

## RESEARCH ARTICLES

# The Influence of Nature on Well-Being During the COVID-19 Pandemic: Views From New England Island Residents

Nicole Kras<sup>1a</sup>, Jennifer Keenan<sup>2b</sup><sup>1</sup> Guttman Community College, City University of New York, <sup>2</sup> Boston University

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Researchers are beginning to explore the impact of the COVID-19 pandemic on island populations, but little is known about the experiences of the residents of Nantucket and Martha's Vineyard in the Northeast region of the United States. In this study, islanders (N=41) provide insight into how spending time in nature influenced their well-being, especially their mental well-being, during this unprecedented time. For the majority of participants, the influence of nature on their well-being increased during the pandemic. Additionally, participants shared benefits of island living such as isolation from the mainland, as well as challenges such as food and supply shortages. Results from this study indicate that further research is needed around the importance of nature on well-being, especially mental health, for island residents.

## Introduction

Research on the immense impact of the COVID-19 pandemic on island populations is rapidly growing (Cuschieri & Grech, 2021; Matheson, 2022; Ripoll et al., 2021; Sindico et al., 2020). Topics of inquiry include the effect of quarantine measures, geographical isolation, concerns over mental health, impact on the physical and economic health of island residents, as well as the role of tourism during this unprecedented time (Agius et al., 2022; Baldacchino, 2018; Cuschieri & Grech, 2021; Galetic, 2020; Hakim, 2020; Matheson, 2022; Ripoll et al., 2021; Sindico et al., 2020). Common findings across island populations include the significance of community, limited access to resources and healthcare, and increased awareness of economic disparities. While there are some noted commonalities across these studies, due to the uniqueness of island communities, much of the research to date on the impact of COVID has been focused on specific islands throughout the world (Benwell et al., 2021; Cuschieri & Grech, 2021; Galetic, 2020; Ripoll et al., 2021; Sindico et al., 2020). The full effect of the COVID-19 pandemic on islands in the New England region of Northeast United States has yet to be discovered.

The current study takes an initial look at the impact that COVID-19 had on island residents of two New England islands, Martha's Vineyard and Nantucket. It differs from other research in that it explores the perceived impact that nature had on residents' overall well-being, including their mental,

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a nicole.kras@guttman.cuny.edu; corresponding author

b jkkeen@bu.edu

physical, social and emotional, and spiritual well-being. This inquiry is built upon a pre-pandemic study with this population that identified the important role that nature plays in their lives (Kras & Keenan, 2021). The current study adds to the literature by sharing how these island residents utilized nature as a coping skill during this extraordinary period while also providing a glimpse into island living during this time.

### **Well-being and the COVID-19 pandemic**

Since the beginning of the COVID-19 pandemic, there have been increases in the rates of obesity, depression, anxiety, stress, and post-traumatic stress disorder (PTSD) among many populations throughout the United States and globally (Aknin et al., 2022; Chugh, 2020; Dagklis, 2020; Jones et al., 2021; Khan & Smith, 2020; Maben & Bridges, 2020; Sani, 2020; Şimşir et al., 2022; Stamu-O'Brien, 2020; Wand, 2020). Additionally, there have been increases in reported loneliness, stress, violence against women, and child abuse (Chaudhury & Banerjee, 2020; Sánchez, 2020; Storz, 2020), as well as a predicted increase in severity with those with addictive disorders (Marsden, 2020). In an extensive review of the literature, Aknin et al. (2022) found that while anxiety, depression, and distress increased in the early months of the pandemic, suicide rates, life satisfaction, and loneliness remained consistent throughout the first year. Outcomes beyond the first year have yet to be published, yet research shows that social isolation can lead to an increased risk of mental disorders, and we have yet to see the complete impact of children and adolescents who “abruptly had a dramatic change of their normal life” (Sani, 2020, p. 372). In addition, there are significant mental health concerns related to the tremendous amount of loss that people have experienced and continue to experience (Walsh, 2020). Few studies have only begun to investigate the impact of the pandemic on the mental health of island residents and the coping strategies that they utilized (Chouchou et al., 2021; Ripoll et al., 2021).

### **Benefits of nature**

One coping strategy that was utilized by non-island and island residents alike during the pandemic was spending time in nature (Aknin et al., 2022; Ripoll et al., 2021; Ugolini et al., 2020; Venter et al., 2021). Spending time in nature and feeling connected to nature has been associated with multiple benefits such as increased happiness, improved mental health, increased cognitive functioning, increased well-being, and increased mindfulness (Berman et al., 2008; Chaudhury & Banerjee, 2020; Howell et al., 2011; Nisbet et al., 2011; Pritchard et al., 2020; Spano et al., 2021). During lockdown, the Centers for Disease Control and Prevention (CDC) indicated that participating in outdoor activities was safer than indoor activities, especially with those who were not in your household (CDC, 2021). This recommendation was also echoed in island communities encouraging residents to safely engage in outdoor activities to support physical health (Sindico et al., 2020). Not only was spending time outdoors safer and provided opportunities for physical

exercise, but additional benefits also included improved mental health, increased positive mood, and decreased social isolation in non-island populations (Dzhambov et al., 2021; Haider et al., 2021; McCunn, 2020).

### **Island blue spaces**

There are many benefits of living in coastal communities such as higher self-reported general and mental health, increased opportunities for stress reduction, and increased physical activity (Wheeler et al., 2012; White et al., 2013, 2020). Island blue spaces:

are often seen as spaces of health and well-being through their construction as sanctuaries, getaways, and places where it is possible to gain contentment as one 'takes in (i.e., embodies) the qualities of the setting (e.g., a view of blue space) and performs situated 'healthy activities' (e.g., reflecting on one's own life)" (Kearns & Coleman, 2018, p. 292).

Studies have explored how spending time at beaches has psychological benefits for children and families, as well as identifying the therapeutic benefits of blue space activities such as swimming, surfing, and fishing on mental and physical health (Ashbullby et al., 2013; Britton & Foley, 2021; Foley, 2015; McManus et al., 2011). While limited in number, studies have found that those who live near water even have higher self-reported general health and mental health (Wheeler et al., 2012; White et al., 2013, 2020).

There are varying views on why blue spaces provide such a multitude of benefits. Theories such as the Attention Restoration Theory and the Stress Recovery Theory, as well as the biophilia hypothesis, point to evolutionary ties (Kaplan, 1995; Ulrich, 1993; Ulrich et al., 1991). The concept of "blue mind" looks to neuroscience to describe the "neurological state the brain enters when around water" (Klinger, 2015, p. 54; Nichols, 2014). While there is increased interest in the benefits of living in all types of coastal communities, there is still a great deal to explore about the human-nature connection (Ives et al., 2017, 2018) as well as the lives of those who live in the vast array of blue spaces around the world (Gascon et al., 2015; Kearns et al., 2015).

### **New England island residents**

There is much to be learned about how living on an island impacts the lives of those who live there (Ashbullby et al., 2013; Gascon et al., 2015; Kearns et al., 2015; Satariano, 2019). This need is especially true when it comes to understanding the impact that COVID had on island communities. The population of focus in this study are island residents from two scarcely studied New England Islands: Nantucket and Martha's Vineyard. These two islands were selected due to feasibility and access, as well as higher year-round resident population as compared to other New England Islands.

## Nantucket

The island of Nantucket is located 30 miles off the south coast of Cape Cod, Massachusetts. It is 14 miles in length and three and a half miles wide. Over 40% of the island is conservation land (Town and County of Nantucket, MA, 2022) and is primarily considered rural. There are approximately 14,000 year-round residents, however, in the summer this population expands to over 80,000 (United States Census Bureau, 2022b). The island population is primarily Caucasian (84%) and the median family income is \$112,306 which is greater than the median family income of Massachusetts.

## Martha's Vineyard

The island of Martha's Vineyard is located just south of Cape Cod, MA. This island is 96 square miles with approximately 20,600 year-round residents, which grows to approximately 200,000 in the summer months (United States Census Bureau, 2022a). There are six small towns on Martha's Vineyard, 35% of the island is conservation land (Vineyard Conservation Society, 2022) and there are portions of the island that are considered rural. The island population is primarily Caucasian (89%) and median family income is \$77,318 which is lower than the median family income of Massachusetts.

## Pre-pandemic

Findings from a pre-pandemic study with these two scarcely studied island populations uncovered the positive influence of nature on their overall well-being, including residents' physical, mental, and social/emotional health, and for some, their spirituality (Kras & Keenan, 2021). These initial findings support similar benefits of spending time in nature that have been identified in studies with people who live in coastal communities (Ashbullby et al., 2013; Baldacchino, 2018; Satariano, 2019). For these New England Island residents, nature is a significant part of their lives by serving as the setting for physical exercise and being the place where most social interactions take place with family, friends, and pets (Kras & Keenan, 2021). Residents believe that nature possesses therapeutic qualities and improve their mental well-being. They shared how nature is a source of comfort, increases happiness, and directly improves their mental health. In addition, several participants indicated that nature supported a spiritual or reflective practice for them.

Based on these pre-pandemic findings within this population about the importance of nature in their lives, the current exploratory study was designed to acquire information on how residents utilized nature during the unprecedented period of lockdown. While some studies have looked at this human-nature relationship in non-island settings during the pandemic, there is currently minimal research on this human-nature relationship for island residents during this time (Dzhambov et al., 2021; McCunn, 2020; Venter et al., 2021). Given the unique characteristics of island communities, these populations should be distinctively studied. This study is guided by the following research questions, *How did nature influence the well-being of island*

Table 1. 'The influence of the natural environment on well-being' questionnaire.

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*For the purposes of this study, the term 'nature' refers to the physical world and aspects of the physical world such as trees and plants. The term 'well-being' refers to a state of being happy and healthy.*

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1. How would you rate the influence of nature on your overall well-being during the pandemic? (five-point Likert scale question ranging from nature has negatively influenced my well-being during the pandemic to nature has positively influenced my life during the pandemic)
2. Please select which one of the following best applies to you (The influence of nature on my well-being has decreased since the pandemic, The influence of nature on my well-being has not increased or decreased since the pandemic, The influence of nature on my well-being has increased since the pandemic).
3. Please provide an example(s) on how nature has influenced your over well-being, either negatively or positively, during the pandemic.
4. If nature has positively influenced your overall well-being during the pandemic, in which area(s) is this most present? You can select more than one choice.
5. Please provide an example of the selection(s) you chose.
6. Has living on an island had any influence on your overall well-being during a pandemic? Please explain.
7. Is there anything else you would like to add?
8. Identified gender:
9. Identified race/ethnicity:

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*residents during the COVID-19 pandemic? What were the benefits and challenges of living on Nantucket and Martha's Vineyard during the COVID-19 pandemic?*

## Methodology

### Participants

Study participants (N=41) are residents ( $n=8$  male,  $n=32$  female,  $n=1$  prefer not to disclose) of one of the two islands in the New England region of the United States. All participants in this study are 18 years of age or older and have lived on one of these two islands for a minimum of one year. Most participants (95%) identify as Non-Hispanic/White which is similar to island demographics (Nantucket 84% and Martha's Vineyard 89% identify as Caucasian). The total population of these two islands, with nearly 35,000 year-round residents, provided a large potential participant pool for the sample. Additionally, these two islands are similar in that they are subject to the same weather, tourist seasons and locations in New England.

### Questionnaire

The electronic questionnaire used in this consisted of 10 questions developed by the primary researcher to expand on findings from an initial study with this population (Kras & Keenan, 2021) and key aspects of adult development and well-being (Keyes & Magyar-Moe, 2003; Tehan & Isaacowitz, 2012) (see [Table 1](#)). These questions were reviewed for validity with content experts. Based on their feedback, the wording of two questions were clarified. Based on participant feedback from a previous study with this population, the terms "well-being" and "nature" were also defined in the questionnaire.

The questionnaire consisted of one Likert-style question that inquired about the perceived influence of the natural environment on overall well-being during the pandemic and open-ended questions that inquired about the influence of the natural environment on physical health, mental wellness, social/emotional well-being, and spirituality. An additional open-ended

question inquired about how living on an island influenced overall well-being during the pandemic. Open-ended questions were used to provide participants the opportunity to share their experiences and perspectives in their own words.

### **Procedure**

This study was conducted in March and April 2021, approximately one year after the COVID-19 pandemic started. Upon approval from the institutional review board, participants for this study were recruited from a list of island residents from a previous study (N=27) who indicated their interest in participating in future research on living on an island in New England. These potential participants were sent an electronic invitation to participate with the link to the study questionnaire. Participants were informed that responses to this questionnaire will be anonymous and no identifying information would be associated with any previous studies that they may have participated in with the researcher.

Utilizing a modified snowball sampling approach (Mertens, 2010), these potential participants were also asked to directly share the study information with anyone who they think would be interested in participating and who meets the study criteria (at least 18 years old and has lived on an island in New England for a minimum of one year). This approach differs from traditional snowball sampling in that the participants shared the study information directly with potential participants instead of referring the potential participants for the researcher to contact. The rationale behind using this method was to reach as many individuals as possible to whom the researchers did not have direct access (Mertens, 2010).

### **Analysis**

Participants were asked to respond to the question, *How would you rate the influence of nature on your overall well-being during the pandemic?* using a five-point Likert scale ranging from nature has negatively influenced my well-being during the pandemic to nature has positively influenced my life during the pandemic. Responses for each point on the Likert scale were recorded and reported as percentages. Similarly, responses to the closed-ended questions, questions two and four, were also recorded and reported as percentages.

Open-ended responses under each question underwent a multi-stepped thematic analysis (Nowell et al., 2017). During the first step of analysis, open-ended responses were collected and read through multiple times by the Principal Investigator to gain initial impressions. Reflections, similarities, participant quotes, and emerging questions were noted in a detailed reflective log. During this deductive analysis, responses under each question were then initially coded line by line for commonalities and re-read for accuracy. Notes on preliminary codes that emerged were made. At this point in the process, peer-debriefing took place to help in the prevention of bias and to increase the trustworthiness of the findings. A doctoral student, who was unfamiliar with the data and findings, repeated the first step and initially coded each of the responses. The researcher and the doctoral student met, reflective notes were

shared, and the initial codes were compared. Two discrepancies in the wording of the codes were found and discussed. From this, a new coding framework emerged.

All responses for each open-ended questions were then color coded using this framework and initial themes were identified, defined, quantified. The doctoral student then repeated this step as part of the peer-debriefing to ensure the validity of the findings. A concluding meeting took place where the findings were reviewed and discussed about how they informed the research question and related to previous findings with this population. Rich direct quotes from participants were also selected to include to increase the trustworthiness of the findings (Cope, 2014).

### **Positionality**

It is important to note that while the authors are frequent visitors to islands in New England, they are not residents. As non-islanders, it is important that the findings from the study allow the voices of New England Island residents to be shared. The researchers engage in continuous reflection on the research design and analysis of the data to minimize any bias when reporting the findings through consultation with academic researchers not associated with the area of study.

## **Results**

For the majority of islanders in this study, nature was utilized as coping strategy and positively influenced their well-being during the pandemic, emphasizing the significance of this human-nature relationship. Participant responses also provided a glimpse into what life was like during the COVID-19 pandemic including the benefits, but also the challenges of island living.

### **The influence of nature on well-being**

For the majority of participants, nature positively influenced their well-being during the pandemic, especially their mental well-being. Island residents found peace, beauty, and solitude in their time spend in nature, often leading to decreased stress and anxiety and increased happiness. Nature also provided the opportunity for exercise and recreational activities, while safely socializing with friends and family. The following are further descriptions on how nature was utilized as a coping skill and influenced broad areas of their lives: overall well-being, mental well-being, physical well-being, social and emotional well-being, and spiritual well-being during the pandemic.

### **Overall well-being**

Nature had a positive influence on participants' well-being during the COVID-19 pandemic. On a five-point Likert scale, ninety percent ( $n=37$ ) of participants selected a rating of "five" indicating that nature positively influenced their overall well-being during the pandemic (see [Table 2](#)). Eighty-one percent ( $n=33$ ) of participants indicated that the influence of nature on their well-being had increased during the pandemic.

Table 2. Questionnaire results: ‘How would you rate the influence of nature on your overall well-being during the pandemic?’

Score	1	2	3	4	5
	Nature has negatively influenced my well-being during the pandemic				Nature has positively influenced my well-being during the pandemic
	0%	0%	2.4% (n=1)	7.3% (n=3)	90.2% (n=37%)

In their open-ended responses, participants shared how nature positively impacted their overall well-being with responses such as “Sunshine and fresh air makes me feel good,” “When I am out in nature I have no stresses or worries” and “It gives a sense of peace and well being that’s needed when you live in fear of a pandemic.”

### Mental well-being

Almost all participants (95%) indicated that nature had positively influenced their mental well-being during the pandemic. Participants shared that being in nature has helped to reduce their stress and anxiety, and in many instances was essential for their mental health. Words such as “paramount,” “critical,” and “essential” were used in their open-ended responses to describe the importance nature had on their mental health. One participant elaborated in her response:

I need to be outside in order to feel any sort of stability. Actually, when the pandemic began I started going swimming in the cold ocean because everything else just felt so out of control. I could not trust my own body - every ache, headache, cough was cause for concern. There was so much focus on the fear of a fever. So I found immersing myself in the cold (40 degree) water was a way to exert control over my body.

Participants also shared how nature was utilized as a coping skill for specific mental health concerns such as anxiety and depression. One islander demonstrates this as follows:

Beauty of nature here helps me mentally by putting things in perspective. It provides the peace needed to maintain my mental well-being and provided an outlet for the additional stress and anxiety brought on by COVID. I am positive that if I did not have nature to retreat to, I would have been a complete basket case during quarantine.

Another islander echoes, “Walking through a beautiful grove of trees/along the beach taking the time to see, hear and smell everything around me become an essential escape from the anxiety & stress we have all been facing.” Responses such as, “Sometimes I have panic attacks and they are easier to manage when I connect to nature,” “I started going to the ocean or to other island bodies of water almost daily- it reducing anxiety and gives perspective”



and “Outdoor recreation (walking, running, biking) has reduced my anxiety” further demonstrate the importance of nature in supporting mental well-being.

### **Physical well-being**

Eighty-four percent of the participants said that nature had influenced their physical health during the pandemic. Participants shared that they have used nature as the setting for their physical exercise during this time and that for many, their frequency of exercise had increased. Some examples of these participant responses included, “Getting outside and being physical makes the body and mind feel better,” “I have explored and gone for more walks outside since the pandemic began,” and “Nature provided an outlet for physical exercise and was helpful in calming me.”

Providing more details about the type of outdoor activities they engaged in, responses included, “With so much open space I have been able to walk, run, trail ride, swim all while following the guidelines for COVID,” “With limited social interaction, solo activities such as hunting, fishing, shellfishing, and hiking have been critical in avoiding boredom, promoting exercise, and relieving stress” and “Outdoor recreation (walking, running, biking) has reduced my anxiety, kept me in shape during a time when gyms have been closed, and allowed me to have some social life.”

### **Social and emotional well-being**

Sixty-three percent of participants indicated that being in nature had influenced their social and emotional well-being during the pandemic. Primarily, nature had influenced this aspect of their well-being because it provided a space for participants to safely interact with others. Some examples included, “Meeting with others for outdoor walks with dogs is my only social interaction these days,” “Being able to safely gather with friends while riding bike outdoors filled my social needs” and “Seeing people on the road and getting a hello or a wave. Being reminded that we are all in this together.” One participant wrote:

While social interaction all but stopped for me I was able to people watch others enjoying nature. Sitting on the beach I noticed everyone was much more friendly. We were just happy to see another living being & everyone waved or yelled hello.

Island residents indicated that nature not only provided a safe space to interact with family and friends, but also a space to provide an “escape” when they needed it. Two examples of this included, “It provided an outlet of separation from my son who normally is away at school” and “Going out for walks makes me feel free from the lockdowns.”

### **Spiritual well-being**

Over half of the participants, 56%, indicated that nature had influenced their spirituality during the pandemic. While responses did not include pandemic-specific responses, they did describe how nature is a meditative and reflective

place for them to spend time. Some responses included, “Having quiet, peaceful natural areas to visit frequently fulfills my spiritual needs,” “Being in a nature provides a deep spiritual connection and provides a way for me to reset my emotions” and “As we respond to the living forces around us, our bodies connect to the spiritual realm.” Additionally, participants shared that spending time in nature “Feeds the soul, quiets/centers the mind and restores positive feelings of well-being” and led them to “Being more present and aware of surroundings” while also identifying specific examples from nature such as “Waves crashing on a beach can be very calming, even spiritual at times.”

### Island living during the COVID-19 pandemic

#### Benefits

For many participants, living on an island during the pandemic was beneficial in two main areas: perceived feelings of safety due to being isolated from the mainland and access to open spaces. While isolation from the mainland was noted as a challenge for some participants during the pandemic, it was also noted as a benefit by several participants stating that the isolation of the island made them feel safer. One island resident expanded on this benefit:

The isolation of XXX worked in our favor during the height of the pandemic as our covid numbers remained very low compared to the rest of the northeast. We were always able to relatively safely move about live nearly normally and had thousands of acres of conservation areas and beaches to escape to every single day without fear of catching covid or coming in to close proximity of large groups of people.

Being able to have access to many natural resources on the island was also emphasized as being a benefit during this time. One participant shared how “This island’s open spaces have absolutely been my saving grace during this time.” While other participants share similar thoughts:

It’s an awesome thing- anywhere you go there is a forest, swamp, beach, pond, etc. so we spend lots of time outside and it’s so healthy for my family and my children and it honestly easier to be here than anywhere else in New England.

I have lived off-island and there is no comparison to quality of life. On Island one of the things I value most is the proximity to great nature trails and the beach and organic activities. I also love that you don’t *have* to drive. Off island I feel there is a great loss of valuable time spent driving in the car. Here, I walk to town and look at everyone’s gardens on the way and I can choose to bike to work or the beach. The ability to choose as a family to go clamming or go exploring on the beach for hours is unique and decompressing from screens.

## Challenges

Participants also identified aspects of living on an island that made it challenging during the pandemic including food and supply shortages, safety concerns, access to health care, and isolation. One participant shared, “Our reliance on the mainland became apparent as the shelves in the supermarkets were frequently sparse.” Others noted safety concerns of having to depend on boat transportation for visiting family members on the mainland, along with the complexity of quarantining, COVID testing, and vaccine distribution. The isolation of island life, especially difficult during the winter months, caused some residents to feel anxious and depressed. One participant shares:

My well being is negatively impacted by bad weather and short days. When the pandemic began in March 2020, the days were getting longer and spring neared. There was hope. Throughout the fall and winter of 2021, the darker days were difficult.

Similarly, another resident wrote, “I think it is more isolating for sure in an already isolating situation,” while others even noted the isolation of the island provoked anxiety, “Living on XXX during the pandemic added to the sense of isolation that created some extra anxiety during a stressful time.” Additional thoughts about this isolation included:

Winter can be isolating here especially for me as I am disabled and getting around in bad weather is a bit harder. Usually I will manage to attend a few gatherings each winter or head off island for some retail therapy. Since Feb of last year I haven’t done anything social except for one car birthday parade. There was no contact though, we all stayed in our cars, paraded & went home. Knowing others were “trapped” having to stay home when they would surely have been out doing things made me sad too.

For some, the summer months brought additional COVID related concerns. One resident shared:

When the pandemic began, hearing the ferry boats in the morning and at night was very calming. I heard their whistles and I knew that there were still some things that were business as usual. The ferries, the tide, yet as the pandemic continued into the summer, the ferries became ominous as they brought hundreds and hundreds of summer people and tourists to the island. The year rounders had worked so hard to maintain our delicate ecosystem, and now we had this infiltration of people escaping to the island. There were many major news stories about the very rich fleeing to XXX.

## Discussion

New England Island residents faced similar challenges and benefits during the pandemic that were shared by other island residents world-wide (Agius et al., 2022; Baldacchino, 2018; Cuschieri & Grech, 2021; Galetic, 2020; Hakim, 2020; Matheson, 2022; Ripoll et al., 2021). For this population, many looked to nature as a place for restoration, for escape, for physical exercise, and for safely connecting with others during lockdown. Nature was a positive, and for some essential, influence on their well-being. For most participants this positive influence of nature on well-being increased during the pandemic. These findings further support the significance of the human-nature relationship, as well as the utilization of nature as a coping strategy during the pandemic.

### **The influence of nature on well-being**

The current study supports previous findings about the importance of nature in these islanders' lives (Kras & Keenan, 2021). Even when asked via open-ended questions about the benefits and challenges of island living during the pandemic, nature was a reoccurring theme in their responses. It is important to bring awareness to the multitude of benefits that nature provides to both island and non-island residents during these unsettling times.

Supporting the mental health of island residents post-pandemic continues to be an on-going challenge (Geddes, 2021; Hufstader, 2022). The Vineyard Gazette reported that as of September 2022, the Island Counseling Center had a shortage of clinicians and a waiting list of 75 islanders in need of mental health care. In the article, the Chief Executive Officer of Martha's Vineyard Community Services shared that there are "unexpected consequences of COVID" being seen in the community, especially with children (Hufstader, 2022, para. 6).

While spending time in nature is not a substitute for adequate mental health care, this study's findings can provide valuable insight for island community and mental healthcare professionals. Clinicians may consider the potential benefits of ecotherapy-related experiences such as therapeutic horticulture, green exercise, and animal-assisted interventions to recommend to their clients and embed in community and mental healthcare offerings as an additional way to support residents as they deal with the impact of the pandemic both now and in the future (Chaudhury & Banerjee, 2020; Hinde et al., 2021).

Islands also play a special role in sharing what they have learned during the pandemic with those on the mainland (Sindico et al., 2020). The nature-based coping strategies utilized by islanders during the pandemic adds to the literature on the multiple benefits of nature especially those for those living in island blue spaces, but it is important that this information also be shared with those in non-coastal communities. What has yet to be explored is if these island residents fared better than adults on the mainland. Further research should explore if island residents reported more positive outcomes in terms of mental health and overall well-being than those on the mainland both with and without access to nature.

## Island life during the pandemic

This study also has provided a deeper look at a population scarcely studied. As was seen in the previous study with this population, there can be conflicting views about living on an island even pre-pandemic (Kras & Keenan, 2021). Some residents shared how they felt safer being detached from the mainland and living on an island during this unprecedented time. In addition to the benefits of having access to natural resources, they liked living amongst a smaller population of people and having the support of the community. These benefits were further supported in other island studies (Sindico et al., 2020).

Some of the noted challenges of living on an island during the pandemic included limited supplies in the stores and depending on a ferry for transportation to see friends and family and shop on the mainland when there were safety concerns surrounding traveling. An additional significant concern was the amount of people coming to the island, especially during the summer months, when there were limited resources and heightened concerns about contracting the virus. These concerns were echoed in an article published at the beginning of the pandemic in the Washington Post titled “‘Stay on the mainland’: Tensions grow as affluent city dwellers fearing coronavirus retreat to second homes” (Farzan, 2020). This article stated “Nantucket’s hospital was only built for basic care and typically brings in doctors from the mainland in the summer. It also only has three ventilators, and some residents have been alarmed by the sudden influx of private jets and BMWs from New York” (Farzan, 2020, para. 7) and shared how then Massachusetts Governor Charlie Baker [warned](#) that those with property on Nantucket or Martha’s Vineyard should “stay on the mainland ” (Farzan, 2020, para. 5).

Similarly, an article in the Vineyard Gazette shared concern over limited island resources:

March had brought an unusual, approximately 4,500-person growth in population on the Vineyard, despite warnings from the governor that seasonal residents should stay away from the Islands. With 25 beds and three intensive care units, the hospital was at risk for being overwhelmed. Hotels were assessed for quarantine capacity. The Martha’s Vineyard Arena was evaluated for use as a temporary morgue. Three Covid-19 positive individuals had been transferred off the Island. One hadn’t made it back. (Asimow, 2020, para. 3)

Similar concerns were noted by Agius et al. (2022) in their study about the anxiety over the spread of COVID-19 on islands in the Central Mediterranean, as well as identified anxieties over food securities, essential workers, and fragile health infrastructure (Sindico et al., 2020). To try and combat the spread and the depletion of medical recourses, islands restricted ferry and air transportation services to try and combat the spread. These findings “highlight both the virtues of isolation, as well as the dangers of overdependence on

tourism” for small islands (Agius et al., 2022, p. 60). Future studies should look at the impact that tourism has on these small island communities, as well as the impact of gentrification on island residents’ lives.

### **Limitations**

While this study adds to the literature on this scarcely studied population, there are noted limitations. One limitation is social desirability. Participants who have positive associations with nature may have been more interested in participating in this study. Another limitation is the study’s relatively small sample size. Recruitment of small and rural community participants for online questionnaires can present sampling challenges (Smyth et al., 2010), as well COVID-related challenges that may have limited residents’ ability to participate. While the participants in this study represent similar demographics as both islands, the results are not necessarily generalizable to all island residents. Further studies with this population should aim to address this limitation of a small sample size when designing recruitment methods including using social media and community outreach. These studies should also seek to collect additional demographic data including income, employment, and educational background.

### **Future research**

There is much to explore about the life of those who decide to reside on islands in New England. This study supports the need to learn more about what it is like to live on these islands, inquiring into areas such as reasons for living in a remote environment, views of island life, the impact of tourism, and a deeper exploration into the influence of nature in their lives. As previously mentioned, further research should investigate if island residents reported more positive outcomes in terms of mental health and overall well-being than those on the mainland, both with and without access to nature. Future research may also want to utilize both qualitative and quantitative research methods to approach these areas of inquiry.

### **Conclusion**

Findings from this study not only provide insight on a scarcely studied population during the COVID-19 pandemic, but they also provide an awareness of the important role that nature played in the well-being and coping strategies of island residents during a time of lockdown and quarantine. Understanding the important influence that nature plays in the lives of these island residents provides further understanding of the human-nature relationship as seen on these islands, but also ignites more questions that need to be explored to guide our further understanding of these island populations and the multiple benefits associated with living in island communities.

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