Strategic Framework Appendices

Appendix 1 - Functionality Scope and Prioritization

A1.1 - Knowledge Summit - What we heard:

At the Knowledge Summit, we heard:

- A needs assessment to understand where information can be accessed, how it is going to be used and accessed.
- Engagement and integration with users throughout.
- Categorization by key topics and use of “keywords” with input from users.
- In order to ensure that the knowledge hub holds relevant documents for practitioners, it is important that priority areas for research are developed to increase the relevancy of the documents collected by the SIP team. This is an iterative process.
- Information to contact each expert.
- Promotion and training on how to use the Knowledge.
- relevant experts on various topics.
- Accessibility to a diverse range of users
- Collection of spatial data across the province.
- Infrastructure and support to maintain the repository long-term.

For example, topic summary #16 from the What We Heard document states that practitioners wish to have easily accessible information on innovative silviculture practices that encourages knowledge sharing and the ability to identify gaps in knowledge and practice.

A1.2 - Communities of practice survey:

Table 1. Trends in the major themes that are present in responses' to Question 14 of the Communities of Practice survey regarding extension products that would help to improve or inform the application of innovative silviculture.

Category	Description	Tags	Tag Sub-Totals
Resource Type	Response describes a type of resource that would help participants improve or inform the application of innovative silviculture	Webinars	19
		Empirical case studies	13
		Peer-review literature	11
		Visual media	11
		Guidelines	9
		Extension notes	9
		News	8
		Technical reports	6
		Policy	1
		Maps	1
Mode of knowledge exchange	Response describes the mode of communication that would help participants improve or inform the application of innovative silviculture	Knowledge hub	16
		Newsletter	4
		Social media	3
Producer of resource	Response describes the producer that would help participants improve or inform the application of innovative silviculture	Government	5
		Academic	2

Table 2. Trends in the major themes of the Communities of Practice survey to what resources respondents found most meaningful to inform innovative silviculture and decision making.

Tags	Number of responses
Learning from peers / experts	65
Hands-on experience	38
Peer-reviewed literature	20
Online data hub / resource	9
Empirical case studies	8
Government resources	7
Webinars	7
Newsletters	6
Guidelines	2
Visual media	2
Operations guide	1

A1.3 - Functionality Survey:

In October 2024, the SIP team engaged 36 potential SIPex users that belong to the two priority user group profiles: (1) forest practitioners, and (2) practitioners that can impact or are impacted by forest management.

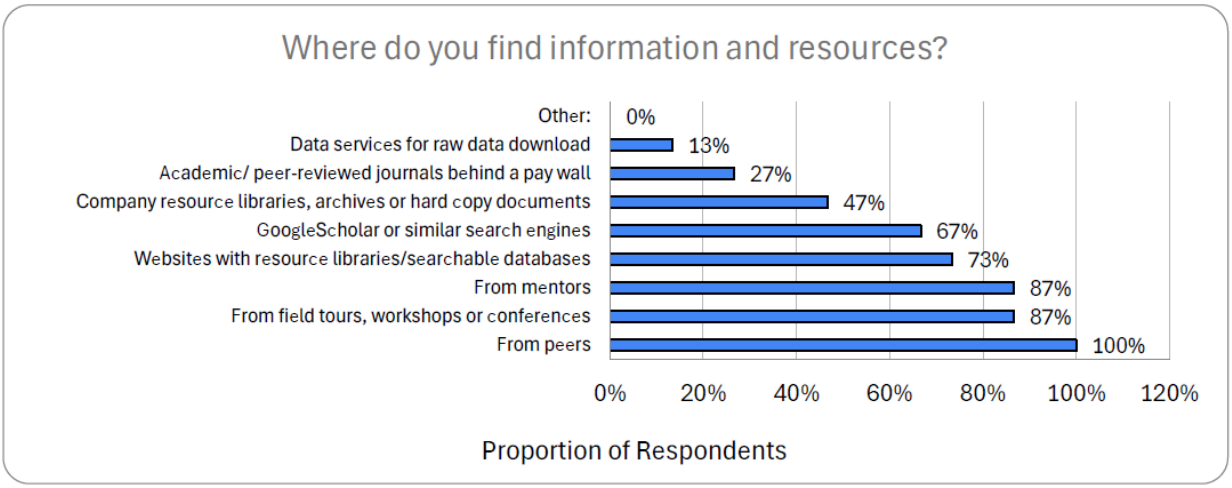

Figure 1 - information sources

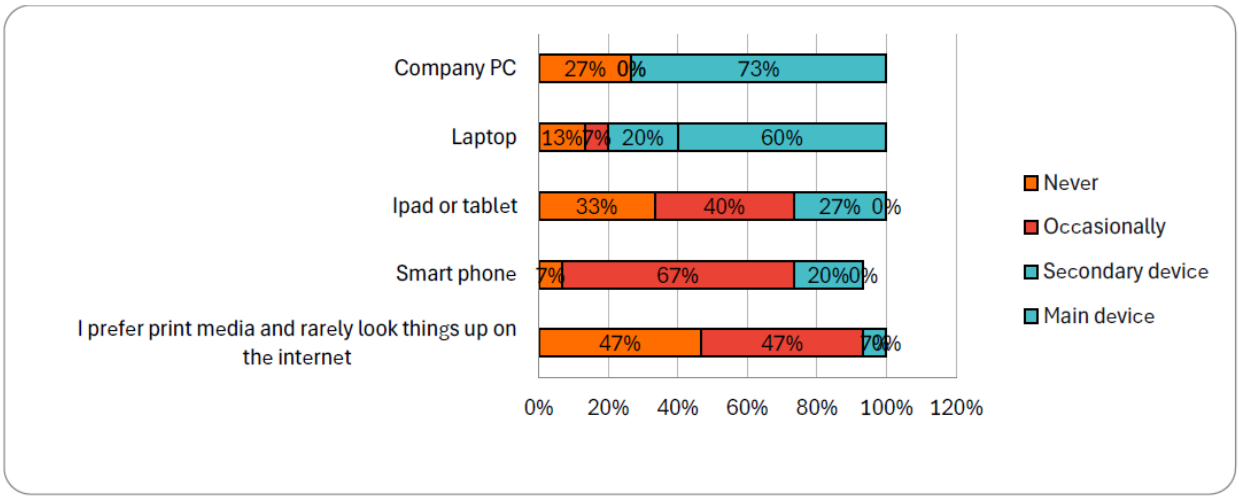

Figure 2 - technology used to access information

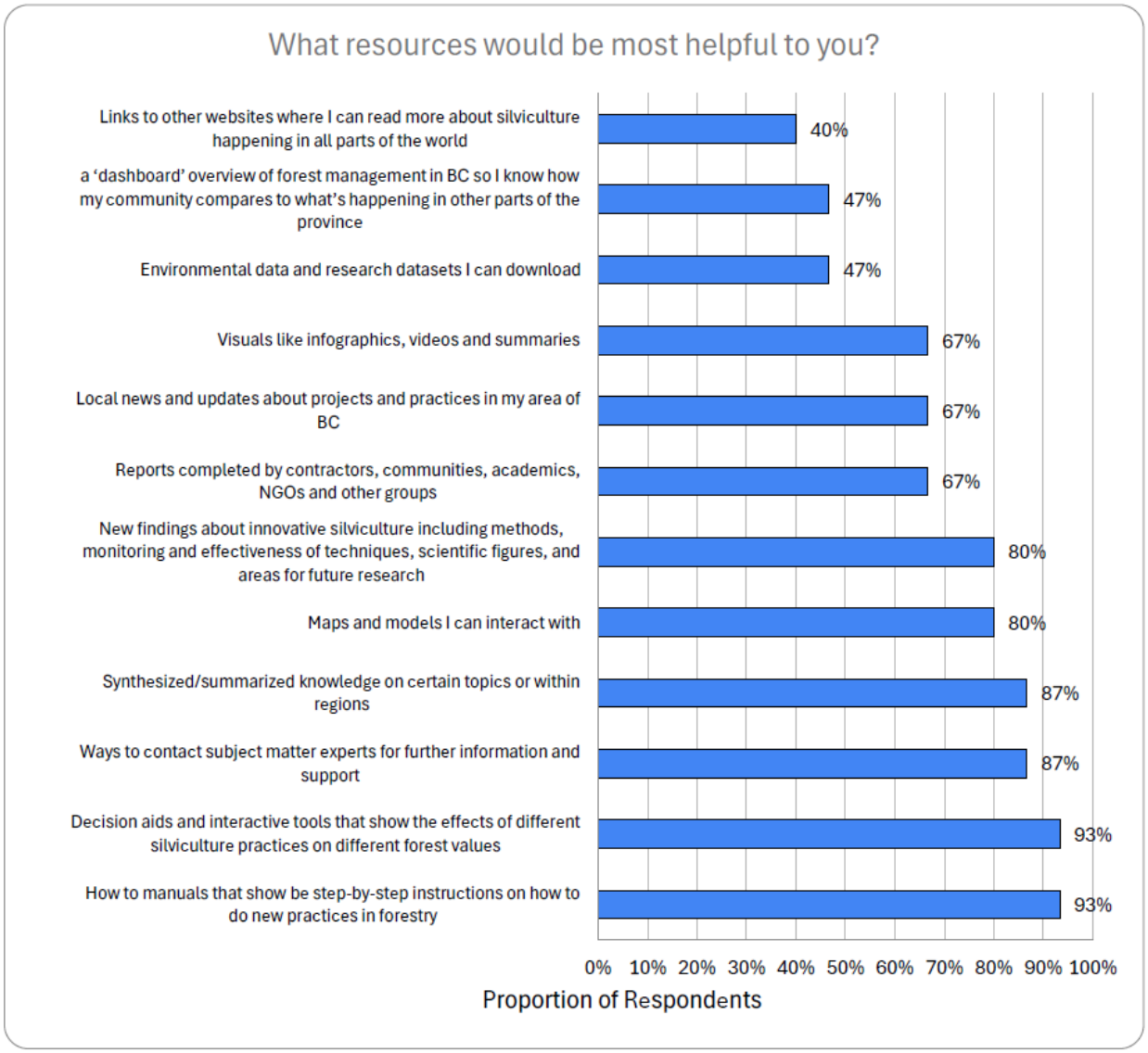

Figure 3 - preference across resource type

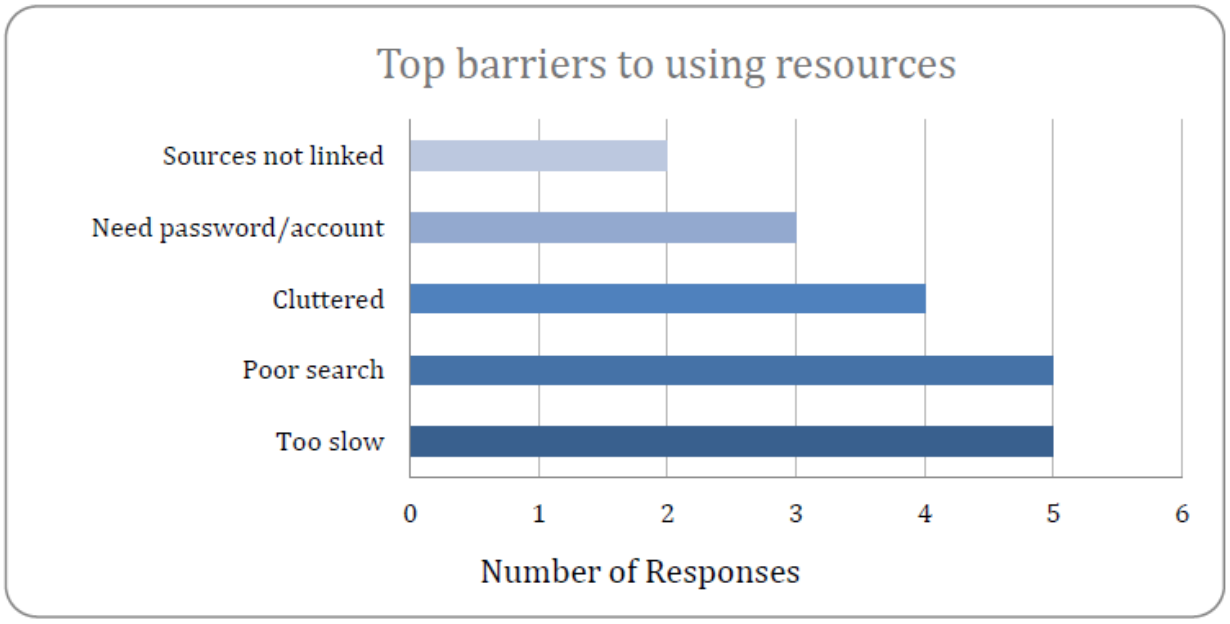

Figure 4 - barriers to using web databases

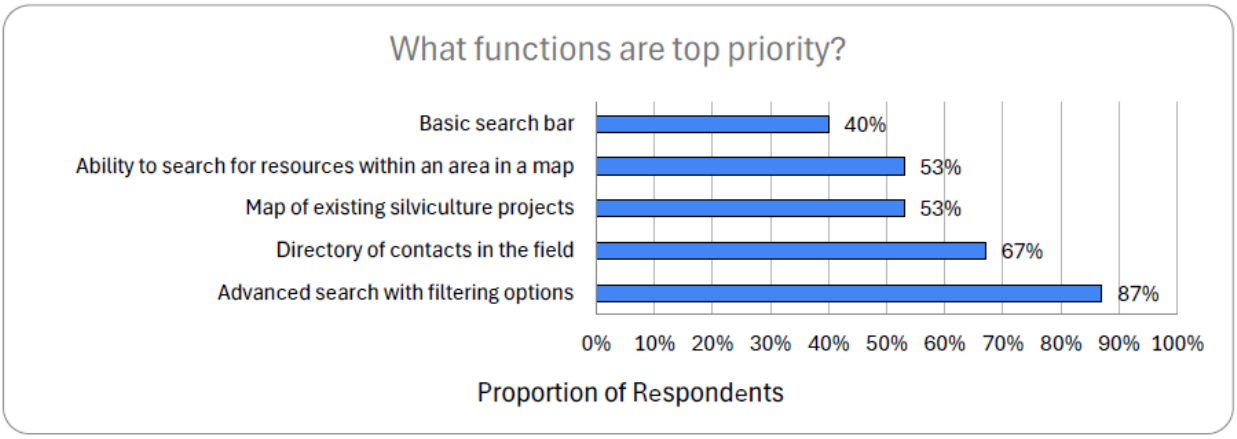

Figure 5 - functionality priorities

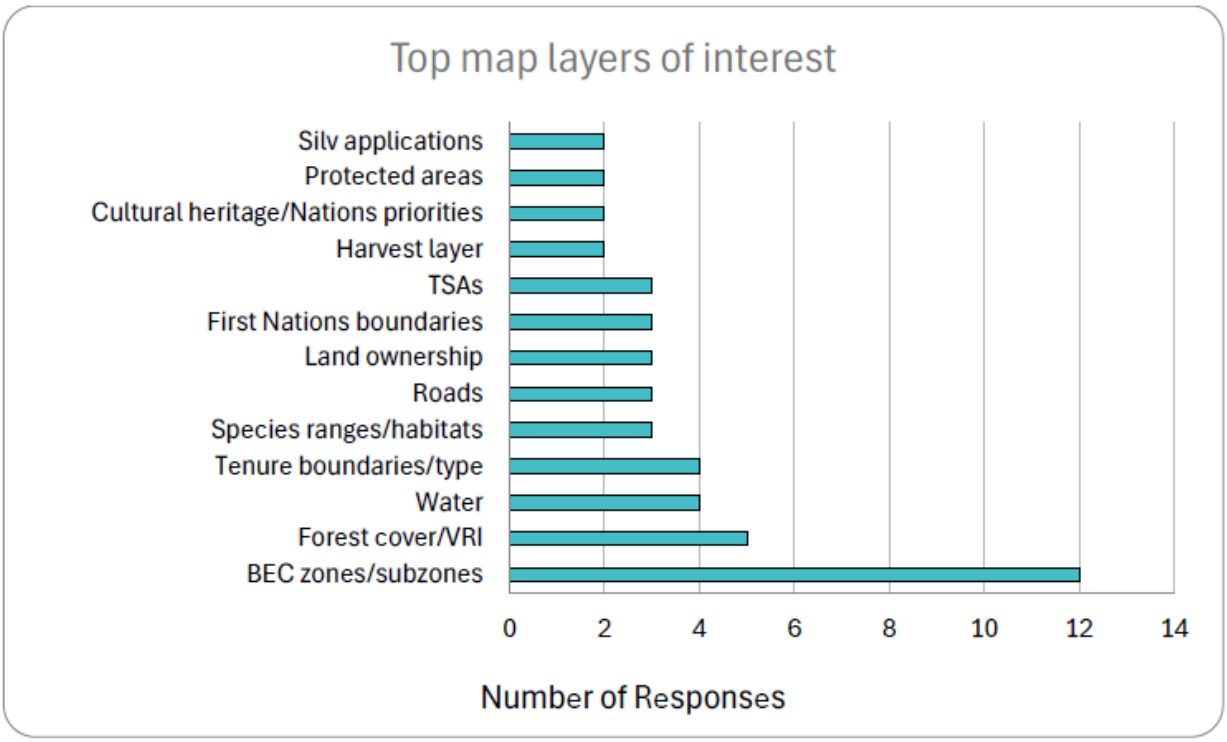

Figure 6 - spatial data preferences

Appendix 2: Content Prioritization

A2.1 - What We Heard Document – Knowledge Summit

Appendix A of the What We Heard document provides a summary of the discussions held during the *Marketplace of Ideas* group activity at the Knowledge Summit. There were 35 discussion summaries that generally explore partial harvest, intensive silviculture, and fire and silviculture. These discussion summaries highlight the content and resources that practitioners believe should be included in the Knowledge Hub.

A research question was developed for 17 (out of a total of 35) topic summaries by identifying the key knowledge gaps and areas of interest presented by the practitioners. A research question was not developed for a topic summary if it did not describe content that practitioners wish to see on the knowledge hub but instead, described general information within the realm of innovative silviculture.

List of guiding questions from the What We Heard (WWH) document

WWH 4: What prescription is needed to achieve wildfire risk reduction and modified stocking standards?

WWH 5: What models exist or how do we advance models/make them more accessible and inclusive to forecast outcomes beyond timber values to support informed decision making? What are alternative quantification methods?

WWH6: What are the local objectives and recognitions of the value of all fiber in forest management (not just sawlogs)? What is the stocking standard for different treatments?

WWH 8: What are the barriers to fostering partnerships with Indigenous nations for innovative practices? What tools exist or could be developed to incentivize or compel for innovative silviculture practices?

WWH 11: What additional information on spatial data exists to increase collaborative studies (where there are existing plots and data)? What examples exist for spatial mapping of location of trials and different prescriptions?

WWH 13: What is required (i.e., objectives and standards) to adapt stocking standards to partial harvest regimes?

WWH 14: How can the use of fibre from various treatments be optimized over a rotation? Are there case studies on new opportunities like biochar and pellets that also consider factors such as carbon benefits and economic viability?

WWH 15: What existing or new trials exist to improve our understanding of stand dynamics and the interaction between overstory and understory in partial harvest treatments?

WWH 17: What comprehensive planning tools and information exist on mitigating risks associated with partial harvesting (e.g., windthrow, stem damage, root rot expansion, and insect infestations)?

WWH 19: What case studies exist on long-term monitoring in partial harvest practices using adaptive management frameworks?

WWH 23: Which actions benefit which values and how do we measure them over time? How do you navigate trade-offs? Identify case studies where success involves respecting risk thresholds for certain values, establishing monitoring plans, and developing adaptive management strategies in cultural plant ecosystems and forest landscape planning.

WWH 24: What are the economics of different machinery to enable innovative silviculture practices? What are practices from other jurisdictions?

WWH 25: How can partial harvest affect the forest capacity to better navigate the hydrological effects of climate change (e.g., snowpack, glacial retreat, extreme weather, etc.). What restoration projects have been implemented for what best management practices exist to increase hydrologic resilience?

WWH: 26: What is the role of partial harvesting in accelerating the development of old-growth characteristics (consider factors such as contiguous distribution in addressing the loss of old growth in many ecosystems)?

WWH 27: What are new technologies or strategies to manage or reduce human access and road access and road densities using partial harvest?

WWH 31: What case studies exist for partial harvesting and carbon markets to finance better forest management? Successful case studies would include continuous verification and diversifying economic opportunities.

WWH 35: What case studies or data toolboxes exist to inform decisions on the value of wood products from partial harvesting and how a partial harvest affects wood quality? Are there any case studies that quantify the impacts of partial harvesting quality in long-term trials?

The SIP team then identified 14 values that practitioners would like to see prioritized by identifying common themes found across the 17 research questions that were derived from the What We Heard topic summaries. One or multiple values were then assigned to each of the 17 research questions by a SIP team member with extensive forestry knowledge to ensure the research question was relevant within the context of the assigned value. The values that were

assigned were not mutually exclusive (i.e., one value can be applied to more than one research question). The SIP team member with a forestry background simultaneously identified existing or emerging innovative silviculture practices and techniques that could be used within the context of the values and the research questions they were applied to. By identifying research questions and the context within which practitioners are seeking documents and resources for, the SIP team was able to prioritize key content that should be included in the Knowledge Hub.

A2.2 - Marketplace Breakout Exercise Notes

In addition to identifying information that would support the content prioritization and curation from Appendix A of the What We Heard document, the SIP team also analyzed the detailed notes of the Marketplace Breakout Exercise. From this, additional information such as regions of focus and additional details on content practitioners wish to see on the Knowledge Hub were pulled. The key information pulled from the Marketplace Breakout Exercise helps to further narrow the scope of the 17 research questions developed by the SIP team and supports an efficient and relevant content search.

A2.3 - Communities of Practice Survey:

The SIP team circulated a Communities of Practice survey to participants from industry, First Nation, academic, and consulting sectors to identify which communities of practice support practitioners' innovative silviculture work. The survey included four long-answer questions which investigated which extension products, activities, and resources support or improve innovative silviculture and which aspects practitioners are most interested in learning more about to support their decision making. There were 564 respondents.

To analyze the responses, the SIP team followed an inductive coding approach where themes were identified as they emerged from the data and were not determined in advance. For the purposes of content prioritization for the Knowledge Hub, the SIP team analyzed Question 16 which asked respondents to describe what aspects of innovative silviculture they are most interested in learning about and which aspects support their decision making. The responses to Question 16 will support the SIP team's understanding of key knowledge and resource gaps that practitioners face and what type of information is needed to support their decision making. The other long-answer questions focused on extension support and would not inform data prioritization for the Knowledge Hub.

The SIP team identified 46 unique codes (henceforth referred to as tags) for Question 16 which could be organized into four categories: Knowledge Gaps, Resource Gaps, Treatments, and Values. The frequency of each tag was counted to identify the most common knowledge gaps, resource gaps, treatments, and values mentioned by the respondents. The SIP team further analyzed the responses with high frequency tags to further contextualize which aspects of knowledge gaps, resource gaps, treatments, and values respondents were most interested in learning more about to support decision making. By assessing high frequency tags, the SIP team was able to support previous findings (i.e., What We Heard Document and Marketplace Breakout Exercise) on what key content should be prioritized for the Knowledge Hub.

To curate relevant resources for the SIP Knowledge Hub, it is essential to prioritize content that addresses the most critical needs identified by forestry practitioners. Based on the Communities of Practice (COP) Survey, practitioners are most interested in resources such as empirical case studies (n = 10). These case studies were the most frequently mentioned resource as they provide practical knowledge and tangible results that practitioners can use to make informed decisions and adapt their practices. Empirical case studies are particularly valuable because they offer real-world examples, describe cost parameters, and address operational issues across various scales of operation, which are often lacking in innovative practices.

In addition to empirical case studies, the knowledge hub should prioritize the inclusion of implementation guidelines (n = 3) and treatment prescriptions (n = 3). These resources are crucial as they complement case studies by providing structured and detailed information on how to implement innovative practices effectively. Implementation guidelines and treatment prescriptions help practitioners understand the step-by-step processes and best practices needed to adapt innovative silviculture to their specific contexts and geographical areas.

The survey also highlighted the importance of learning from peers/experts (n = 65) and hands-on experiences (n = 38) as the best resources for informing innovative silviculture and decision-making. This supports the survey findings that resources that share practical knowledge will best support the implementation of innovative practices i.e., empirical case studies, implementation guidelines, and treatment prescriptions.

The COP survey outlined that practitioners are most interested in learning about innovative silviculture practices such as species selection (n = 7), thinning (n = 7), and harvesting (n = 5) to satisfy objectives related to climate change resilience (n = 16), wildfire risk (n = 10), and hydrology (n = 10). Moreover, survey respondents most frequently cited economics/cost benefits (n = 72), implementation (n = 60), and short and long-term results (n = 42) as specific knowledge gaps they face when learning about and making informed decisions on innovative silviculture. These knowledge gaps further highlight the importance of resources that describe the practical application of innovative silviculture, such as empirical case studies, implementation guidelines, and treatment prescriptions to guide practitioners in adapting and implementing innovative practices to address their desired objectives effectively.

Figure 7 - word cloud of themes emerging from Community of Practice survey

Economics / Cost Benefit (Knowledge Gap) (72)

- Respondents expressed that one of the biggest knowledge gaps for implementing innovative silviculture practices is the cost implications. They emphasized that understanding the cost and effectiveness of a practice is critical to their ability and/or interest in carrying out innovative silviculture practices.
- Some respondents were interested specifically in learning more about new or existing funding opportunities and what/who the funding sources are to supplement the cost of innovative treatments/practices.
- One respondent shared that they would like to learn more about the revenue that will be generated from products using innovative silviculture practices.
- The majority of respondents did not provide additional details regarding the economic / cost benefit knowledge gap.

Implementation (Knowledge Gap) (60)

- Respondents highlighted that one of the major knowledge gaps they face is understanding how to *implement* or put innovative silviculture to practice.
- Respondents explained that they wish to learn more about how to adapt the implementation of innovative practices for their own activities and geographical areas.
- Many respondents also expressed that they wish to learn more about the specific challenges to implementing innovative silviculture practices to prevent similar challenges or mistakes from occurring again and to understand what techniques can be used successfully for operations.

- One respondent shared that they are interested in learning more about the administrative challenges associated with the implementation of innovative practices.

Short and Long Term (Knowledge Gap) (42)

- Respondents shared that access to tangible results from innovative silviculture would help them engage in meaningful discussions with stakeholders.
- It was highlighted by respondents that understanding the short and long term outcomes (results) of innovative silviculture is critical for identifying opportunities for improvement and ensuring the continued success of projects. Having access to short and long term results will also enable respondents to develop effective long-term monitoring strategies.
- Respondents highlighted that having access to/understanding results of innovative silviculture will enable them to adapt prescriptions to fit within the land-base objectives and regulations they are working with.

Empirical Case Studies (Resource Gap) (10)

- Respondents shared the importance of reviewing real world examples of innovative silviculture in order to make decisions and adapt their own practices. Further, respondents emphasized that many innovative practices have few replicates to demonstrate success for objectives, or to describe cost parameters, or operational issues that apply at various scales of operation. As such, empirical case studies would provide respondents with practical knowledge and tangible results.
- One respondent shared that they have limited time to review case studies despite finding them very useful.

Species Selection (Treatment) (7)

- Tree species selection or alternate tree selection was the most frequently mentioned treatment that respondents wish to learn more about in relation to innovative silviculture practices and to help with decision making.

Commercial Thinning (Treatment) (5)

- Commercial thinning was a treatment frequently mentioned by respondents that they wish to learn more about in relation to innovative silviculture practices and to help with decision making.

Machinery (Treatment) (5)

- Respondents are interested in understanding how implementation plans for innovative practices change or can be adapted based on machine availability and what the alternative options are for equipment. This is especially important to respondents due

to a lack of resources (time, funding, capacity) for specialized machinery required for innovative silviculture practices.

Climate Change Resilience (Value) (16)

- Broadly, respondents are interested in learning more about the impacts of climate change on silviculture practices and the adaptations they can make to their practices/treatments to address the effects of climate change. Respondents share that this is important to address in order to create stands that provide a wider spectrum of benefits, benefit ecosystem health, and benefit wildlife species.

Fire Risk (Value) (10)

- Respondents highlighted that they are interested in learning more about reforestation opportunities and challenges post wildfire and how innovative silviculture can be used when developing and implementing wildfire risk reduction activities.
- Further, respondents are keen to learn more about how different innovative silviculture practices can impact/effect the risk for wildfire and what information must be taken into consideration when making decisions pre or post wildfire.

Hydrology (Value) (10)

- Respondents are most interested in learning about drought management, specifically drought-resistant planting strategies, and how to maintain hydrological function using innovative silviculture practices.

The findings from the COP survey support the practices, objectives, knowledge gaps, and resource gaps identified in the Knowledge Summit What We Heard (WWH) document. For instance, the 17 research questions derived from the WWH document outline practitioners' interest in resources that support the practical application of innovative silviculture practices such as thinning, harvesting, etc, to satisfy objectives such as climate change resiliency, wildfire risk, and hydrological objectives, among others (see the Content Prioritization table for a full list of practices, objectives, and research questions). Additionally, the objectives and practices identified in the COP survey support the findings of the focus group, where hydrology and climate change resilience objectives and thinning and harvesting practices were also listed as high priority areas of interest to practitioners (see Figures 8 & 9 under Functionality Survey).

The COP survey ultimately provided guidance on which practices and objectives are of most interest to practitioners through frequency of mentions and identified a starting point for the resource curation process. The SIP team will begin by curating content related to practices, objectives, knowledge gaps, and resource gaps with the highest frequency of mentions listed in Table 3. By prioritizing these content areas, the knowledge hub can effectively support

practitioners in overcoming the identified gaps and achieving their goals in innovative silviculture.

Table 3. The knowledge gaps, resource gaps, practices, and objectives with the highest frequency of mentions in the COP survey.

Category	Content	Frequency of Mentions
Knowledge Gap	Economics / cost benefit	72
Knowledge Gap	Implementation	60
Knowledge Gap	Short and long-term results	42
Resource Gap	Empirical case studies	10
Resource Gap	Implementation guidelines	3
Resource Gap	Treatment prescription	3
Practice	Species selection	7
Practice	Thinning	7
Practice	Harvesting	5
Value	Climate change resilience	16
Value	Wildfire risk	10
Value	Hydrology	10

Table 4. Trends in the major themes from Question 16 of the Communities of Practice Survey regarding what aspects of innovative silviculture respondents are most interested in learning and what aspects can help inform decision making.

Category	Description	Tags	Number of Mentions
Knowledge Gap	Responses describe a specific knowledge gap that practitioners face when learning about and making informed decisions on innovative silviculture.	Economics / Cost Benefits	72
		Implementation	60
		Results (short and long-term)	42
		Treatment Logistics	33
		Effectiveness of Treatment	31
		Monitoring Plan Details	20
		Policy Guidance	19
		Management	18
		Communication	16
		Collaboration	12
		Region-Specific Resources	8
		Growth and Yield	5
		Indigenous Knowledge	3
		Training	2
Resource Gap	Responses describe a specific resource that is missing for practitioners to make informed decisions on innovative silviculture.	Empirical Case Studies	10
		Guidelines	3
		Treatment Prescription	3
		Operational Project Report	1
		Peer-Reviewed Literature	1
		Pilot Projects	1
		Extension Notes	1
		Visual Media	1

		Webinars	1
Practices	Responses describe a specific treatment that practitioners would like to learn more of to make informed decisions on innovative silviculture.	Species Selection	7
		Commercial Thinning	5
		Harvesting (all kinds)	5
		Machinery	5
		Partial Harvest	4
		Retention	3
		Seedlot Selection	3
		Reforestation	2
		Thinning	2
		Brushing	1
		Establishing Species	1
		Fertilization	1
Value	Responses describe a specific value that practitioners would like to learn more of to make informed decisions on innovative silviculture.	Climate Change Resilience	16
		Fire Risk	10
		Hydrology	10
		Ecosystem Health	8
		Timber	8
		Wildlife	8
		Forest Health	6
		Carbon	3
		Culture	2

A2.5 - Functionality Survey:

In October 2024, the SIP team engaged 36 potential SIPex users that belong to the two priority user group profiles: (1) forest practitioners, and (2) practitioners that can impact or are impacted

by forest management. They were asked to rank the values and practices that they are managing for or are interested in applying, to support content prioritization. The resulting ranking of priority values were wildlife, climate change resilience, water, ecosystem health, culture, forest health, stand structure, cultural plants, fire risk, timber, deciduous species, carbon and biomass. The only value that was ranked by all 15 respondents (no one gave it a non-applicable or no ranking) was climate change resilience.

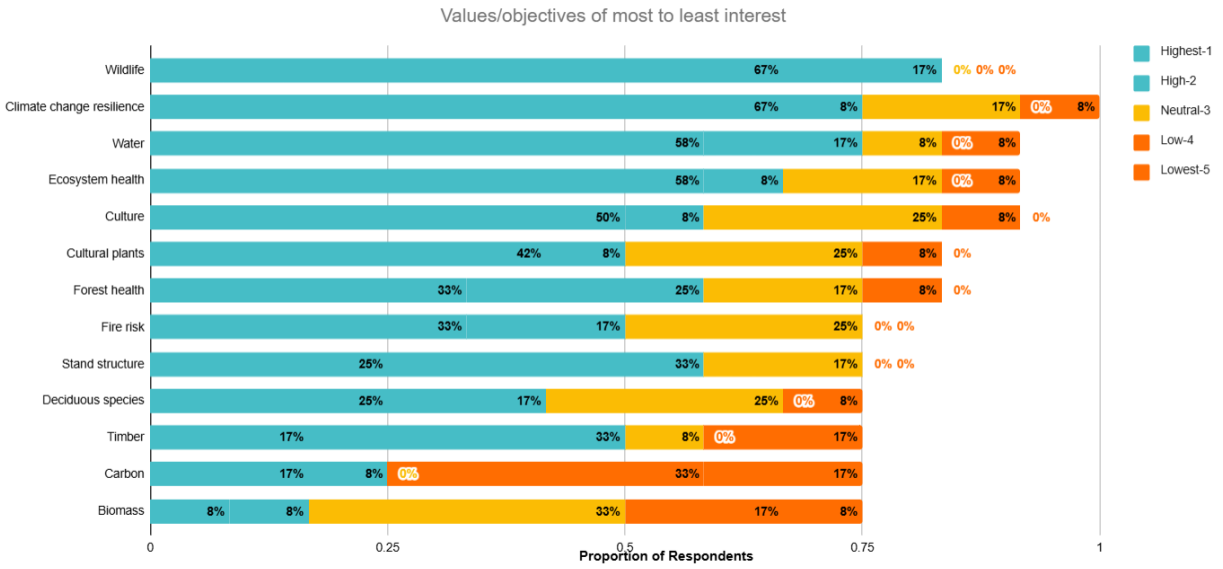

Figure 8 - forest values of interest

More survey participants were interested in thinning and partial harvest practices, followed by prescribed or cultural fire, spacing, planting, and processing waste. There was less interest in fertilizing, pruning and coppicing.

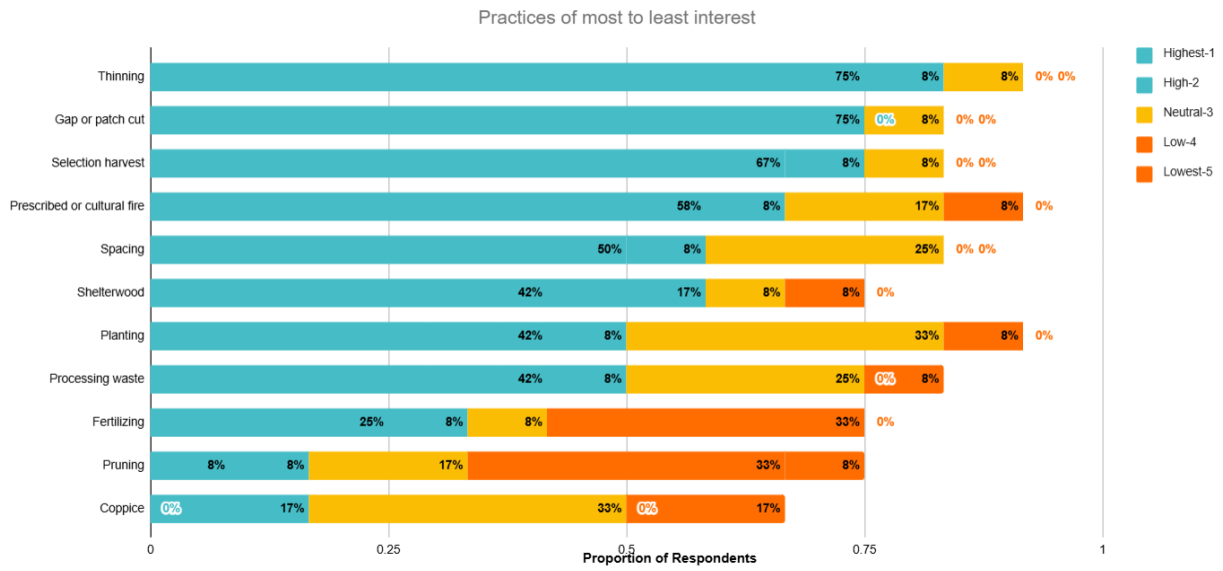

Figure 9 - practices of interest