leave significant exposure during market contractions. This may be one strategic area where the adoption of industry 4.0 technology will have a significant impact on the future.
- The **wood products and markets** area is similar in that many wood products are used by large national economic drivers like housing. However, changing social patterns and consumer preferences play a role in this sector. The importance of matching consumer preferences to wood products is a noted distinction. One primary challenge to this market is the sensitivity in this space to changing geo-political conditions which impact Vermont's ability to sell products overseas. However, this sector may be best situated in terms of supporting diversified uses of wood products moving forward to include new composites and chemicals derived from wood that can be used in new products.
- The **forest industry workforce** data on trends has been very consistent over the past twenty years. An aging workforce coupled with a slow trickle of entrants into the field suggests this may be the biggest long-term challenge for this forest economy. The buildout and investment of industry 4.0 technology will assist in reducing workforce needs, however, strong competition for workers with different skillsets will be the standard for the foreseeable future. The state has identified this issue and is working to address it.

Overall, there is a range of good data and research to inform movement going forward. Information is often corroborated between research reports which indicates that the issues are verifiable and impact across strategic areas. However, this also may indicate that some issues are not being addressed in a way that begins to change what the research is finding. Some issues have been noted and are currently being addressed by the State, but some do not appear to have any noted lead or accountable entities connected to them, which provides an opportunity for the Strategic Roadmap work.



2.1 | FOREST LANDSCAPE AND MANAGEMENT

Impacts from climate change are going to play a larger and larger role in forest management and will impact overall health and wellbeing of these important forest natural resources.

Vermont's forest and landscape management practices have a noted history in preserving biodiversity, mitigating climate change impacts, sustaining local economies, and addressing competing land use demands¹.

Vermont, like many regions globally, is experiencing the repercussions of climate change. Rising temperatures, erratic precipitation patterns, and increased frequency of extreme weather events pose challenges to the state's forests. Climate change disrupts ecological processes, alters species composition, and intensifies forest pests and diseases. Sustainable forest management prioritizes adaptive strategies that enhance forest resilience, such as promoting diverse species composition, fostering natural regeneration, and reducing vulnerability to disturbances.

The background research scan shows that:

- Vermont's forests provide invaluable ecosystem services that contribute to the well-being of both nature and the communities around it².
- Sustainable forest management practices emphasize the preservation of biodiversity, maintenance of water quality, carbon sequestration, and the provision of recreational opportunities. Implementing sustainable forestry practices, such as selective harvesting, ensuring responsible logging, and protecting sensitive areas, have been noted goals for the balanced use of forest resources while preserving their long-term ecological integrity³.
- Previous data indicates that Vermont faces increasing competition for land use, driven by a variety of factors including residential development, agriculture, energy infrastructure, recreational demands, and forestland ownership fractionalization. The number of landowners is increasing, the size of the parcels is decreasing, and the age of the owners is increasing⁴. This fractionalization presently causes challenges but may continue to be inflamed as land is handed down from one generation to the next.
- Balancing competing land use demands with forest preservation and sustainable management requires thoughtful planning and collaboration among all stakeholders. Encouraging smart growth strategies, promoting land conservation initiatives, and establishing comprehensive land-use policies have been noted to help mitigate conflicts and ensure the sustainable utilization of limited land resources⁵.

The sum of much of the research indicates that effective forest and landscape management necessitates collaboration among diverse stakeholders, including government agencies, landowners, conservation organizations, and local communities. Engaging stakeholders in decision-making processes fosters shared responsibility and encourages the development of innovative solutions. The Current Use Program has incentivized better forest management and continues to be a critical legislative component to better management practices⁶.



1. USDA: Vermont Forests (2017)
2. Vermont's Return on Investment in Land Conservation (2018)
3. Vermont Climate Action Plan (2021)
4. Forests of Vermont and New Hampshire (2012)
5. Vermont Forest Action Plan (2017)
6. Yellow Wood: Focus Group Summary (2015)

2.2 | WOOD HARVESTING AND PROCESSING

The connection between the vitality of the forest economy and the prosperity of rural communities is critical, and future strategies need to strengthen this connection.

Vermont's wood harvesting and processing industry plays a vital role in the state's economy, providing jobs, raw materials, and contributing to sustainable forest management.

This industry encompasses a wide range of activities, including harvesting operations, the supply chain, reforestation efforts, trucking, mill operations, maintenance, and utilization of raw materials. The wood harvesting industry is influenced by market demand and economic factors.

The background research scan shows that:

- Data shows that the total forest product harvesting Vermont, on a volume basis, reached a peak in 1995 and declined at a relatively steady pace through 2010⁷. Further, there is a clear trend to increasing mechanization of timber harvesting operations in Vermont. The increase in mechanical harvesting may reflect a move on the part of harvesting contractors to reduce crew size, as well as a shortage of workers willing or able to hand-fell timber⁸.
- Standard practices for developing wood harvesting guidelines⁹, understanding the impacts of climate change on wood harvesting operations, and improvements in wood harvesting equipment have been cited goals in previous reports¹⁰. Trucking plays a pivotal role in the wood harvesting industry in Vermont, serving as the vital link between the forests and the mills. The annual economic activity for forestry trucking, calculated in terms of annual sales or value of shipments, exceeds \$45 million¹¹. Vermont's rugged terrain, especially during winter months, presents trucking operators with significant challenges which could be exacerbated by uneven climate swings.
- Wood processing facilities in Vermont encompass sawmills, plywood mills, flooring manufacturers, furniture component producers, and other enterprises that convert raw logs into finished wood products. These facilities often rely on advanced machinery, technology, and skilled labor to maximize the utilization of harvested timber and produce high-quality wood products. Challenges to this industry include quality control of harvested timber, supply line timing to ensure there are no bottlenecks for production, and evolving marketing demands for wood products.
- Unfortunately, processing facilities like sawmills have closed over the past decade attributable to a range of market and workforce changes^{12,13}. Importantly, as processing facilities close, the further harvesters must travel to sell their products adds barriers and costs. Beyond that, many mills are located in the rural areas of the state and provide an economic engine for the communities they operate within. When they close, they take the jobs with them¹⁴.

As communities impacted by mills closures are facing an uncertain future, previous recommendations have included greater support to assist them in reimagining their future through planning and visioning.



7. Assessment of Timber Harvesting and Forest Resource Management (2012)
8. Assessment of Timber Harvesting and Forest Resource Management (2012)
9. Vermont Climate Action Plan (2021)
10. Yellow Wood: Focus Group Summary (2015)
11. Economic Importance of Vermont's Forest-Based Economy (2013)
12. Yellow Wood: Focus Group Summary (2015)
13. Vermont Wood Products Sector Strategic Plan Update (2011)
14. Yellow Wood: Focus Group Summary (2015)

2.3 | WOOD PRODUCTS AND MARKETS

On numerous fronts, throughout the research, recommendations have been made to improve messaging, create certifications, and enhance overall awareness. These are ideas that continue to resonate with industry stakeholders.

In recent decades, the Vermont forest industry has witnessed significant transformations, shaped by advancements in technology¹⁵, a growing emphasis on sustainability and tourism, the rise of biofuels, evolving market trends, and expanding exports.

Regardless of the economic scenarios of the future, techno-economic acceleration is likely to thread any economic point in the future. Computational systems, networks and sensors, artificial intelligence, biotechnology, bioinformatics, 3-D printing, nanotechnology, human-machine interfaces, and biomedical engineering describe a future for most industries¹⁶. The wood products market will be impacted by these changes and will increasingly be shaped and influenced by technologies such as material science, nanotechnology, robotics and artificial intelligence¹⁷.

The background research scan shows that:

- Key shifts in the use of forests along with shifting consumer interests have translated into new opportunities in the areas of tourism and recreation. Research suggests that each year, tourists spend \$2.61 billion in Vermont. Together, tourists and residents generate \$5.5 billion in annual consumer spending related to outdoor recreation, which generates \$505 million in tax revenues. This spending also supports 51,000 jobs with an associated \$1.5 billion in wages and salaries¹⁸. An evolution in this space is reframing the wood products and markets sector to view forestland itself as a good to be shared with specific goals¹⁹ and significant positive economic impacts to the overall forest economy.
- On a broader scale, multiple reports highlight the need to coordinate the messaging around Vermont's wood products, their connections to the forest, and fulfilling the social value that some consumers demand from the market²⁰. Data insights indicate that common messaging, campaigns, certifications, and public awareness are all important elements to connecting the dots between the markets and the products being produced²¹.
- The social values surrounding climate change and the use of wood-based biofuels are a good example of meeting consumers where they are and providing them with opportunities to participate in the market. Hundreds of thousands of cords of wood are used each heating season indicating significant social license for the industry and telling the story of Vermont's place in securing a more sustainable future meeting consumers' social demand.



15. Yellow Wood: Focus Group Summary (2015)
16. USDA: Drivers of Change in Forests in the Next 20 years (2020)
17. USDA: Drivers of Change in Forests in the Next 20 years (2020)
18. Vermont's Return on Investment in Land Conservation (2018)
19. Vermont Forest Action Plan (2017)
20. Yellow Wood: Forest Sector Analysis (2015)
21. Primary Industry Summit (2006)

2.4 | WORKFORCE AND INVESTMENT

Workforce is a significant challenge for the industry in the long term. Factors that play a challenging role in workforce supply include national and state demographic trends, aging of the local workforce, and changing marketing conditions.

The logging industry, as an example, has been particularly affected; the median age of workers in the industry was approaching 50 years in 2017 and a workforce contraction of 13 percent is projected over the next decade²². Issues related to workforce have likely accelerated due to the COVID-19 pandemic.

The background research scan shows that:

- It has been cited in previous reports that the legislature should continue to monitor changes to the workforce and support ways in which to encourage new entrants into the field²³. In fact, previous recommendations have focused on building a pipeline of talent from K-12 through secondary education and training²⁴. This is critically important as the wood products industry directly supports nearly 23,000 direct and indirect jobs²⁵.
- Contractions in multiple markets have impacted workforce. Primary manufacturing, secondary manufacturing, and pulp and paper have mostly declined in the last two decades with wood energy indicating some growth²⁶.
- The opportunity exists, however, to reimagine the future workforce of the industry and support new industries that use wood in new and innovative ways. Building an infrastructure that supports future oriented wood products and startups may support the drivers of change in the future which include workforce development in the areas of material science, nanotechnology, and artificial intelligence²⁷. These may not be the traditional form of labor inputs experienced over the past century, but they could be for the future. These types of jobs often have higher wages and considering the rural nature of the industry may reinject needed stimulus into Vermont's rural economy.
- Investment in the industry faces challenges including capital intensity and securing funding for new operations, market volatility as changes in markets increase perceived risk, compliance costs adhering to state and federal regulations, and the long-term horizon on making a return on investment. Beyond those factors, public perception of the industry plays a role as well²⁸. This is compounded by the nature of fragmented land ownership and land availability as acquiring a significant contiguous land area for forestry operations can be challenging due to fragmented ownership patterns. Identifying suitable land for investment and negotiating with multiple landowners can be time-consuming and complex²⁹.

Workforce issues are projected to remain key concerns for the traditional forest products sector. However, there are new entrants to the forest economy, with significant numbers of people now involved in the recreation sector.

22. USDA: Drivers of Change in Forests in the Next 20 years (2020)
23. Biomass Energy Development Working Group Final Report (2012)
24. Vermont Forest Product Council (2002)
25. Forest and Wood Products Industries Economic Contributions (2020)
26. Economic Importance of Vermont's Forest-Based Economy (2013)
27. USDA: Drivers of Change in Forests in the Next 20 years (2020)
28. Yellow Wood: Focus Group Summary (2015)
29. Forests of Vermont and New Hampshire (2012)





The Strategic Roadmap offers the opportunity to build on previous research and envision a new future for the Vermont forest economy.

2.5 | KEY INSIGHTS FROM RESEARCH SCAN

The research scan reveals an extraordinary number of previous studies that have deliberated about the future of the Vermont forest economy and forest products sector.

The numerous challenges facing the industry are well documented, and various recommendations are well articulated. It appears there has been good progress on a number of these recommendations, but some of the primary challenges remain. A number of these are systemic issues that will require concerted effort and focus to ‘move the needle’.

There are several key underlying perceptions and concerns in the research scan. From the project consultant (Future iQ) perspective, the main issues include:



IMPORTANCE OF FOREST HEALTH

The sum of the research highlights the perception that forest health is critical to the future forest industry and the state. Numerous papers work to quantify the conditions of the forest and assess the overall health of the forests in Vermont. Importantly, climate change seems to become more salient the closer we get to the present, indicating a perceived concern that a more volatile climate will impart negative consequences for the industry writ large. The issue of forest health has been central to the discussions about the Vermont Future Forest Strategic Roadmap.



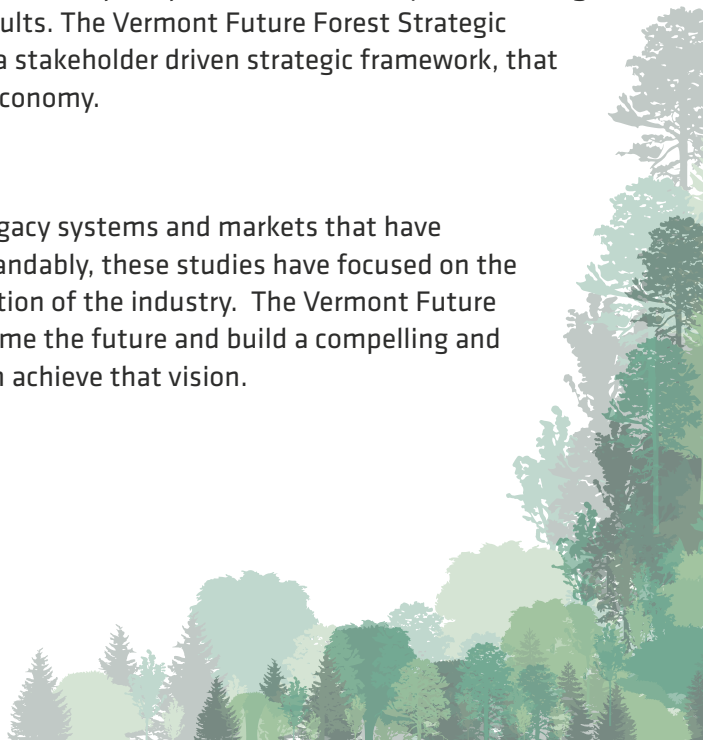
IMPORTANCE OF HAVING A UNIFIED VOICE AND APPROACH

Throughout the research data, in multiple strategic sectors, the fractionalization or siloed nature of the industry seems to be a commonly perceived concern. There is some perception that there may not be enough cohesion to create a critical mass to achieve the desired results. The Vermont Future Forest Strategic Roadmap planning process offers the opportunity to build a stakeholder driven strategic framework, that helps unify the sectors and voices representing the forest economy.



OPPORTUNITY TO REFRAME THE FUTURE

Much of the previous research focuses on the analysis of legacy systems and markets that have traditionally formed the backbone of the industry. Understandably, these studies have focused on the challenges, but have lacked a clear view of the future evolution of the industry. The Vermont Future Forest Strategic Roadmap planning process is helping reframe the future and build a compelling and relevant vision for the future, together with actions that can achieve that vision.





3.0 | INDUSTRY ROUNDTABLE SESSIONS

The industry roundtables provided an opportunity to engage in meaningful discussions about the opportunities and challenges facing the forest economy.

The Industry Roundtables were the initial engagement step for the Vermont Forest Future Strategic Roadmap project. They were held on November 28, 29, and 30, 2022 and aimed to tap into the considerable industry stakeholder expertise and knowledge about the Vermont forest economy.

THE INTENDED OUTCOMES FROM THE INDUSTRY ROUNDTABLES WERE:

- Identification of key industry drivers and areas of concern for the long-term viability of the Vermont forest economy
- Exploration and ideas for the development of potential actionable strategies



The 2-hour discussion sessions took place in five locations across Vermont. The roundtables preceded the more extensive public engagement opportunities which ran from December 2022 to March 2023.

The dates and locations of the Industry Roundtables were:

- Monday November 28, 2022, at Do North Co Working, Lyndonville, VT
- Tuesday November 29, 2022, at UVM Extension Office Classroom, Berlin, VT
- Tuesday November 29, 2022, at Allard Lumber Co. Conference Room, Brattleboro, VT
- Wednesday November 30, 2022, at Mill River Lumber Co. Conference Room, Clarendon, VT
- Wednesday November 30, 2022, at Burlington Electric, McNeil Station, Forest Office Conference Room, Burlington VT



In total, approximately 80 industry stakeholders attended the roundtables. They represented a wide cross section of interests from foresters, landowners, saw mill operators, architects and forest products operators.




3.1 | DISCUSSION THEMES AND QUESTIONS

The industry roundtables explored stakeholder perceptions about the future, and thoughts on how Vermont can position its important forest economy and forest products sector.

The industry roundtables were designed as an open discussion format, with a series of topics to explore. The discussion topics included:


ECONOMIC VIABILITY OF VERMONT'S FOREST PRODUCTS SECTOR

Vermont's forest products sector provides more than 13,000 jobs, more than \$2 billion in economic output, and supports the growing outdoor recreation and tourism sectors. The relationship between the forest products sector, working forests, and forest users in Vermont is a balancing act of multiple uses.

 QUESTION: Over the next decade, how do you see the economic viability of Vermont's forest products sector changing? What is driving that change?


IMPACT OF NON-TIMBER FOREST USES

Vermont's forests support multiple uses and provide many types of benefits, including recreation, habitat services, and ecosystem functions. Some of these uses are becoming more common and valuable.

 QUESTION: Over the next decade, how do you see the economic impact of non-timber forest uses in Vermont changing? How do we balance the land uses?


QUALITY OF VERMONT'S WORKING FORESTS

Working forests rely on active management based on the principles of sustainable forestry, including the use of silvicultural practices to maintain and enhance forest productivity, structure, species composition, and health.

 QUESTION: From a forest products perspective, how do you think the quality of the working forests is changing? What might it look like in 10 years?


DEMAND FOR VERMONT'S CONVENTIONAL FOREST PRODUCTS

Forest products have many uses, and changes in societal values and new construction methods may increase demand for sustainably sourced materials. However, the market is competitive and alternative sources and materials will compete for market share.

 QUESTION: Over the next decade, how do you see demand for Vermont's conventional forest products changing? What do you think will be main factors that drive demand?

VALUE ADDING AND PROCESSING

Forest products undergo value adding in terms of processing and manufacturing. Supply chains are changing, as some become more industrial and global, and some are returning to local and regional configurations.

 QUESTION: Over the next decade, how do you see Vermont's local processing and manufacture of solid and composite wood products changing? What role can innovation play?



3.2 | KEY INSIGHTS FROM INDUSTRY ROUNDTABLES

The industry roundtable discussions reflected a wide range of perceptions and views about the future. This was best summed up by a paraphrased comment of “We should be feeling optimistic about the future, but we are not”.

In areas where stakeholders saw the most opportunity in the future included:

- Changing consumer values and market choices offers great potential, especially in regards to renewable and sustainable wood products and production. However, that requires the industry to be able to ensure these credentials and reputation. There is potential promise in new wood product types, and the greater use of wood in specialty construction.
- Outdoor recreation is viewed to be growing and will continue to grow. It has the potential to complementary land use, that contributes to rural community vitality, and potentially brings in new workforce and people interested in the ‘forest lifestyle’.
- Public perception and education is seen as a critical ‘future-splitting’ issue. This is an overarching key issue for the future, and building and retaining public support is essential.

In areas where stakeholders saw the most challenges in the future included:

- The future workforce is a deep concern, especially with the aging of the existing workforce and industry participants. Workplace mechanization is not yet fully materialized and includes significant cost barriers. There is a massive challenge with a transition to a more efficient industry, especially in a workforce constrained environment.
- There are differing views about investment in innovation and capital attraction. The general view was that this larger capital investment is going elsewhere in New England and Canada, as Vermont does not represent a competitive location or have sufficient scale.
- Future access to forest resources was a concern, where timber harvest may be constrained due to a lack of access to forests. There is a transition occurring in the perception of the value of forests, and what is the highest use. There are emerging competing land uses such as set-aside carbon schemes, ‘lifestyle’ purchases, and urban development.
- Overall, the perception was that landowner investment in forest management is too low, which is reducing the quality of the forests and timber products.

In broad terms, there is some significant concern about the future, especially from established industry operators, who have dealt with challenging shifts in economic scale and viability and have seen saw mills close and operations move elsewhere. There is also a cohort of younger industry entrants, who are bringing new ideas and see potential in the Vermont forests products in different ways.



4.0 | STRATEGIC ROADMAP STAKEHOLDER SURVEY #1

This was the first survey as part of the Vermont Forest Future Strategic Roadmap project. It was launched in late November 2022 and ran until January 31, 2023. In total, over 650 people responded to the survey.

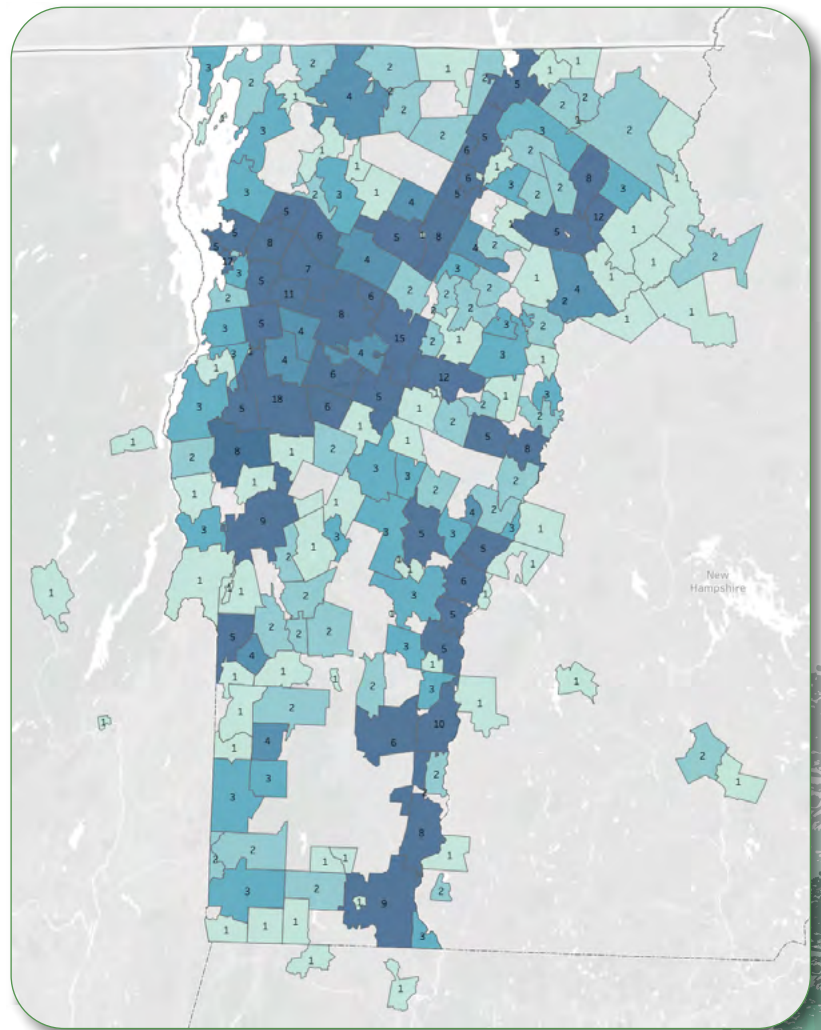
The stakeholder survey #1 gathered very useful data on perceptions about the future of the forest economy and the forest products sector.

The survey was designed to explore questions associated with the overarching outcomes of the Vermont Forest Future Strategic Roadmap, which includes:

- Increase sustainable economic development and jobs in Vermont's forest economy
- Promote ways to expand the workforce and strengthen forest product enterprises
- Promote the importance of healthy, resilient and sustainably managed working forests
- Identify actionable strategies to strengthen, modernize, promote and protect Vermont's forest products sector

KEY SURVEY METRICS:

- The survey was 20 questions long and included a mixture of qualitative and quantitative questions.
- The survey focused on main themes including future perceptions about:
 - Economic viability and impacts
 - Working forests
 - Markets and Innovation
 - Future Perceptions
- Respondents represented a good cross section of interests and groups, including:
 - Survey responses were recorded from across most of the zip codes covering the state
 - Broad range of user groups
 - Good cross section of age and years associated with the Vermont forest economy



MORE INFORMATION ON SURVEY RESULTS:

Full survey results, including data visualization, are available on the project portal:

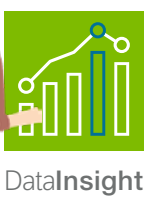
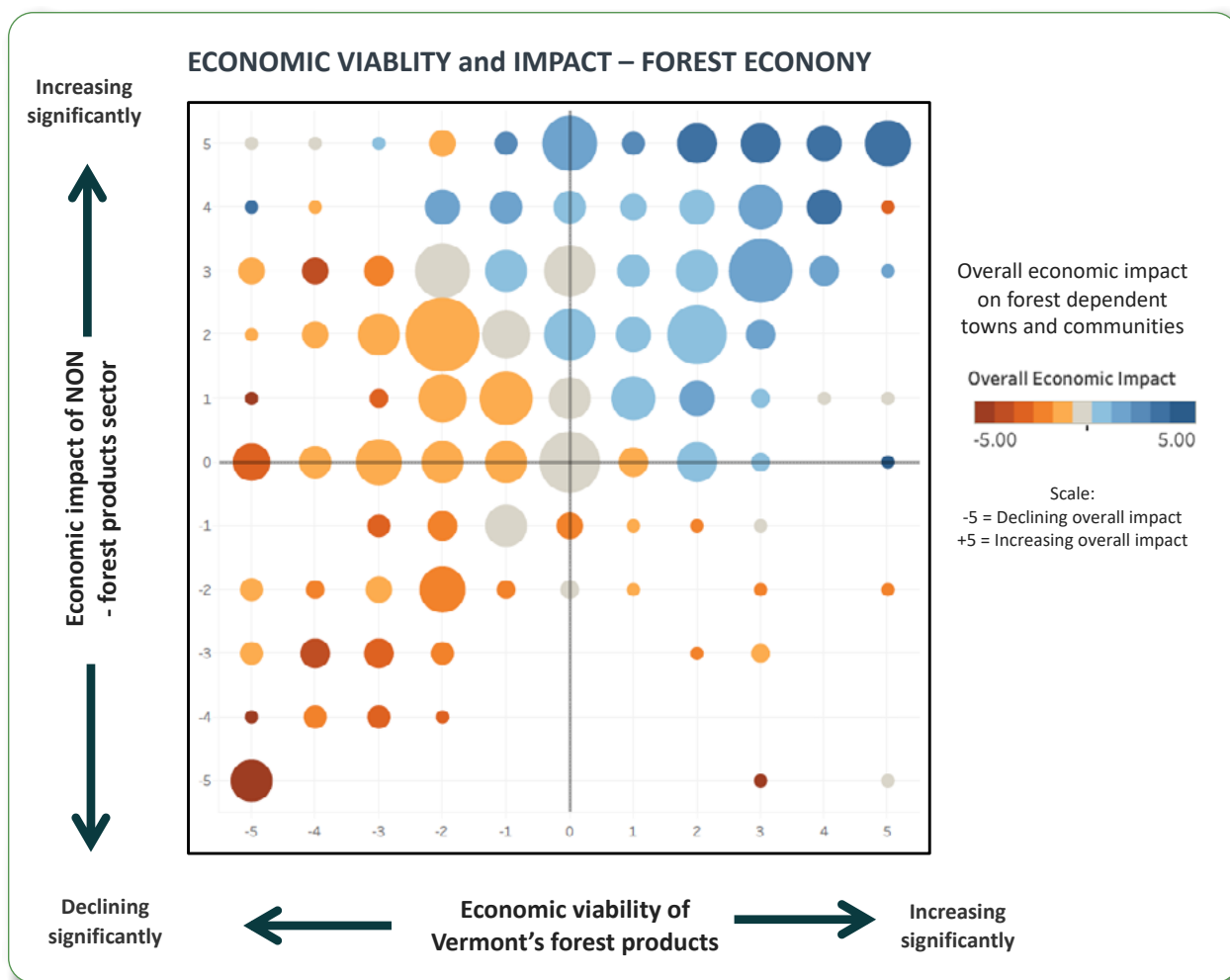
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Selected summary data is presented in the following sections.

4.1 | ECONOMIC VIABILITY AND IMPACT

The survey included a series of key questions about the perception of future economic viability and impacts of the forest economy and the forest products sector. The following chart combines responses to three questions to create an interactive scatter plot. The chart is structured as follows:

- X-Axis is the response to the question “Over the next decade, do you see the economic viability of Vermont’s forest products sector increasing or decreasing?”. Scale: -5 = Declining significantly; 0 = Same; +5 = Increasing significantly
- Y-Axis is the response to the question “Over the next decade, do you see the economic impact of Vermont’s forest economy, not including the forest products sector increasing or decreasing?”. Scale: -5 = Declining significantly; 0 = Same; +5 = Increasing significantly
- Color is a scale in response to the question “Over the next decade, do you see the overall economic impact of Vermont’s forest economy on forest dependent communities increasing or decreasing?”. Scale: -5 = Declining overall impact; 0 = Same; +5 = Increasing overall impact
- The size of the circles represents the number of respondents at each location in the scatter chart.



- Overall, people saw the future economic viability of the forest products sector declining, and the economic impact of the NON-forest products sector increasing (such as; recreation).
- There is a wide distribution of responses, but there are a significant number of responses that are pessimistic about the future, and simultaneously a significant number of responses that are very optimistic about the future economic impact and viability.

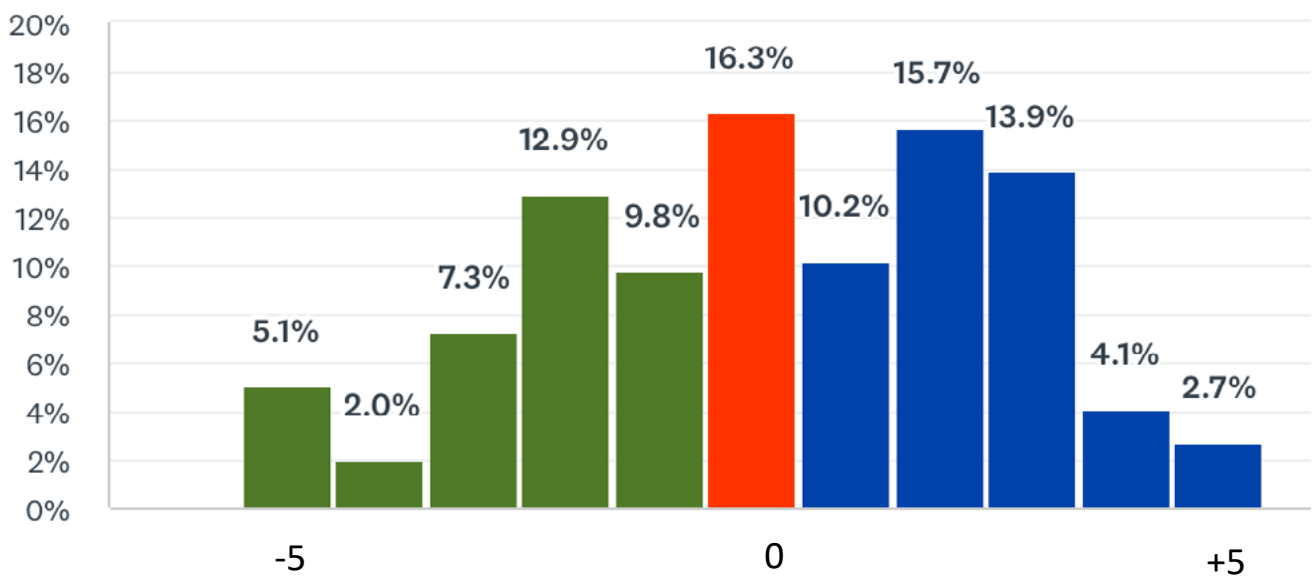
4.2 | WORKING FORESTS – QUALITY OF VERMONT’S WORKING FORESTS

Vermont’s forest products sector relies on access to intact working forests, while forest landowners rely on the support of a thriving forest economy and the benefits of their working forest to maintain intact forestland.

Working forests rely on active management based on the principles of sustainable forestry, including the use of silvicultural practices to maintain and enhance forest productivity, structure, species composition, and health. Forest management has an important role in managing native species and eliminating invasive species; and shaping the overall quality of the working forests. The survey explored the perceptions about the trajectory of the quality of working forests.

WORKING FORESTS - Quality of Vermont's working forests

From a forest products perspective, do you think the quality of the working forests in Vermont will improve or decline over the next decade?



(Scale: -5 = Significant decline; 0 = Same; +5 = Significant improvement)



DataInsight

- Like many of the questions in this survey, there was a wide range of responses, with some people seeing significant decline in the future quality of the working forests, while others see significant improvement.
- Overall, the data leans slightly to seeing improvement, largely driven by the fact that harvest rates are lower than forest growth rates, which is leading to larger higher quality timber stands.



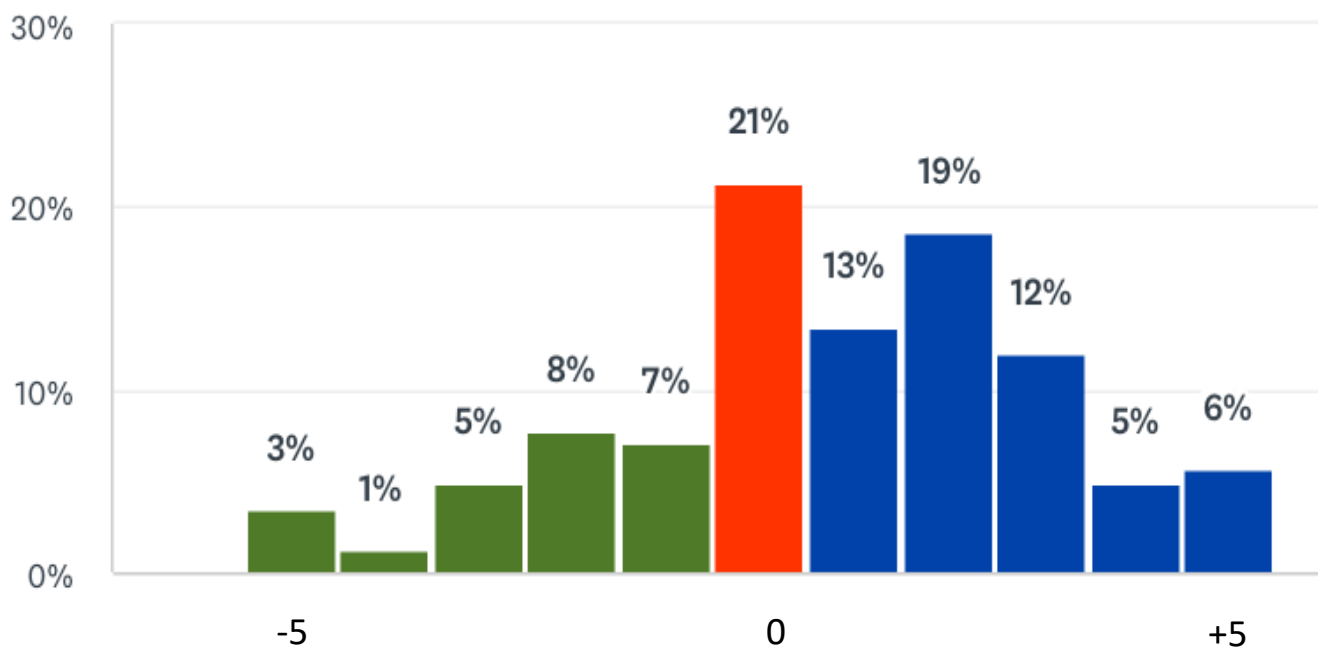
4.3 | DEMAND FOR VERMONT'S CONVENTIONAL FOREST PRODUCTS

Forest products have many uses, and changes in societal values and new construction methods may increase demand for sustainably sourced materials.

The rapid emergence of digital technologies, such as automation and robotics, is reshaping industrial and manufacturing sectors. At the same time, society is going through a profound adjustment in response to the impacts of climate change. Combined, these forces could drive new appetite for sustainable materials and creative new building products. This may create a rapidly changing market demand that opens new opportunities. However, the market is competitive and alternative sources and materials will compete with wood for market share.

MARKETS and INNOVATION - Demand for Vermont's conventional forest products

Over the next decade, do you see demand for Vermont's conventional forest products (logs, pulpwood, fuelwood) increasing or decreasing?

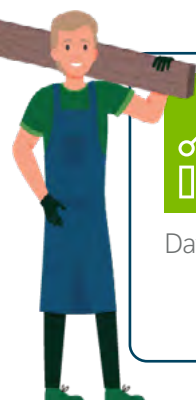


(Scale: -5 = Significantly less; 0 = Same; +5 = Significantly more)



DataInsight

- Over half the respondents viewed the demand for Vermont's conventional forest products would increase over the coming decades. The expected demand for firewood and timber was also highlighted in the Industry Roundtable sessions.
- In an associated survey question, there was less optimism about the potential growth in local processing, value adding and manufacture of solid and composite wood products. The views on this were relatively evenly split between less and more such processing.



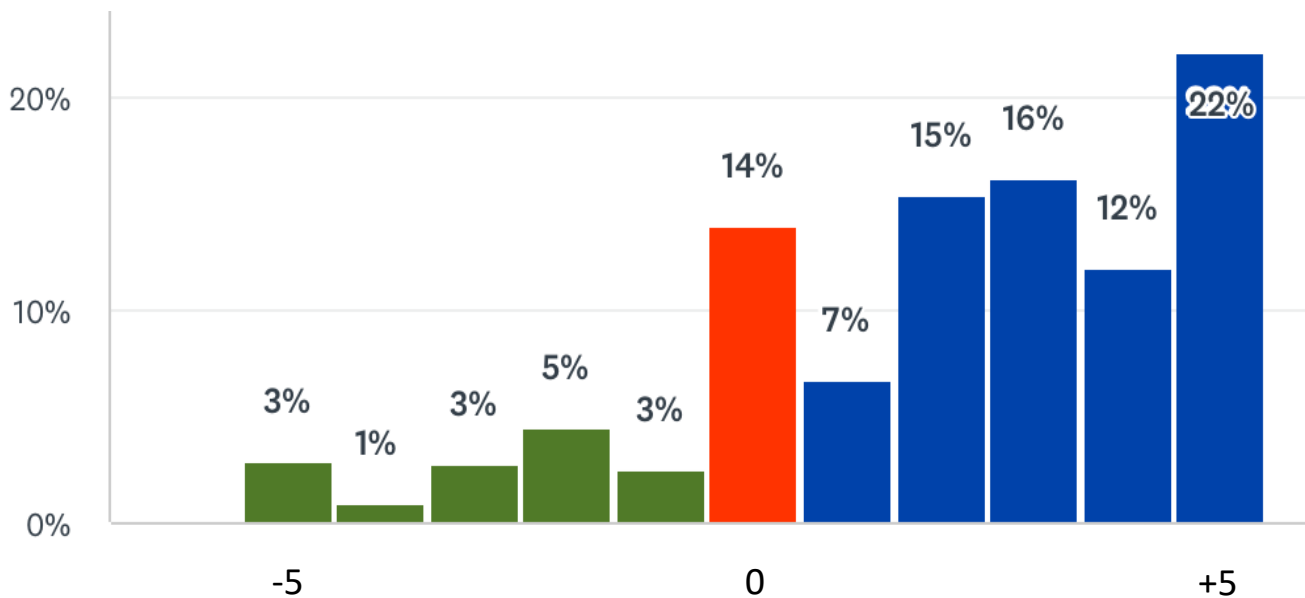
4.4 | OVERALL CONTRIBUTION TO VERMONT'S RURAL CHARACTER

The working forest landscape has long been a key factor that shapes the rural character and identity of Vermont.

This spans a range of public values such as distinctive scenery, fall colors, unique products like maple syrup, building styles and materials, and the quality of Vermont life. There has historically been strong support for the working landscape and working forests in Vermont.

OVERALL CONTRIBUTION TO VERMONT'S RURAL CHARACTER

Over the next decade, do you see Vermont's working forests becoming more, or less, important, in terms of enhancing and preserving the rural character and identity of Vermont?



(Scale: -5 = Much less important; 0 = Same; +5 = Much more important)



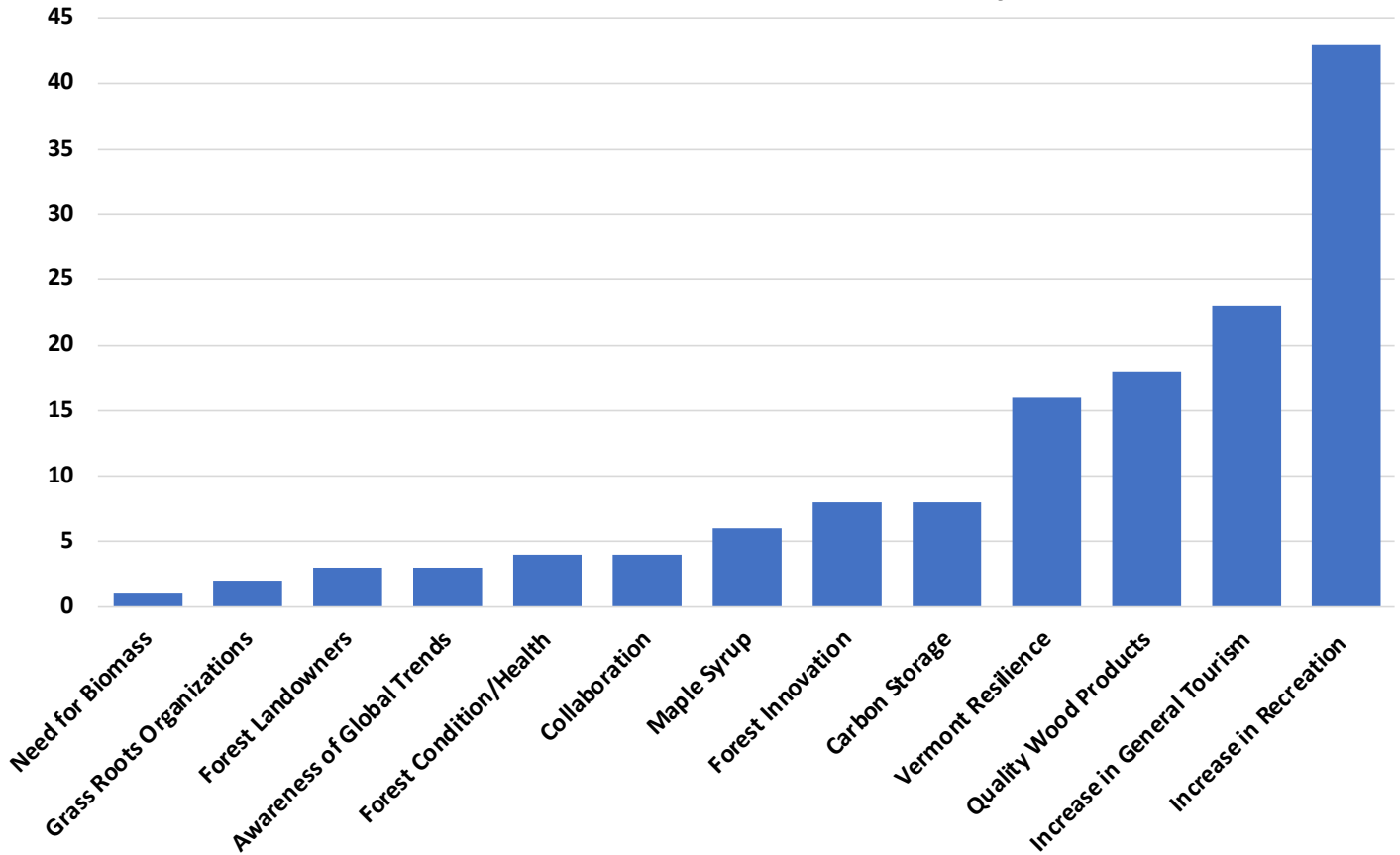
DataInsight

- Survey respondents were strongly leaning to seeing that Vermont's working forests become much more important in terms of enhancing and preserving the rural character and identity of Vermont. This reflects the optimism about the growth in tourism and outdoor recreation activities.
- The challenge is translating the importance of Vermont's working forests into economic vitality and impact. There is a deep connection between the working forests and Vermont's identity, which offers opportunity in brand recognition.

4.5 | VIEWS OF THE FUTURE – OPTIMISTIC TRENDS AND ATTRIBUTES

The survey explored future perceptions and asked open ended questions for peoples' thoughts on emerging trends and attributes. These questions were categorized based on the written responses and the sentiment. Overall, there were a significant number of responses that reflect optimism about the future.

What are you most optimistic about in relation to the future potential of the overall Vermont forest economy?



DataInsight

- Overall, the most optimistic comments were in relation to the growth in recreation and tourism. This was seen as delivering benefits by bringing new people and investments into rural communities and was generally seen as a complementary land use.
- There were also a range of comments that were optimistic about the quality and use of the forest products resources, such as timber, maple and emerging alternative forest uses.

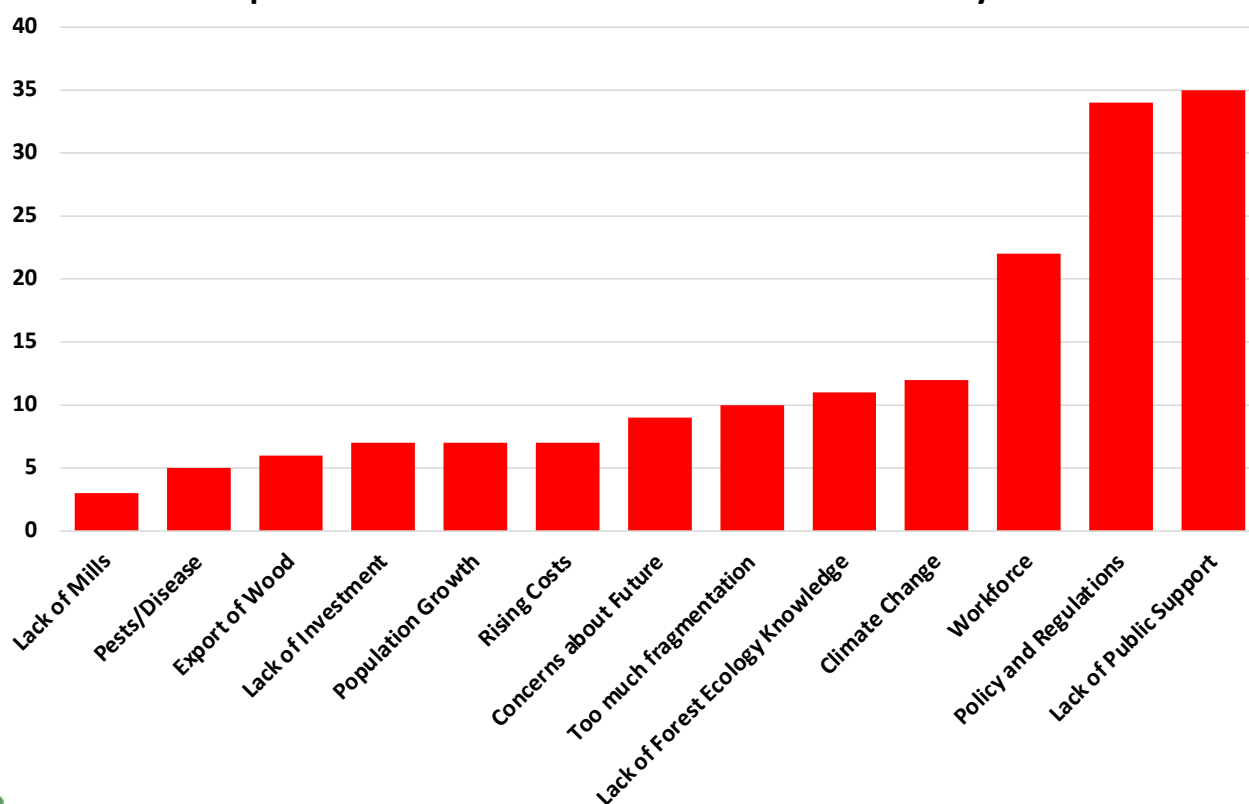
4.6 | VIEWS OF THE FUTURE – CONCERNING TRENDS AND ATTRIBUTES

In addition to asking about optimistic trends, the survey also explored open ended questions about concerning trends or issues that people felt pessimistic about. These questions were categorized based on the written responses and the sentiment.

Overall, there were three stand out issues of concern. These included:

- A sense of a lack of public support – many in the forest industry felt that public support has been moving away from the industry, and that it is increasingly exposed to negative public sentiment. This was a deep concern for many.
- Policy and regulations were seen by some as impediments to industry growth and operations. This was largely tied to a perception of a high cost of doing business in Vermont, that made the location less competitive, especially for value added activities.

What are you most pessimistic about in relation to the future potential of the overall Vermont forest economy?



DataInsight

- Overall, the negative or pessimistic sentiments about the future mirrored the discussions in the Industry Roundtables.
- The issues were centered around the constraints and costs of doing business in Vermont, and the larger issue of the impacts of climate change and how that could hinder operations and forest quality.

4.4 | KEY INSIGHTS FROM THE STRATEGIC ROADMAP STAKEHOLDER SURVEY #1

The stakeholder survey #1 was successful in gathering a strong representative cross section of responses. Like the Industry Roundtables, the stakeholder survey has highlighted some diverging perceptions about the future.

Key insights from the survey results and accompanying comments include:



BROAD RANGE OF VIEWS AND PERCEPTIONS ABOUT THE FUTURE

There are a broad range of views about the future of the forests products sector across most of the questions. This reflects the dual themes of optimism and pessimism about the future that was heard at the Industry Roundtables.

- Some survey respondents saw significant challenges in the future of some of the traditional forest products sectors, especially in how they adapt to changing market and climate conditions. There are significant barriers to adjustment due to the capital intensive nature of equipment and automation.
- Other survey respondents were very positive about the relevance, potential growth and economic impact of forest products and the forest economy. These respondents saw untapped opportunity and the chance to innovate and reframe the Vermont forest economy.



PROMISING GROWTH PREDICTED IN NON-FOREST PRODUCTS SECTORS AND NON-TRADITIONAL PRODUCTS

No forest product sectors are predicted to have an increasingly large impact on the economic viability of the forest economy. Recreation is seen as a major future driver, which is largely compatible with traditional forestry, but concerns remain that these sectors could come into conflict in certain situations. There are stronger views that non-traditional forest products could grow, including maple, specialty timbers and forest products, however the ultimate scale was viewed as somewhat limited.



FORESTED LANDSCAPES ARE CRITICALLY IMPORTANT TO THE VERMONT CHARACTER AND IDENTITY

The one area of strong agreement was that the forested landscapes are important to the Vermont character and identity and will become increasingly so over the next decade. This ties to the tourism economy and the connection to the forests that people in Vermont cherish.



CONNECTION TO THE VERMONT COMMUNITY IS VITAL

In the survey open ended questions, many respondents referenced the connection to the broader Vermont community as being essential for the future. There is concern that public support is moving away from traditional forest pursuits. There is also recognition that the forest industry must work to build education and understanding, and ultimately retain this important public support.



The bottom-line of the survey analysis, is that the industry faces a fork in the road. There are diverging views about what the future might hold, and how well the industry will perform in the future. These topics will be central discussions through the roadmap development process.

The initial engagement steps in the Vermont Future Forest Strategic Roadmap process have identified a range of contextual challenges.

These issues surfaced in the Industry Roundtable and were the subject of many comments in the stakeholder survey #1. In addition, these issues were also explored during the Think-tank sessions in December 2022 and January 2023. In March 2023, the Advisory Panel devoted time to exploring these ‘tough questions’ or contextual challenges. The purpose was to better understand these issues and consider how to address them in the roadmap planning process. The primary contextual challenges were framed as:



WHAT CONSTITUTES A ‘HEALTHY AND RESILIENT’ FOREST IN THE VERMONT CONTEXT?

This contextual challenge is compounded by the emerging impacts of climate change, which might mean that resilience will take on a different meaning. Supporting climate change mitigation will be an important part of future resilience.



WHAT IS THE RIGHT BALANCE BETWEEN FOREST PRODUCTS ECONOMY AND ECOSYSTEM MANAGEMENT?

In Vermont, most forests are regrowth or re-established forests, and they are part of a managed working forest landscape. This requires intentional management to ensure solid and water quality, manage for invasive species and supply a diverse range of products.



CAN WE IDENTIFY AND COME TO CONSENSUS ON STATE POLICY AND PROGRAMS?

The forest economy stakeholders now represent a wide array of voices and ambitions. Bringing these voices together in a unified approach to help guides state policy and programs will require a culture of collaboration and mutual respect and understanding.



WHAT IS THE BEST WAY TO EMBRACE SHIFTING SOCIETAL VALUES AND TOLERANCE FOR CHANGE?

Public sentiment is shifting, and more keenly focused on sustainability issues. How does the forest products sector best engage and work with the broader public on larger land management issues and questions. There is an opportunity to recognize the need for healthy forests, and the need for timber and wood products for people’s everyday lives. This ‘big-tent’ approach can bring stakeholders together on shared big-picture issues.



HOW DO WE ENCOMPASS A BROADER LAND USE CONTEXT?

Land uses are expanding, with more outdoor recreation emerging, that is in addition to the traditional recreation uses such as fishing, hiking, hunting etc. How does the forest products sector interact with the recreation economy, to create a complementary land use pattern that is not in conflict?



These issues will be teased out throughout the Vermont Forest Future Strategic Roadmap planning process, together with other key issues around industry viability, workforce, innovation and market development.



6.0 | MORE INFORMATION

For more information about background research and data analysis, please contact:

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FOLLOW THE ROADMAP PLANNING PROCESS

Please stay connected to the Vermont Forest Future Strategic Roadmap project by visiting the project portal:

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VERMONT FOREST FUTURE
STRATEGIC ROADMAP

REPORT 1 - CURRENT CONDITIONS

BACKGROUND RESEARCH AND
STAKEHOLDER PERSPECTIVE

MAY 2023

