

Residents' Perspectives on the Port Hills Fire Response

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1. Executive Summary

- The 2017 and 2024 Port Hills fires had extensive environmental and social impacts on surrounding communities.
- While the 2024 fires saw notable improvements in agency responses compared to 2017, residents still identified several areas where further enhancements are needed.
- The central research question is “Considering the 2017 and 2024 Port Hills fires, how can future agency responses be improved to better factor in residents' needs?”
- Focus groups and interviews were conducted with seven residents and community spokespersons, whose responses were transcribed and analysed to form key conclusions.
- Key findings include the overall improvements from the 2017 to 2024 fire response, animal evacuation concerns, accountability over the landscape management, and a desire from the community wanting information on the best ways to engage during an emergency response.
- Future research should expand the sample size, incorporate greater ethnic diversity, and explore the implications of property and insurance markets on wildfire response.
- Ultimately, we recommend that Christchurch City Council and Civil Defence Emergency Management prioritise developing stronger community resilience initiatives and involve residents more actively in decision-making processes around Port Hills development to ensure more effective responses to future fires.

2. Introduction

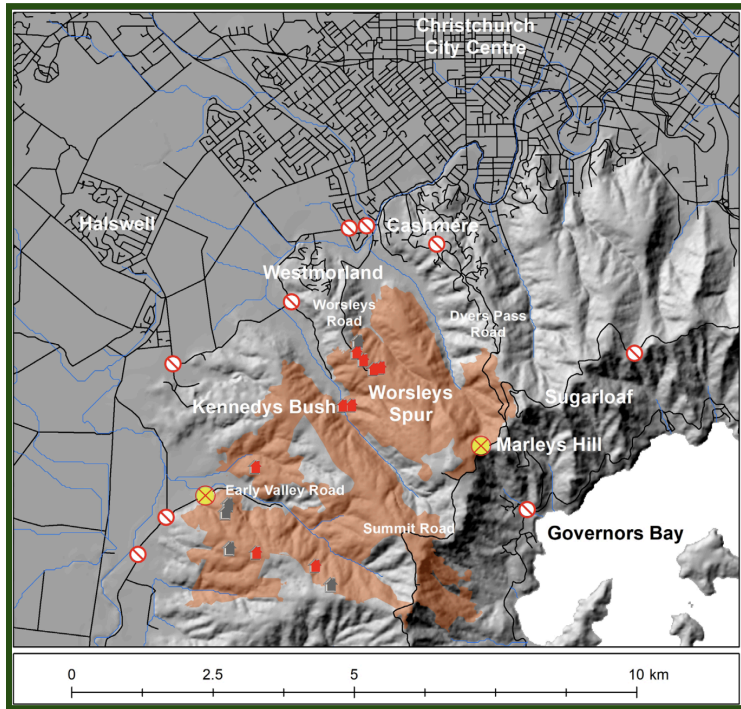
"Whāia te mātauranga hei oranga mō koutou, Seek after learning for the sake of your collective wellbeing." This whakataukī (proverb) perfectly summarises the aim of this project to understand how agencies could improve future responses to the Port Hills fires from a resident's perspective. Our community partners, Aimee Martin from the Christchurch City Council (CCC) and Brenden Winder and Aviva Cui from Civil Defence Emergency Management (CDEM) are interested in finding ways to enhance their response strategies for when a future fire inevitably sparks in the Port Hills.

This research is particularly important given the increasing climate risk and ongoing property development across the suburbs, which heighten the vulnerability of residents and the need for improved emergency responses. The Port Hills, located south of Christchurch in the Canterbury region, are becoming increasingly prone to wildfire-inducing dry climate conditions and have already experienced major wildfires in February 2017 and 2024 (Melia et al., 2022). Both fires burned extensive areas across the Port Hills, as highlighted in Figures 1 and 2, as well as caused significant damage to infrastructure (FENZ, 2024; FENZ, 2017). Additionally, substantial property development is occurring in the region, some of which is being built on converted pine forestry land previously burned in the 2017 fire (Worsley Road resident, 2024). These factors are important because they directly impact risk to resident property and livelihoods.

The increasing climate and development risks have reinforced the need for improved response strategies. While many residents acknowledge that agency responses have significantly improved from 2017 to 2024, there is still room for further improvement. Given this, our primary research question is 'Considering the 2017 and 2024 Port Hills fires, how can agency responses be improved to better address residents' needs?'. Our sub-questions include "What aspects of agency responses did residents find effective?", "How can communication with residents be enhanced?", and "What additional steps can agencies take to meet residents' needs during wildfires?".

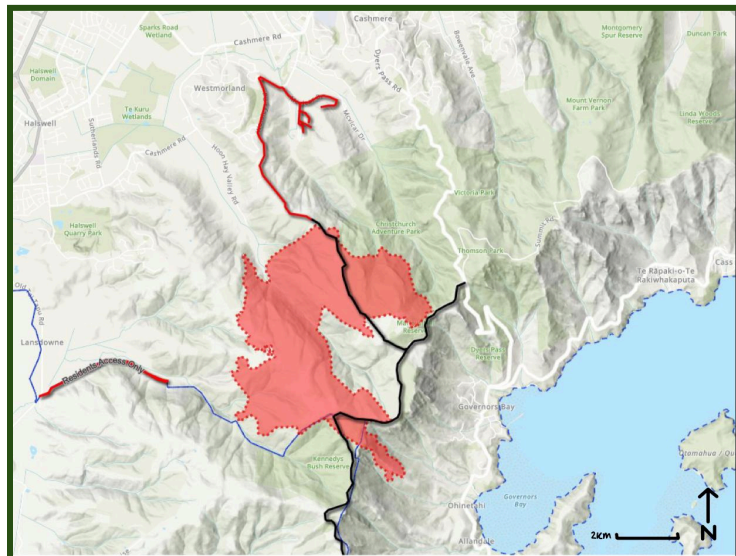
We begin by summarising relevant literature on wildfires and emergency responses, highlighting key findings that shaped our research design. Next, we cover the methods utilised, including participant recruitment and interview techniques. Following the methods section, relevant findings will be discussed and analysed. Finally, suggestions for future research and recommendations will be presented, along with a concluding summary.

Figure 1.
Area Burned in 2017 Port Hills Fire



Note. From *Port Hills fire experiences might help answer some burning questions*, 2018, Langer, L. (<https://resiliencechallenge.nz/port-hills-fire-experiences-might-help-answer-some-burning-questions/>)

Figure 2.
Area Burned in 2024 Port Hills fire



Note. From *Port Hills Fire Update*, 2017, Civil Defence Emergency Management (CDEM). (<https://www.facebook.com/photo?fbid=786574870182403&set=a.308346534671908>)

3. Literature Review

To help understand what is already known about wildfires and fire response, we analysed a variety of academic literature themes. These topics included psychosocial impacts, resident preparedness, mana whenua impacts, climate change and behavioural response and economic impacts. Reviewing key findings in the academic articles helped us to develop our research design according to what is already known or what is worth investigating further.

3.1 Psychosocial Impacts

With our research focused primarily on the experiences of people and communities during a wildfire, investigating potential psychological and psychosocial impacts is important. The literature contributed to developing our research framework and approach by understanding the impacts on people and reinforcing the sensitivity required for conducting interviews. A common theme in the literature was solastalgia, which relates to the distress caused by changes to the natural environment, including psychological stress from wildfire events (Eisenman et al., 2015). A significant consequence of wildfires is environmental changes created which are relevant to our interviewed residents as they may feel disconnected to their neighbourhoods and land following the wildfires. Findings by To et al. (2021) corroborate the significance of solastalgia as a factor of stress felt by residents. They also found this stress correlates with higher rates of depression post-wildfire. Post Traumatic Stress Disorder (PTSD) is another relevant theme within the psychological impacts of wildfires. Research by Mitchell (2007) shares that PTSD is considered the most harmful of psychological conditions that can develop from wildfire events. This recognises that these feelings of stress were possibly experienced by Port Hills residents and the long-term implications. Therefore, we needed to conduct our research sensitively and frame our questions to focus on agency response in addressing residents' needs rather than the potential trauma experienced.

3.2 Resident Preparedness

An analysis of both local and international literature highlights significant variations in residents' wildfire preparedness. McGee and Langer's (2019) study of the 2019 Northland fire demonstrated the positive impact of tangata whenua, with many residents crediting the strong iwi presence for creating a sense of community. This finding emphasises the importance of including the local marae perspective in our research. The study also revealed diverse resident perspectives, which influenced our decision to use semi-structured interviews. Building from the perspectives of Northland residents, to further guide our interviews, we examined international literature from wildfire-prone countries, such as Australia and Canada. This research shows that fire awareness and education overseas is more advanced than in New Zealand (Howe et al., 2017). McCaffery (2015) emphasised that increasing wildfire frequency

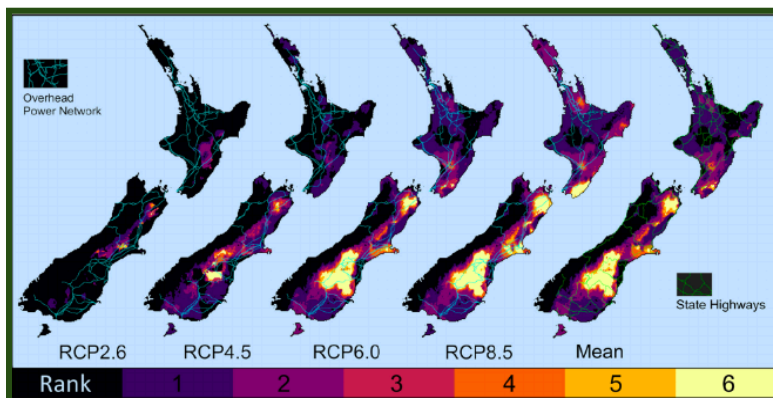
necessitates policy changes to improve resident preparedness. Kraberger et al. (2018), in their review of the 2017 Port Hills fire, argued that New Zealand should follow international examples by equipping residents with knowledge focused on prevention rather than aggressive suppression (response-based goals). Considering residents' pre-fire knowledge and perspectives is critical for identifying areas of improvement to answer our research question, as residents should not need to experience a wildfire in order to be prepared for the next one.

3.3 Climate Change and Behavioural Response

A range of relevant literature about climate change, related wildfire risk, and subsequent resident responses helped to shape our research design. Initially, academic literature was used to confirm the rising risk of wildfire within the Port Hills. Melia et al.'s (2022) research on New Zealand's 21st-century wildfire climate highlighted the increasing risk of wildfire in the South Island of New Zealand. As highlighted in Figure 3, the climate gets progressively hotter and drier. The paper depicts the increasing risks for our study area in the Port Hills and emphasises the need for co-design and coordination between residents and agencies in future responses. Other papers highlighted that preparedness should occur at the individual, community, and agency levels to address increasing climate risks. Langer et al. (2021) suggest that agencies should offer more engagement with communities to increase resilience, so we wanted to investigate whether residents agreed with this idea. Literature shows that adaptive climate measures can disproportionately impact indigenous communities. Christianson (2015) highlights that these groups are often most at risk within the rural-urban interface (RUI), yet the least consulted, leading to a loss of valuable knowledge. To avoid this, our research intentions were to consider the local mana whenua perspective of the Port Hills fires.

Figure 3

Areas Projected to Experience Increased Wildfire Weather Risk



Note. From *Aotearoa New Zealand's 21st-Century Wildfire Climate*, 2022, Melia et al., (<https://doi.org/10.1029/2022EF002853>).

3.4 Economic Impacts

Upon reflection on the economic impacts of wildfires, the key themes that emerged included property value, insurance markets, and long-term financial forecasting. Literature shows that past wildfire events have caused a decline in property values and increased homeowners' insurance costs. This is especially prevalent for the Port Hills residents as there is significant property development occurring across the Port Hills suburbs. Studies done by Dixon et al. (2018) and Dong (2024) point out the financial struggles that homeowners face due to rising insurance premiums and issues acquiring insurance coverage. Past literature from California and Australia has detailed the importance of considering both the property owner and insurance market perspectives in managing the increasing wildfire risks (Hazra & Gallagher, 2022). New Zealand's wildfire literature remains limited, so international models can predict the economic challenges Port Hills residents may face. We aimed to frame our inquiry to address whether residents foresee similar financial challenges with the rising property development.

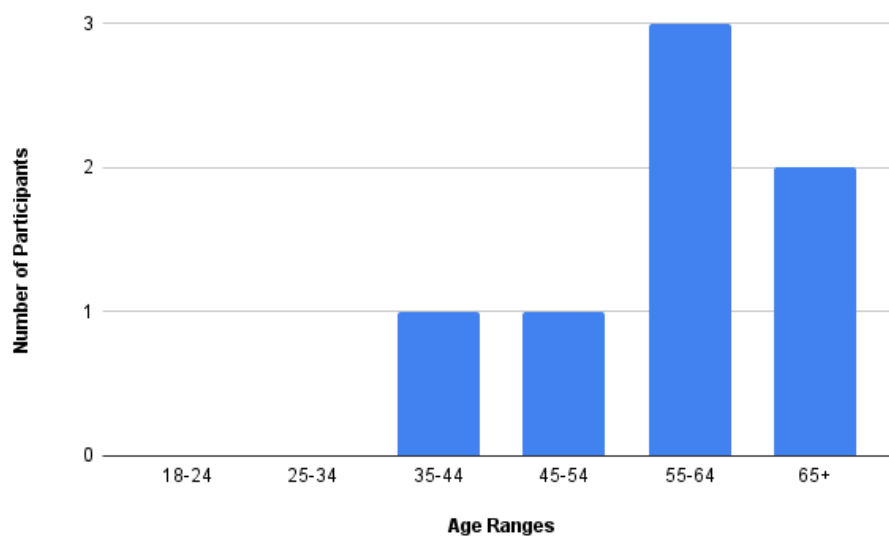
4. Methods

Our research focused on collecting qualitative data from residents in the affected area. Using a combination of contacts from community partners, personal connections, and online Facebook groups, we reached out to a variety of individuals to gather their perspectives on the fires. The fastest responses came from established Residents Associations, particularly in Halswell and Cracroft. To accommodate both our time constraints and participant convenience, we organised focus groups for residents to attend collectively. Additionally, we conducted one individual interview, and sent a revised set of interview questions via email to another participant who was unable to attend in person. Ultimately, we interviewed seven residents/spokespersons, and Table 1 and Figure 4 present their demographic characteristics.

Our participants were entirely self-selected, as we were aware of the research fatigue in the community due to individual investigations by Fire and Emergency New Zealand (FENZ), the police, and councils. We were also mindful of the sensitive nature of the topic so wanted to include only those who were comfortable speaking with us. As a result, we did not implement purposive sampling for a wide demographic range. While there was no ethnic diversity among the participants, there was a variety of locations represented, which influenced individual experiences based on proximity to the fires. Age differences also impact personal values and beliefs, which in turn affect their perspectives on what is important to improve in the emergency response. Additionally, some participants spoke on behalf of others, thus incorporating more viewpoints. To draw out key ideas and perspectives, our interview questions were kept open-ended. We wanted to avoid double-barrelled or leading questions that could confuse or influence responses.

Table 1*Participant Demographic Information*

Participant Number	Residential Suburb	Ethnicity	Special role (if any)
1	Cracroft	NZ European	Environmental Planner
2	Cracroft	NZ European	
3	Cashmere	NZ European	Secretary of Halswell Residents Association
4	Avonhead	NZ European	Admin to Halswell Residents Association Facebook page
5	Halswell	NZ European	
6	Halswell	NZ European	Spokesperson for community
7	Cracroft	NZ European	

Figure 4*Age Ranges of Participants*

Some examples of the questions we asked are as follows:

- What was your experience with the 2017/2024 Port Hills fire(s)?
- What, if any, were some positive experiences with the agencies involved?
- What, if any, were some negative experiences with the agencies involved?
- How would you want to see the agency responses improve in future?
- During and immediately after the fire, what were things you wish were done either by you personally or the agencies involved?

Our interviews and focus groups were semi-structured to allow for further discussion, particularly in focus groups where residents could build on each other's ideas. By acknowledging that none of us had personally experienced the Port Hills fire, we anticipated unexpected topics to be discussed. This flexibility was one reason we did not use surveys as a primary data collection method. Surveys are great for efficiency and scale to reach more people quickly and would have helped to improve the demographic scope of our research (Ruel, 2019). However, there is a lack of flexibility in asking follow-up questions and probing deeper into certain responses, making it difficult to capture the entire perspective. In contrast, interviews and focus groups allowed us to explore residents' experiences in more detail. Focus groups, in particular, quickly revealed areas of consensus. During these sessions, we facilitated productive group dynamics to ensure participants felt comfortable sharing their views (Morgan, 1997). Each discussion lasted between 60 and 90 minutes, providing a significant amount of insight.

As we were interacting with members of the public, we made several ethical considerations before conducting the research. We prepared an information sheet to send to willing participants prior to their involvement, explaining the purpose of the research, its significance, and how their information would be used. We ensured participants' identities remained confidential and will not be disclosed in this report. Additionally, all participants were required to sign a consent form before the discussion began, and we have kept these for our records.

After collecting our data, we attempted to transcribe the recordings using Otter.AI however, this proved to be unsuccessful due to the lengths. As a result, we re-listened to various parts of the recordings to extract key ideas and direct quotes. For our data analysis, we followed a thematic approach, loosely guided by Braun & Clarke's (2006) framework, by reviewing the data and searching for themes. This method allowed us to identify recurring themes and patterns in the responses without making inferences about the wider population. While our participants do not represent every Port Hills resident, their insights, particularly given their positions within the community, provided valuable perspectives.

5. Findings

We determined four main findings from our interviews with Port Hills residents: positive changes from the 2017 fire response, animal evacuation concerns, accountability over the landscape management, and a desire from the community wanting direct information on the best ways to engage during an emergency response. These discussion points demonstrate specific areas where improvements can be made, closely aligning with our research aim.

5.1 2017 to 2024

One of the most valuable findings was that the community and emergency services have developed a stronger relationship after the 2024 Port Hills fire. Many residents spoke about the lack of communication during the 2017 fires and how it created a sense of wariness. The progress made since then shows the importance of clear communication and collaboration in improving disaster preparedness.

Comparing the two responses to the Port Hills fires in 2017 and 2024, there have been positive improvements in communication and coordination between agencies and residents, but there still are some areas for improvement. In 2017, the response was notably hampered by slow, uncoordinated communication between the key agencies Selwyn District Council (SDC), CCC, and FENZ. The lack of coordination between these agencies left residents feeling anxious and confused during a critical time. One Worsleys Road resident said, “it was frustrating, we wanted information and there wasn’t any”. This lack of communication and disorganised approach from the agencies contributed to more damage, as residents were left without the crucial information to protect themselves and their houses.

By 2024, significant changes had been made in terms of both communication and agency coordination. During the 2024 fire, stricter area cordons were put in place to reduce the number of visitors coming to watch, which allowed first responders to focus more on the fire response and their communication efforts with residents. This contributed to a stronger relationship between the responding agencies and the local residents, as they felt more informed and supported than in 2017.

Despite these improvements, residents have stated that there is still work to be done, “I feel I have to find information out rather than receiving information”. There are concerns about both real-time updates and follow-up communication along with education about Port Hills fire risks. “We still haven’t been contacted and it’s been months” said one resident, displaying their disappointment at the lack of direct communication during the post-fire response in 2024.

Furthermore, given the increased risk posed by drier summers, residents have called for proactive efforts to educate the community about fire safety - “people who haven’t experienced a fire have no idea” (Worsleys Road resident). There is a growing understanding that more must be done in terms of prevention, with residents asking for stronger measures to ensure that they are better prepared for future fire events. Although progress has been made in communication and coordination, long-term preparedness remains an important area for improvement.

5.2 Animal Evacuation Plan

An important discussion point we encountered in interviews was the stress associated with residents having to leave animals behind when evacuating. Ensuring safety for animals has a meaningful impact on reducing anxiety for affected residents, therefore, it is crucial for agencies to consider. The current strategies utilised from both fire responses were criticised for not considering the diverse list of residents’ pets/livestock. Residents reported “It wasn’t clear if we were allowed to take our pets” so the confusing information created additional tension. One homeowner we spoke with said, “I remember one of my neighbours broke the cordon and snuck past police to go back and feed his cats”. This example highlights an area to improve for future responses. Suggestions from the community ranged from partnerships with local vets and shelters to offering housing during emergencies.

Residents suggested a list of veterinary clinics that are willing and able to take pets in during fire events should be provided. One resident stated, “we have a really good vet down the road who offered to take in any animals during the fire”. Contacts or lists for pet evacuation options would lower resident stress about animals they may have had to leave behind during evacuations. Another resident appreciated the ability to feed their cats within the cordon during allotted times with a police escort. More timeslots to feed animals would be beneficial if it is safe to do so.

5.3 Wider Accountability for Land Management

A key finding identified was residents' ongoing frustration surrounding the wider fire risks outside of their control. Despite their willingness to participate in fire prevention strategies on their properties, the wider landscape remains a threat. One Worsleys Road resident reported annoyance over clearing pine trees from their property as instructed, yet there was a large plantation of fir trees being planted across the valley. This resident remarked, "that’s what worries me with the replanting up there...those trees are just going to be gasoline for the next fire". Their concern highlights the disconnect between what residents want and the ongoing disputes over forestry management within the Port Hills. Many residents expressed the desire for some accountability from both private and public landowners to avoid this happening each fire season. One resident shared “it shouldn't just be up to us homeowners”

Residents would like for all landowners to be involved in preventative measures to help reduce the amount of fire-prone fuels on the landscape. Discussions surrounding the involvement of local government agencies and forestry companies such as 'McVicar Timber' who own a 320-hectare plantation of pine were said to have taken place. The owner John McVicar stated, "a native costs 10 times the amount of planting a pine" (Macduff, 2024). Therefore, regenerating the landscape with fire-resistant natives is perceived as less feasible for commercial landowners. Unfortunately, residents feel left out of the discussion and need to be further consulted.

5.4 Resident Engagement

During the fires, residents of the affected areas and surrounding communities were eager to help in any way they could. People contributed in various ways to support the firefighting efforts. One resident even allowed their pool to be used by helicopters to fight the fire, despite the financial cost of replacing their plumbing due to chemicals used by FENZ. The resident stated that "this was acceptable in light of the greater good". Many community members baked goods for emergency services, but unfortunately, the food had to be turned away because FENZ wouldn't accept it - "You couldn't take food to the fire people because it all had to go through a commercial kitchen". This highlights the need for better communication about how community members can engage in supporting agencies during fires.

Additionally, local community groups have engaged in communication efforts. The Halswell Residents Association, for example, was at the heart of relaying information. One admin reported, "I was staying up late into the night to keep up with all posts from FENZ and share them with our 20,000 group members". These community groups helped keep everyone informed and coordinated with the community response, whilst offering support to other impacted members. Overall, the affected communities engaged with agencies wherever they could. Even after the fires, this attitude of support has not changed. With climate change continuing to persist, the residents feel more prepared to assist each other with the inevitable fires. Many interview participants expressed their willingness to support their neighbours and community, which agencies should utilise in future responses.

6. Recommendations

6.1 Enhance Transparency and Direct Communication to Residents

Residents have expressed the wish to have enhanced communication through regular updates from the involved agencies during a wildfire event. We suggest this can be achieved by the CCC or FENZ delegating a representative to develop or join the relevant community Facebook pages to act as an information channel for residents. This will ensure they can rely on information from a verified source during a wildfire event that can include factors discussed such as; expectations, regular updates, instructions, or ways community members can contribute to help efforts. Additionally, this works to alleviate the pressure of those who ran the Facebook groups and worked to provide real-time updates.

6.2 Community-Involved Wildfire Preparation and Prevention

Although many residents' wildfire preparedness has increased, there was a mixture in the understanding of what preparation is sufficient in an emergency evacuation scenario. This can be achieved through developing a community wildfire preparedness programme or workshop. The information provided can include expected emergency kits, evacuation protocol, fire prevention methods and ways to protect their properties. This can involve local community groups and leaders to increase the community's willingness to participate. For residents new to the area, having access to this knowledge and resources can be important to improve their risk preparedness.

6.3 Develop Animal Evacuation Plans and Protocols

Building on clear information and knowledge programmes, residents request clear instructions for how to manage a wide range of pets during a wildfire. This clarity can relieve the stress and pressure of having a formalised protocol known widely within the community. Working with vets and shelters that helped during the fires, as well as expanding options and coordination with others will benefit the residents.

6.4 Further Involvement of Residents in Land Management

Residents wish to be involved in the management of their communities for their safety and want more consistency across public and private land ownership. Involving some community representatives to address these issues with the CCC could be beneficial and ensure the residents' land concerns are taken seriously. Furthermore, implementing clearer instructions and measures for landscape management can improve this factor to ensure transparency for residents throughout the decision-making process.

6.5 Integrate Mana Whenua Perspectives in Future Research

We struggled to obtain mana whenua's perspectives and insight, therefore, building on this is an important area for future research. This can develop the understanding and experiences across different demographics. Incorporating Māori viewpoints and needs fosters a culturally inclusive community.

7. Conclusions

In conclusion, we effectively answered our research question by suggesting improvements for future wildfire responses as informed by Port Hills residents. Although residents acknowledged the positive change from 2017 to 2024, there were still areas for improvement, especially when considering the impacts of property development and increasing climate factors. Initially, we reviewed literature to develop a foundational understanding to inform our research design by identifying what is already known. Additionally, it highlighted the importance of conducting our research sensitively and ethically.

The qualitative methods used with both interviews and focus groups allowed us to gain in-depth insights from residents. From the seven residents interviewed, four key findings were obtained. These included positive changes from the 2017 fire response, animal evacuation concerns, accountability over landscape management, and a desire from the community wanting to know the best ways to engage during an emergency response. Throughout the research obtained, we found the residents have a strong community identity and want to help however they can. To increase the reliability of our findings, we recommend a larger sample size to widen the demographic scope of participants as well as include a mana whenua perspective. This would better represent the wider Port Hills resident population.

The whakataukī, "Whāia te mātauranga hei oranga mō koutou", seek after learning for the sake of your collective wellbeing" remains relevant and resonates with our overall research aim. If agencies continue to learn more and consider our recommendations to better understand residents' perspectives, these insights can be used to improve community wellbeing. This bridges the gap between residents and agencies to build a stronger relationship where common goals of improving emergency responses and community resilience are shared. Overall, by implementing and developing our recommendations, the CCC, CDEM and FENZ can reinforce more effective, reliable and inclusive emergency responses for future wildfire events.

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