

RESEARCH ARTICLE



Social and economic effects of the Covid-19 pandemic on tourism-based communities in Southeast Alaska

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ABSTRACT

In 2020, the COVID-19 pandemic led to the abrupt suspension of cruise ship visits under the U.S. Center for Disease Control's "No Sail Order" resulting in loss of jobs and revenues for coastal communities of Southeast Alaska. We conducted case studies in three Southeast Alaska communities to learn how they responded to the abrupt loss of cruise tourism and to the economic and social challenges of COVID-19. Through data gathered in focus groups and convenience surveys, we ascertained the strategies that sustained households, businesses, and cultures amid the health threat and economic uncertainty. The research concludes that residents, governmental and nongovernmental agencies, and tribes pursued a variety of social, cultural, and economic strategies to withstand changes associated with COVID-19, including increased reliance on subsistence resources. Results also suggest that established social networks and community institutions play an important role in maintaining community resilience.

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Statement of novelty

Imagine you are in a small community in coastal Southeast Alaska, and up to 90% of your economy is dependent on cruise ship tourism. Overnight COVID 19 covered the country with new restrictions on cruise ships. The United States Center for Disease Control 'No Ship Order' abruptly stops all cruise ship tourism in Alaska, including these communities. What do you do?

This paper examines how three coastal Southeast Alaska communities responded and resiliently rebounded. The participating communities demonstrated a variety of adaptive governance strategies, such as collaborative and adaptive networks, bottom-up and decentralised decision making, and self-organisation. The paper also compares the communities and analyses what they learned. There is novelty in the comparison of Indigenous social networking and increase in subsistence resources versus the non-Indigenous responses, especially how they regained their tourism economy.

Introduction

When COVID-19 struck communities around the world in early 2020, governments were forced to adapt quickly to protect their citizens' health while maintaining local economies in the face of reduced revenue and supply shortages. Rural communities were particularly impacted by COVID-19

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due to population health factors, quality of healthcare, supply chain disruptions, and geographic isolation (Mueller et al., 2021). Disparities in infection and recovery rates by race, ethnicity, socioeconomic status, and place of residence have been identified (Perry et al., 2021). These trends were especially evident in Alaska (USA), which is separated from the Lower 48 states by Canada, and which contains large expanses of territory distant from transportation and shipping hubs. The impacts of the pandemic were felt in isolated Alaska villages where supply chain disruptions were significant (Johnson et al., 2021).

In addition to coping with the public health threat and interrupted shipments of food and supplies, Alaska's communities that depended on tourism faced setbacks due to curtailed visitation and a suspension of cruise ship visits. Southeast Alaska ports serve as a primary draw for cruise-ship arrivals and local economies depend heavily on the tourism industry (Cervený, 2008). For many communities, particularly cruise destinations, visitation declines caused losses of jobs, income, and tax revenues (Wiebold, 2023). The pandemic constituted a destabilising event that raised concerns about the resilience of Southeast Alaska communities and their ability to withstand change.

As part of the broader socioecological system, tourism responds to changes in that system leaving it and local communities vulnerable (Lew et al., 2018). Research over the last decade has shown that sustainability of the industry can be enhanced with the inclusion of local communities and stakeholders in industry governance and stewardship, building local capacity, which in turn assists destination communities in post crisis recovery (Heslinga et al., 2019; Pyke et al., 2018; Waligo et al., 2013). da Silva Lopes et al. (2021) studied pandemic effects on a tourism-dependent region in Portugal, concluding that collaborative governance enhanced support for local agency capacity and the integration of knowledge systems proved important to recovery.

This paper outlines what can be learned from the actions taken by Southeast Alaska's rural communities in response to the sudden socio-economic challenges brought on by the COVID-19 pandemic. We describe how new models of community resilience emerged based on Indigenous and non-Indigenous social and cultural systems and values. Using community data, we identify the pandemic's effects on the Southeast Alaskan communities of Skagway, Hoonah, and Wrangell, and their responses to it. Our collaborative team of researchers and community leaders investigated two broad research questions:

- How did communities with varying degrees of cruise ship visitation respond to economic changes during early phases of the COVID-19 pandemic?
- How did the pandemic impact households and individuals, and how did these impacts vary across communities?

This research was designed to answer these questions by applying resilience theory to gain an understanding of local community and government responses to COVID-19 in the participating communities. Resilience is defined as 'the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events' (NRC, 2012, p. 17). Resilience theory provides a compelling framework within which to analyse project data. Using these scientific frameworks, we identify the ways in which rural Alaska communities, Indigenous majority and multi-ethnic, created new sustainable pathways that utilised existing social and cultural values.

Community resilience, tourism, and a global pandemic

Community resilience is understood as the ability of communities to retain optimal performance in response to a crisis or shock (Adger, 2000; Brown & Kulig, 1996). Resilient communities can absorb damage from the shock, adapt or adjust to change, and enhance their ability to withstand future shocks (Ashkenazy et al., 2018; Sharifi, 2016; Suleimany et al., 2022). Rural communities are especially vulnerable due to geographic isolation, infrastructure and transportation challenges that lead to higher costs, and economies of scale (McIntyre & Roy, 2023). Adaptive governance models highlight

the evolving decentralised decision-making structures in the host communities by maximising a bottom-up response to systemic shocks such as COVID-19 and other severe economic threats (Brunner & Lynch, 2010).

Tourism destinations are best understood as an interconnected web of businesses and community stakeholders (Scott & Laws, 2006). Studies investigating community responses to short and long-term changes in the tourism industry have found that investment in social capital is important for enhancing adaptive capacity (Bec et al., 2016). A growing body of research focuses on the effects of the pandemic on the tourism industry (Huang & Wang, 2023; Sigala, 2021), yet little attention has been given to its impact on the everyday lives of residents of destination communities. Prior to the pandemic, cruise ship tourism was among the fastest growing subsectors of the tourism industry (Papathanassis, 2020). When borders closed, cruise lines shut down with concerns about the spread of disease onboard and into domestic health systems (Arli & Ülker, 2021; Zhang et al., 2022). Institutional leadership and expanded social capital were shown to be important coping strategies (King et al., 2021; Suleimany et al., 2022). Local businesses were identified as being central to community resilience efforts (Ngo, 2022) and enhanced adaptive capacity by providing jobs, supporting local organisations, and civic engagement (McIntyre & Roy, 2023). Destination communities dependent on tourism felt the effects of cruise ship losses sharply.

The COVID-19 pandemic strained rural communities through lost economic opportunity, reduced social interactions from lockdowns, disruption of normal activities, and strains on transportation systems (Mueller et al., 2021). Due to geographic isolation, Alaska communities were especially vulnerable. Indigenous Alaska communities were at risk, due to preexisting health conditions, food insecurity, challenging economic conditions, and reduced access to health care (Petrov et al., 2021). In Alaska, the pandemic resulted in a shortage of store-bought food due to disrupted supply chains and panic-buying, which increased the prices and supplies (Nelson et al., 2024). Rural communities shifted their focus to subsistence harvest, sharing across households, and reliance on wild foods (Fried et al., 2023). Informal systems of sharing among households and support were important coping strategies in rural areas during the pandemic (McConnell et al., 2023). Less is known about the implications of pandemic effects on tourism—dependent rural and indigenous communities.

Study context

The communities of Skagway, Hoonah, and Wrangell are in the Alexander Archipelago, a chain of islands running 500 miles along Alaska's Southeast panhandle, an area referred to locally as 'Southeast Alaska.' The area is dominated by public lands under state and federal ownership, including the Tongass National Forest and Glacier Bay National Park, which comprises over 80% of the land area. Native corporations established by the Alaska Native Claims Settlement Act of 1971 also own land in the region. Most Southeast Alaska communities lack roads connecting them to each other or the mainland, restricting their economic opportunities. Goods are transported to coastal Alaska communities as freight, on barges arriving from the Lower 48 states or by air. Travel between communities relies on the Alaska Marine Highway System, a fleet of state-owned ferries, and by commercial airlines, float planes, and private marine vessels.

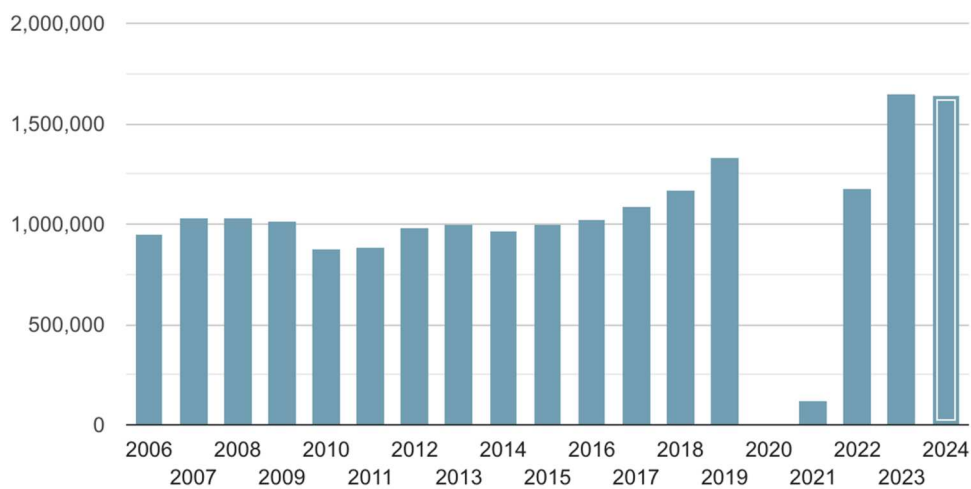
Extraction of fish, timber, and mineral resources has historically played the largest role in the Southeast Alaska economy (Colt et al., 2007; Mekbebe et al., 2009). Between Alaska's statehood in 1959 and 1990, the Southeast Alaska economy doubled, with rapid growth of employment in mining, government, fishing, timber, and tourism (Rain Coast Data, 2022b). Large scale industrial logging ended in the 1990s, although small-scale logging continues (Sisk, 2007). Both commercial and subsistence fisheries continue to play an important role in the region, and mining remains active (Arnold, 2009). As extraction-based industries have retreated, now communities rely on tourism and other industries to sustain employment and contribute to the tax base (Bell, 2015; Huber-Stearns et al., 2020).

Cruise ship tourism has been growing steadily in Alaska for more than a century (Cerveny, 2008). Visitors travelling to Southeast Alaska on cruise ships increased from one half million in the mid-1990s to more than 1.3 million in 2019 (Cruise Industry News, 2022; Rain Coast Data, 2023) (Figure 1).

Stops in Southeast Alaska ports vary by cruise line and are negotiated between city officials and cruise line executives (Cerveny, 2008). Several Southeast Alaska communities, (including Skagway and Hoonah) invested in deep-water ports, harbour improvements, or attractions to draw large cruise ships. Some communities focused on the small cruise ship market. Meanwhile, others catered to independent travellers arriving by air or ferry (Cerveny, 2005). While tourism is recognised by as an important economic driver, Southeast Alaskans have voiced concerns about environmental and social impacts of tourism and about over-reliance on one global industry (Cerveny, 2005; Kruger, 2005). In the wake of the pandemic, these concerns magnified the need for local economic diversification and other strategies to strengthen community resilience (Adams, 2010; Naylor et al., 2021). Our analysis focuses on Skagway, Hoonah, and Wrangell, which were selected because of their similar size, coastal setting, cultural history and legacy, and geography, but which varied based on the nature of tourism (Figure 2) (Table 1).

Skagway (Shgagwéi)

Skagway is located 100 miles north of Juneau, Alaska’s capital, and 22 miles southwest of the Canadian border. Skagway and its surrounds have long been home to the Chilkoot and Chilkat Tlingit and a vibrant hunting, fishing, and gathering culture. Skagway became Alaska’s first incorporated city in June 1900, and its neighbouring community Dyea served as a main supply hub for prospectors travelling to the Yukon gold fields (National Park Service, 2022). In 2020, Skagway had 1,240 permanent residents (92% White) (U.S. Census, 2020). With the arrival of summer tourism workers, the population more than doubles each year (Skagway Chamber of Commerce, 2025). Cruise tourism began in Skagway during the 1880s, with the arrival of visitors by steam ship (National Park



Source: Cruise Lines Agencies of Alaska
2020 – No passengers in 2020 due to COVID-19 restrictions.
2024 – Numbers estimated.

Figure 1. Alaska’s yearly anticipated and actual cruise ship passengers.

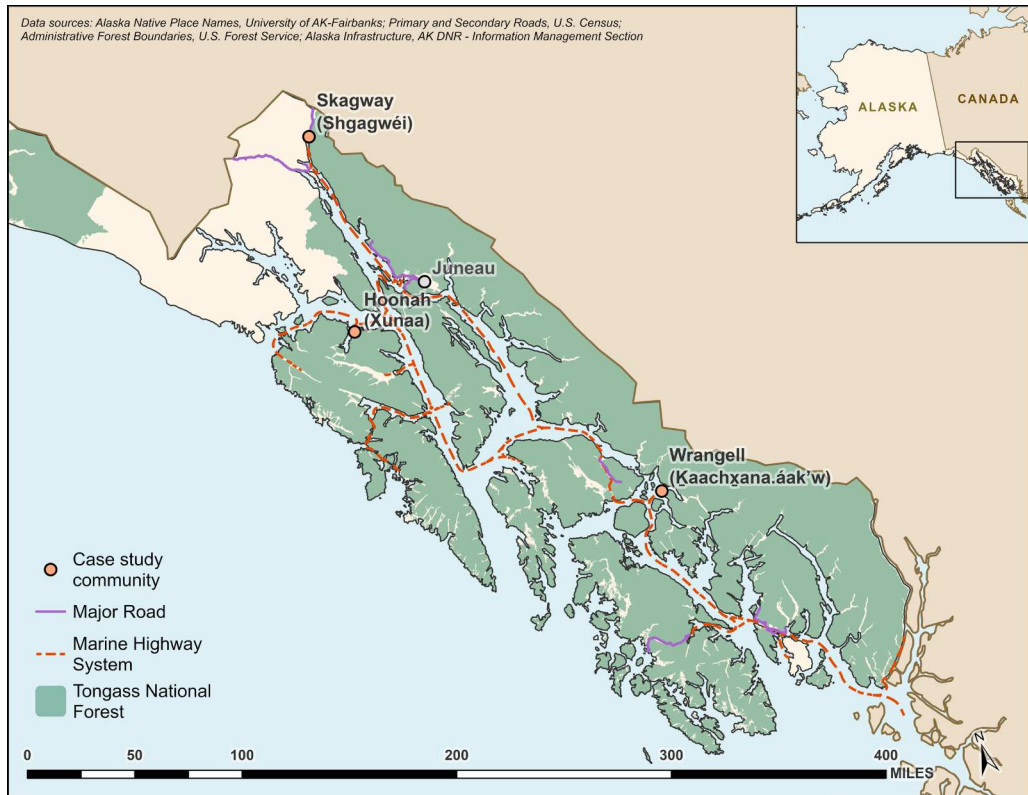


Figure 2. Map showing the locations of the three studied communities: Skagway, Hoonah, and Wrangell, Alaska, USA.

Service, 2022). By 1992, annual cruise line visitation to Skagway exceeded 300,000. Visitors to Skagway experience the Klondike Gold Rush history and enjoy nature-based tours. By 2019, Skagway had become the 18th most visited cruise ship port in the world, with 1,035,800 cruise visitors (Swasey, 2022; Wiebold, 2023). Skagway's port also is important for transport of minerals from Yukon Territory, Canada.

Table 1. Community demographics.

	Wrangell	Skagway	Hoonah
Population ^a	2,127	1,240	931
Males per 100 Females ^b	118	102	156
Persons 65 years and over (%) ^b	23%	13%	22%
Education level			
Bachelor's degree or higher (%) ^c	17%	24%	17%
Income			
Median household income ^d	\$58,438	\$71,875	\$63,250
Race ^a			
White (%)	64%	86%	33%
Black or African American (%)	0%	1%	<1%
American Indian, Alaska Native (%)	18%	2.6%	49%
Asian (%)	1%	3%	<1%
Native Hawaiian, Pacific Islander (%)	<1%	0%	<1%
Two or more races (%)	16%	7%	16%

Sources: ^aU.S. Census Bureau, 2020 Decennial Census, Total Population (Table P1).

^bU.S. Census Bureau, 2016–2020 American Community Survey 5-year estimates, Age and Sex (Table S0101).

^cUS Census, educational attainment for population 25 years and over (Table S1501).

^dU.S. Census, Income in the past 12 months (in 2020 inflation-adjusted dollars) (Table S1901).

Hoonah (Xunaa)

Located on Chichagof Island, 30 air miles west of Juneau, Hoonah is home to 931 inhabitants, of whom 54% are Alaska Native, primarily Tlingit (U.S. Census, 2020). Logging and commercial fishing have historically been important to the local economy and central to Hoonah's way of life (Dapcevich, 2017). In 1912, Hoonah Packing Company built and operated cannery 1.6 miles outside town at Icy Strait Point, which closed in 1953 (ISP, 2022). In 2002, Huna Totem, Inc., the village corporation formed under the Alaska Native Claims Settlement Act, bought the cannery and renovated the site for cruise ship tourism (Cerveny, 2007; ISP, 2022). The first cruise ship arrived in May of 2004, followed by 31 more that first season. In 2019, Icy Strait Point hosted 137 ship calls, bringing 267,200 passengers to Hoonah (Wiebold, 2023). A second dock was completed in 2020, which expanded visitor capacity (ISP, 2022). Cruise ship visitors to Icy Strait Point learn about Tlingit culture, engage with Native people, view wildlife, kayak, ride a zipline, and purchase local crafts and foods (Cruise West Coast, 2020). Hoonah's community infrastructure also includes a ferry terminal, float plane dock, and airport. In 2021, the visitor industry accounted for approximately 25% of Hoonah's economy (Rain Coast Data, 2022a).

Wrangell (K̓aach̓x̓ana.áak'w)

Wrangell (population 2,127; 64% White, 18% Alaska Native) is the largest and most economically diverse of our study communities (U.S. Census, 2020). Incorporated in 1903, Wrangell is located on the ancestral land of Interior Tlingits who travelled down the Stikine River and settled on the coast (City and Borough of Wrangell, Alaska, 2023). Located approximately 155 miles south of Juneau, Wrangell is accessed by daily jet service, small planes, and ferries. It is an historic logging town with a vibrant commercial fishing industry (Bell, 2014). Since 2000, tourism has bolstered Wrangell's economy, including both independent visitors and midsize cruise ships (fewer than 700 passengers). Wrangell averaged about 20,000 cruise ship passengers annually through 2019 (Rushmore, 2021). Wrangell markets itself as a destination for anglers and wildlife enthusiasts and serves as the gateway to the Anan Creek Bear Observatory. Local entities promote cultural tourism featuring traditional crafts exhibits, totem pole carving, and Native dance. Adding to the diversity of the local economy are maritime industries, such as a local working boatyard and two fish processing plants.

2020 Cruise ship 'No sail order'

In December 2019, the coronavirus (COVID-19) received international attention as cases surfaced around the globe. The following year, more than 350,000 deaths were recorded in the United States alone (CDC, 2022). By March 11, 2020, the World Health Organization declared COVID-19 a pandemic, and, three days later, the Centers for Disease Control (CDC) issued a 'No Sail Order' for cruise ships bound for U.S. destinations (No Sail Order, 2020). The purpose of the CDC order was to protect travellers and their destination hosts from transmission of the virus. As a result of the loss of cruise ship visitors and associated changes in other industries, many rural communities in coastal Southeast Alaska suddenly found themselves threatened with economic disaster (ATIA, 2021; SOA, 2020a).¹ Skagway, which, of the three studied communities, historically had the highest level of cruise ship visitors, was hardest hit financially, with over \$13 million in lost tax revenue. Hoonah experienced a \$3.5 million dollar loss and Wrangell suffered an estimated, \$220,000 loss (Table 2).

In October 2020, the CDC allowed the No Sail Order to expire, replacing it with guidelines for cruise ship sailings (CDC, 2020). However, under the Passenger Vessel Services Act of 1886, vessels owned by American companies that transport passengers between U.S. ports are required to be built in the U.S. and crewed mostly by U.S. citizens. Cruise ships sailing to and from Alaska,

Table 2. Revenue from 2020 cruise ship visits reflecting the estimated community tax revenue losses for a single year under the CDC's No Sail Order (SOA, 2021).

Community	Number of Annual cruise passengers (2019)	Sales Tax	Commercial Passenger Vessel Tax (State Sharing)	Estimated Bed Tax	Estimated Total Tax Revenue Losses
Skagway	1,035,800	\$8,000,000	\$5,083,250	\$150,000	\$13,233,250
Hoonah	267,200	\$3,218,931	\$1,317,075	N/A	\$3,536,006
Wrangell	17,300	\$154,393	\$58,660	\$7,743,000	\$220,796

Table 3. Alaska Recovery Plan – Federal COVID-19 Relief. Allocations of \$1.02 billion to Alaska received as part of the American Rescue Plan (SOA, 2022).

Category of federal relief as part of the American Rescue Plan	Allocation	Amounts
Protecting Alaskans – Emergency response costs	8%	\$80,000,000
Alaska Tourism Revitalization – Relief to promote tourism and adaptive services for potential loss of cruise ship season	15%	\$150,000,000
Economic Recovery and Innovation – Relief to businesses and organisations	32%	\$325,000,000
Build Alaska – Infrastructure Investment – Water, sewer and broadband infrastructure.	32%	\$325,000,000
General Fund Offset – provision of government services related to COVID-related losses, offsetting general fund expenditures	14%	\$139,259,000

most of which are foreign-registered and staffed by foreign nationals, have historically evaded the Act by stopping in Canada. When the No Sail Order expired, Canada was unwilling to open its ports to the vessels. Cruises to Alaska thus remained at a standstill until passage of the Alaska Tourism Restoration Act in May of 2021, which temporarily allowed 51 named cruise ships to bypass Canadian ports and sail to Alaska directly from Washington state (Murkowski, 2021). The pandemic had reversed the upward trajectory of the number of annual cruise ship passengers, reducing it to just 48 cruise ship visitors in 2020 (Rain Coast Data, 2022b). By 2021, the industry had slowly begun to recover, with 124,600 visitors cruising to Alaska (CLIA, 2024; Wiebold, 2023). The 2022 season saw a significant recovery to 1.5 million passengers (Cramer, 2022; Cruise Industry News, 2022), and numbers returned to 1.6 million by 2023 (CLIA, 2024).

In 2021, Southeast Alaska's communities began to rebuild their economies with the help of federal aid. In June 2022, however, the region remained down 5,000 jobs, a 12% drop attributed largely to a still-lagging tourism sector (Rain Coast Data, 2022b). Employment in the researched communities changed dramatically between the years of 2018 and 2021. Skagway experienced the biggest swing, from a 42% loss of employment when the pandemic first arrived in early 2020, to an 11% gain in 2021 (SOA, 2021). In 2023, visitation returned to previous levels and, jobs and wages also rebounded (Rain Coast Data, 2023). The U.S. Congress authorised several programmes to aid communities during the COVID-19 pandemic and ensuing period of economic hardship. Major programmes included \$1.02 billion for Alaska, with \$150 million earmarked for promoting tourism for potential losses from cruise ship tourism (SOA, 2022; Table 3).

Methods

We collaborated with a regional partner, Southeast Conference, whose staff provided input on study focus and design and administered a survey. Local partners in each of the study communities helped us to identify and recruit key respondents and conduct outreach. We employed a mixed-methods approach, featuring focus groups, a survey, and secondary data to maximise data triangulation (Denzin & Lincoln, 2000). Our survey and focus group guides covered the same substantive content through different means. The survey guide featured fixed-response items, Lickert-scale questions, and short open-ended questions. The focus group guide posed questions that were open-ended, allowing for interviewees to elaborate and describe individual experiences. Use of socio-economic data from state and federal agencies allowed us to assess changes in communities over time. Incorporating data from multiple sources enabled us to collect and verify quantifiable data

and gain detailed insights from the qualitative data (Bernard, 2017). This approach gave us a more nuanced understanding of how the pandemic impacted southeast Alaskans and resulted in a more complex data set than any single method approach.

We used a case-study methodology to highlight varying experiences of Alaska communities (Yin, 2018). Three communities were selected based on the criteria of population size and age structures, economic systems, geographic location, and existing data on engagement with cruise ship tourism. Skagway is an established cruise ship destination with high visitor volumes. Hoonah was selected because it is a developing cruise ship port and because it has a majority Indigenous population. We chose Wrangell for its more diversified tourism economy and focus on small cruise ship tourism. Comparing these three deepened our understanding of the cruise ship industry's social and economic impacts and COVID-19's effects across the communities.

Focus groups

Community-based focus groups were employed to highlight comparisons across the three study sites (Morgan, 1998; Yin, 2018). Four online focus groups (each comprising 5 to 7 participants) were conducted using Zoom videoconferencing ($n = 31$) (Archibald et al., 2019; Howlett, 2022). COVID-19 restrictions and guidelines prevented the research team from conducting in-person interviews (UAF, 2020). Each session lasted approximately 90 minutes. Two focus groups were conducted in Skagway and one group was held in each of the other two communities, Wrangell and Hoonah. Focus group participants were recruited by study partners who assembled a diverse group of business owners, community leaders, social service agency providers, educators, and traditional knowledge holders. Focus group prompts asked participants to discuss (a) the impacts of the pandemic on their community and its households, (b) resources and strategies used to adapt to the pandemic, (c) ideas for future tourism development, and (d) hopes for the future of their community (Supplemental File A.)

The Zoom teleconferencing software generated a meeting transcript, which two members of the study team checked against the original audio recording for accuracy. Responses were analysed manually by converting focus group transcripts into data tables using descriptive and coding using NVivo software. Coding occurred in three phases: 1. Initial codes were drawn from transcript segments that represented patterns and meanings. 2. The number of initial codes were reduced and categorised according to common patterns. 3. Codes were aggregated into themes related to the research questions. The team identified patterns from the direct quotes and analysed codes to inform the convenience survey and major findings.

Online convenience survey

The community survey was co-developed and administered by the Southeast Conference. The study was approved by the University of Alaska Institutional Review Board (IRB-1731744-4). We used a convenience sampling approach to distribute an online survey to the three studied communities in May and June 2021, through a link to the organisation's website. We chose convenience sampling for its power as a non-probability sampling method that selects respondents for inclusion in the sample based on the ease of researcher access to the respondent (Schreuder et al., 2001). Local partners in our study communities distributed the survey link by posting it on agency websites, on flyers posted at community centres, and by emailing it to community leaders. Southeast Conference sponsored a lottery incentive of a \$100 gift card.

The survey featured 44 questions, including categorical, open-ended, and Likert-scale formats. Questions were organised into six sections that loosely mirrored the focus group questions: (a) the effects of the pandemic on the community, (b) individual households' strategies for adapting to the pandemic, (c) community capacity, (d) attitudes toward tourism development, and (e) demographics. The survey was administered online using Qualtrics, an online survey software. The median

response duration was 11 minutes. Respondents were directed through the survey using skip patterns to ensure they only saw questions that applied to their circumstances. All data were exported from Qualtrics as a CSV file, then prepared for analysis in R and Excel. Of the 424 survey responses received, we removed 69 incomplete surveys. Three surveys submitted simultaneously with identical responses were consolidated into one response.

Results

We organised our findings to distinguish between focus group responses and convenience survey responses, as applicable. Through data analyses, five broad social and economic categories emerged: filling the grocery gap, loss of cultural and community activities, community responses to declining visitation, adaptive strategies and supports, and planning for future tourism. We describe these themes below using quotations from respondents to illustrate our findings. (See Supplemental File B for demographics and respondent characteristics.)

Filling the grocery gap

Analysis of focus group data showed how research participants augmented food supplies for their individual households, extended family, and friends. Groceries sometimes became scarce during the pandemic due to supply chain issues largely related to reduced ferry and air transportation. Southeast Alaska experienced the negative effects of legislative funding cuts to the state ferry system, resulting in a shortage of goods being available for purchase from local merchants. Hoonah focus group participants reported that community members increased their traditional hunting, fishing, and gathering (subsistence) activities and sharing of resources with extended family and kin groups. Study participants from all three communities noted an informal network of neighbours checking on each other more frequently to make sure people had enough food, shopping for and at times buying food for shut-ins, and checking to make sure their neighbours were safe.

Food-sharing is an essential cultural practice of Tlingit and Haida peoples that has strong spiritual and moral meaning. According to focus group participants, sharing of food increased during the pandemic, fortifying household resilience, particularly for elders and others unable to do their own hunting, fishing, and gathering. Hoonah households also benefited from food assistance efforts conducted by the Central Council of Tlingit and Haida Indian Tribes of Alaska, the largest tribal government in Southeast Alaska, as well as the Southeast Alaska Food Bank. Churches in each of the communities were credited by respondents as being instrumental in organising food drives and delivery for the at-risk and in-need. A focus group participant reported that during the first four months of 2020, 207 Hoonah households received combined \$68,000 in food from the Salvation Army church—a four-fold increase over 2019. One resident reported that the church donated 750 cooked crabs, handing out ‘five at a time’ to residents.

Prior to the pandemic, Southeast Alaska communities harvested approximately 185 pounds of wild food per person, including fish, invertebrates, marine mammals, birds and eggs, land mammals, and plant foods (Fall & Kostick, 2018). This remained true during the pandemic, with subsistence playing a key role in ‘filling the grocery gap.’ Yet, the ability to share and store subsistence foods was affected as residents faced shortages of canning and other food storage supplies. As a Hoonah focus group participant explained,

We were trying to put food away, but there was a lack of jars and vacuum bags. It was difficult! Salvation Army bought an extra freezer, and it took five months to show up because of COVID. Hoonah didn’t have bait! Salvation Army went to Juneau to bring some back, so people were able to lay skates or pots to get food.

A Skagway-specific issue stemmed from residents’ habit of routinely driving 109 miles north to Whitehorse, Yukon (Canada), for groceries and supplies. In 2020 and 2021, Canada closed its land

borders due to COVID-19 safety concerns, blocking the one road that connects Skagway not only to Whitehorse, but to the North America mainland. This required Skagway residents to travel several hours to Juneau by ferry or air for supplies. Skagway residents expressed concerns about the long-term viability of the community's lone grocery store and their own food insecurity given the increased cost of flying in freights following reductions in ferry service.

These are meaningful examples of the interwoven nature of rural economic systems in Alaska. The lack of essential supplies noted by respondents and the closing of international borders created unanticipated food insecurity. The ability to hunt, fish, and gather was affected by the same interruptions in the supply chain suffered by people in the rest of the United States.

Loss of cultural and community activities

Focus group participants described how the pandemic resulted in an interruption of community activities, ceremonies, and cultural events. Traditional community gatherings and celebrations, such as the 40-day Party and *koo.éex* (potlatches) important to Indigenous Tlingit and Haida culture as well as the biennial gathering of clans, known as the Celebration, were cancelled due to concerns about safety and community health. Other cancelled included high school sports competitions and academic events, Independence Day celebrations, winter holiday events, and the socially significant 'Gold Medal' annual basketball tournament, with players travelling from Southeast Alaska villages. Cancellations meant that relatives and friends living afar could not visit with one another. The loss of these key events, significant for maintaining and fostering cultural ties and sharing knowledge across generations, was experienced across our study communities, but particularly in Hoonah, due to its significant Indigenous population. A Hoonah focus group member discussed the impacts on cultural transmission from these closures and cancellations: '*Our koo.éex—memorial potlatch—our living, they are our songs. We need to sing them at our ceremonies to keep our language.*'

Across all communities, there was an overall increase in outdoor activities. In Skagway, traditional indoor activities were replaced with events such as impromptu drive-in theatres. As one Skagway resident described, '*(We) created many events to keep youth active, school graduation parade, extra lights during holidays, expanded behavioral care, Zoom meetings with friends, Tribal social services assistance—burial, emergency, and general financial assistance.*' A similar trend was observed in Wrangell, where one resident noted, '*We increased outside activities and acknowledged people as our most important asset.*' Each community sought ways to promote interaction and keep traditions alive in the face of COVID-19 restrictions and health concerns. In Wrangell and Skagway, focus group members talked about sharing and checking-in with neighbours. As one Skagway participant said, '*We ate out less, churches helped with food distribution, and neighbors checked on neighbors.*'

Community responses to visitation declines

In communities where a large portion of city revenue is generated by sales tax, reductions in tourism can mean the loss of vital city services. Based on focus group interviews, we observed that each community responded to economic changes somewhat differently. In communities more dependent on cruise ships (Skagway and Hoonah), respondents were more likely to describe setbacks associated with economic impacts. Skagway focus group participants reported shuttered hotels, a heightened sense of remoteness, supply chain disruptions, mental health challenges, increased transportation barriers, and food scarcity. One described the impact on their Skagway business:

We are 95% down in revenue. [In 2020], the Inn brought in \$1,350 in room revenue. It's normally close to \$500,000. No cruise ships shut down the town. 100% of our economy was cruise ship traffic. We need to come up with things that can help our economy.

In Hoonah, the sudden lack of cruise ship activity at Icy Strait Point took a toll on the local economy. As a focus group participant observed, *'sales tax from cruise ship tourism funds several city departments, such as police department, the youth center, and utilities.'*

Since large cruise ships do not visit Wrangell, the community did not appear to suffer from the loss of cruise ship arrivals to the same extent as Hoonah and Skagway. However, all types of tourism slowed as clients opted to stay home. A Wrangell focus group participant pointed out, *'We have tons of opportunity, and we aren't dependent on the [large ship] cruise traffic.'*

Ferries are another source of visitors to rural communities. Focus group participants mentioned that reduction in ferry service intensified their community's sense of isolation. Skagway focus group participants also observed the effects of border closing, reducing the number of Canadian shoppers and independent visitors coming to Skagway. *'Going to Whitehorse for medical facilities or shopping, that just wasn't an option this last year,'* noted one participant. Skagway relies on the ferry as a lower-cost transportation alternative to access elder care, buy groceries and other necessities, and attend traditional social gatherings such as *koo.éex*.

A Wrangell focus group member who owned businesses reported a 20% drop in revenue during the pandemic. Although the community was not highly affected by the No Sail Order, tourism numbers declined significantly due to border restrictions and visitors opting to stay home. According to one focus group participant, *'We wouldn't have made it if people didn't show up locally.'* Another participant, who was initially reluctant to receive outside government assistance, noted, *'I finally went ahead and applied for the small business loans, because it would help with spending in the community – the economic multiplier was a main draw.'*

Adaptive strategies and supports

Data from focus groups and the convenience survey show the variety of mechanisms and strategies used by study participants to adapt to the pandemic, as well as the reliance on various types of public and private assistance. We summarised adaptive strategies described by focus group participants in Table 4.

In Skagway, the focus of economic adaptive strategies was on support for mortgage assistance by the city government, reduced health fees and expanded behavioural health care, and financial support from the CARES Act. Hoonah residents received support from numerous sources. The cruise industry provided a donation to help offset resident losses. The community also received support from the city, which waived harbour fees, and from the Bureau of Indian Affairs and the

Table 4. Economic adaptive strategies used by Hoonah, Skagway, and Wrangell.

Community	Economic Adaptive Strategies
Skagway	• City provided direct payments and rental/mortgage assistance of \$1,000/Month • CARES Act funding, up to \$1,680 per month per resident • Reduced fees for health care; behavioural health care expanded • Utility assistance programme • Emergency Assistance Program – \$400 one time to each resident; \$200 for spouse/partner. • Tribal social services assistance—burial, emergency, and general financial assistance.
Hoonah	• Norwegian Cruise Lines donated \$2 million of unrestricted funds, assistance with lost sales tax • City budget reduced, sought new strategic partnerships • US Bureau of Indian Affairs provided grants and loans • City waived harbour fees • Central Council Tlingit Haida Indian Association provided fuel. Electricity and internet for elders and free Internet for children
Wrangell	• City economic relief programmes included general household economic relief assistance (up to \$500); General small business and commercial fisherman and deckhand emergency relief (\$2,000) • Targeted visitor industry relief (up to \$6,000) • Vessel repair haul-out lift fee assistance – 50% reimbursement to vessel owners; • Business and nonprofit accounting and professional services support (up to \$200) • Buy-local initiative launched

Central Council of Tlingit & Haida Indian Tribes of Alaska, which supplemented individual incomes. Wrangell’s adaptive response primarily focused on assisting local businesses in applying for federal COVID-19 funds and Alaska Coronavirus Aid, Relief, and Economic Security Act (CARES) monies to help residents carry on through 2021. The City of Wrangell also provided relief for households, businesses, and commercial fisherman. Focus group participants described community-based initiatives to encourage residents to ‘shop local.’

Survey participants were asked to share changes they had experienced in their household finances, employment, or routines because of the COVID-19 pandemic. Almost three quarters of respondents (n = 63; 72%) answered that they drew on aid programmes or financial assistance to help alleviate the impacts of the pandemic on their household (Figure 3). About 30% of respondents in Wrangell and Hoonah reported they did not utilise any resources or programmes in response to COVID-19 at the household level, while Skagway respondents most frequently used local governmental assistance. Overall, 30% of respondents used at least one resource (n = 106), and 10% reported using four or more resources. There were some similarities in the most frequently identified resources by community, but the proportion of respondents that used each resource varied; some of the most frequently reported resources were unique to the respondent’s community. Survey respondents who own or operate businesses (n = 143; 41%) saw increases in revenue; decreases, often substantial, were greater in number. In Skagway, two-thirds of business owners experienced revenue losses of 50% or more.

To help mitigate the impacts of COVID-19 on their businesses, many business owners took advantage of federal, local, or tribal aid programmes. Among business owners, only 33% in Wrangell and Hoonah reported using local government assistance, compared to 71% in Skagway. Overall, many relied on COVID-19 relief to mitigate the financial impacts of the pandemic. Altogether, only about a quarter of business owners reported that they did *not* use any government programmes,

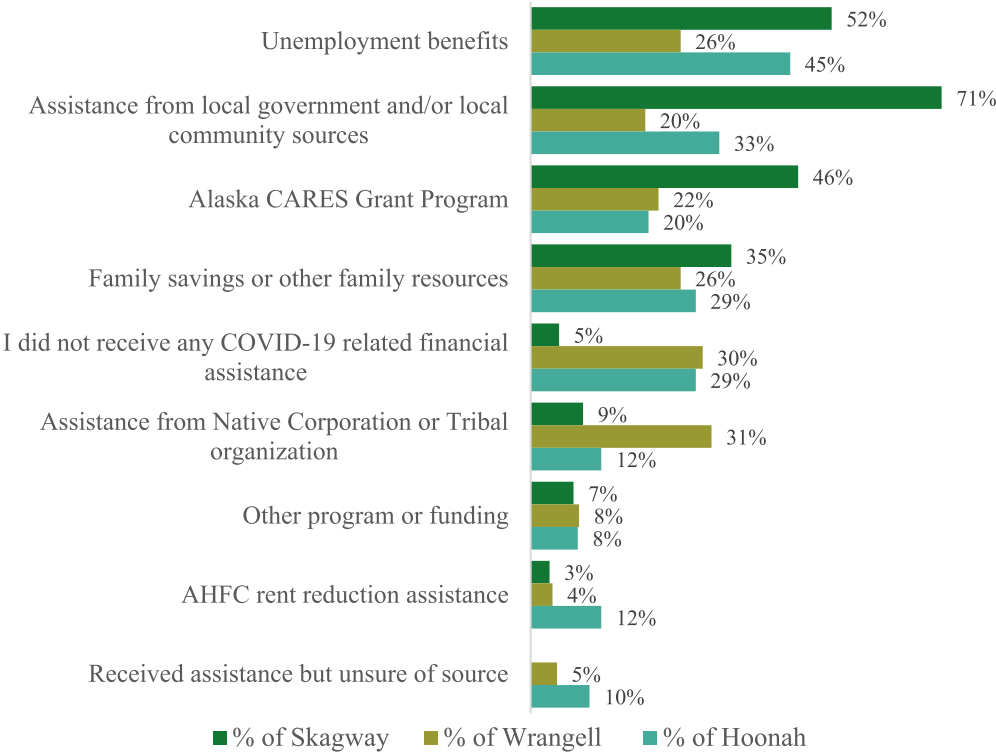


Figure 3. Financial assistance used by the three communities to mitigate the economic impacts from COVID-19.

funding, or resources to get through the pandemic ($n = 39$; 28%). Fewer Wrangell respondents used these resources (38% did not use any), and the number was low for Skagway and Hoonah business owners. In Wrangell and Hoonah, 'Federal Assistance and Alaska CARES' were the funding resources most frequently reported on the survey, while nearly half of Skagway business owner respondents who indicated they had received aid chose to answer, 'assistance from local government and/or local community' ($n = 28$, 48%).

Planning for future tourism

The dramatic reduction in cruise ship visitors and independent travellers to Southeast Alaska due to the COVID-19 pandemic provided an opportunity for residents to reflect on the future of tourism in their community.

Focus group participants in all three communities appeared to be enthusiastic in their support for future tourism, although some expressed caution about the speed in which they wanted to see tourism re-introduced. Concerns were especially pronounced about the frequency of visitor contact and visitor volumes, with questions about how to keep residents safe from the virus. Some community leaders talked about the types of collaboration needed to ensure health and safety. A Hoonah focus group participant stated, *'we are currently testing every person who comes into town, underwritten by the City. The collaboration and cooperation between entities has made Hoonah safe'*.

Comments related to the future of tourism also reflected a desire to have a more balanced approach that depends on lesson cruise visitors. One Hoonah participant talked about 'developed campgrounds for independent travelers.' A Skagway participant mentioned the need for an RV park and 'tourism planning for more outdoor trails and the independent traveler.' Wrangell

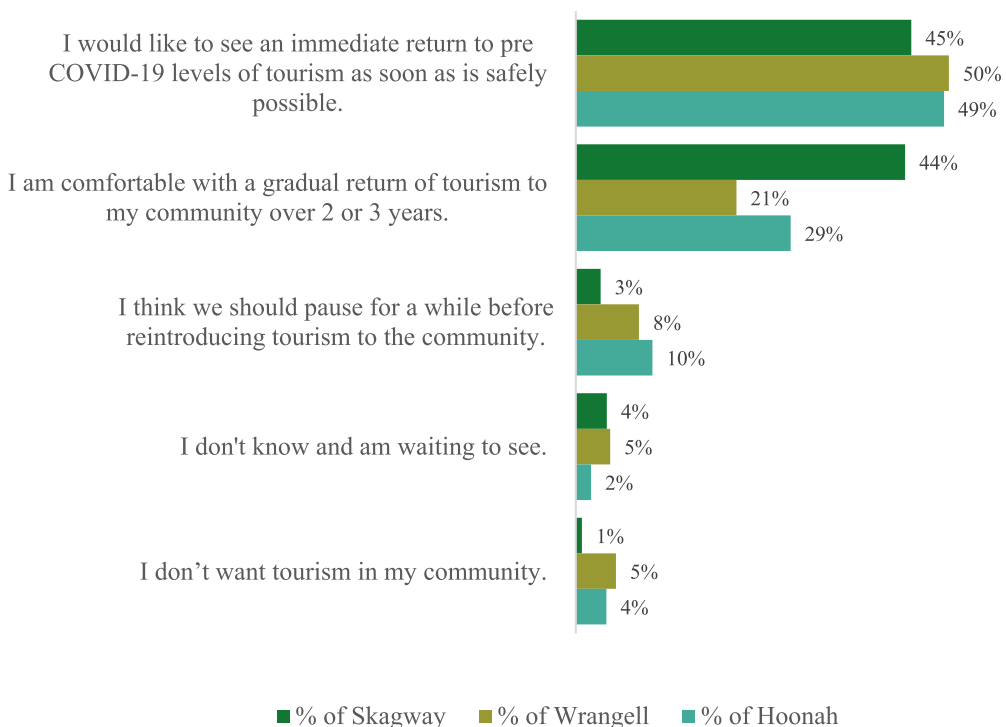


Figure 4. Responses to the question, 'How do you feel about the arrival of tourists to your community?'.

participants generally seemed satisfied with their city's balanced approach to tourism, as one participant noted, *'Visitors that come to Wrangell come because they want to avoid the cruise ship circuit. We need to market Wrangell as a safe place, tons of opportunity and not dependent on cruise ship traffic.'*

Survey respondents were asked to share their opinions about tourism in their community and generally (Figure 4). Across the three communities, approximately half stated they would like to see an 'immediate return to pre-COVID-19 tourism levels as soon as is safely possible. Skagway respondents were more likely to favour a gradual reintroduction with 44% saying, 'I am comfortable with a gradual return of tourism to my community over 2 or 3 years'. About 10% of Hoonah residents were in favour of taking a short pause. Very few respondents favoured no tourism in their community (overall 3%).

Discussion

This study investigated how three communities responded to decreased cruise ship port calls during the early phases of COVID-19 and the resulting effects on households and communities. Communities dependent on cruise ship tourism are vulnerable to fluctuations in regulations and policies imposed by outside authorities lying far beyond residents' influence and control—from the CDC to the U.S. Congress to the Canadian government. This is especially true in Southeast Alaska due to its geographic isolation. The participating communities demonstrated a variety of adaptive governance strategies, such as collaborative and adaptive networks, bottom-up and decentralised decision making, and self-organisation (Brunner & Lynch, 2010; McConnell et al., 2023). Examples that illustrate these adaptive strategies include neighbours sharing food, checking in with each other, and creating informal networks. This included bottom-up networking of interacting formal and informal Indigenous and non-Indigenous institutions. The COVID-19 pandemic pushed communities to consider planning and building more adaptive capacity in the form of economic diversification, reinforcement of existing social and cultural systems, and increased government flexibility and support for programmes in communities experiencing severe and rapid change.

Our results reinforce what has been identified elsewhere: that community resilience depends on local and Indigenous resources and knowledge as well as strengthened social relationships among community institutions (King et al., 2021; Suleimany et al., 2022; Zavaleta-Cortijo et al., 2020). Given the isolated setting and dependence on external supplies, Southeast Alaska's communities have a tradition of and motivation for innovation and self-sufficiency (Fried et al., 2023). A Hoonah focus participant underlined the importance of their community's resilience:

Hoonah is an amazing place that has always been able to adapt. ... You don't have 10,000 years of history without resilience and being adaptable – unity and coming together. If we can overcome a pandemic, imagine what we can overcome when we work together.

While the COVID-19 crisis added a sense of urgency because of the vagaries of federal aid programmes, participants generally agreed that resilience and adaptation were bolstered by traditional cultural and social structures. Remote and small communities such as those in this case study are characterised by extensive social networks and thus possess strong social capital—a key characteristic of resilience. Many of the successful adaptive actions taken are traceable to community members' willingness to support one another. Like previous studies, our respondents placed lower value on material needs and emphasised human connections and time spent outdoors (Ngo, 2022).

All three communities demonstrated capacity for creating a diverse set of coping strategies. In Skagway, a largely seasonal community that was highly invested in cruise-based tourism, the losses in revenue and tax base resulting from the No Sail Order made survival especially difficult. Skagway was sustained in part, due to the strength of the informal caring network, local government ingenuity, and federal and other COVID-19 emergency financial assistance. In Wrangell, which had a more diverse economy and larger year-round population, we saw evidence of collaboration among

organisations to provide an array of social, economic, and political services to adapt to the pandemic's challenges. In Hoonah, resilience can be traced to the community's foundation in Tlingit cultural lifeways of valuing social capital, as reflected in residents' subsistence routines and established patterns of sharing and reciprocity. Cultural practices such as hunting, fishing, gathering, and sharing food, gathering socially, and applying local and traditional knowledge enhanced Hoonah's resilience, increasing people's chances of weathering the pandemic.

Our case study communities each demonstrated evidence of pursuing collaborative approaches to managing future impacts of cruise ships and to enhance economic resilience in the face of unexpected shocks to the system (da Silva Lopes et al., 2021). Skagway business leaders began to seek private partnerships to attract independent travellers. Skagway municipal leaders also had considered an approach based on Juneau's 'Tourism Best Management Practices' programme. Partnerships between industry and local government were seen to provide a pathway toward addressing some of the concerns expressed about the present and future negative effects of the cruise ship industry on the residents of Skagway's envisioned quality of life. Wrangell business leaders expressed commitment to diversifying the tourism economy around ecotourism, cultural tourism, sport fishing, wildlife viewing, and small ship cruising. In Hoonah, community leaders sought to increase opportunities for future cruise-ship arrivals with leadership from their Native Corporation and attention to expanding benefits of cruise visitors to the community. These locally driven conversations about diversification and adaptation in livelihoods echo the findings of studies of pandemic responses in other tourism regions (King et al., 2021). Investment by businesses deeply embedded in the community enhance adaptive capacity and improve resilience (McIntyre & Roy, 2023).

Study contributions and limitations

A combination of secondary data, online surveys, and virtual focus groups enabled us to understand how the lives and livelihoods of residents in three Alaska communities changed during the first two years of the COVID-19 pandemic and how they may adapt to future crises. Online surveys with convenience samples have inherent limitations. Though efforts were made to distribute the survey to residents of the three case study communities, participation was voluntary and self-selecting. Online surveys exclude those with no or slow Internet connections, common in many Alaska homes. Older and low-income residents of rural areas are less likely to have Internet access (Cotton et al., 2014). Those without access to a computer or the Internet would face barriers to inclusion in the study. Because a convenience sample was used, we cannot generalise the data to the broader population of Southeast Alaska. Results reflect the viewpoints of those who responded. Future research to identify how rural Alaskans respond to large-scale events would benefit from more communities and a greater diversity and quantity of respondents. Finally, additional qualitative investigation is needed to understand how rural residents perceive risks, manage risks, and build personal and community resilience in the face of large-scale change. While this study focused on tourism opportunities, future research may consider a wider array of industry options.

These data were collected at a specific point during the COVID-19 pandemic and reflect the views of people during the pandemic. Follow-up research in the study communities could yield important insights about how individuals and communities adapted or responded to change. Our knowledge would be further bolstered by socioeconomic analysis of key data points over time to assess recovery from downturns during the pandemic. A longitudinal analysis focused on Southeast Alaska could be useful to compare with other regions globally.

Conclusion

Faced with the COVID-19 pandemic and a complete shutdown of cruise ship tourism, three rural communities in Southeast Alaska experienced subsequent downturns in their local employment opportunities and revenues and demonstrated an array of adaptive governance strategies and

increased reliance of traditional social and cultural pathways toward resilience. Relief was found for individuals, households, and businesses through a combination of local resident adaptive strategies, federal aid programmes, and support from regional organisations and tribes. Consistent with previous studies, we found strong networks of social capital in the studied communities, with neighbours sharing and checking in with each other, innovative activities being developed by families and youth, and localities reaching out to other Southeast Alaska communities for assistance. Study findings fit within a body of Arctic social science literature defining how social and cultural traditions are key to resilience of social economic systems in the north. What is unique to this research study is the direct comparison of tourism-dependent communities and their adaptations during the pandemic to a more diverse tourism community. Comparing across communities, we identified the importance of subsistence, food sharing and restored cultural events in predominantly-Indigenous communities, while non-Indigenous majority community members highlighted neighbour and friendship networks, filling the grocery gap for at-risk households and youth opportunities. Traditional social and cultural structures were leveraged during the pandemic disruption, increasing community resilience.

Note

1. Alaska's first case of COVID-19 was registered on March 12, 2020 (SOA, [2020b](#)).

Author contributions

CRediT: **James E. Powell:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing; **Lee K. Cervený:** Conceptualization, Formal analysis, Funding acquisition, Methodology, Project administration, Writing – original draft, Writing – review & editing; **Abigail R. Kaminski:** Data curation, Formal analysis, Methodology, Software, Writing – original draft; **Peggy Wilcox:** Data curation, Methodology, Writing – original draft; **Steve Colt:** Conceptualization, Formal analysis, Methodology, Writing – review & editing.

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