

NEW YORK MASTER NATURALIST PROGRAM:
PARTICIPANT EXPERIENCE SURVEY

A Thesis

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by

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ABSTRACT

I designed and conducted a survey of New York Master Naturalist program participants to assess participant characteristics and three program outcomes: enjoyment, sense of community, and resilience. Survey results will help the Program Director shape program offerings for participants in future years and understand the impact of the pandemic on participants' program experiences. Respondents' mean enjoyment, sense of community, and resilience were compared between participants and non-participants in individual program elements using t-tests. The same comparisons were made between participants who were active and inactive during the COVID-19 pandemic. Results show that program elements with in-person components were related to higher enjoyment, and that program elements involving face-to-face interaction with other participants were related to a higher sense of community. All program elements were related to a higher resilience score. Whether a respondent was active during the pandemic influenced which program elements related to higher enjoyment, community, and resilience scores.

BIOGRAPHICAL SKETCH

Margaret Lin is completing her Master of Professional Studies in Natural Resources at Cornell University, with a concentration in Conservation Social Science and Decision Making. She completed her Bachelor of Science at Cornell as well, graduating in December 2020 with a major in Environment & Sustainability and minors in Climate Change and Music.

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INTRODUCTION

The New York Master Naturalist (NYMN) Program is a science-based training program teaching adults about New York's natural resources and empowering them to educate others and participate in conservation and monitoring projects (*About*, n.d.). Over 400 people have participated in the program since its inception in 2008. Program elements include an initial training weekend for each annual cohort, ongoing volunteering and training opportunities offered by both the NYMN program and external programs, and web-based forms of participant engagement. Participants must complete 30 volunteer hours and 30 training hours to earn the distinction of Master Naturalist. In consultation with Program Director Kristi Sullivan, I developed a web-based survey instrument, implemented the survey of both active and inactive program participants, and analyzed the results.

Project Objectives

The goal of this survey was to obtain information that Sullivan can use to shape the program offerings in the future and improve understanding of participants' experiences in the program. In cooperation with Sullivan, I developed 2 research objectives.

Assess which elements of the NYMN Program contribute to participants':

1. Enjoyment of the program
2. Sense of community within the program
3. Personal resilience

Assess whether these measures differ between participants who were active in the program during the pandemic and those who were not.

CONCEPTUAL FOUNDATION

Personal Resilience

The literature on personal resilience is complex and somewhat nebulous. Most publications define the term as a trait, process, or mechanism that allows an individual to maintain a relatively stable, healthy level of psychological and physical functioning when confronted with stressors or potentially traumatic events (van der Meer et al., 2018; Gooding et al., 2011; Connor et al., 2003). A resilient person does not necessarily fail to experience emotional distress, but rather is able to rebound or adapt quickly with few effects on their ability to function (Nucifora Jr. et al., 2013). Several scales have been proposed to measure personal resilience; however, there is little consensus in the literature as to a standard scale or measurement (van der Meer et al., 2018; Windle et al., 2011).

I created my own set of questions within the survey to measure personal resilience while maintaining relevancy of the questions to the NYMN program and survey respondents, and designed these questions based on the current literature. Studies measuring resilience investigate a variety of potential qualities of resilience; here I have italicized those I found most relevant to the experiences of participants in the NYMN program and which I attempted to measure. van der Meer et al. suggest two potential underlying constructs of psychological resilience: *self-confidence*, or trust in oneself; and *self-efficacy*, positive beliefs about adaptive coping with stressful situations (2018). They also positively evaluate a Dutch resilience scale which measured three factors of resilience relevant to my study: *self-reliance* (the belief in oneself and one's capabilities), *perseverance* (being able to keep going despite difficulties), and “*meaningfulness* (feeling that life has a purpose and life is valuable)” (van der Meer et al., 2018).

The literature also examines factors that can contribute to resilience, which are distinct from traits we consider as providing resilience. In a study on psychological resilience between younger and older adults, Gooding et al. used a questionnaire to measure *social support*, calling it a sub-scale of resilience (2011). *Physical fitness* has also been shown to positively influence

personal resilience by minimizing stress reactivity, protecting against adverse metabolic consequences of stressful events, and generally inducing positive psychological and physiological effects (Silverman & Deuster, 2014). These measurable characteristics (listed below) were those that I also hypothesized might be influenced by participation in the NYMN Program, where participants may be learning, teaching, and meeting new people.

Table 1. Components of personal resilience measured in survey

Components of Personal Resilience Measured
Self-confidence
Self-reliance
Self-efficacy
Perseverance
Meaningfulness
Social support
Physical fitness

Keith Tidball's research suggests that time spent outdoors, especially interacting with nature, can increase personal resilience. Regarding nature's role in human resilience, Tidball hypothesizes that humans' affinity for the rest of nature, the process of remembering that attraction, and the urge to express it through creation of restorative environments (which may also restore or increase ecological function) may confer resilience not only on a personal level, but also contribute to ecological system resilience (Tidball 2012). It is therefore reasonable to hypothesize that participation in the NYMN Program may positively contribute to participants' personal resilience.

METHODS

Web Survey Instrument

In cooperation with Sullivan and my faculty mentor Dr. Bruce Lauber, I developed a self-administered web-based questionnaire to address Sullivan's program evaluation objectives (see Appendix A for full survey instrument). The questionnaire characterized program participants' experiences in the NYMN program, including their enjoyment of specific program elements, sense of community with other program participants, and their resilience, as well as respondents' background characteristics. Rather than selecting a sample of participants to be surveyed, the questionnaire was emailed to all program participant email addresses available (372) from my personal student email.

Survey Implementation

The survey was designed and distributed using Qualtrics Survey Software, and implemented between September 14, 2021, and October 12, 2021. I contacted each participant up to 4 times with a message and a link to the questionnaire, only contacting participants who had not yet completed the survey for each reminder message.

Analysis

All analyses were completed using StataCorp Stata, Version 17.0, accessed through Cornell Center for Social Science Research's Apps on Demand software. I calculated descriptive statistics (frequencies, means, and medians) to compare results for each variable across participants. Because every program participant is required to participate in the initial training weekend, and enjoyment scores for that program element had little variation, analysis of this program element is not included. I used t-tests to test for differences in the means of enjoyment, sense of community, and resilience between those who participated in each program element and those who did not, and also between people who participated in the program during the pandemic and those who did not. It is important to note that statistical tests run using Stata assume that the sample is representative of a hypothetical, infinitely large population. The sample of respondents

to this survey (39.5% of 372 people) came from a finite, small population of program participants. Although I did not receive responses from all members of the population, I treated my results as a census of the population of interest and so did not calculate statistical significance.

I created multi-item scales to measure program enjoyment and participant resilience. Scale construction is described below.

Enjoyment. I created a scale variable to describe respondents' overall enjoyment of the NYMN Program by taking the mean of their responses to questions assessing their enjoyment of individual program elements (including the initial training weekend). If a respondent indicated that they did not participate in a given element, that response was recoded as missing. Therefore, average enjoyment scores are based only on program elements a respondent has participated in. Their overall enjoyment of their participation in the NYMN Program is represented on a 5-point scale.

Community. A question on the survey asked participants to indicate on a 5-point Likert scale how much they agree or disagree with the statement regarding other participants in the program: "I feel like part of a community." Respondents' answer to this question constitutes their single-item, 5-point community score.

Resilience. I originally created a 4-item scale using confirmatory factor analysis (Cronbach's $\alpha = .936$) to measure changes in resilience, based on the questions that most directly reflected other assessments of resilience in the literature. The items asked respondents to identify on a 5-point Likert scale how much they agreed or disagreed with whether the following statements reflected what they had gotten out of participating in the program: "I am more confident," "I have a better perspective of my place in the world," "I am more able to persevere through difficult times," and "I am more self-reliant." However, I had also included in the survey additional questions more specific to NYMN Program participants' experiences that I hypothesized would correlate to

resilience as well. These questions were: “I feel more connected to the natural environment where I live,” “I have learned new ways of looking at things,” “I met and kept in touch with new people,” “The NYMN program nurtured my curiosity,” “I feel more physically fit,” “I feel like I am positively contributing to conservation in NY,” and “I feel empowered to teach others about conservation and natural resources.” After performing an exploratory factor analysis and determining that respondents’ answers across all 11 resilience-coded items correlated significantly at the $P < .05$ level, I created a 11-item scale (Cronbach’s $\alpha = .917$) based on these questions. All items in the scale asked respondents to identify on a 5-point Likert scale how much they agreed or disagreed with whether the statements reflected what they had gotten out of participating in the program, so the combined resilience scale corresponds to Likert scale values. Including the additional questions in the 5-point resilience scale minimizes any possible issues regarding inaccurate responses or errors.

Table 2. Scale reliability and factor loadings of items to measure resilience.

Variable and measurement item text	Factor Loadings
<i>Resilience</i> (Cronbach’s $\alpha = .9167$)	
I am more confident	0.858
I have a better perspective of my place in the world	0.849
I am more able to persevere through difficult times	0.849
I am more self-reliant	0.832
I feel empowered to teach others about conservation and natural resources	0.783
I feel like I am positively contributing to conservation in NY	0.650
I have learned new ways of looking at things	0.648
The NYMN Program nurtured my curiosity	0.633
I feel more physically fit	0.616
I feel more connected to the natural environment where I live	0.615
I met and kept in touch with new people	0.596

RESULTS AND DISCUSSION

I received a total of 147 completed surveys from a pool of 372 deliverable emails, yielding an overall response rate of 39.5%.

Respondent Characteristics

See Appendix B for a comprehensive set of results tables by survey question. The mean age of respondents was 56 years old, and the majority of respondents were female (67.0%). A majority of respondents (58.2%) had completed the training and volunteering requirements to become a Master Naturalist at the time of taking the survey, meaning the remaining 42% either are still working towards 30 volunteer and 30 training hours, or had stopped participating in the program before they earned their Master Naturalist designation. 44.4% of respondents are employed full-time, and 31.2% are retired.

Program Enjoyment

The mean enjoyment score across survey respondents was 4.54, indicating a high level of overall enjoyment in the program. I wanted to know if there would be a difference in mean enjoyment score between people who did participate in a given program element and those who did not, so I analyzed the data by running t-tests for each program element for those two groups (Table 3). Respondents who participated in other organizations' virtual training events¹ showed a mean enjoyment score 0.11 points higher than respondents who did not. Given the wide variety of possible training events by other organizations available, it is difficult to assess potential reasons for this. One possible explanation is that respondents that participate in virtual training events seek those that specifically fit their interests, leading to more overall enjoyment. Or, perhaps respondents who already enjoy the program seek out more virtual training events. The other program element with a similar mean difference in enjoyment scores between participants and non-participants was live Naturalist Exchange presentations (+0.10).

The program element that had the largest negative mean difference between participants and non-participants was the NYMN Instagram page (-0.31), meaning that respondents who

¹ Volunteering and training hours earned through other organizations' events count as credits towards becoming a Master Naturalist in the NYMN Program.

participate in the Instagram page had a mean enjoyment score 0.31 points lower than respondents who did not. The Instagram page is not very active, so respondents who participate in it but scored that question low for enjoyment may push the overall mean enjoyment score down. However, this is a large difference, so unless the Instagram page is one of the few program elements they participate in, other factors likely contributed to this pattern.

Table 3. Mean overall enjoyment by participation in program elements.

Overall (N = 113)

Program Element	Participant Mean Overall Enjoyment	Non-Participant Mean Overall Enjoyment	Difference
Other organizations' virtual training events	4.56	4.45	0.11
The Naturalist Exchange live webinar presentations by other volunteers	4.56	4.46	0.10
NYMN-hosted in-person training events	4.56	4.5	0.06
Other organizations' in-person volunteer events	4.55	4.5	0.05
The Naturalist Exchange recorded webinars	4.55	4.52	0.03
Emails to the listserv sharing volunteer/training opportunities	4.54	4.53	0.01
Other organizations' in-person training events	4.53	4.54	-0.01
Featured Master Naturalist posts on the NYMN website	4.52	4.58	-0.06
NYMN-hosted in-person volunteering events (volunteer weekends)	4.49	4.57	-0.08
Emails to the listserv announcing Master Naturalists' level advancements	4.53	4.63	-0.1
Featured opportunity posts on the NYMN website	4.51	4.61	-0.1
The NYMN Facebook page	4.47	4.61	-0.14
The NYMN Instagram page	4.33	4.64	-0.31

I also wanted to know if the program elements related to higher enjoyment scores would be the same if I separated the results by respondents who were active in the NYMN Program during the pandemic and those who were not. I analyzed the data by running t-tests, but on these respondent segments separately. For respondents active during the pandemic, the program element that showed the largest mean difference in overall enjoyment for participants was emails to the listserv announcing Master Naturalists' level advancements (+0.31) (Table 4). This could mean that the program element contributes to enjoyment; it could also be the case that people who generally enjoy the program more also happen to participate in this program element. Interestingly, respondents who participated in other organizations' in-person volunteer events during the pandemic had a program enjoyment score 0.87 points lower than respondents who did not. Because the program offerings of other organizations are widely varied, it is difficult to hypothesize why this might be. The pandemic itself could have influenced enjoyment of these events if in-person volunteering events were not as rewarding or enjoyable with restrictions in place.

Table 4. Mean overall enjoyment by participation in program elements – active during pandemic.

Only respondents active during the COVID-19 pandemic (N = 85)

Program Element	Participant Mean Overall Enjoyment	Non-Participant Mean Overall Enjoyment	Difference
Emails to the listserv announcing Master Naturalists' level advancements	4.58	4.27	0.31
The Naturalist Exchange live webinar presentations by other volunteers	4.59	4.42	0.17
The Naturalist Exchange recorded webinars	4.59	4.51	0.08
Emails to the listserv sharing volunteer/training opportunities	4.58	4.5	0.08
Other organizations' virtual training events	4.57	4.51	0.06

Featured Master Naturalist posts on the NYMN website	4.58	4.54	0.04
NYMN-hosted in-person training events	4.57	4.56	0.01
Featured opportunity posts on the NYMN website	4.57	4.57	0
Other organizations' in-person training events	4.56	4.58	-0.02
NYMN-hosted in-person volunteering events (volunteer weekends)	4.53	4.59	-0.06
The NYMN Facebook page	4.49	4.65	-0.16
The NYMN Instagram page	4.38	4.67	-0.29
Other organizations' in-person volunteer events	4.57	5.44	-0.87

For respondents inactive during the pandemic, the program element that had the largest increase in mean overall enjoyment score from non-participants to participants was NYMN-hosted in-person training events (+0.14) (Table 5). This may mean that this program elements contributes to overall enjoyment, or that respondents who enjoy the program overall also tend to participate in NYMN-hosted in-person training events. Some program elements also showed lower mean overall enjoyment scores for participants, including the NYMN Instagram page (-0.46), featured opportunity posts on the NYMN website (-0.45), and featured Master Naturalist posts on the NYMN website (-0.46). These lower scores do not necessarily mean that these program elements lead to lower overall enjoyment; respondents who participate in these elements may have lower overall enjoyment scores from ranking other elements low.

Table 5. Mean overall enjoyment by participation in program elements – inactive during pandemic.

Only respondents inactive during the COVID-19 pandemic (N = 28)

Program Element	Participant Mean Overall Enjoyment	Non-Participant Mean Overall Enjoyment	Difference
NYMN-hosted in-person training events	4.52	4.38	0.14
Other organizations' virtual training events	4.47	4.4	0.07

Other organizations' in-person volunteer events	4.46	4.4	0.06
Other organizations' in-person training events	4.43	4.46	-0.03
The Naturalist Exchange live webinar presentations by other volunteers	4.39	4.49	-0.1
The NYMN Facebook page	4.39	4.49	-0.1
NYMN-hosted in-person volunteering events (volunteer weekends)	4.3	4.5	-0.2
The Naturalist Exchange recorded webinars	4.34	4.54	-0.2
Emails to the listserv sharing volunteer/training opportunities	4.4	4.61	-0.21
Featured Master Naturalist posts on the NYMN website	4.27	4.64	-0.37
Featured opportunity posts on the NYMN website	4.2	4.65	-0.45
The NYMN Instagram page	4.08	4.54	-0.46
Emails to the listserv announcing Master Naturalists' level advancements	4.38	5	-0.62

Enjoyment of individual program elements. The results for respondent enjoyment of each program element individually can be found in Appendix B, 14; they are also reproduced here. Worth noting is that no program element had a minimum enjoyment score of 1, meaning no respondents indicated that they do not enjoy a program element.

Table 6. Individual program element enjoyment results.

The NYMN program engages Master Naturalists in a variety of ways. Please indicate your enjoyment of the following elements of the NYMN program. (1=dislike, 5=enjoy; 6=I do not participate in this element, removed from statistical calculations for this table)

Statement	Mean	SD	Min	Max	N	Number who don't participate in given element
The initial NYMN training	4.90	0.33	3	5	112	0
NYMN-hosted in-person training events	4.80	0.49	3	5	66	46

Other organizations' in-person volunteer events	4.80	0.47	3	5	87	25
Other organizations' in-person training events	4.80	0.48	3	5	83	29
NYMN-hosted in-person volunteering events (volunteer weekends)	4.70	0.62	3	5	43	70
The Naturalist Exchange live webinar presentations by other volunteers	4.60	0.70	2	5	84	27
Emails to the listserv sharing volunteer/training opportunities	4.60	0.71	3	5	96	17
Other organizations' virtual training events	4.50	0.72	2	5	92	21
The Naturalist Exchange recorded webinars	4.50	0.73	3	5	72	41
Featured opportunity posts on the NYMN website	4.40	0.81	3	5	79	32
Featured Master Naturalist posts on the NYMN website	4.30	0.80	3	5	82	28
The NYMN Facebook page	4.20	0.81	3	5	79	32
Emails to the listserv announcing Master Naturalists' level advancements	4.10	0.92	2	5	107	5
The NYMN Instagram page	3.80	0.81	3	5	36	76

Sense of Community

The mean community score across survey respondents was 3.90, indicating that the average level of agreement with the statement “I feel like part of a community” was between “neither agree nor disagree” and “somewhat agree,” but very close to “somewhat agree.” I wanted to know if there would be a difference in mean community score between people who did participate in a given program element and those who did not, so I analyzed the data by

running t-tests for each program element for those two groups (Table 7). The program element that showed the largest mean difference in sense of community between those that did and did not participate was in-person training events hosted by the NYMN Program. Those who participated in these events had a mean community score of 4.05, as opposed to those who did not participate, who had a mean community score of 3.58, a difference of nearly half a point (.47). Respondents who participated in in-person volunteering events hosted by the NYMN Program also showed a higher mean community score (4.07) than those who did not (3.72), a difference of .35 points. Participants in live Naturalist Exchange webinar presentations showed a mean community score 0.33 points higher than non-participants. All these program elements involve face-to-face interaction with other participants, be it in-person or online, which may be a reason people who participate in these elements show higher community scores.

Other program elements that showed higher mean community scores for participants were other organizations' in-person volunteer events (+0.28), Naturalist Exchange recorded webinars (+0.24), and Featured Master Naturalist posts on the NYMN website (+0.21). These mean differences do not necessarily mean that participation in these program elements causes a higher sense of community, only that participants with a higher sense of community tend to participate in these elements. It is plausible that program participants who already feel a strong sense of community seek more community-centered events.

Table 7. Mean sense of community by participation in program elements.

Overall (N = 111)

Program Element	Participant Mean Sense of Community	Non-Participant Mean Sense of Community	Difference
NYMN-hosted in-person training events	4.05	3.58	0.47
NYMN-hosted in-person volunteering events (volunteer weekends)	4.07	3.72	0.35
The Naturalist Exchange live webinar presentations by other volunteers	3.94	3.61	0.33

Other organizations' in-person volunteer events	3.92	3.64	0.28
The Naturalist Exchange recorded webinars	3.94	3.7	0.24
Featured Master Naturalist posts on the NYMN website	3.91	3.7	0.21
Other organizations' in-person training events	3.88	3.79	0.09
Featured opportunity posts on the NYMN website	3.87	3.82	0.05
The NYMN Facebook page	3.84	3.87	-0.03
Other organizations' virtual training events	3.84	3.9	-0.06
Emails to the listserv announcing Master Naturalists' level advancements	3.85	4	-0.15
The NYMN Instagram page	3.69	3.93	-0.24
Emails to the listserv sharing volunteer/training opportunities	3.8	4.19	-0.39

I also wanted to know if the program elements related to higher community scores would be the same if I separated the results by respondents who were active in the NYMN Program during the pandemic and those who were not. I analyzed the data by running t-tests again, but on these respondent segments separately. Respondents who participated in the program during the pandemic and also participated in The Naturalist Exchange, either live or recorded, had about a third of a point higher mean community score than those who were also active during the pandemic but did not participate in those elements (Table 8). The Naturalist Exchange was one of the few program elements that had regular offerings during the pandemic and allowed interaction with other participants, so this may contribute to its prominence as a program element related to higher community scores for participants active during the pandemic.

Table 8. Mean sense of community by participation in program elements – active during pandemic.

Only respondents active during the COVID-19 pandemic (N = 84)

Program Element	Participant Mean Sense of Community	Non-Participant Mean Sense of Community	Difference
NYMN-hosted in-person volunteering events (volunteer weekends)	4.18	3.8	0.38
NYMN-hosted in-person training events	4.09	3.71	0.38
The Naturalist Exchange recorded webinars	4.05	3.73	0.32
The Naturalist Exchange live webinar presentations by other volunteers	4	3.69	0.31
Other organizations' in-person volunteer events	4.01	3.71	0.3
Other organizations' in-person training events	3.98	3.85	0.13
Featured Master Naturalist posts on the NYMN website	3.95	3.94	0.01
The NYMN Facebook page	3.93	3.98	-0.05
Featured opportunity posts on the NYMN website	3.92	4.05	-0.13
The NYMN Instagram page	3.77	4.06	-0.29
Emails to the listserv announcing Master Naturalists' level advancements	3.94	4.33	-0.39
Emails to the listserv sharing volunteer/training opportunities	3.89	4.36	-0.47
Other organizations' virtual training events	3.89	4.4	-0.51

For respondents inactive during the pandemic, the element that corresponded to the greatest difference in mean community score was participation in NYMN-hosted in-person training events (+0.55), again providing face-to-face interaction with other program participants (Table 9). Inactive respondents also showed a large difference in mean community score between people who read Featured Master Naturalists posts on the NYMN website and those

who did not (+0.40). This may be due to the fact that people who already have a high sense of community in the program seek out the Featured Master Naturalist posts to read. The Naturalist Exchange did not exist before the pandemic, so comparisons for respondents who were inactive during the pandemic but answered that they participated in the Naturalist Exchange are not informative. These responses may be due to respondents who have participated in Naturalist Exchange activities, but do not consider this participation to make them “active” in the program.

Table 9. Mean sense of community by participation in program elements – inactive during pandemic.

Only respondents inactive during the COVID-19 pandemic (N = 27)

Program Element	Participant Mean Sense of Community	Non-Participant Mean Sense of Community	Difference
NYMN-hosted in-person training events	3.84	3.29	0.55
Featured Master Naturalist posts on the NYMN website	3.73	3.33	0.40
Other organizations’ virtual training events	3.63	3.45	0.18
Featured opportunity posts on the NYMN website	3.62	3.5	0.12
NYMN-hosted in-person volunteering events (volunteer weekends)	3.63	3.53	0.10
Other organizations’ in-person volunteer events	3.58	3.50	0.08
Emails to the listserv announcing Master Naturalists’ level advancements	3.56	3.50	0.06
*The Naturalist Exchange live webinar presentations by other volunteers	3.58	3.53	0.05
The NYMN Facebook page	3.54	3.57	-0.03
Other organizations’ in-person training events	3.53	3.63	-0.1
*The Naturalist Exchange recorded webinars	3.46	3.64	-0.18
The NYMN Instagram page	3.33	3.62	-0.29

Emails to the listserv sharing volunteer/training opportunities	3.5	3.8	-0.3
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*These program elements did not exist prior to the pandemic, however, some respondents who indicated not participating in volunteering or training during the pandemic provided a response to these questions other than “I did not participate in this element.”

Resilience

The mean resilience score across survey respondents was 3.80 out of 5. I wanted to know if there would be a difference in mean resilience score between people who did participate in a given program element and those who did not, so I analyzed the data by running t-tests for each program element for those two groups (Table 10). All program elements showed that respondents who participated in that element had higher mean resilience scores than non-participants to some degree. For all respondents, the program element that had the largest difference in mean resilience score between participants and non-participants was Master Naturalist level advancement emails sent to the listserv (+0.79). Another large difference was between those who read Featured Master Naturalist posts on the NYMN website and those who do not (+0.43). These results may suggest that people who seek to learn from other program participants’ experiences have higher resilience scores. Additional elements of note include NYMN-hosted in-person training events (+0.36), the Facebook page (+0.30), and Featured Opportunity posts on the website (+0.23).

Table 10. Mean personal resilience by participation in program elements.

Overall (N = 110)

Program Element	Participant Mean Resilience	Non-Participant Mean Resilience	Difference
Emails to the listserv announcing Master Naturalists’ level advancements	3.85	3.06	0.79
Featured Master Naturalist posts on the NYMN website	3.93	3.5	0.43
NYMN-hosted in-person training events	3.96	3.6	0.36
The NYMN Facebook page	3.96	3.66	0.3
Featured opportunity posts on the NYMN website	3.88	3.65	0.23

The Naturalist Exchange recorded webinars	3.89	3.67	0.22
Other organizations' in-person training events	3.86	3.67	0.19
Other organizations' in-person volunteer events	3.85	3.67	0.18
The Naturalist Exchange live webinar presentations by other volunteers	3.86	3.68	0.18
Emails to the listserv sharing volunteer/training opportunities	3.83	3.69	0.14
NYMN-hosted in-person volunteering events (volunteer weekends)	3.89	3.76	0.13
Other organizations' virtual training events	3.83	3.72	0.11
The NYMN Instagram page	3.87	3.79	0.08

I also wanted to know if the program elements related to higher resilience scores would be the same if I separated the results by respondents who were active in the NYMN Program during the pandemic and those who were not. I analyzed the data by running t-tests again, but on these respondent segments separately (Table 11). For respondents active during the pandemic, the program element that showed the greatest difference in mean resilience score for participants was emails to the listserv announcing Master Naturalists' level advancements, like the results for respondents overall. The group of respondents who participated in this program element during the pandemic had a mean resilience score 1.7 points higher than those who did not. Also important for mean resilience scores of respondents active during the pandemic were Featured Master Naturalist posts on the NYMN website, participating in which yielded a mean resilience score 0.46 points higher than non-participants. I am unable to claim causality in either direction because the reasoning behind self-reported answers cannot be made clear, but generally, respondents active during the pandemic who participated in emails to the listserv announcing level advancements, Featured Master Naturalist posts, or NYMN-hosted in-person training events were a more likely to say that the program made them more resilient.

Table 11. Mean personal resilience by participation in program elements – active during pandemic.

Only respondents active during the COVID-19 pandemic (N = 82)

Program Element	Participant Mean Resilience	Non-Participant Mean Resilience	Difference
Emails to the listserv announcing Master Naturalists' level advancements	3.93	2.23	1.7
Featured Master Naturalist posts on the NYMN website	3.98	3.52	0.46
NYMN-hosted in-person training events	4	3.68	0.32
The NYMN Facebook page	3.99	3.78	0.21
Featured opportunity posts on the NYMN website	3.92	3.75	0.17
NYMN-hosted in-person volunteering events (volunteer weekends)	3.96	3.83	0.13
Other organizations' in-person training events	3.91	3.8	0.11
The Naturalist Exchange recorded webinars	3.92	3.81	0.11
Other organizations' in-person volunteer events	3.9	3.82	0.08
The Naturalist Exchange live webinar presentations by other volunteers	3.89	3.85	0.04
Emails to the listserv sharing volunteer/training opportunities	3.89	3.85	0.04
The NYMN Instagram page	3.91	3.87	0.04
Other organizations' virtual training events	3.83	4.37	-0.54

Interestingly, for respondents inactive during the pandemic, participating in other organizations' virtual training events was associated with the largest difference in mean resilience scores (+0.68), but participation in the same element by respondents active during the pandemic corresponded to a mean resilience score 0.54 points less than respondents who did not participate in that element (Table 12). Given the wide variety of possible training events by other organizations available, it is difficult to assess potential reasons for these results. It is possible that more resilient respondents who were active during the pandemic were seeking different types of opportunities instead of virtual training events. Additionally, virtual training events were

less common before the pandemic, so seeking out these events at that time may have been more likely for more resilient respondents. For respondents inactive during the pandemic, participating in the NYMN Facebook page also related to a mean resilience score over half a point higher than those who did not participate. This may be related to a respondent's age – social media can be less accessible for older people, who make up the majority of program participants. Before internet interaction became widely necessary to interact with people during the pandemic, participating in this program element may have been more limited to people who were more resilient.

Table 12. Mean personal resilience by participation in program elements – inactive during pandemic.

Only respondents inactive during the COVID-19 pandemic (N = 28)

Program Element	Participant Mean Resilience	Non-Participant Mean Resilience	Difference
Other organizations' virtual training events	3.86	3.18	0.68
The NYMN Facebook page	3.87	3.35	0.52
NYMN-hosted in-person training events	3.78	3.43	0.35
The Naturalist Exchange recorded webinars	3.78	3.44	0.34
Other organizations' in-person volunteer events	3.69	3.36	0.33
Other organizations' in-person training events	3.69	3.4	0.29
Featured Master Naturalist posts on the NYMN website	3.71	3.46	0.25
Emails to the listserv sharing volunteer/training opportunities	3.64	3.42	0.22
Featured opportunity posts on the NYMN website	3.66	3.54	0.12
The Naturalist Exchange live webinar presentations by other volunteers	3.66	3.55	0.11
The NYMN Instagram page	3.65	3.58	0.07
NYMN-hosted in-person volunteering events (volunteer weekends)	3.6	3.59	0.01
Emails to the listserv announcing Master Naturalists' level advancements	3.59	3.62	-0.03

I also wanted to know if participating in the program at all during the pandemic was related to higher resilience scores. I ran a t-test to compare the mean resilience score of respondents who were active in the program during the pandemic, and respondents who were inactive (Table 13).

Table 13. Mean personal resilience by pandemic participation status.

Active during pandemic – mean resilience	Inactive during pandemic – mean resilience	Difference
3.89	3.60	0.29

Respondents who were active during the pandemic had a mean resilience score 0.29 points higher than inactive respondents. Furthermore, performing a pairwise correlation between resilience scores and the number of program elements a respondent participated in (regardless of participation in the pandemic) also showed that as the number of program elements a respondent participated in increased, so did their resilience score (correlation coefficient 0.27). It is unclear whether these relationships are due to the program conferring resilience, or if respondents who were more likely to say the program made them resilient also happened to participate during the pandemic or participate in more program elements.

CONCLUSIONS

Considerations

It should be noted that no respondents indicated that they “do not enjoy” any given program element, most program elements had a minimum enjoyment score of 3, out of a maximum of 5, and all but one program element had a mean enjoyment score above 4. Additionally, the average overall enjoyment score for respondents was 4.54. This shows a high level of general enjoyment in the program and suggests that most participants are not dissatisfied with their program experience. When looking at the enjoyment scores for each individual program element, it becomes apparent that in-person activities, either hosted by the NYMN Program or by other organizations, are the most enjoyable activities for respondents. Providing

more opportunities for in-person engagement, whether through NYMN-hosted events or sharing more opportunities from other organizations would likely be well-received.

Program elements that involved face-to-face interaction between program participants, especially those hosted by the NYMN program, were related to higher community scores overall, regardless of pandemic participation. This included the Naturalist Exchange, suggesting that participating in this program element introduced during the COVID-19 pandemic could continue to relate to a higher sense of community even after the pandemic abates. Before the pandemic, people who participated in Featured Master Naturalist posts were also more likely to report a higher sense of community, although it is unclear if those people gain a sense of community through reading the posts or seek the posts because they already have a high sense of community.

Overall, all program elements were related to higher resilience scores for respondents. It is difficult to determine causal reasons for this effect, but different facets of the elements like social interaction or promoting self-efficacy may contribute to this pattern. Additionally, the various elements of the Master Naturalist program provide opportunities for participants to both act and reflect on their affinity for nature, and to express that affinity through creating restored environments, which Tidball's research suggests may confer personal resilience (Tidball 2012). Interestingly, for respondents overall and for respondents active during the pandemic, those who participated in emails to the listserv announcing Master Naturalist level advancements were more likely to report higher resilience scores. However, for those inactive during the pandemic, the element that related to the largest positive mean difference for participants was other organizations' virtual training events. Any participation in the program during the pandemic was also related to higher resilience scores. Again, the causal relationship behind these patterns is difficult to pinpoint with this data alone, but I hypothesize these patterns may have to do with more resilient respondents actively seeking opportunities to participate in.

Study Limitations

One of the limitations of the study was that the survey may not have reached every program participant who would have responded. After the survey concluded, some program participants indicated that they had not seen the survey, either due to busy email inboxes or strict spam filters. However, a 39.5% response rate still provided adequate responses to get an overall picture of participant experiences.

It was challenging to interpret the enjoyment score results, mainly because each program element a respondent participated in mathematically was weighted equally into their overall enjoyment score. In respondents' actual experience however, any given program element may have a large or minimal impact on someone's overall enjoyment of the program compared to other elements. For example, someone may not enjoy the NYMN Instagram page, but that might not diminish their overall enjoyment of the program as much as not enjoying virtual training events. A better way to evaluate overall enjoyment would have been to include an additional question asking participants to indicate their enjoyment in the program as a whole.

Additionally, because this study relies on self-reported data from survey respondents, causality between participation in program elements and program enjoyment, sense of community, and resilience can only be hypothesized, not implied. Other factors present in respondents' experiences may have influenced their responses to all questions in ways that were unable to be captured by the survey. For example, a study by Windle et al. found that although a strong sense of personal agency (a factor of resilience my survey's resilience scale focused on) is important for negotiating adversity, "the availability of resources from the level of family and community are also important" (Windle et al., 2011). The COVID-19 pandemic likely had widely ranging effects on respondents in many areas of their lives, including availability of family and community resources, making it difficult to be completely sure that the outcomes they attribute to the NYMN Program are fully accurate. For example, if a respondent experienced hardships in other areas of their life, they may have been unable to reap all the benefits to their resilience the Program could have. Despite this limitation, the survey results still

provide important insights into the experiences of NYMN Program participants on the surface, and especially into the ways respondents view their own experiences. Program participant interviews or more detailed future surveys could be conducted to delve deeper into the causes of some of the results.

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APPENDIX A (Survey Instrument)

NEW YORK MASTER NATURALIST: Program Participant Experience

The New York Master Naturalist Program is sponsoring this survey to learn more about the experience of participants in the program. Your response will help the NYMN Program improve its offerings to participants and shape the program in the future.

We would like input from EVERYONE who receives this questionnaire, even if you have not been an active participant of the NYMN program in recent years. We want the results of this survey to reflect the perspectives of all NYMN participants.

Your participation is voluntary, but we hope you will take a few minutes to complete the survey. Your identity will be kept confidential and the information you provide will never be associated with your name. If you have any questions, please contact Maggie Lin at mcl239@cornell.edu.

Thank you for your participation!

A: Program participation status and pandemic participation

1. In what year did you join the Master Naturalist Program?: _____

2. People participate in the NYMN program for a variety of reasons. How important were each of the following reasons to YOU in deciding to participate in the program? (not at all important, somewhat important, important, very important)
 - I enjoy spending time outside
 - I enjoy spending time with others who have similar interests
 - I wanted to do my part to alleviate environmental degradation
 - I enjoy teaching others about the environment and natural resources
 - I wanted to learn more about the environment and natural resources
 - I am passionate about wildlife
 - I wanted to give back to my community
 - I wanted to contribute to scientific research

3. If the statements above did not best describe your most important reason for deciding to participate in the program, please write that reason here: _____

4. Regarding your initial MN training at the beginning of the program; (strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree)
 - I enjoyed the training
 - I was able to meet new people
 - I felt comfortable asking questions
 - I learned something new that interested me
 - I left the event energized to continue training and volunteering

5. Have you participated in training hours towards the NYMN program in the last 5 years?
- Yes
 - No

6. Have you participated in training hours towards the NYMN program during the COVID-19 pandemic?

- Yes
- No

[Yes] later includes E

[No] later includes D

7. Have you participated in volunteer hours towards the NYMN program in the last 5 years?
- Yes
 - No

8. Have you participated in volunteer hours towards the NYMN program during the COVID-19 pandemic?

- Yes
- No

[Yes] later includes E

[No] later includes D

[No] to all questions directs immediately to B, if any [Yes] then directs to C

B: For respondents who have not participated in 5 years

People who have completed the initial MN training have different reasons for not continuing to participate in the NYMN program. Please indicate whether you agree or disagree with the following statements about why you did not participate in the NYMN program in the last 5 years. (strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree)

9. I did not participate in the program the last three years because:
- I am not interested in participating
 - I do not have time to participate
 - I moved away from New York State
 - I volunteer or participate in training activities but do not record my hours *[any amount of agree to this question sends them through the appropriate rest of the form]*

10. If none of the previous statements best describes your reason(s) for not continuing to participate in the NYMN program, please describe them here: _____

[finishing this section directs to F]

C: Program elements, for all participants of the last 5 years

11. Please indicate how much you agree or disagree with the following statements about other participants in the program: (strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree)

- I feel like part of a community
- I would like more opportunities to engage with other participants in person
- I would like more opportunities to engage with other participants online

Consider all of your NYMN training and volunteer credits to date. Generally:

12. How many volunteer hours do you typically spend (none, few, some, many)

- Working individually
- Working with one other person
- Working in a group (3 or more people)

13. How many training hours do you typically spend (none, few, some, many)

- Training individually
- Training with one other person
- Training in a group (3 or more people)

14. The NYMN program engages Master Naturalists in a variety of ways. Please indicate your enjoyment of the following elements of the NYMN program. (dislike, somewhat dislike, neither dislike nor enjoy, somewhat enjoy, enjoy, I do not participate in this element)

- The initial NYMN training
- NYMN-hosted in-person volunteering events (volunteer weekends)
- NYMN-hosted in-person training events
- The Naturalist Exchange live webinar presentations by other volunteers
- The Naturalist Exchange recorded webinars
- Other organizations' in-person volunteer events
- Other organizations' in-person training events
- Other organizations' virtual training events
- Emails to the listserv sharing volunteer/training opportunities
- Emails to the listserv announcing Master Naturalists' level advancements
- Featured Master Naturalist posts on the NYMN website
- Featured opportunity posts on the NYMN website
- The NYMN Instagram page
- The NYMN Facebook page

15. Does the NYMN Facebook page help you feel like part of a community?

- Yes
- Somewhat
- No
- I do not visit the MN Facebook page

16. Does the NYMN Instagram page help you feel like part of a community?

- Yes
- Somewhat
- No
- I do not visit the MN Instagram page

17. Have you attended an in-person volunteer or training event hosted by the NYMN program in the last 5 years? (yes or no, no skips the next 4 questions)

Considering the event(s) you attended:

18. How frequently did you learn something new?

- Never *[skips next question]*
- Sometimes
- Often
- Always

19. How frequently did the information you learned lead you to seek new volunteer work in those topic areas?

- Never
- Sometimes
- Often
- Always

20. How frequently did you meet someone new?

- Never *[skips next question]*
- Sometimes
- Often
- Always

21. As a result of meeting someone new at a NYMN event, how often did that lead to you finding and participating in new volunteering opportunities?

- Never
- Sometimes
- Often
- Always

22. Have you attended an in-person volunteering or training event hosted by an organization other than the Master Naturalist Program in the last 5 years? (yes or no, no skips the next 4 questions)

Considering the event(s) you attended:

23. How frequently did you learn something new?

- Never
- Sometimes
- Often
- Always

24. How frequently did the information you learned lead you to seek new volunteer work in those topic areas?

- Never
- Sometimes
- Often
- Always

25. How frequently did you meet someone new?

- Never
- Sometimes
- Often
- Always

26. As a result of meeting someone new at an event, how often did that lead to you finding and participating in new volunteering opportunities?

- Never
- Sometimes
- Often
- Always

27. Many NYMN participants find volunteer or training opportunities offered by other organizations. The NYMN program occasionally highlights external training and volunteer opportunities through various channels. Please indicate through which of the following channels you have learned about volunteer or training opportunities:

- Emails to the listserv announcing opportunities
- Emails to the listserv announcing Master Naturalists' level advancements and highlighting the organizations with which they volunteer
- Featured opportunities posted to the NYMN website
- The Volunteer Opportunities in NY State booklet on the NYMN website
- The NYMN Facebook page
- The NYMN Instagram page
- Word of mouth from other MN volunteers

Finishing this section directs to F

D: Respondents who did not participate during the pandemic

28. People who have completed the initial MN training have different reasons for not participating in the NYMN program. Please indicate whether you agree or disagree with the following statements about why you didn't participate in the NYMN program during the pandemic. (strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree)

- I did not want to participate in the NYMN program
- I did not have time to participate in the NYMN program
- I did not have opportunities to volunteer
- I did not have training opportunities

- Health and/or safety concerns prevented me from participating in the MN program
- I had other priorities that prevented my participation in the MN program
- I did not live in New York State during the COVID-19 pandemic

29. If the statements above did not best describe your most important reason for deciding not to participate in the program, please write that reason here:

Finishing this section directs to F

E: Respondents that did participate during the pandemic

30. The Naturalist Exchange is a newer element of the NYMN program, added during the pandemic. Regarding the Naturalist Exchange, have you (yes or no):

- Attended a live webinar on Zoom
- Watched a webinar posted on the YouTube channel
- Given a Naturalist Exchange presentation

31. If you attended a live Naturalist Exchange webinar on Zoom, how much did the event provide you with a sense of community?

- Very much
- Somewhat
- Not at all
- I have not attended a live Naturalist Exchange webinar

32. During the pandemic, did you volunteer more, less, or roughly the same amount as before the pandemic?

- More
- Roughly the same amount
- Less

33. During the pandemic, did you participate in training more, less, or roughly the same amount as before the pandemic?

- More
- Roughly the same amount
- Less

34. Did you participate in an online training or volunteer event during the pandemic?

- Yes
- No

35. If yes, had you participated in an online training or volunteer event before the pandemic?

- Yes
- No

36. When pandemic restrictions are fully lifted, do you plan to continue to seek opportunities to train and/or volunteer online?

- Yes
- No

Finishing this section directs to F

F: All respondents, summary questions

37. As a result of participating in this program, I have shared something I learned with others

- Yes
- No

38. Participants may get a variety of benefits from the NYMN program. Please indicate whether you agree or disagree with the following statements about what you have gotten out of the NYMN program: (strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree)

- *I feel more connected to the natural environment where I live
- I am more knowledgeable about conservation and natural resources in NY
- *I have learned new ways of looking at things
- *I met and kept in touch with new people
- *The NYMN program nurtured my curiosity
- *I feel more physically fit
- I feel like I am positively contributing to conservation in NY
- *I feel empowered to teach others about conservation and natural resources
- *I am more confident
- *I have a better perspective of my place in the world
- *I am more able to persevere through difficult times
- *I am more self-reliant

39. Have you earned the training and volunteer requirements to become a Master Naturalist? (yes or no)

40. In what county do you currently reside?: _____ (dropdown)

Finishing this section directs to G

G: Demographics

41. What is your gender?

- Female
- Male
- Other

42. In what year were you born? _____

43. Which of the following best describes where you live?

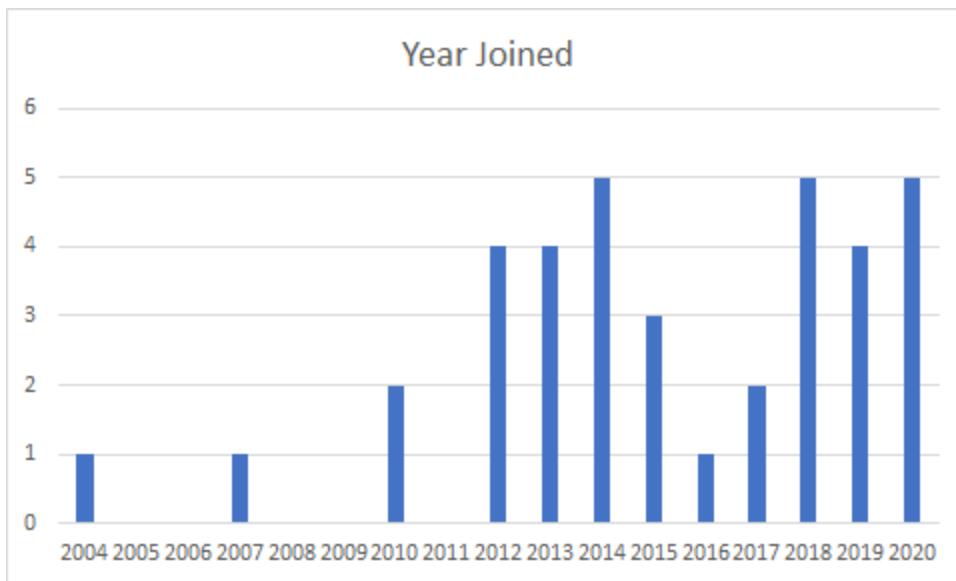
- A town/city with many neighbors
 - Outside a town/city with scattered neighbors
 - A rural area with few neighbors
44. Which of these best describes your current employment?
- Employed full-time
 - Employed part-time
 - Not employed, seeking employment
 - Not employed, not seeking employment
45. Are you retired?
- Yes
 - No

Thank you for your participation in this survey! Your responses will help the New York Master Naturalist Program improve its offerings to current and future participants. We appreciate your continued interest in the program and your care for New York's natural resources.

APPENDIX B (Results by Survey Question)

Answered by all respondents:

1. In what year did you join the Master Naturalist Program?: _____



2. People participate in the NYMN program for a variety of reasons. How important were each of the following reasons to YOU in deciding to participate in the program? (1=not at all important, somewhat important, important, 4=very important)

Statement	Mean	SD	Min	Max	N
I enjoy spending time outside	3.90	0.37	2	4	135
I wanted to learn more about the environment and natural resources	3.80	0.48	2	4	135
I am passionate about wildlife	3.60	0.67	1	4	135
I wanted to do my part to alleviate environmental degradation	3.40	0.77	1	4	135
I enjoy teaching others about the environment and natural resources	3.40	0.85	1	4	135
I wanted to give back to my community	3.30	0.76	1	4	135
I enjoy spending time with others who have similar interests	3.20	0.81	1	4	135

I wanted to contribute to scientific research	3.00	0.91	1	4	135
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3. If the statements above did not best describe your most important reason for deciding to participate in the program, please write that reason here:

I am passionate about teaching children to be “naturalists”
I wanted to learn more about the nature around me.
I wanted to learn more about the environment and natural resources
I wanted to be Master Naturalist to be an educator in Naturalist Educator in programs for children and adults
Gave me a more rounded background in nature.
na
Not the most important reason, but: I wanted a 'certification' of my expertise in the subject matter.
Quality of the presenters and resources
I want to make sure I help facilitate positive changes, for my children's futures.
Self improvement
help me in my work
Outstanding experience as an MN in VA
I wanted to have a credential to work at Rogers Center in Sherburne as a volunteer.
I am more passionate about plants than wildlife :)
I want to be the best steward I can be for my own property.
Friend talked me into it.
I wanted to update my environmental science education for my roll as a volunteer museum educator.
I've been an avid amateur naturalist and it's ichthological want to be my entire life
Staying active mentally & physically

The biggest reason was I had heard about similar programs in other states and thought it would be beneficial to my career as an environmental educator.

4. Regarding your initial MN training at the beginning of the program; (1=strongly disagree, 5=strongly agree)

Statement	Mean	SD	Min	Max	N
I learned something new that interested me	4.80	0.45	2	5	135
I enjoyed the training	4.80	0.46	2	5	135
I felt comfortable asking questions	4.70	0.61	2	5	135
I left the event energized to continue training and volunteering	4.60	0.73	1	5	135
I was able to meet new people	4.40	0.70	3	5	135

5. Have you participated in training hours towards the NYMN program in the last 5 years?

Yes	72.3%
No	27.7%

N = 139

6. Have you participated in training hours towards the NYMN program during the COVID-19 pandemic?

Yes	49.3%
No	50.7%

N = 107

7. Have you participated in volunteer hours towards the NYMN program in the last 5 years?

Yes	66.2%
No	33.8%

N = 139

8. Have you participated in volunteer hours towards the NYMN program during the COVID-19 pandemic?

Yes	47.3%
No	52.7%

N = 98

Answered by inactive participants:

9. People who have completed the initial MN training have different reasons for not continuing to participate in the NYMN program. Please indicate whether you agree or disagree with the following statements about why you did not participate in the NYMN program in the last 5 years. (1=strongly disagree, 5=strongly agree)

Statement	Mean	SD	Min	Max	N
I do not have time to participate	3.50	1.40	1	5	25
I volunteer or participate in training activities but do not record my hours	2.80	1.50	1	5	26
I am not interested in participating	2.30	1.40	1	5	25
I moved away from New York State	1.40	1.20	1	5	25

10. If none of the previous statements best describes your reason(s) for not continuing to participate in the NYMN program, please describe them here:

I volunteer as a Master Gardener, this training and ongoing experience and reading expand my knowledge.
It was too much time, and I was already involved with the Natural Areas Academy with Cornell Botanic Garden. I went on to collect seeds for them and for a local native plant society.
I was severely injured in a car accident and was no longer able to participate
I moved back to Minnesota and am now certified as a Minnesota Master Naturalist
I feel slightly overwhelmed -- not knowing what choices there are, I've never recorded anything so don't know how that process is. I suggest having folks record something before leaving the weekend, so it's not a hump that inhibits participation (like for me!)
I live in New York City and it was not easy to find a place to volunteer. After I started volunteering in Highbridge Park, I had an injury that prevented subsequent volunteering. I

then became a Master Gardener through CCE Nassau and have been volunteering through that program and therefore did not pursue further Master Naturalist hours.
Within a year of completing the program, I started full-time+ work. (I believe my MN Training enhanced my resume at the environmental org I applied to!)
My work with the Rogers Center in Sherburne is more administrative (Board Member). My instruction activity relies more on my professional background.
The opportunities to attend events are not frequent in this area, either training or volunteering
I could not find anyone to volunteer with in my specific focus
i work for a park so most of the hours i would have would actually be paid, not volunteer.
I took the training as a way to build skills for my job, and found it very useful but did not have the extra time to do volunteering
Covid and family issues
I didn't want to become a master naturalist, just interested in learning and volunteering.
many programs are in distant areas from my residence
I was working as an environmental educator for a non-profit and found it difficult to distinguish volunteer work from my paid duties. Currently I am a park Ranger and have similar issues plus I've started a family and don't have the same amount of time to dedicate

Answered by respondents active in the program the last 5 years:

11. Please indicate how much you agree or disagree with the following statements about other participants in the program: (1=strongly disagree, 5=strongly agree)

Statement	Mean	SD	Min	Max	N
I would like more opportunities to engage with other participants in person	4.10	0.79	3	5	111
I feel like part of a community	3.90	0.82	2	5	111
I would like more opportunities to engage with other participants online	3.60	0.83	2	5	111

Consider all of your NYMN training and volunteer credits to date. Generally:

12. How many volunteer hours do you typically spend... (1=none, 4=many)

Statement	Mean	SD	Min	Max	N
Working individually?	2.80	1.10	1	4	112
Working with one other person?	2.30	0.98	1	4	111
Working in a group (3 or more people)?	2.30	1.00	1	4	113

13. How many training hours do you typically spend... (1=none, 4=many)

Statement	Mean	SD	Min	Max	N
Training individually?	2.80	1.10	1	4	111
Training in a group (3 or more people)?	2.30	1.00	1	4	112
Training with one other person?	1.80	0.91	1	4	110

14. The NYMN program engages Master Naturalists in a variety of ways. Please indicate your enjoyment of the following elements of the NYMN program. (1=dislike, 5=enjoy; 6=I do not participate in this element, removed from statistical calculations for this table)

Statement	Mean	SD	Min	Max	N	Number who don't participate in given element
The initial NYMN training	4.90	0.33	3	5	112	0
NYMN-hosted in-person training events	4.80	0.49	3	5	66	46
Other organizations' in-person volunteer events	4.80	0.47	3	5	87	25
Other organizations' in-person training events	4.80	0.48	3	5	83	29
NYMN-hosted in-person volunteering events (volunteer weekends)	4.70	0.62	3	5	43	70
The Naturalist Exchange live webinar presentations by other volunteers	4.60	0.70	2	5	84	27

Emails to the listserv sharing volunteer/training opportunities	4.60	0.71	3	5	96	17
Other organizations' virtual training events	4.50	0.72	2	5	92	21
The Naturalist Exchange recorded webinars	4.50	0.73	3	5	72	41
Featured opportunity posts on the NYMN website	4.40	0.81	3	5	79	32
Featured Master Naturalist posts on the NYMN website	4.30	0.80	3	5	82	28
The NYMN Facebook page	4.20	0.81	3	5	79	32
Emails to the listserv announcing Master Naturalists' level advancements	4.10	0.92	2	5	107	5
The NYMN Instagram page	3.80	0.81	3	5	36	76

15. Does the NYMN Facebook page help you feel like part of a community?

Yes	13.6%
Somewhat	42.4%
No	11.9%
I do not visit the MN Facebook page	32.2%

N = 59

16. Does the NYMN Instagram page help you feel like part of a community?

Yes	13.9%
Somewhat	25.0%
No	8.3%
I do not visit the MN Instagram page	52.8%

N = 36

17. Have you attended an in-person volunteer or training event hosted by the NYMN program in the last 5 years?

Yes	65.2%
No	34.8%

N = 112

Considering the event(s) you attended:

18. How frequently did you learn something new?

Never	0.0%
Sometimes	4.1%
Often	32.9%
Always	63.0%

N = 73

19. How frequently did the information you learned lead you to seek new volunteer work in those topic areas?

Never	0.2%
Sometimes	70.8%
Often	19.4%
Always	5.6%

N = 72

20. How frequently did you meet someone new?

Never	1.4%
Sometimes	34.7%
Often	32.0%
Always	32.0%

N = 72

21. As a result of meeting someone new at a NYMN event, how often did that lead to you finding and participating in new volunteering opportunities?

Never	39.1%
Sometimes	47.8%
Often	10.1%
Always	2.9%

N = 69

22. Have you attended an in-person volunteering or training event hosted by an organization other than the Master Naturalist Program in the last 5 years?

Yes	78.6%
No	21.4%

N = 112

Considering the event(s) you attended:

23. How frequently did you learn something new?

Never	0.0%
Sometimes	6.8%
Often	36.4%
Always	56.8%

N = 88

24. How frequently did the information you learned lead you to seek new volunteer work in those topic areas?

Never	6.7%
Sometimes	66.0%
Often	25.0%
Always	3.4%

N = 88

25. How frequently did you meet someone new?

Never	3.4%
Sometimes	44.3%
Often	31.8%
Always	20.5%

N = 88

26. As a result of meeting someone new at an event, how often did that lead to you finding and participating in new volunteering opportunities?

Never	16.7%
Sometimes	63.1%
Often	14.3%
Always	5.9%

N = 84

27. Many NYMN participants find volunteer or training opportunities offered by other organizations. The NYMN program occasionally highlights external training and volunteer opportunities through various channels. Please indicate through which of the following channels you have learned about volunteer or training opportunities:

Channel	Total times marked by respondents
Emails to the listserv announcing opportunities	99
Emails to the listserv announcing Master Naturalists' level advancements and highlighting the organizations with which they volunteer	46
Featured opportunities posted to the NYMN website	30
The Volunteer Opportunities in NY State booklet on the NYMN website	9
The NYMN Facebook page	23
The NYMN Instagram page	9

Answered by respondents not active in the program during the pandemic:

28. People who have completed the initial MN training have different reasons for not participating in the NYMN program. Please indicate whether you agree or disagree with the following statements about why you didn't participate in the NYMN program during the pandemic. (1=strongly disagree, 5=strongly agree)

Statement	Mean	SD	Min	Max	N
I had other priorities that prevented my participation in the MN program	3.70	1.20	1	5	28
I did not have time to participate in the NYMN program	3.30	1.40	1	5	28
I did not have opportunities to volunteer	3.10	1.20	1	5	28
Health and/or safety concerns prevented me from participating in the MN program	2.90	1.60	1	5	28
I did not have training opportunities	2.70	1.20	1	5	27
I did not want to participate in the NYMN program	1.80	0.98	1	4	28
I did not live in New York State during the COVID-19 pandemic	1.60	1.30	1	5	28

29. If the statements above did not best describe your most important reason for deciding not to participate in the program, please write that reason here:

COVID limited travel and put a strain on my profession
No volunteer opportunities in natural sciences/outdoor learning in my area
mental health has been bad
The place I was volunteering shut down during COVID and hasn't reopened many volunteer opportunities
I would love to participate more or even at all because I teach full time in NYC and the opportunities, while fascinating, are not possible since I live in NYC and do not have a car. I wish very much I was able to!
Training and opportunities to volunteer were too far from home.

I found it very difficult to find volunteer opportunities in the Westchester County area. Many of the volunteer opportunities seemed to be a several hour drive from my home. Most volunteer opportunities seemed to be scheduled for week days. That would have meant taking at least 2 days off from work, and paying for a hotel. And since I need to work full time in an unrelated field, I cannot take time off from work to volunteer. It was frustrating.

The person who was helping the MN program at St. Lawrence County CCE left. We had started as a group on an interpretive trail at the CCE farm. Just so you know I am volunteering on both the Master preserver program and the Energy Navigator program.

Most of the things you mention I have never been informed of by listserv. Did not know you are on social media and could not find you on Instagram after seeing that listed here

Answered by respondents who were active in the program during the pandemic:

30. The Naturalist Exchange is a newer element of the NYMN program, added during the pandemic. Regarding the Naturalist Exchange, have you (y/n):

	Yes	No
Attended a live webinar on Zoom	81.9%	18.1%
Watched a webinar posted on the YouTube channel	61.5%	38.6%
Given a Naturalist Exchange presentation	14.5%	85.5%

N = 83

31. If you attended a live Naturalist Exchange webinar on Zoom, how much did the event provide you with a sense of community?

Very much	27.5%
Somewhat	53.8%
Not at all	5.0%
I have not attended a live Naturalist Exchange webinar	13.8%

N = 84

32. During the pandemic, did you volunteer more, less, or roughly the same amount as before the pandemic?

More	10.7%
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Roughly the same amount	38.1%
Less	51.2%

N = 84

33. During the pandemic, did you participate in training more, less, or roughly the same amount as before the pandemic?

More	27.4%
Roughly the same amount	42.9%
Less	29.8%

N = 80

34. Did you participate in an online training or volunteer event during the pandemic?

Yes	95.2%
No	4.8%

N = 84

35. If yes, had you participated in an online training or volunteer event before the pandemic?

Yes	53.6%
No	46.4%

N = 84

36. When pandemic restrictions are fully lifted, do you plan to continue to seek opportunities to train and/or volunteer online?

Yes	95.2%
No	4.8%

N = 84

Answered by all respondents:

37. As a result of participating in this program, I have shared something I learned with others

Yes	97.3%
No	2.7%

N = 110

38. Participants may get a variety of benefits from the NYMN program. Please indicate whether you agree or disagree with the following statements about what you have gotten out of the NYMN program:

Statement	Mean	SD	Min	Max	N
I am more knowledgeable about conservation and natural resources in NY	4.50	0.84	1	5	110
*The NYMN program nurtured my curiosity	4.40	0.85	1	5	109
*I feel more connected to the natural environment where I live	4.40	0.96	1	5	110
*I have learned new ways of looking at things	4.30	0.92	1	5	109
*I feel empowered to teach others about conservation and natural resources	4.20	0.93	1	5	110
*I feel like I am positively contributing to conservation in NY	4.10	0.95	1	5	110
*I am more confident	3.80	1.10	1	5	110
*I have a better perspective of my place in the world	3.70	1.00	1	5	110
*I am more self-reliant	3.30	1.00	1	5	110
*I am more able to persevere through difficult times	3.30	1.10	1	5	110
*I met and kept in touch with new people	3.30	1.20	1	5	108
*I feel more physically fit	3.20	1.10	1	5	109

*Questions constructed to measure resilience

39. Have you earned the training and volunteer requirements to become a Master Naturalist?

Yes	58.2%
No	41.8%

N = 110

40. In what county do you currently reside?: _____ (dropdown)

Albany	2
Broome	3
Chenango	1
Cortland	1
Dutchess	8
Erie	16
Essex	1
Greene	3
Jefferson	2
Kings	1
Livingston	1
Madison	3
Monroe	3
New York	3
Onondaga	6
Ontario	2
Oswego	1
Otsego	1
Putnam	2
Rensselaer	3
Saratoga	6
Schenectady	1
Schuyler	1
St. Lawrence	4

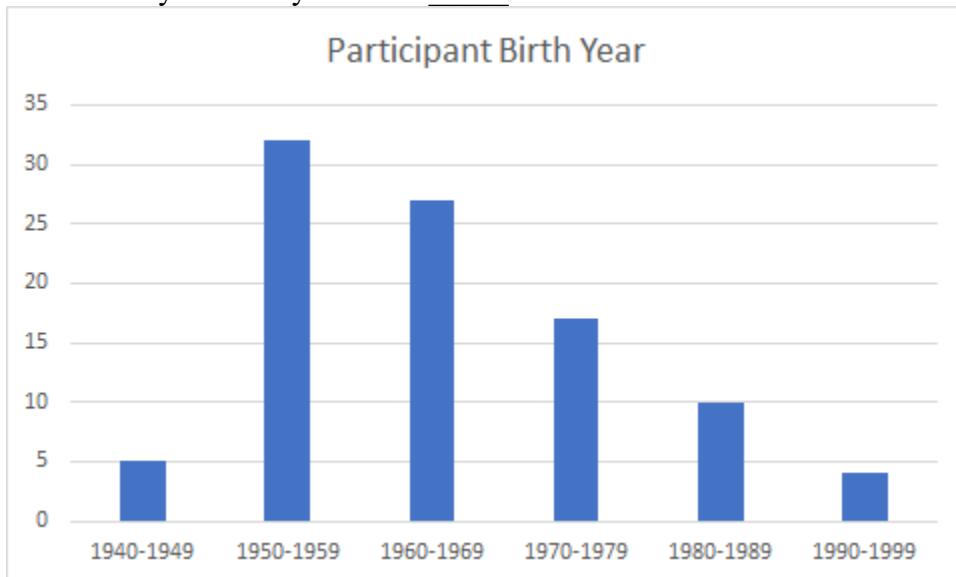
Steuben	1
Suffolk	3
Tompkins	13
Ulster	4
Westchester	9

41. What is your gender?

Male	29.3%
Female	67.0%
Other	3.8%

N = 106

41. In what year were you born? _____



43. Which of the following best describes where you live?

A town/city with many neighbors	58.2%
Outside a town/city with scattered neighbors	24.6%
A rural area with few neighbors	17.3%

N = 110

44. Which of these best describes your current employment?

Employed full-time	44.4%
Employed part-time	25.0%
Not employed, seeking employment	4.6%
Not employed, not seeking employment	26.0%

N = 108

45. Are you retired?

Yes	31.2%
No	68.8%

N = 109