



WEBSITE USER RESEARCH REPORT

By
Jill Kambs , University of Wisconsin, Madison iSchool
Nancy A Sheehan, Program Coordinator, Journey North,
University of Wisconsin, Madison Arboretum

December 3, 2019

Contents

[Goals Setting & the HEART Framework](#)

[Research Questions](#)

[Methodology](#)

[Survey Design & Questions](#)

[Survey Analysis](#)

[Interview & Test Questions](#)

[Interview & Test Analysis](#)

[Recommendations](#)

[Appendix](#)

Goals Setting & the HEART Framework

At the beginning of this research study we assembled a team of stakeholders to identify goals for the website. This team included Journey North’s Citizen Science Coordinator, Nancy Sheehan; Journey North Data Manager, Liz Goehring; Volunteer Paul Banas; and User Research Consultant, Jill Kambs. In writing goals, the team sought to identify measures that matters for action with the website. This means collecting the right evidence and tying these measures to the mission to support decisions to make changes. The HEART framework helps to focus on what an organization is trying to achieve according to some specific facets, e.g. happiness, engagement, adoptions, retention, and task success. Once goals are established, signals are identified to determine whether goals are being achieved, and finally, data metrics are identified to support these claims. Goal setting was then used to identify key research questions. This report will focus on answering the questions addressable through surveys and interviews, but the framework should provide guidance for further user research and study of future Google and Facebook analytics data.

HEART	Goals What does ___ look like for users?	Signals How would we know?	Metrics What measures or analytics?
<p>Happiness Measures of users’ attitudes</p>	<p>Users have an easy to use website that connects them with the mission, participation opportunities (e.g.: sightings), learning services, news updates, and help they need.</p> <p>Passive users: Users feel excited about seeing large-scale natural phenomenon unfold before their eyes.</p> <p>Active users: Users feel like they are making a difference in something larger than themselves while building connection to their “sense of place”.</p> <p>Educators: Users feel good about student learning.</p>	<p>Users report that the website is easy to use, (e.g.: interactive maps are easy to use and visualize the data, photos are enticing, etc).</p> <p>Users frequently refer the website to others. Active users report increased satisfaction of seeing sightings and photographs published.</p> <p>Teachers report student excitement and “a ha” moments in the classroom, an understanding of science concepts in action.</p>	<p>Surveys & interviews</p>

<p>Engagement Level of user involvement</p>	<p>Users visit the website, access the weekly updates and learning resources, engage in the process of submitting data. (e.g.: reporting sightings and habitat protection), and viewing maps.</p> <p>Users are able to find answers to their questions at their convenience (e.g.: through answers within the website or through the help line).</p> <p>Users create community that draws from diverse demographics (gender, race, ethnicity, age, nationality, abilities).</p>	<p>Increase in web traffic.</p> <p>Increase in marketing referrals.</p> <p>Increase in sightings, comments, and photo submissions.</p> <p>Users report finding answers to their questions more frequently than not.</p> <p>Users are communicating using social media and observer contacts via the website.</p>	<p>Google Analytics data & campaign monitor (Avg. site visits per user / sighting submissions per user / time on site per user / pages per visit per user, bounce rate, social media analytics, Facebook engagement / posts / comments / shares)</p> <p>Surveys & interviews</p>
<p>Adoption Gaining new users of your services</p>	<p>New users are enticed by the web content; find the information they need to get started; and become aware of the mission, learning resources, and how to participate.</p> <p>New users find information about Journey North through partner organizations.</p>	<p>Increased new user web traffic, number of registrations, email subscriptions, and social media likes/post/shares (even during non-migration season).</p> <p>Increased number of partner organizations.</p>	<p>Google Analytics data & campaign monitor (New users per month/season, new registrants per month/season, new email subscriptions per month/season, social media referral traffic per month/season)</p> <p>Social media analytics (Facebook organic reach / impressions likes)</p>
<p>Retention Rate at which existing users return</p>	<p>Returning users continue to be enticed by the web content, find the information they need, and connect to participation opportunities and resources for following their own history of observations.</p>	<p>Increased returning user web traffic & social media likes/post/shares (even outside migration season).</p> <p>Increased number of sightings per single user & detail in sighting comments.</p> <p>Users are returning & viewing their reports & maps/others' reports.</p> <p>Increased project participation.</p>	<p>Trend in returning users.</p> <p>Google & social media analytics (returning users per month/season, sightings per month/season per returning user, report views per month/season per returning user)</p> <p>Surveys & interviews</p>

<p>Task completion Efficiency, effectiveness and error / success</p>	<p>Users can easily find the mission, ways to participate (e.g.: sightings), learning services, news updates, and answers to their questions.</p> <p>Passive viewer: can easily navigate the website, drilling down and back out of web pathways.</p> <p>Active contributors: can figure out how to register, subscribe to emails, enter their sightings, change passwords, subscribe / unsubscribe, find protocols, access their reports, and answers to technical questions.</p> <p>Educators can access classroom resources that are applicable to a particular level.</p>	<p>Fewer helpline questions.</p> <p>Increased number of registrations.</p> <p>Increased number of sightings.</p> <p>Increased number of educators participating in specific educational projects and accessing educational materials.</p> <p>Users report that the website is easy to use.</p> <p>Users are successful and efficient in completing basic tasks, resulting in reduced staff time data vetting.</p> <p>Users understand the language of the website and the pathways to the information they seek.</p>	<p>Google Analytics (Goals)</p> <p>Surveys & interviews</p> <p>User testing</p> <p>Card sorting</p> <p>Google Analytics / Survey (Downloads of classroom resources)</p>
---	--	--	---

Research Questions

1. Who are the key users of the Journey North Program?
 - a. Gather demographic data on age, gender, education, profession, level of engagement (passive, active, educator), frequency (year-round vs. peak migration)/longevity/depth of engagement, what initially drew them to JN and keeps them coming back, whether they participate in other citizen science programs.
2. How do users understand the mission of Journey North, and where do they develop this understanding (from the website, newsletters, etc)?
3. How do users feel about the Journey North Program/community?
 - a. How do users connect/build community? (e.g.: contact an observer, social media, partner organizations)
 - b. Do users want a central account where they and others can access individual profiles?
4. How are users currently interacting with the Journey North website?
 - a. How do users understand the nomenclature of the homepage navigation?
 - b. Are users aware of the spectrum of resources available on the JN site, and can they easily find them? Can users efficiently and successfully complete the basic web tasks necessary to passively and actively contribute (e.g.: register, subscribe/unsubscribe to emails, change passwords, find answers to technical questions, view & interpret maps, find project information, enter sightings, find sighting protocols, access reports, find answers to scientific queries, find & read news)?
 - c. What are their top pain points?
 - i. What do users find frustrating or confusing about navigating the JN site?
 - ii. When and why do users utilize the helpline?
 - iii. Is there any information missing or difficult to locate that would make task completion easier for users?
 - iv. Is there any information or web functionality missing that would help users to better participate?
5. How do users rate the usability of the website?
 - a. Aesthetics (website design enticing, engaging, and visually pleasing)
 - b. Organization of content (information architecture matches users' mental map, findability, navigation)
 - c. Ease of use (findability, navigation, functionality—e.g.: of maps, efficiency)
 - d. Utility (curated content is helpful to their individual goals)

Methodology

Overview:

The usability consultant worked directly with the Journey North Citizen Science Coordinator to design, conduct, and summarize user research for the Journey North website. Using quantitative and qualitative research methods and analysis, the consultant made recommendations for a potential site redesign, articulated in this written report and final presentation.

User Research Methods:

- **Survey:** The high-level, brief qualtrics survey was distributed to the full Journey North subscription list of 35,647 users. The survey focused heavily on identifying demographic spread, level of engagement, and users' perception of website usability. The survey consisted mostly of close-ended quantitative questions with one qualitative question soliciting open-ended feedback.
- **Interviews/Tests:** 90-minute semi-structured interviews with metric-based testing were conducted with five users who varied in demographics. Audio and screen recording using zoom was used to document interviews and tests. While the survey provided a surface-level measurement of the retained user group, the interviews sought thick data from users with more diverse identities, professions, and levels of engagement in order to evaluate potential for new user adoption. Interviewees were asked open-ended questions about their experiences using the Journey North site, which were summarized using qualitative thematic analysis. A significant portion of the session included user testing to gauge ease of task completion and familiarity with Journey North mission and resources. Each task was analyzed quantitatively according to the following metrics: time on task; pathway and number of clicks; and success, hesitation, or fail rate. Because the format allowed for unstructured commentary through think aloud protocol, tasks did not always end uniformly, so the time-on-task metric cannot be taken as statistically valid. Time-on-task metrics still provide a general assessment of ease of search. Click counts and success, hesitation, and fail rates, however, are statistically accurate. A task was coded as successful if the user completed the task in the minimum number of clicks without getting lost or looking for an excessive amount of time. A task was recorded as a hesitation if the user required more clicks or time do to lostness to complete the task. A task was recorded as a fail, if the user did not complete the task due to misinterpretation, lostness, or forfeit.

Survey Design & Questions

For greatest response rate, the survey was designed to be completed in under 5 minutes. The 24-question survey was comprised almost entirely of close-ended questions, which included 4 single answer multiple choice questions, 2 single answer dropdown menu questions, 6 single answer Yes/No/I don't know questions, 3 single answer likert scale questions, 8 check all that apply questions. It included one open-ended text entry question. Best practices for survey design require that everyone must be able to answer every question gracefully, so certain close-ended questions also included "other" fields which allowed text entry.

The survey employed forced response validation for all close-ended questions with the exception of the 3 demographic questions at the end, which were entirely optional. The open-ended question had no validation. Three of the single answer Yes/No/I don't know questions employed skip logic, so depending on how the individual responded, the survey could be reduced to 21 questions, with the final 4 questions (including the text entry and demographic questions) being optional.

While survey questions may address multiple research questions simultaneously, questions #1-12 and optional demographic questions #22-24 were designed to address the first research question: "Who are the key users of Journey North?" Questions #13 and #14 address the third research question: "How do users feel about the Journey North program/community?" Questions #15 and #16 address the fourth research question: "How are users currently interacting with the Journey North website?" Questions #17-20 address the fifth research question: "How do users rate the usability of the website?" Question #21 was left entirely open-ended with the potential to answer any research question.

The following pages include screenshots of the complete survey.



We are committed to maintaining and improving the excellent services you have come to expect from Journey North. Thank you for taking this 5-minute survey about your experience with the Journey North Program and website. Your responses will be anonymous.

How did you first discover the Journey North program?

- Internet search
- Social media
- Listserve
- News media
- Recommended by a friend
- Other

How long have you followed the Journey North program?

On average, how frequently do you visit the website?

Which functions or resources of the website do you use? (Check all that apply.)

- News updates
- What to report
- Enter sightings
- Real-time maps
- Journal question of the week
- Slideshows and/or photo galleries
- Teaching resources
- Other

- None

Are you in a science, conservation, or natural resource management field?

- Yes
- No
- I don't know

Are you an educator? (e.g. classroom, homeschool, informal ed setting, specialist, etc.)

- Yes
- No
- I don't know



Which grade level(s) do you teach? (Check all that apply.)

- K-2
- 3-5
- 6-8
- 9-12
- College
- Other

Which seasons do you follow species events? (Check all that apply.)

- Fall
- Winter
- Spring
- Summer
- None of the above

Which projects do you follow? (Check all that apply.)

- Bald Eagles
- Barn Swallow
- Common Loon
- Frogs
- Hummingbirds
- Ice-out
- Leaf-out
- Live Cam
- Monarch Butterfly
- Mystery Class
- Orioles
- Redwing Blackbirds
- Robins
- Signs of Fall (and Daylight)
- Signs of Spring (and Daylight)
- Tulip Test Garden
- Weather and Songbird Migration
- Whooping Cranes
- Worms
- None

Have you entered an observation?

- Yes
- No
- I don't know

0% 100%



Which best describes your reasons for not entering observations? (Check all that apply.)

- Too difficult to navigate
- Privacy concerns
- Lack of interest
- Other

Do you participate in other citizen science programs? If yes, please indicate which program.

Yes

No

I don't know

Which of the following do you use to connect with the Journey North community? (Check all that apply.)

- Facebook
- Twitter
- Instagram
- Emailed news updates
- Contact an observer
- None

Would you recommend Journey North to a friend?

Yes

No

Maybe

I don't know

Have you ever contacted the helpline?

Yes

No

I don't know



0%  100%



If so, what kind of problem did you experience that led you to contact help? (Check all that apply.)

- Registering
- Subscribing to receive email
- Changing your password
- Submitting and/or editing your observation entry
- Submitting a question about a particular species of concern
- Other

What do you find most frustrating about the Journey North website? (Check all that apply.)

- Organization of the website
- Registration process
- Sightings submission process
- Viewing my own data
- Downloading data
- Accessing resources
- Map visualization
- Loading speed
- No mobile application
- Other

- Nothing about the site is frustrating





Rate the following statements from strongly agree to strongly disagree. If you have no basis for evaluating a statement, please select "not applicable".

It is easy to find what I am looking for on the Journey North website.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree
- Not applicable

The content of the Journey North website is helpful to my individual goals.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree
- Not applicable

Instructions for entering observations are clear.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree
- Not applicable





Please share any additional feedback you have for the Journey North website here:

Demographic Questions (optional)

How old are you?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 or older

With which gender do you identify?

- Male
- Female
- Non-binary
- Gender fluid
- Other

What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

- No high school
- Some high school, no diploma
- High school graduate, diploma or GED equivalent
- Some college credit, no degree
- Technical or trade training
- Associate degree
- Bachelor's degree
- Master's degree
- Doctorate degree

Survey Analysis

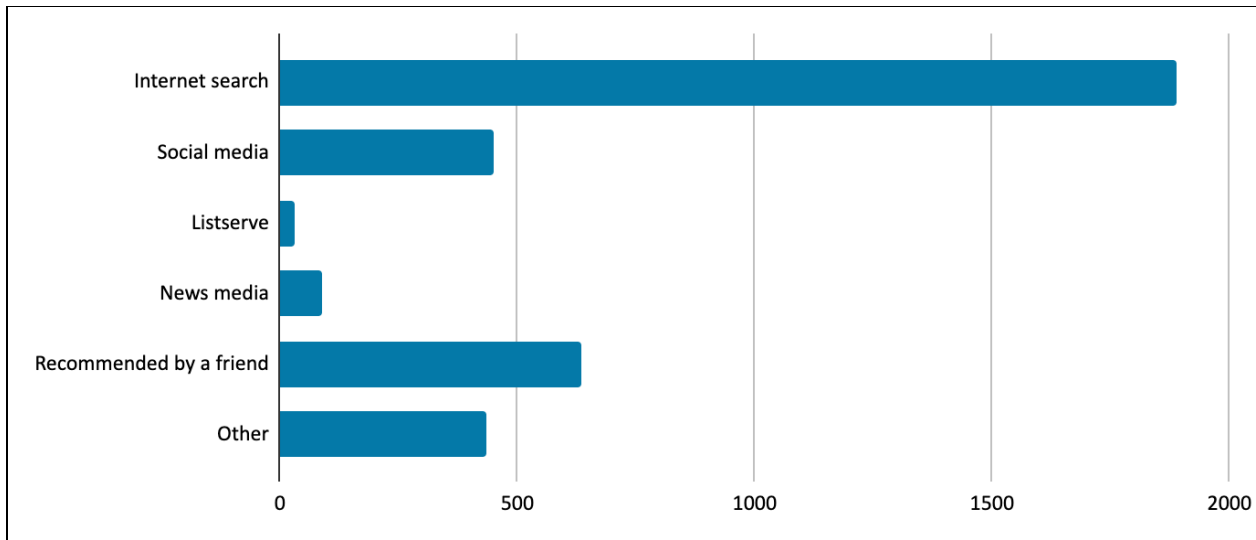
The survey was distributed to 35,647 subscribers and received 3,526 answers for a response rate of nearly 10%. Even though all close-ended, single-choice questions—with the exception of the optional demographics questions—included forced answer validation, the response rate for these fluctuated from the beginning to the end of the survey. Early questions received the full 3,526 responses, but later questions only received 3,203, which suggests that a percentage of participants either dropped out of the survey midway, or the validation function did not work uniformly.

The analysis that follows organizes survey questions according to the research questions which they address. Close-ended questions are analyzed quantitatively using descriptive statistics. Open-ended questions, including “other” field text entries are analyzed qualitatively using thematic analysis. Raw data from the survey generated over 3500 rows of data, with many entries containing multivalued fields and lengthy text entries. This required significant data cleaning in order to analyze results. Follow these links to view the survey’s complete [raw dataset](#) and [clean dataset](#).

Question #21 “Please share any additional feedback you have for the Journey North website” was also open-ended. Despite its optional entry, this question received nearly 1300 unique responses yielding 27,000+ words. Due to time constraints and the scope of this study, the answers have not yet been qualitatively analyzed. They have, however, been alphabetized for greater scanability. Journey North volunteer Paul Banas, who has a professional background in marketing and survey analysis has graciously offered to code the answers to this question. While a cursory glance at this feedback reinforces the positive perception and gratitude users have regarding Journey North, there are numerous constructive criticisms embedded in their responses as well. Follow this link to view the [raw dataset for question #21](#).

RQ1: Who are the key users of the Journey North Program?

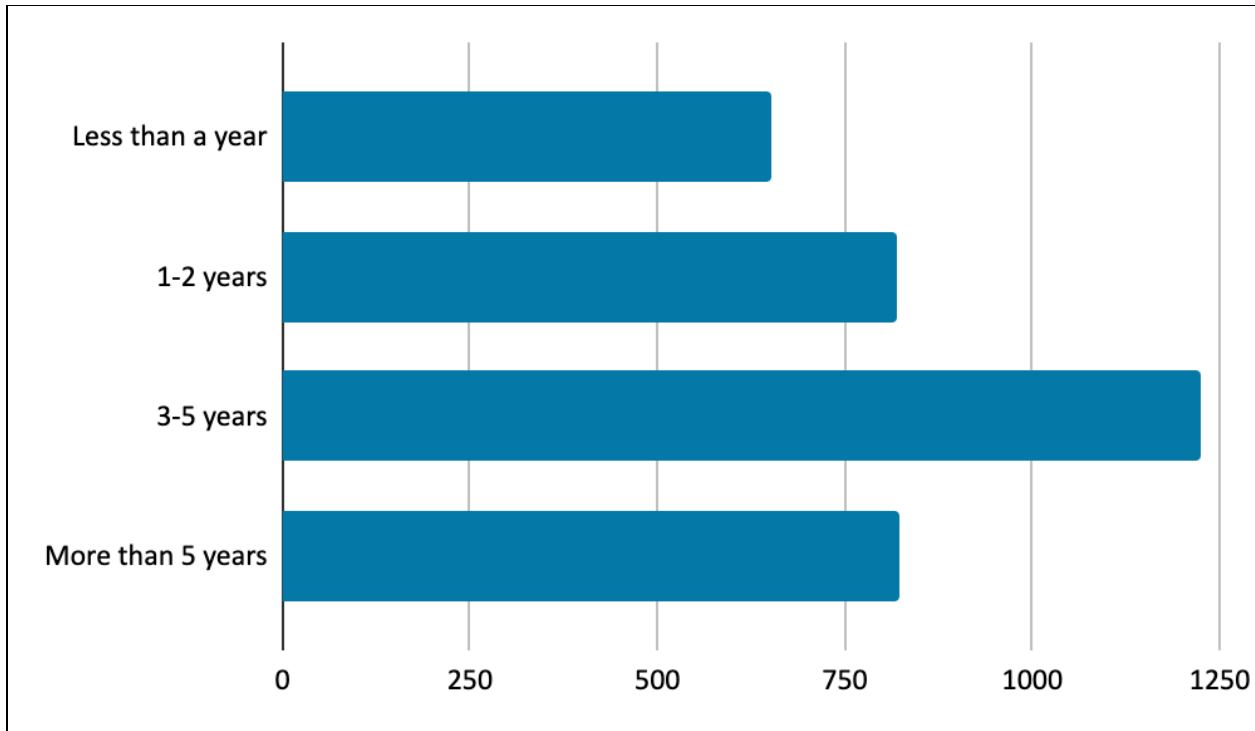
Survey Question 1: How did you first discover the Journey North program?



Internet search	1889
Social media	450
Listserve	31
News media	90
Recommended by a friend	633
Other	433
Total	3526

Most users discovered Journey North through internet searches, social media, and personal recommendations, but a significant number of respondents cited other ways of discovering the program. While the majority of “Other” responses were left blank or recorded “unsure,” top text entries for this field included “Conference/Seminar/Workshop” (23 count), “Website referral” (16), “Teaching” (13), “Email” (10), and “Monarch Watch” (10).

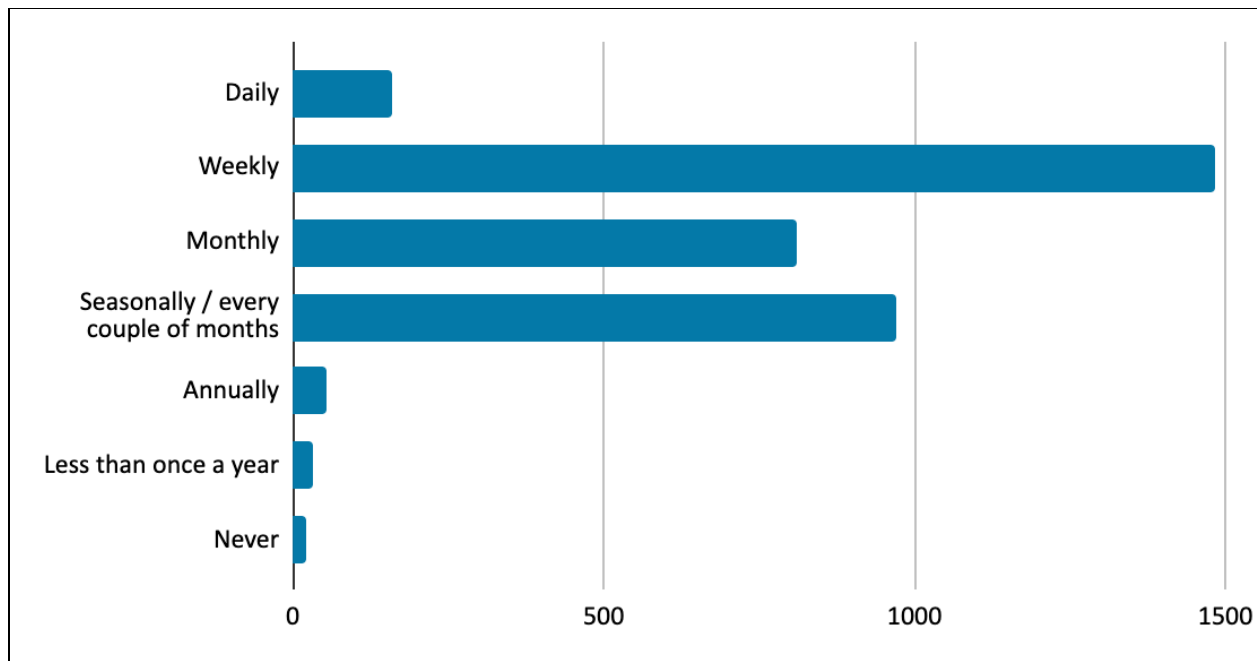
Survey Question 2: How long have you followed the Journey North program?



Less than a year	653
1-2 years	820
3-5 years	1226
More than 5 years	824
Total	3523

More than half of Journey North users surveyed have participated in the program for three years or longer with the largest group falling in the 3-5 year range. It is encouraging to see that the program has a critical mass of new adopters with 653 users joining within the last year.

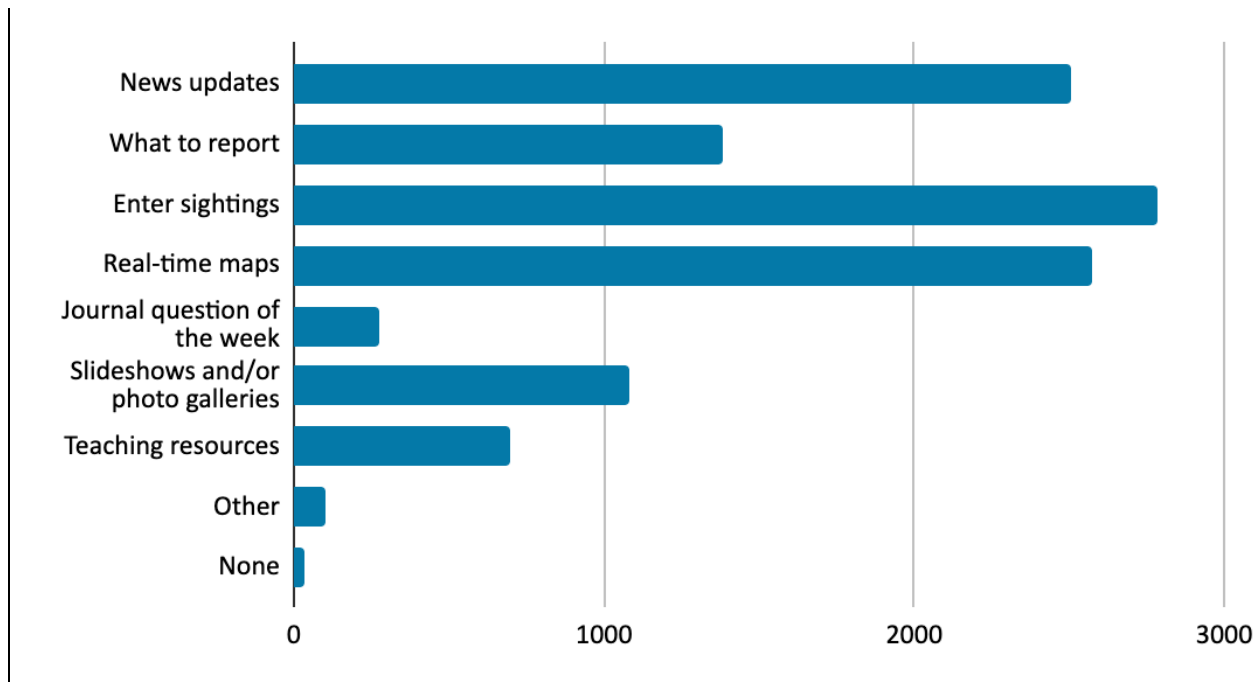
Survey Question 3: On average, how frequently do you visit the website?



Daily	158
Weekly	1482
Monthly	810
Seasonally / every couple of months	971
Annually	54
Less than once a year	31
Never	20
Total	3526

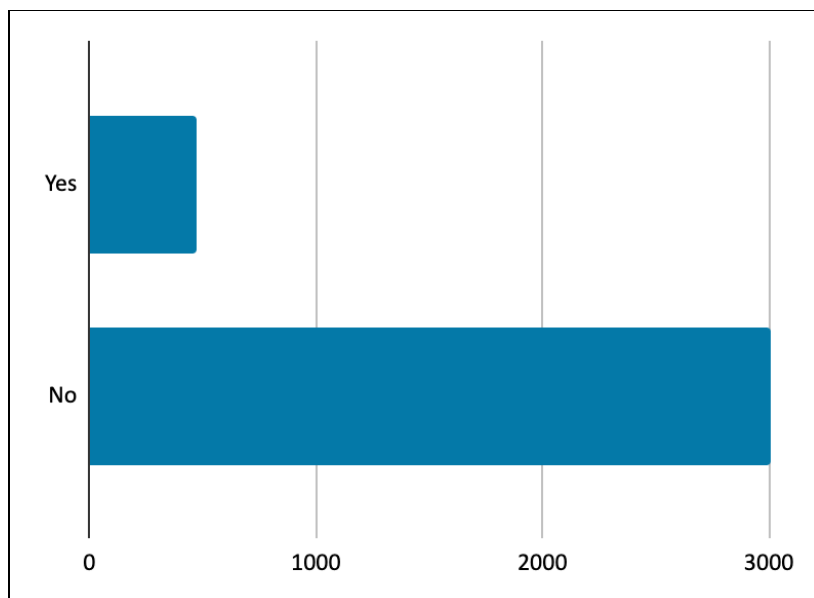
The majority of users surveyed access the website weekly to seasonally, with the greatest number visiting weekly. They are likely prompted to visit the site from weekly updates. Seasonal users are likely prompted to visit in order to observe migration patterns and entering their sightings. Few users visit the site daily or less frequently than seasonally.

Survey Question 4: Which functions or resources of the website do you use? (Check all that apply.)



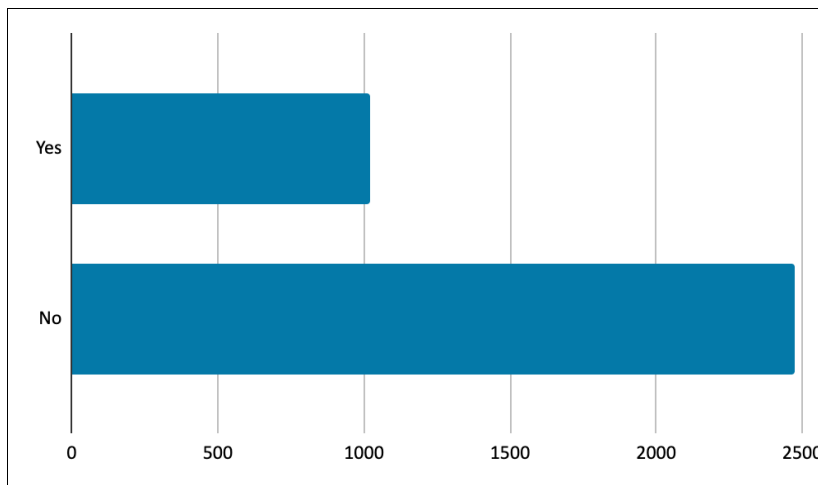
News updates	2505
What to report	1383
Enter sightings	2785
Real-time maps	2571
Journal question of the week	276
Slideshows and/or photo galleries	1085
Teaching resources	698
Other	102
None	37

The top three website functions/resources utilized by users surveyed were entering sightings, viewing maps, and reading news updates. About 40% of users surveyed utilize report protocols, 30% utilize the slideshows and/or photo galleries, and less than 20% utilize the teaching resources. Few users use or are even aware of the Journal question of the week. Most of the “other” field entries were blank or cited specific projects which they follow. This data suggests that primary user interest lies in viewing and entering migration data.



Survey Question 5: Are you in a science, conservation, or natural resource management field?

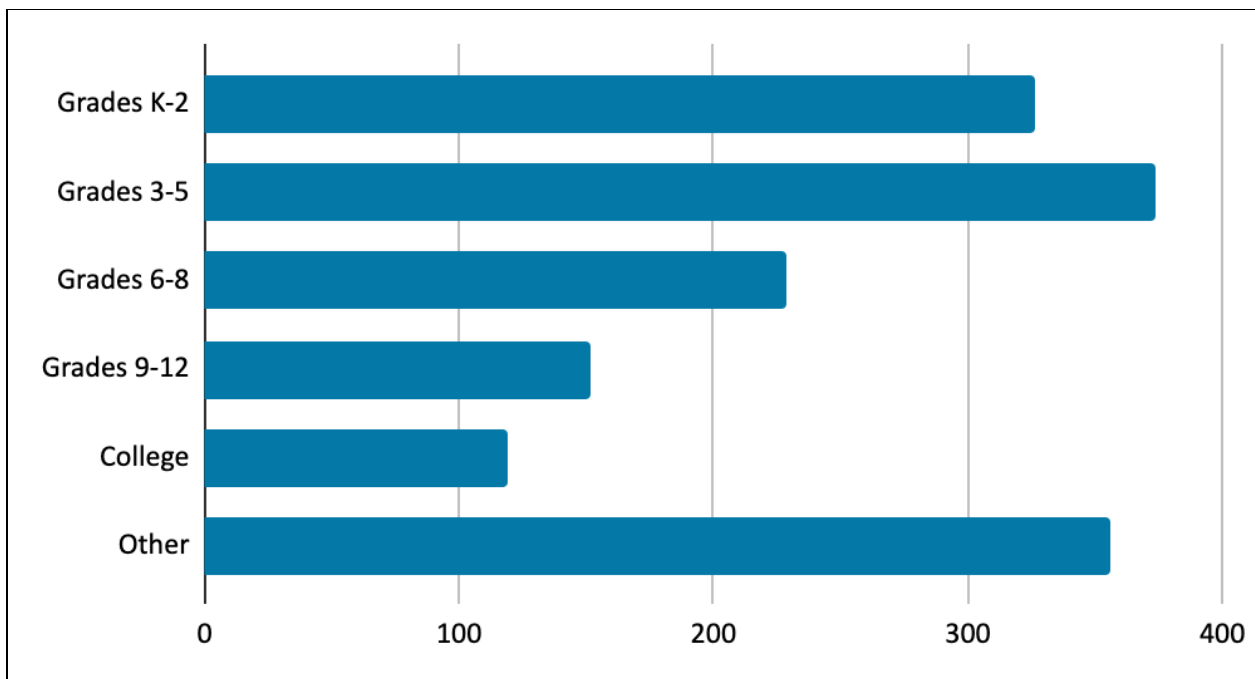
The majority of users surveyed are not in a science, conservation, or natural resource management field with 3010 from outside these fields and only 475 with a professional background in these areas.



Survey Question 6: Are you an educator? (e.g. classroom, homeschool, informal education setting, specialist, etc.)

Roughly a third of users surveyed identify as an educator with 1022 answering yes and 2477 answering no.

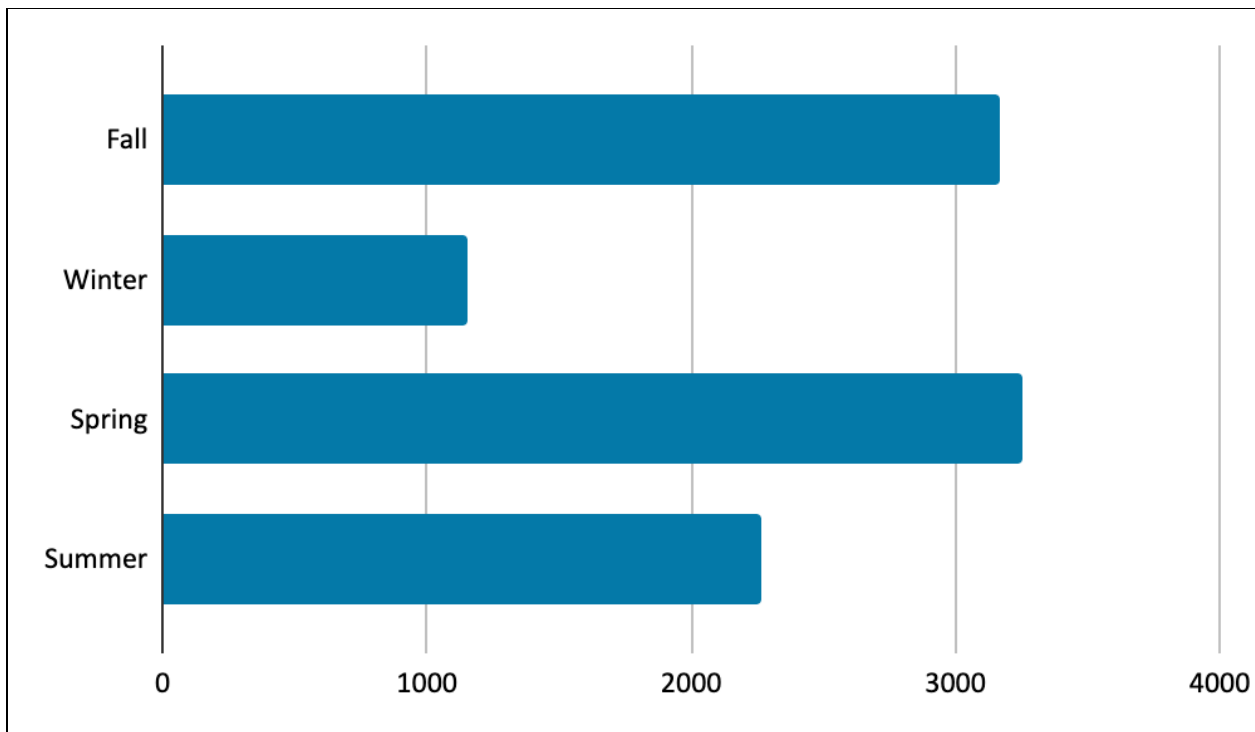
Survey Question 7: Which grade level(s) do you teach? (Check all that apply.)



Grades K-2	326
Grades 3-5	374
Grades 6-8	229
Grades 9-12	152
College	119
Other	356

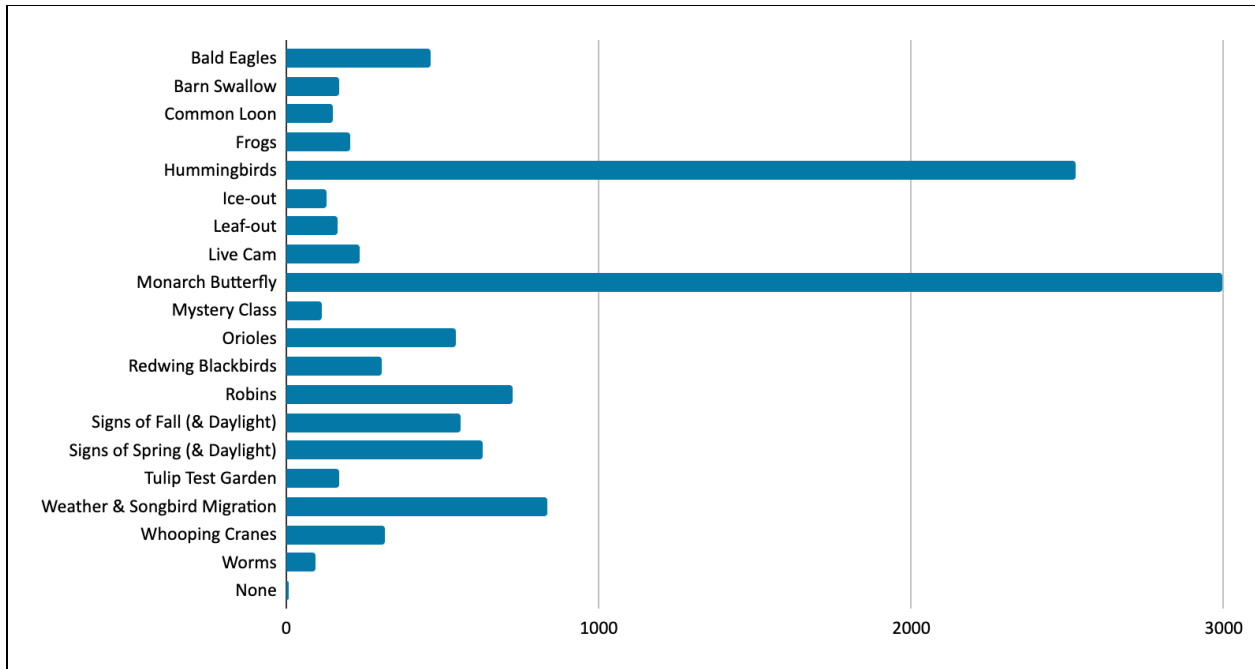
Educators surveyed work largely at the elementary level, with few teaching in secondary or higher education. A critical mass of respondents reported that they teach in other settings. While the majority of these “other” responses were blank, top text entries included “all ages” (51 count) “retired educator” (48), “adults” (34), “preschool” (24), and “community education” (22). This data suggests that a number of users are teaching outside of academic institutions in community centers and for local programming.

Survey Question 8: Which seasons do you follow species events? (Check all that apply.)



The majority of users surveyed are following species events, with the highest participation in the spring (3250 count) and the fall (3166). Nearly two-thirds of users (2266) follow species events in the summer, while only roughly a third of users (1150) follow winter events. This seasonal dip is expected due migration patterns and the primary user group being located in the United States.

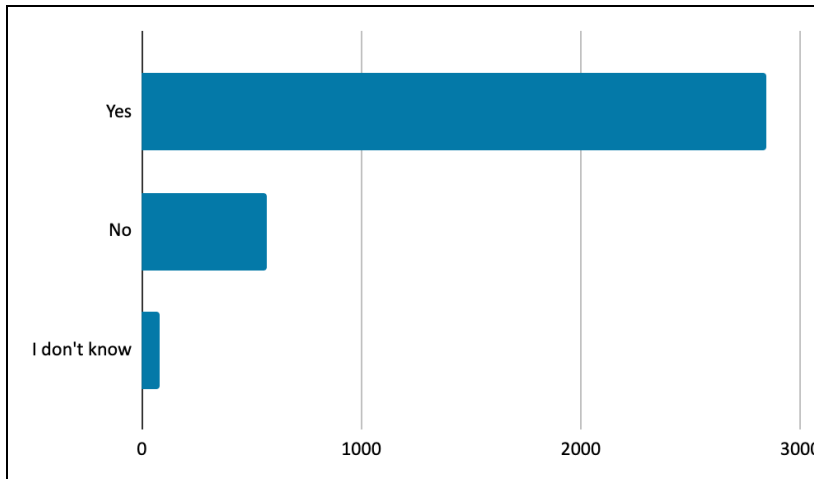
Survey Question 9: Which projects do you follow? (Check all that apply.)



Bald Eagles	460
Barn Swallow	169
Common Loon	150
Frogs	203
Hummingbirds	2524
Ice-out	131
Leaf-out	165
Live Cam	235
Monarch Butterfly	2996
Mystery Class	116
Orioles	544
Redwing Blackbirds	307
Robins	722
Signs of Fall (& Daylight)	560
Signs of Spring (& Daylight)	631
Tulip Test Garden	170
Weather & Songbirds	837
Whooping Cranes	315
Worms	96
None	10

By far and away the monarch butterfly and hummingbird projects are the most popular among users surveyed, capturing the interest of 85% and 72%, respectively. Other significant areas of interest include the following bird projects: weather and songbirds with 24% following, robins with 20%, orioles with 15%, and bald eagles with 13%. Signs of fall and spring also had a 16-17% following rate.

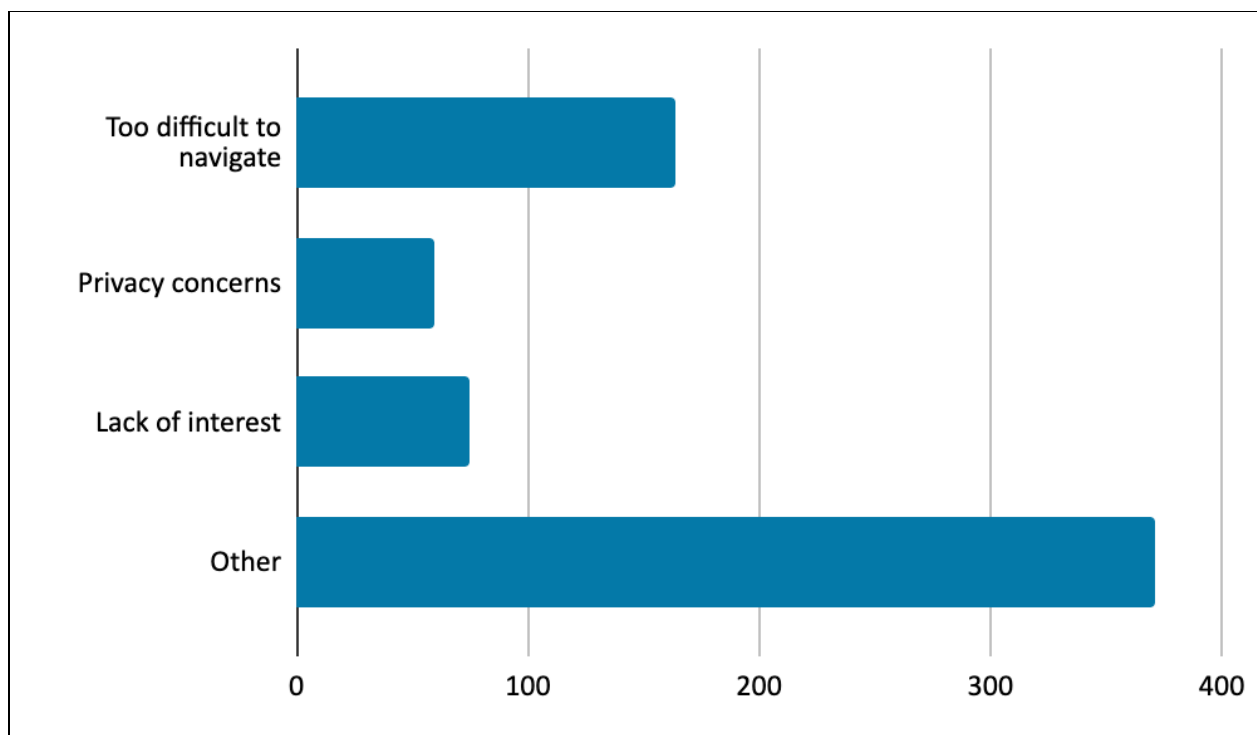
It is curious how big of a part branding and marketing plays in project following, as there were a number of comments in both the survey and user interviews from individuals who were unaware that Journey North covered such wide ranging phenology.



Survey Question 10: Have you entered an observation?

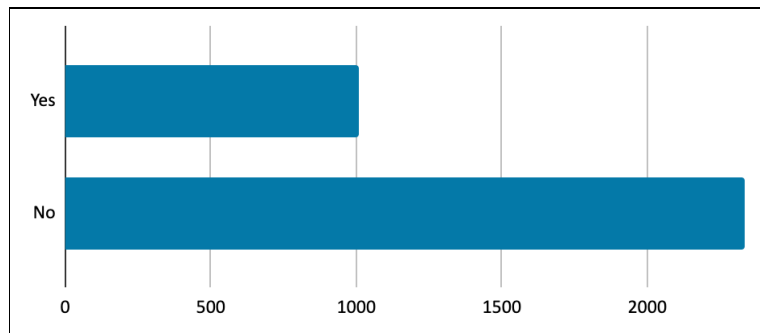
80% of those who answered this question reported that they have entered an observation before, with 16% reporting no, and 4% were unsure if they had.

Survey Question 11: Which best describes your reasons for not entering observations? (Check all that apply.)



Too difficult to navigate	164
Privacy concerns	60
Lack of interest	75
Other	371

Roughly a quarter of those who have not entered observations cited navigation difficulties as the reason. A much larger percentage of users cited “other” reasons. Again most of the other responses were blank, but top text entries included “time constraints” (45 count) and “lack of data to share” (32).

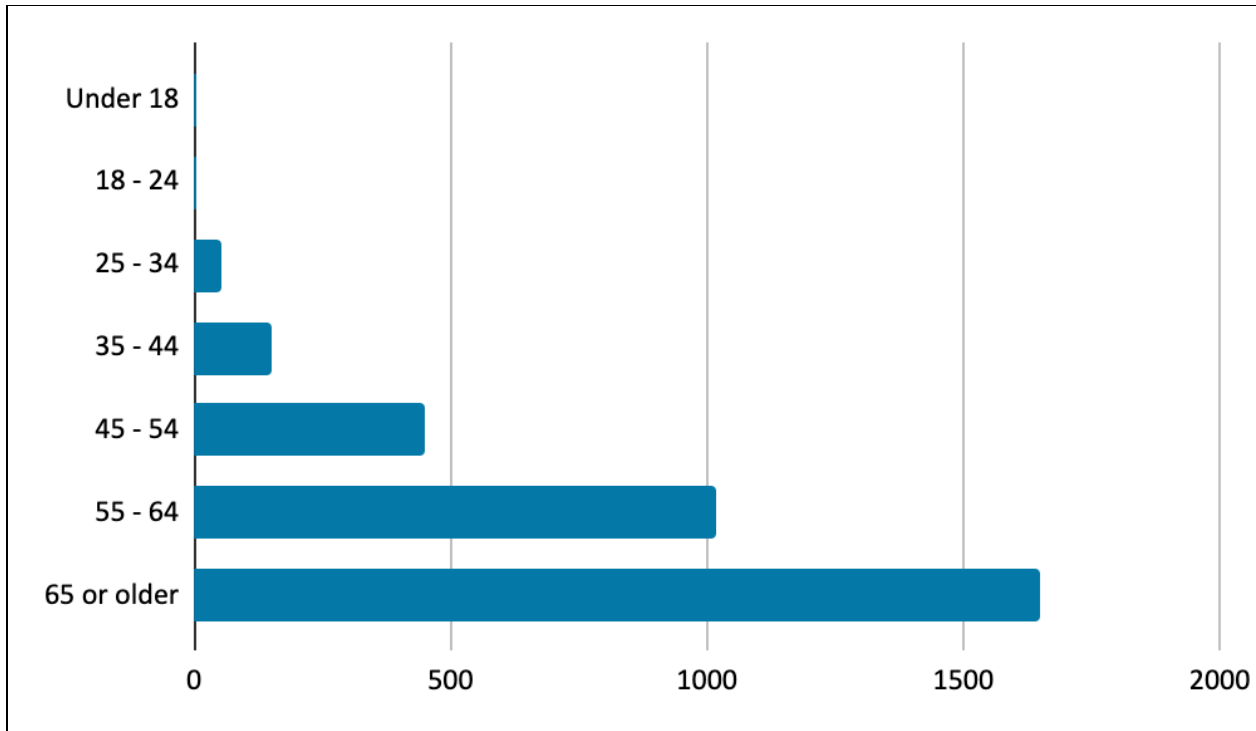


Survey Question 12: Do you participate in other citizen science programs? If yes, please indicate which program.

1008 users participate in other citizen science programs, comprising 30% of the respondents, and 2334 do not. Below to the left is a list of the most frequently mentioned citizen science programs in which Journey North users participate. Many of the respondents reported participation in multiple citizen science programs as well as local groups that watch, count, and tag species. In other parts of the survey some of these users expressed a desire to share data and collaborate across citizen science programs. This list and the complete dataset should be referenced to identify potential partner organizations, places to market Journey North, and comparison programs for revising protocols and website design.

Monarch Watch	113
eBird	76
FeederWatch	57
iNaturalist	57
Cornell Lab of Ornithology	52
Audubon Society	27
Monarch Larva Monitoring Project	24
Christmas & Winter Backyard Bird Count	20
MonarchNet / Monarch Health	18
Great Backyard Bird Count	17
Master Gardener / Naturalist	16
Local & independent programs	13
CoCoRaHS	12
FrogWatch	12
Zooniverse	10

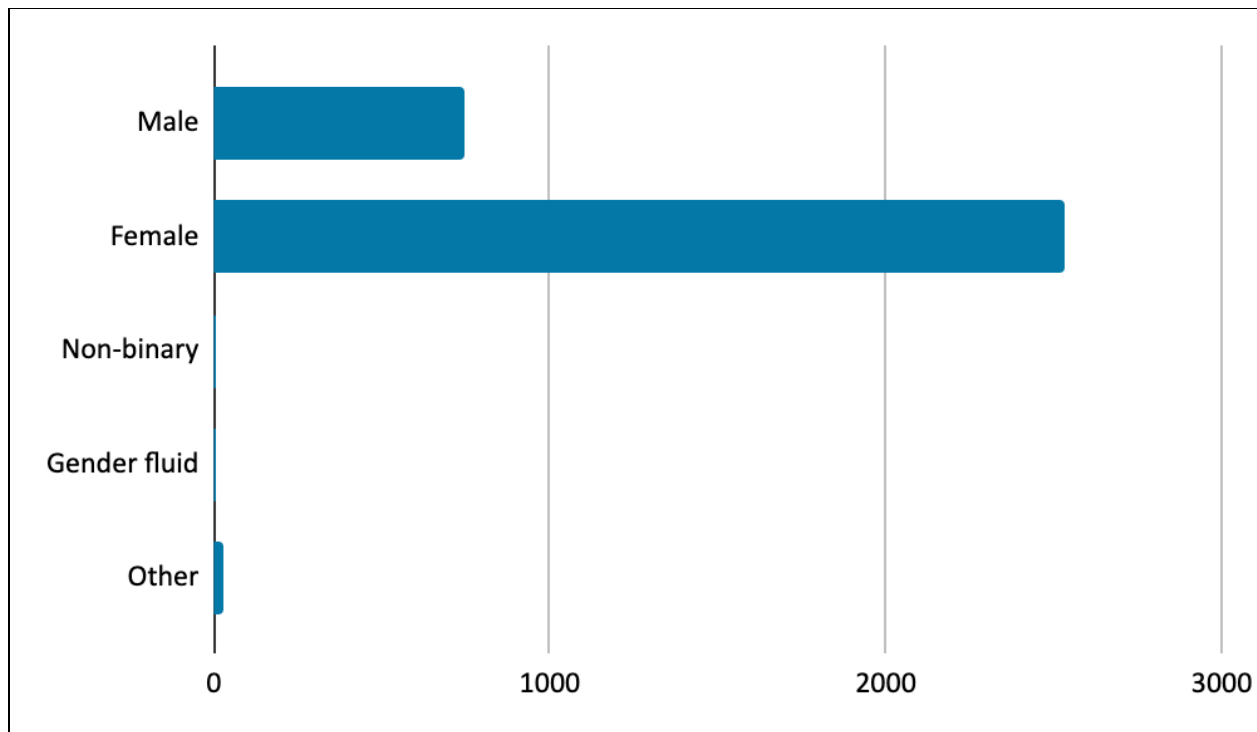
Survey Question 22: How old are you?



Under 18	3
18 - 24	5
25 - 34	53
35 - 44	151
45 - 54	449
55 - 64	1020
65 or older	1652
Total	3333

The majority of users surveyed are retired or nearing retirement. This makes sense in that a retired user has more time to engage with citizen science efforts than a working user, but it also speaks to the challenge of adopting new users. Through the HEART framework process, Journey North administrators identified a goal of gaining new users and that these users create community that draws from diverse demographics. When planning information architecture and user experience strategy for site design, it is important to balance the needs of the mostly satisfied and aging core user group with the needs of younger diverse users which Journey North seeks to recruit. Reference analysis and recommendations from user interviews and tests for diverse perspective on the user experience of the site.

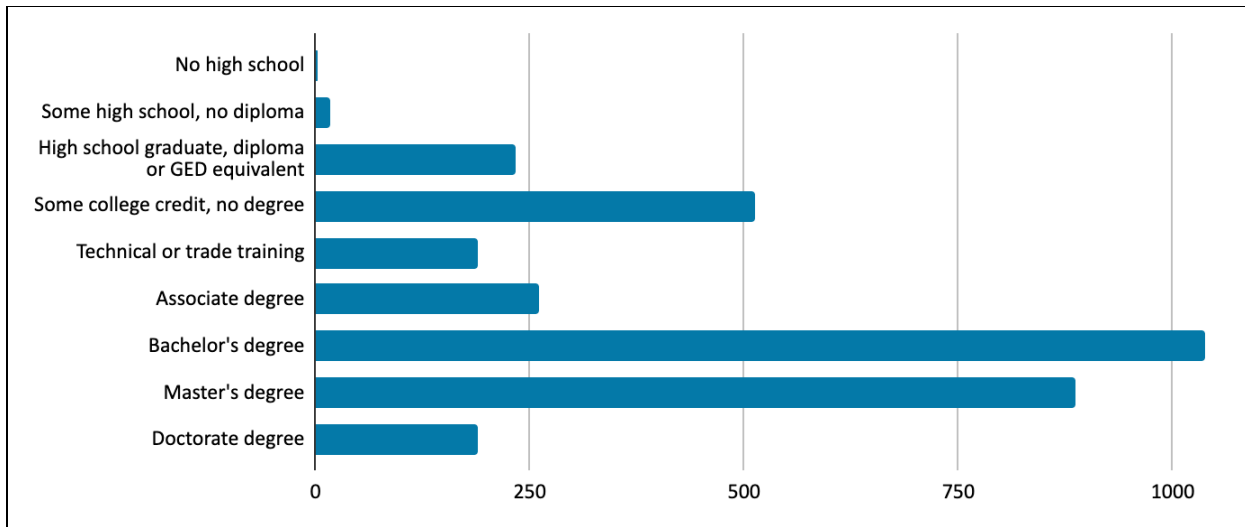
Question 23: With which gender do you identify?



Male	749
Female	2531
Non-binary	5
Gender fluid	5
Other	25
Total	3315

The majority of survey respondents identify as female, making up 76% of the sample, males making up 22%, and less than 2% identifying otherwise. While this question along with all the demographic questions was optional, a vocal minority was offended by the nonbinary options provided by this question and utilized the “other” field to voice their complaints.

Survey Question 24: What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

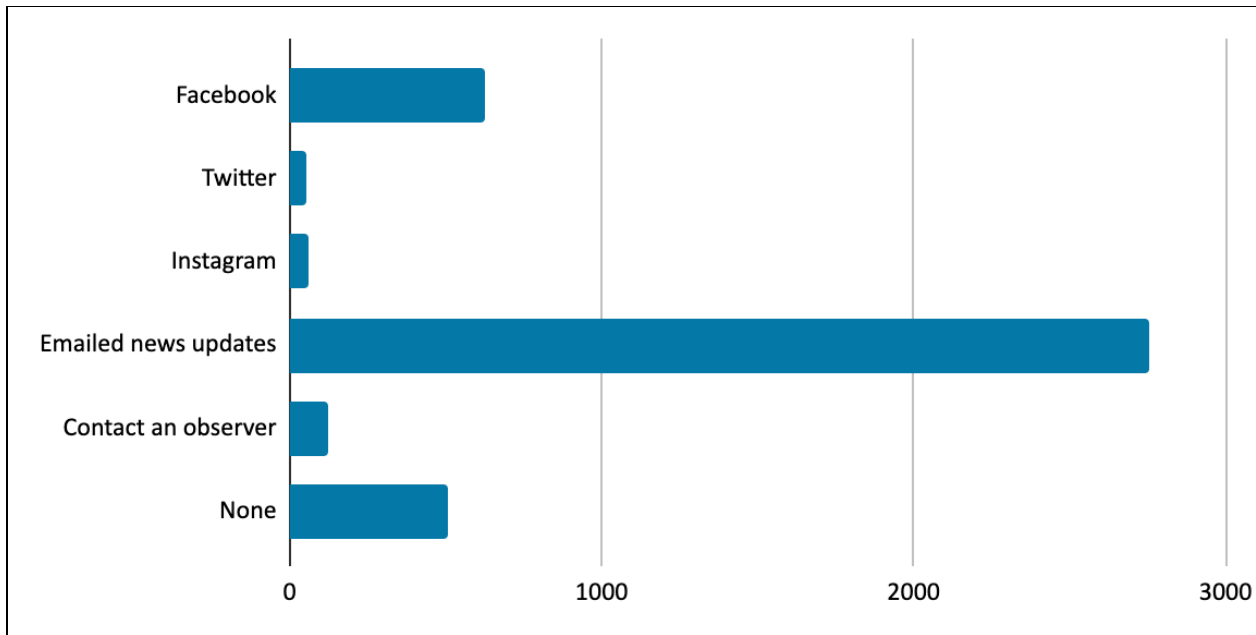


No high school	2
Some high school, no diploma	17
High school graduate, diploma or GED equivalent	234
Some college credit, no degree	512
Technical or trade training	190
Associate degree	261
Bachelor's degree	1037
Master's degree	886
Doctorate degree	190
Total	3329

The Journey North users surveyed are highly educated with the majority holding bachelor’s degrees or higher. Less than 8% of those surveyed reported no college education.

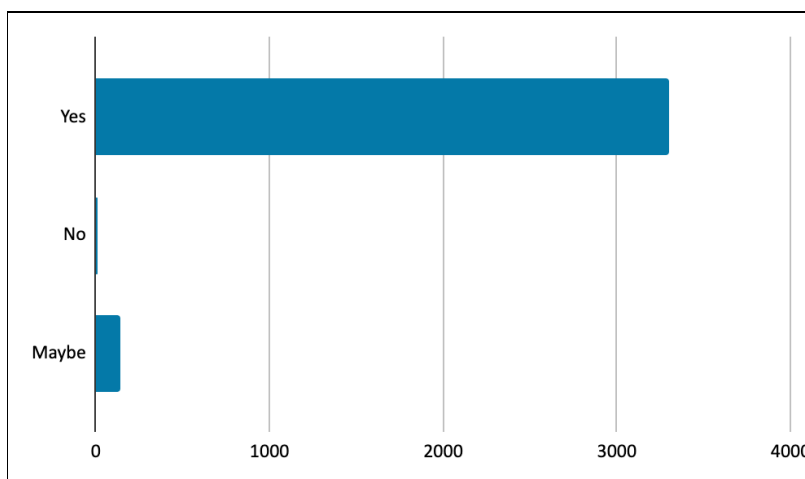
RQ3: How do users feel about the Journey North Program/community?

Survey Question 13: Which of the following do you use to connect with the Journey North community? (Check all that apply.)



Facebook	629
Twitter	54
Instagram	63
Emailed news updates	2756
Contact an observer	122
None	506

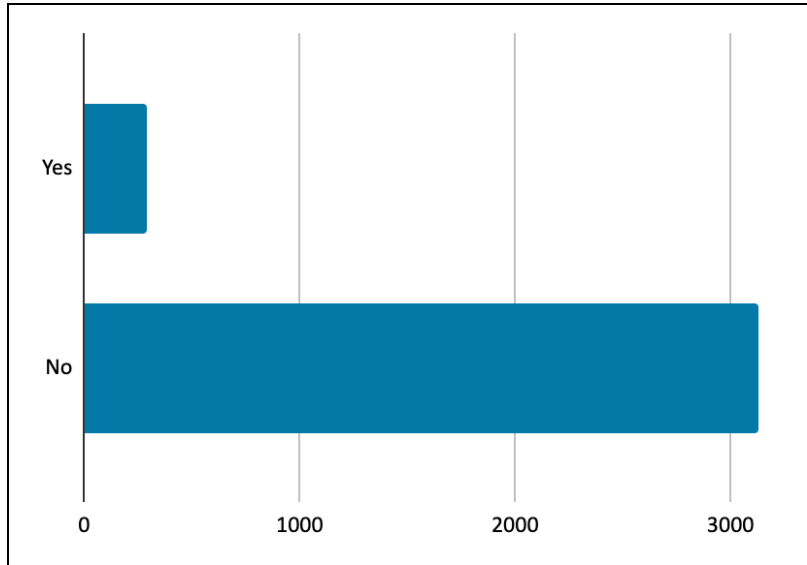
Emailed news updates were by far the most popular method for users to connect with Journey North, and for those who do not use the site, this is the primary way they are connecting with the program. A critical mass of users also connect with Journey North via Facebook. Few users connect using Twitter or Instagram, but this may be more reflective of current marketing practices with the organization. A significant number of users none of these digital communication tools to connect with the program.



Survey Question 14: Would you recommend Journey North to a friend?

Over 95% of users answered positively to this question, and their satisfaction is reflected in the likert scale questions (questions 18-20) and their open-ended feedback (question 21).

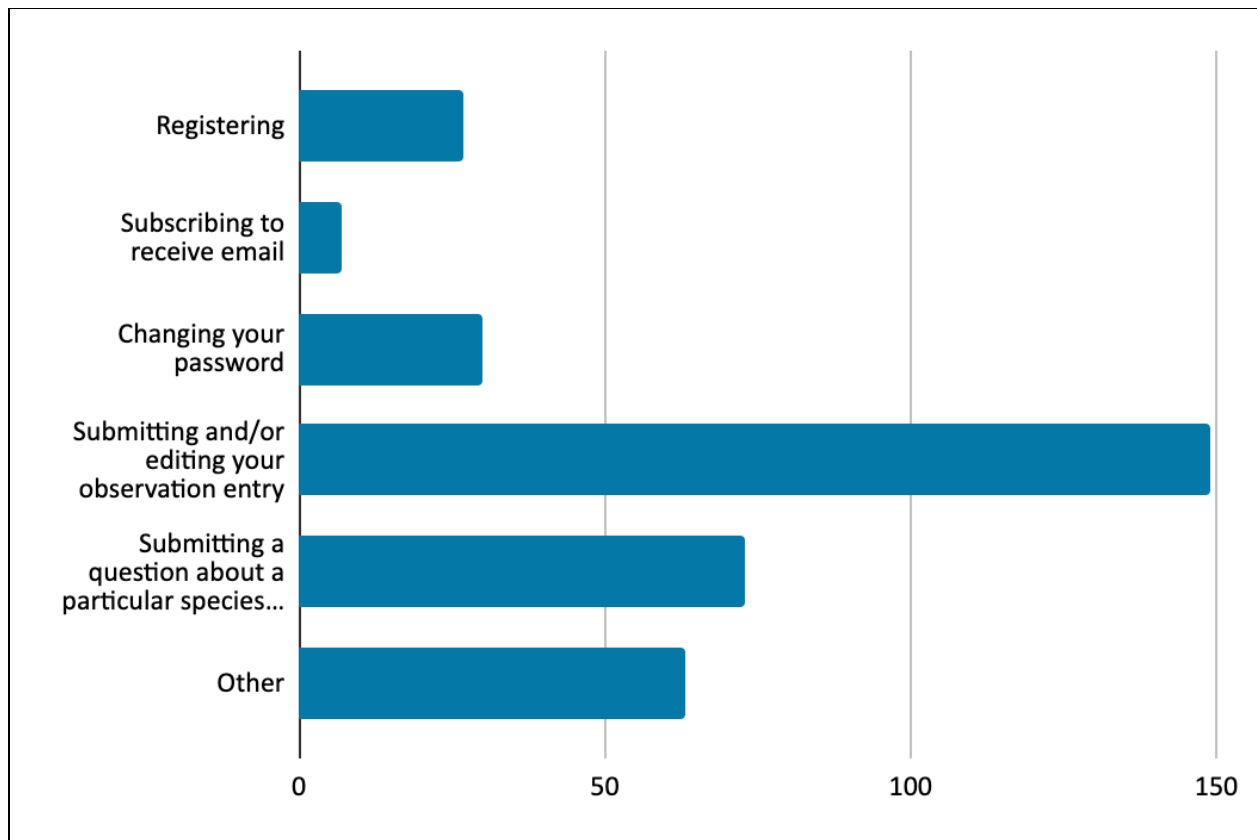
RQ4: How are users currently interacting with the Journey North website?



Survey Question 15: Have you ever contacted the helpline?

Only 289, roughly 8% of those who answered this question had contacted the helpline.

Survey Question 16: If so, what kind of problem did you experience that led you to contact help? (Check all that apply).

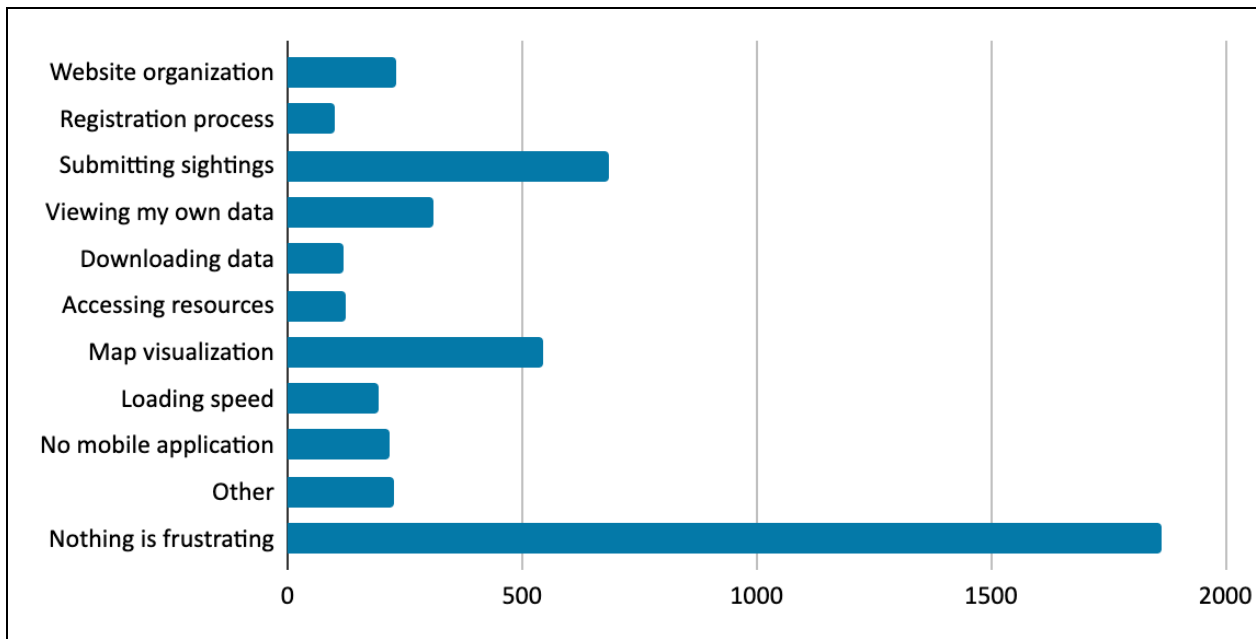


Registering	27
Subscribing to receive email	7
Changing your password	30
Submitting and/or editing your observation entry	149
Submitting a question about a species of concern	73
Other	63

Submitting and editing observation entries was by far the most common reason for contacting help, a concern that comes up repeatedly.

RQ5: How do users rate the usability of the website?

Survey Question 17: What do you find most frustrating about the Journey North website? (Check all that apply).



Website organization	232
Registration process	102
Submitting sightings	685
Viewing my own data	313
Downloading data	118
Accessing resources	126
Map visualization	544
Loading speed	195
No mobile application	219
Other	227
Nothing is frustrating	1863

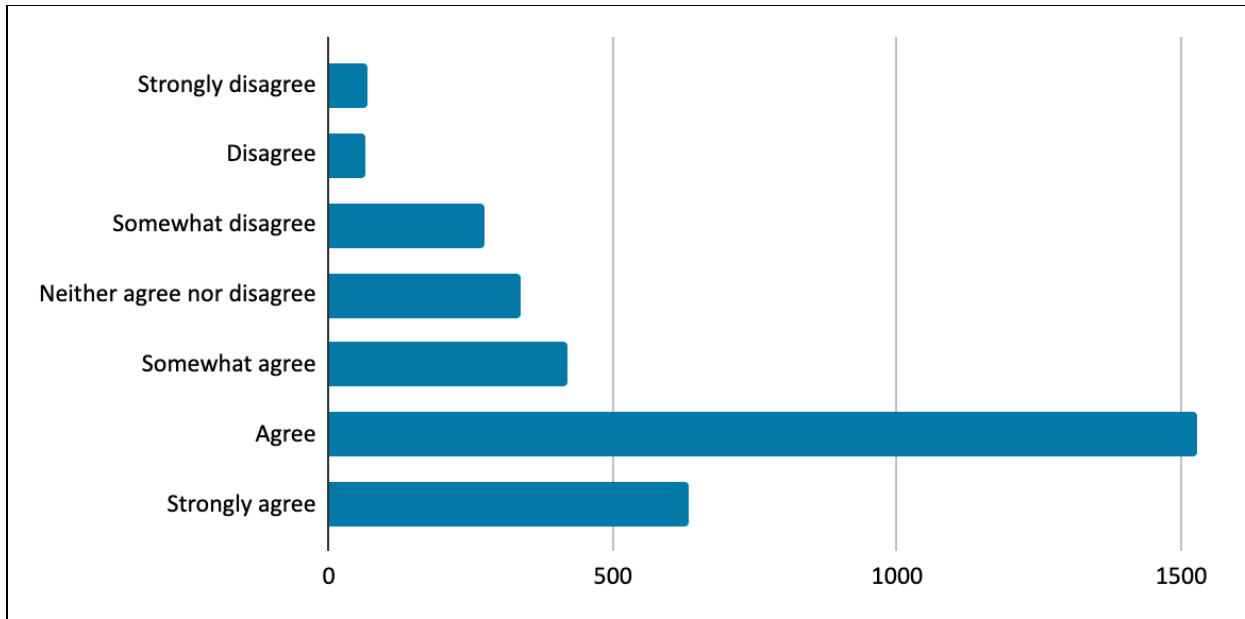
While the majority of users surveyed reported nothing about the site was frustrating, a critical mass of users reported struggling with submitting sightings as well as viewing their own data, the map visualization, and website organization. These concerns were reiterated in the comments for the other field. Their top frustrations were with sightings (41 count), maps (26), sign-in and password issues (19), lack of mobile site/app (16), site not user friendly (15), and editing submitted data (12).

Users registered the following complaints with the sighting process: reporting protocols and categories are confusing, lack of geolocation feature on sighting page, photo upload is difficult and distorted, entries do not load consistently, and reports are not interoperable with other monitoring sites.

Their issues with the maps included: slow loading speed, difficulting interpreting the visualization, difficulty distinguishing between the many map types, limitations to search/sort/comparison, difficulty downloading/printing, and difficulty finding specific locations using the zoom function.

Several users expressed frustration with the sign-in process, citing difficulty remembering passwords as well as confusion logging in and out. Users cited poor organization, convoluted navigation, inconsistent page layout, and slow speed as features diminishing the usability of the site. Last, several users complained about not being able to edit their own submitted data.

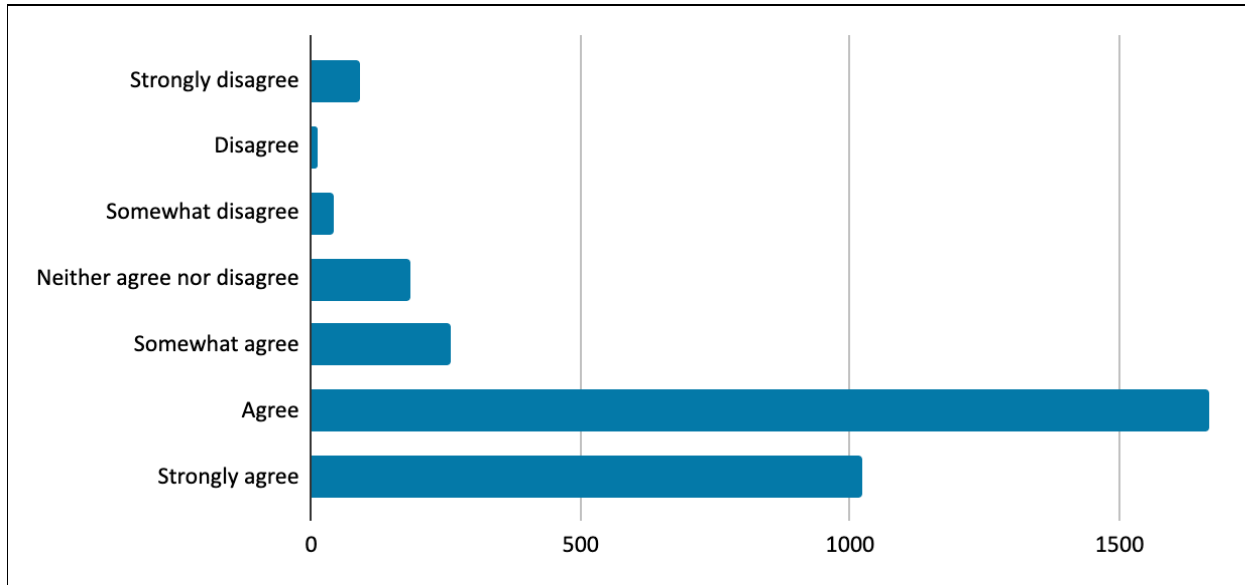
Survey Question 18: It is easy to find what I am looking for on the Journey North website.



Strongly disagree	67
Disagree	65
Somewhat disagree	273
Neither agree nor disagree	337
Somewhat agree	420
Agree	1527
Strongly agree	632
Total	3321

The majority of users surveyed believe it is easy to find what they are looking for on the Journey North website.

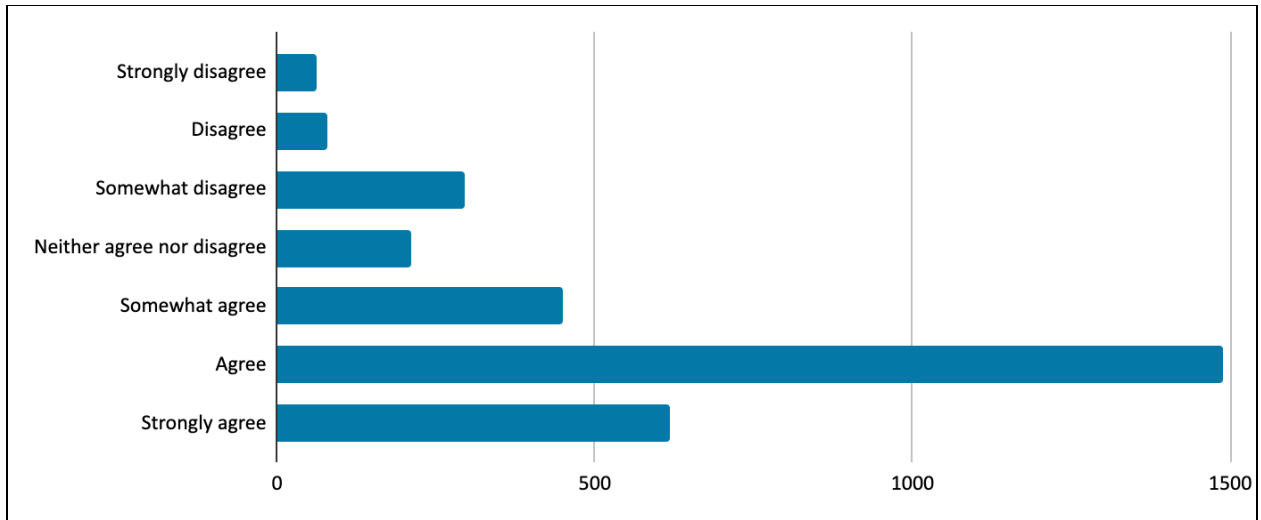
Survey Question 19: The content of the Journey North website is helpful to my individual goals.



Strongly disagree	90
Disagree	10
Somewhat disagree	41
Neither agree nor disagree	184
Somewhat agree	260
Agree	1666
Strongly agree	1021
Total	3272

The majority of users surveyed believe the content of the Journey North website is helpful to their individual goals.

Survey Question 20: Instructions for entering observations are clear.



Strongly disagree	61
Disagree	78
Somewhat disagree	295
Neither agree nor disagree	211
Somewhat agree	450
Agree	1489
Strongly agree	619
Total	3203

The majority of users surveyed believe that instructions for entering observations are clear.

Interview & Test Questions

RQ1: Who are the key users of the Journey North Program?

1. Tell me a little bit about yourself, your professional background and interests.
2. (If applicable) What initially drew you to Journey North?
3. Have you ever used the Journey North website?
4. (If applicable) Which functions/resources of the website do you use? (e.g.: Enter migration observations, news updates, image of the week, journal pages, real-time maps, slideshows, booklets, photo galleries, ask the expert, teaching suggestions, other)
5. (If applicable) On average, how frequently do you visit the website? (e.g.: Daily, weekly, monthly, seasonally/every couple of months, annually, less than once a year, never)
6. (If applicable) How long have you followed the JN program? (e.g.: I have never participated in the JN program, less than a year, 1-2 years, 3-5 years, more than 5 years)
7. Have you ever entered an observation? Yes/No
8. If you have never entered an observation, which best describes your reasons? (e.g.: Too difficult to navigate, privacy concerns, lack of interest, other)
9. (If applicable) What keeps you coming back to JN?
10. Do you participate in other citizen science programs? Yes (which one)/No

RQ2: How do users understand the mission of Journey North, and where do they develop this understanding (from the website, newsletters, etc)?

1. Starting from the homepage, show me where you would go on the website to understand the mission of JN program. Please think out loud as you search and describe the mission.

RQ3: How do users feel about the Journey North Program/community?

1. (If applicable) Which of the following platforms do you use to connect with the Journey North community? (e.g: Facebook, Twitter, Instagram, emailed news updates, contact an observer)
2. (If applicable) Are there other ways you would like to connect with the Journey North community? (e.g.: A central account where you can access individual profiles)

RQ4: How are users currently interacting with the Journey North website?

1. From the homepage, show me how you would register to become a participant of the JN program.
 - a. Show me where you would go to subscribe/unsubscribe to emails.
 - b. Show me how you would change your profile password.
 - c. Show me where you would go if you experience a problem with any of these registration features.
 - d. Do you have any suggestions for improving the registration page?
2. From the homepage, show me how you would find the migration pattern of monarchs.
 - a. Explain what you think this map is showing.
 - b. What are the different functionalities of this map page? (Encourage them to explore and click around)

3. From the homepage, show me where you would go to find out the projects of the Journey North program.
 - a. How many projects are there? (See if they can find the full list from either the dropdown menu or the image index)
4. You are most interested in hummingbirds. From the homepage, show me how to get to this project page.
 - a. What are the objectives of the hummingbird project?
 - b. What does this page encourage Journey North participants to do?
 - c. Show me how you would report a hummingbird sighting.
 - i. What is this “Report sighting” page asking you to do?
 - ii. Are there instructions for what to report in the Spring vs. Fall?
 - iii. How often are you supposed to report for “Fall Hummingbird sightings”?
 - iv. If you have never entered a sighting, show me how you would enter a practice sighting.
 - v. Show me how you would access your report?
 - d. You are trying to enter a hummingbird sighting and need to distinguish between a Ruby-throated and Rufous hummingbird. Show me how you would find this information on this site?
 - e. You are interested in finding out more information on hummingbirds. (e.g.: How many babies do they have?) Where would you go?
 - f. Where would you go to find news about hummingbirds?
 - i. Are there multiple places you could go?
 - ii. Where makes the most sense to you for navigating to news?
 - iii. What does reading the news do for you?
 - iv. Does reading the news clarify what you should be reporting?
 - g. Did you find anything frustrating or confusing about navigating the hummingbird project page?
 - h. Do you have any suggestions for improving the hummingbird project page?
5. Using the whole site, find an example of a slideshow on monarchs that you could use in a public presentation or classroom setting.
6. Starting from the homepage, find an “activity” related to monarchs.

RQ5: How do users rate the usability of the website?

1. How did you feel about task instructions on the website? (e.g.: Were instructions for entering observations clear)
2. From the homepage, looking at the buttons and navigation bars in the header and footer, which menu options do you find the easiest to understand? Are any confusing? What different language might be helpful? Do the links offer what you expect from them?
3. Within a project page (e.g.: hummingbirds), describe the function of the primary and secondary menus.
4. How do you feel about the visual design of the Journey North website? (e.g.: Do you find it appealing/unappealing, engaging/boring, etc.?)

Interview & Test Analysis

RQ1 Who are the key users of the Journey North Program?

All user interviews were conducted in person with members of the Madison community.

User 1: Female (early 20s) second-year graduate student, pursuing a masters in Library & Information Studies with a concentration in UX Design & Research. Hobbies include painting, kayaking, and community gardening soil testing. Not a member of Journey North, but had visited the website briefly, more than a year ago when prompted to look at the map function for a class.

User 2: Female (early 30s) early-career youth services librarian who manages partnerships with public schools and different youth organizations, coordinates making/learning opportunities for children, and designs and conducts early literacy and making/learning trainings with educators. Worked as an elementary school teacher for six years before making a career change to youth librarianship. Lives in the country with her husband, and both are avid bird watchers who work to create bird habitats on their property through the plants they grow. While she is not a member of Journey North and has never visited the website before, she does participate in the Great Backyard Birdwatch through the Audubon's Society's Citizen Science Program.

User 3: Female (60s) retired occupational therapist and master gardener. With her grandchildren became interested in studying and helping the monarch population about four years ago. Became involved with the Arboretum two years ago when she retired, learned about Journey North through the Arboretum, and became a member of the Arboretum Monarch Larva project and Journey North in spring 2019. Has used the website once to enter a sighting of monarchs. Receives email, but does not read the updates. Occasionally participates in other Citizen Science programming, including the Arboretum's dragonfly and monarch larva projects as well as a milkweed project from a separate organization. She is also a steward of the Arboretum. User cites Journey North's relationship with the Arboretum and her interest in monarchs as the primary reasons she is drawn to participate in Journey North. Self-identifies as computer savvy.

User 4: Male (40s) mid-career ecologist who enjoys exploring the natural world through family camping trips and outdoor sports. Became a member of Journey North for professional reasons and has been a member since the Arboretum acquired it in January of 2019. Visits the website monthly to view maps and, prompted by emailed news updates, visits project pages for hummingbirds and monarchs. Due to a busy schedule and competing interests, has never entered a sighting. Participates in other Citizen Science programs, including eBird and the dragonfly program at the Arboretum.

User 5: Female (60s) retired nurse and small business owner (women's boutique). Not a member of Journey North and has never visited the website. Participates in other Citizen Science programs, including stream monitoring for SWIMS and volunteering at the Arboretum. Is also a master naturalist.

RQ2: How do users understand the mission of Journey North, and where do they develop this understanding (from the website, newsletters, etc)?

While four of the five users tested eventually identified the “About Journey North” paragraph within the About page as the mission statement of the organization, none found it easily and no one felt it adequately described the mission. See Metrics Table 1 in the [Appendix](#). All users stated that they expected the mission statement to be located under About, and they expected this page to be more prominently featured in the top navigation. Two of these users also mis-interpreted the yellow “Welcome to Journey North” banner as a button, which they expected would take them to a page about the organization, including the mission statement. For the four users who made it to the About page, none felt the mission statement was clear. They could deduce from context and previous knowledge about migration what the site was about, but they could not discern the scope of the organization. One user noted that they expected the mission statement to be conveyed as a bulleted list describing the primary goals of the program. Three users felt confused by the information presented under the About page, stating that it seemed more like a news page or press release rather than what one would expect under about. One user stated the heading “Journey North Migrating to a New Home” doesn’t make any sense. Also noteworthy, it is only after spending 73 minutes on the site that one user finally grasps that Journey North encompasses more than migration and understands that it is also a phenology website. This speaks to the opacity of the mission statement.

RQ3: How do users feel about the Journey North Program/community?

Of the five users interviewed, one two are members of Journey North. These members connect with the organization primarily through the Arboretum and the emailed newsletters. One user noted they would like to connect with the program through a mobile app, because it would be much more practical for entering observation data.

RQ4: How are users currently interacting with the Journey North website?

Registration:

Overall, users were successful in completing most registration related tasks, including completing the initial registration form, changing their profile passwords, and contacting help for issues with registration features. See Metrics Tables 2, 4, and 5 in [Appendix](#). Many users, however, found the term “Registration,” confusing, associating it with registering for a finite event rather than continued participation with an organization. One user suggested that the phrase “Get Involved” might be better.

Users had mixed results when it came to subscribing/unsubscribing to emails with a less than a 50% success rate. See Metrics Table 3 in the [Appendix](#). The two users who failed this task discovered the unsubscribe function of registration several minutes later during another part of

the user test. Multiple users felt that email subscription should be separated from the registration process. They felt that it was unclear what they are subscribing for and whether registering creates the subscription. They recommended making this function available elsewhere on the site (e.g. link in the footer) and being more transparent about the process of subscribing through a checkbox field in the registration.

Users also noted the inconsistency of the Registration page design and recommended unifying its design with the rest of the site. One user noted “I could see a user losing their sense of place”. One user noted that the “registration form” and “go now” links go to the same place and recommended consolidating them into a single button. Another user expressed concern about the generic web contact form, because they associate these generic forms with poor response rate, which they felt could be frustrating if they were trying to get into their account. Finally, one user noted they would like to have easy access to a profile page from within registration. They felt it was unclear whether there is a profile created from registration where you can view information you have entered or other projects you have participated in.

Maps:

Users expressed some hesitation when they tried to identify the migration pattern of monarchs. See Metrics Table 6 in the [Appendix](#). All users understood that they were looking at a map showing observations of adult monarchs from August through December and were able to discern a basic north to south migration pattern. They, however, found the data visualization confusing for various reasons, including:

1. Map shows past and future dates with data covering data.
2. Colored gradients typically convey intensity/quantity rather than time/movement.
3. Color contrast is too weak to distinguish between chronological data points.
4. Data collection metrics are unclear
 - a. Unsure whether data points on the map represent single observations or a cluster and if multiple sightings from a single location/date come from a single person or an aggregate.
 - b. Two users questioned the validity of the data, wondering why there are so few data points at starting point (Canada) and the final destination (Mexico) and hypothesized that maybe very few people had entered data in these locations.

Users explored many of the functions of the map page, including “link to map”, “view data”, “play”, other types of data that could be gathered and played from the dropdown menu, and zooming in on different data points. No user, however, accurately comprehended every function of the map.

The greatest obstacle to task completion was map loading speed. Everyone was at least moderately affected by loading speed, but two user tests were completely derailed map dysfunctions. One user was confused when the map stalled out, and didn’t recognize that it was a loading speed issue. The map was stuck loading for several minutes and the page became unresponsive. User noted that if too many delays happen when they are visiting a site, they will abort the mission altogether. We had to exit the site and refresh to continue on with the user test. A second user attempted to click on “report sightings”, which opened three new windows with a

long delay before getting to the sighting page where it stalled again as the user attempted to log out and log back in. The user attempted to click on “report sightings” a second time, which took more than 20 seconds to load. It is worth noting that the map window completely slowed the function of the site and continued to create loading issues for other pages until it was closed.

Users also struggled with the dropdown menus, both within Sightings and Map pages, finding them confusing and not interoperable. One user noted that sightings interface has you select a species, but it does not load into the subsequent sightings page, and you have to select again. Another user commented that some of the options under Sightings were more ambiguous (e.g. daylight), and others were more granular than a single species (e.g. eggs/larva). One user commented that the sightings page was fairly intuitive, but they also thought one could enter a sighting without registering, which is inaccurate. Another user is confused by what PEAK migration signifies and believes it conveys the complete migration round trip instead of just one direction.

Another user was confused by the dual operations of the image icons on the Map page. They clicked the corner of the icon where it said “data,” which took them to a query list page. Then they clicked on the center of the icon, which took them to the mapping page.

Two users question the utility of the “play” function. One notes that this option is redundant given that it automatically plays when they come to this page. Another user does not understand the play function at all and is expecting to hear something.

One user is confused by the “link to map” function and does not understand that it is a shareable link.

Projects:

All users successfully and efficiently navigated to the project page and identified 20 projects as part of Journey North. See Metrics Table 7 in the [Appendix](#). Most users identified the projects through the image index, opposed to the dropdown menu. One user initially viewed the projects through the dropdown menu and falsely assumed that there were only 9 projects. Another user hesitated over the image index and was not immediately certain whether these would navigate them to project pages. Several users questioned what constitutes a project. Users were most confused with project pages that did not fit within species migration (e.g. tulip test garden, symbolic migration, mystery class, sunlight & seasons). One user, a registered Journey North participant, was surprised to learn that it included projects outside of monarchs migrating north, an assumption they made based on Journey North branding. Another user questioned why “Livecam” is included in this list and felt it should be its own button easily accessed from the homepage, because this is an appealing feature to many users and educators.

Most users were able to successfully and efficiently navigate to the Hummingbird project page, although one user noted there were many pathways to this page. See Metrics Table 8 in the [Appendix](#). Another user, a retired JN member, became very lost looking for the hummingbird project page, even though they had just observed the project index in the prior task. This user also

misinterpreted the “Report your sightings” photo of a hummingbird as a direct link to the hummingbird project page, which contributed to their sense of lostness.

Individual Project Pages – Hummingbirds:

Multiple users believe there needs to be more context for the project pages. One user notes that page lacks a project description and jumps straight into a highlight image “Still Nectaring Along Migration Routes”, which appears out of context with no proper orientation to the goals of the project. This highlight image also confuses some users, because it includes a date, which depending on when they are visiting the site is often out of date.

Users understanding of the objectives of the hummingbird project ranged from vague to detailed. Everyone understood that it related to tracking migration, but only two users identified the full objectives outlined within the “track hummingbird” paragraph. This information is buried a full scroll down page and requires clicking back and forth through several hyperlinks, which some users feel are disruptive to the reading process.

Only one user discovered the “About this project” page, which was nested in the hamburger menu within the secondary Project menu. The user commented that they are not used to seeing a hamburger menu on a desktop, and that they did not feel that the “About this project” page gave a clearer sense of the objectives other than tracking fall migration. Separate from the hummingbird project tasks, a second user discovered the “About this project” page buried within the hamburger menu after working on the site for 83 minutes. The user wants to know why this is not the first menu option or the first thing that shows up on this project page, because this would provide the orienting information that a new user would need.

The news update at the top of the page and index at the bottom both enticed and distracted users. One user who is particularly impressed by the images and the amount of information present on the page believes that the primary objective of the page is simply sharing information about hummingbirds and their migration routes. They elaborate: ***“This is something that I have lived on all my life. It’s the little things that count, and that is why I am so enthusiastic about this because it seems it is the little things that people don’t see and don’t appreciate in nature.”*** The inundation of information and images, while attractive to the viewers, actually deters them from completing the primary goals of the site (entering observations). They experience information overload and become distracted to the point that they cannot find key information (protocols and how to submit sightings). As another user expressed: ***“This page is trying to do too much and lead the visitor in too many directions without proper context for what they are actually supposed to do.”***

Sightings:

Users struggled with reporting sightings, with two failing the test and the other three completing it with great hesitation. They did slightly better on a second attempt to enter practice sightings. See Metrics Table 9 and 10 in the [Appendix](#). Most of their confusion centers around the design of the Sightings page, to which the Report link takes them directly. The sightings page includes functions for both reporting and viewing data, and these two functions are not clearly delineated or labeled. The choice is between “Select Species or Event” and “View Sightings” with the word

Report listed nowhere on the page. Users routinely confused which dropdown they should be clicking into to report a sighting. In fact, as multiple users note, View Sightings, is featured more prominently with larger font, higher on the page. They also note that the hierarchy, proximity, and alignment of elements on this page seemed arbitrary to the order of reading and operations. They recommend revising layout and nomenclature for a clearer order of reading and task operation and renaming the page to reflect its dual function (e.g. Report & View Sightings).

Users are widely confused on what to report. Despite scouring Project, Sightings, and News, and Resource pages, no users are able to locate instructions for how often to report and what to report in Fall versus Spring. One user thinks they need to read migration news first to figure out how to report a sighting of hummingbirds. Another user is repeatedly drawn to the picture of the hummingbird with the text “report sightings” and is expecting this link to provide the information they seek. Multiple users note they need an identification key and protocols in order to determine which option to select from the dropdown menu “What did you see?” They note that some of the dropdown choices include overlapping and vague categories and wonder if this muddies their data. Many find the “none sighted” option confusing and are also confused why “adult male” is listed but “adult female” is not. One user notes that the “Hummingbird (other observations)” likely gets at hummingbird behavior, but this user feels this requires background with this type of Citizen Science observation in order to understand this option. Another user remarks that inconsistencies in dropdown options extend to their design, noting that some are in all caps and some in lowercase with different punctuation, which makes the site feel amateur.

Two users suggest it would be helpful to limit the dropdown options to species level distinction, which are discrete categories, and then provide checkbox metadata tags that could be added to the sighting (e.g. An adult male could also be nectaring from flowers) . They echo the feedback of the other users, citing the importance of providing recommendations for that tagging (e.g.: check this if you observed... And what is the protocol for sighting a mixed group of hummingbirds?). Users are also unsure what should be entered in the comments field.

One user also noted that the map function was kind of tedious and if it doesn’t automatically geolocate you it would require the user to know where they are, which might be confusing for a nonresident entering a sighting.

While most users were able to access their sighting reports, they did so with significant hesitation, and it took them very long to complete the task. See Metrics Table 11 in the [Appendix](#). They experienced a range of obstacles. For example, one user clicked on “all sightings” from the internal menu within “My Sightings” which pulled up a very confusing Archive menu. Two users indicated selecting within the dropdown list was confusing and unhelpful. They note that it is a very long dropdown menu to select from within and that it requires the user to recall exactly what kind of sighting they entered (e.g. Hummingbird nectaring from flowers). They suggest that looking up sightings should be filtered differently, starting first with projects so that you get into the species first. Give the user the option to see all of their data and then filter their sightings accordingly.

Resources:

When asked to complete tasks that utilized the Resource pages, users failed completely. See Metrics Tables 12 and 13 in the [Appendix](#). Users found the naming and categorization of information contained on the Resource page confusing (e.g. image, photo gallery, article, facts, slideshow, map). While they were widely confused by these designations, they expected “Facts” resources to provide statistical information they sought. Two users questioned why this page included filters for “season” and “type” and no organic search. One user attempted to use the Google search custom search within the site with unfortunate results. This user completely exists the site for public records search that they think is a hummingbird identification site. Multiple times I ask them do you think this is going to provide the results you’re looking for. Would you take this approach in real life? Even as the page is taking several minutes to load search results, would you wait this long for it to load? They say yes. It is not until a social media scan appears that they realize it is an ad and not the information they seek.

For the other four users who stayed within the Journey North site, the two pages they most expected to deliver identification information were the “Who’s Who?” article located within the Hummingbird Resource page and the “What to report” page linked from the homepage of the Hummingbird project page. While these pages did not deliver the information they needed to complete the task, they did contain information on species identification and reporting protocols. The “What to report” protocols, however, contradicted the dropdown options in the reporting page (e.g. it says “do not report when you no longer see them”, but “none sighted” is an option in the sightings dropdown menu). One user expressed their frustration with the lack of identification and reporting protocols: ***“With a Citizen Science program, one of the dangers is that you [participants] are not indicating that there are different species that you’re seeing... If I am ignorant to the world of hummingbirds, but I am seeking to track them without clear distinctions of different species I might see, I’m not going to know that’s an option. There is a huge amount of information on this website, and it is not obviously linked through the main action of the website, which is reporting your sightings. Within the sightings page they could point me to resources that could make my sightings better, and if I’m participating in a Citizen Science program, I probably want my sightings to be helpful.”***

In conclusion, the Resource page is hard to find—there is no top nav heading for Resources on the homepage, so users are more likely to simply Google search the information they seek. Resource and archive pages are hard to navigate and search within, and they use terminology that is meaningless to the user. Overall there is too much information to digest without an adequate search function. As one user put it, ***“I will not go here again. I would go to the Cornell Lab of Ornithology to find what I’m looking for.”***

News:

Users had mixed results in locating the project specific-news, with some finding it very swiftly and others failing. See Metrics Table 14 in the [Appendix](#). All users interpreted News found on the top nav of the homepage to be global to the site and News within the Project pages to be specific to individual projects. One user also interpreted the articles within the Resource pages as news items too. Another user noted that they expected the News from the homepage to deliver information about Journey North, but instead it indexes News for all the projects. Two users suggested it

would be more intuitive to navigate from the homepage's top nav to a comprehensive News page that includes species filters. They think it is redundant to have news in both the homepage and the project page, and it would be sufficient to simply include a link to News from the project page.

Users feel that the term "News" is not entirely accurate. They interpret the news items as weekly migration updates that provide information about what observers might be seeing with identification guides, how to support the population, and encouragement to report. While users feel reading the news piques curiosity, they do not feel it clarifies what they should be reporting.

One user noted that the organization of News within the project page needs improvement. They think there needs to be some sort-of header "Most recent news" instead of the news highlight with the yellow circle and date. They also expect the index of archived news items to appear in reverse chronological order.

Educators / Instructional Materials:

Users struggled to navigate instructional materials on the site, with the majority of users failing or greatly hesitating. See Metrics Tables 15 and 16 in the [Appendix](#). One user reads the news and thinks it will yield activities or that they could generate an activity from what they learned, but they cannot find a ready to go activity.

Those who did succeed were inefficient. The single user who succeeded at both tasks related to locating instructional materials happened to be a youth services librarian and former educator. This user offered many critiques of content organization. This user greatly disliked the Instructional Activities page, noting that the headings were very strange (e.g. What does alliteration have to do with Citizen Science projects?) and they did not know how to navigate it. They also noted that the materials within "Educational Planning Tools" are not specific to different species, which makes it difficult to navigate or plan an activity. They would want to see these materials organized by project. They preferred the "Teacher Guide" page to the "Instructional Activities" page, because they felt it was much more organized. They commented, however, that it was confusing to find lesson plans organized under "Kids", because a child would not need to access them. They assumed that the "Kids" page would include web content appropriate for child interaction (e.g. "Tap on the butterfly and make its wings flap"). This user read headings of "Kids" and "Educators" as a call out to specific user's identity.

A second user commented that the instructional materials did not include sufficient contextualizing information. The slideshows, for example, do not include background information or much text, so users would not know how to present the information. They noted that copyright, purpose, and audience is unclear. Last, this user suggested that "Slideshows" should be renamed "Presentation".

RQ5: How do users rate the usability of the website?

Reflecting on their experience exploring the Journey North site, most users found navigation and task completion very confusing and difficult. They attribute this confusion to vaguely and inconsistently named headings and illogical site organization. One user commented that they often lost their sense of place, noting that the site lacked consistent use of headings. User noted that they could build some context through imagery, but for someone with a visual impairment, this site would be completely inaccessible, presenting a number of ADA issues. Additionally, dynamic content (e.g. news updates) disrupts visual memorability.

One user also noted that instructions for educators on how to use those resources were very unclear, but the primary challenge most users identified was navigating and entering data on the Sightings page. One user stated, *“If I were a new user and wanted to enter observations, I wouldn’t know where to go. I would get frustrated pretty quickly trying to learn how to navigate and operate this site.”* Users would like to see more instructions on how to enter sightings. They felt it was difficult to discern what to do on the sightings page and hard to distinguish between entering data and viewing data. No where on the Sightings page does it explicitly state “Report Sighting.”

Conversely, one user reported no frustrations with site navigation or task completion, despite failing multiple tasks and previously stating that they needed clearer protocols and identification guides. When pressed on this point the user responded, *“Maybe this isn’t a website to identify things. It’s a website for migration and so identification isn’t top on the list”* This is an alarming conclusion for a Citizen Scientist to draw after spending nearly 70 minutes exploring the site. For this user, poor digital literacy clearly impacted their comprehension of the site. Given the aging demographic of Journey North’s primary user group who often have limited digital training, it is important to note that user satisfaction may not correlate with user comprehension.

When asked to evaluate the headings and organization of the homepage, users had the following recommendations for improvements:

- **Logo:** Multiple users comment that the logo limits their understanding of the mission of the site, causing them to assume it is only about monarchs. One user finds the name Journey North both inaccurate and confusing to the goals of the program which actually track migration year round. Because of the logo, they initially assumed that the organization only tracked spring migration.
- **Home:** Two users (both retired users) would like to see “Home” in top navigation menu. They did not understand that the logo functioned as a direct link to home.
- **Projects:** Users feel this term is somewhat vague and does not reflect what it is about.
- **News:** Users feel that the articles within News do not deliver what is expected and this category should be renamed “Migration Updates”
- **Map:** Users felt the heading Map was very clear.
- **Sightings:** Users feel that this heading is extremely confusing, because it is unclear whether it is asking you to report or view sightings, and the confusion continues as you click into the page. One user recommends renaming this page “Report & View Sightings”.

- **Educators:** Users feel this page should be renamed Educator Resources or Instructional Materials.
- **Registration:** Users are widely confused by the name and function of this page. They do not fully understand that registration creates membership and email subscription and is required in order to enter an observation. They believe the registration form needs more context, and it needs to state what it means to be registered and what your involvement will be. One user suggested renaming this page something like “Get involved”.
- **Mission statement:** All users were advocated for incorporating a brief mission statement on the homepage. They would like a welcoming statement that orients the user how to engage with the program depending on who you are and what you need (e.g. report sightings, do activities, learn in other ways). Four of the five users tested found the yellow “Welcome to Journey North” banner very confusing, misinterpreting it as a button that they thought would link to orienting material for new users (e.g. mission statement). One user expressed their confusion: *“Here it is welcoming me, but I don’t know what it is. I’m not sure I want to be here.”*
- **Report Your Sightings:** Multiple users were confused by the redundancy of the Sightings page and “Report Your Sightings” graphic. Because the graphic on the homepage features a hummingbird, some users interpreted it as a link to the hummingbird project or a link specifically for reporting hummingbird sightings, and they were confused when it took them to the general sightings page.
- **Image index:** Users found the image index on the homepage confusing, because it lacks a header describing what it is. Initially they found it unclear that these are links to the project pages.
- **About:** The majority of users would like to see this in the top nav. They also believe that the content under about should be timeless, while the current content is more of a News item/press release. Some users believe this would be an appropriate place to include the mission statement.
- **Calendar:** Users feel this function is meaningless to the user.
- **Contact:** Users have no difficulty understanding this heading, but they are not why there is another link to contacts within it. One user would like to see a help button or navigation item in the homepage, but perhaps if Contact were more prominently displayed, this would alleviate their need.
- **Privacy:** Some users find this heading confusing and think it should be relabeled “Data Privacy”.
- **Unsubscribe:** Multiple users feel that there should be an unsubscribe link in the footer.

When asked to describe the function of the primary and secondary menus, all users accurately interpreted the primary menu as global to the site and the secondary menu as specific to the project, but none are convinced a secondary navigation is necessary. One user notes that some of the content in the primary and secondary menus is duplicated, while some of it is delineated whole site to individual project. A second user commented that if there is a secondary navigation, they are used to seeing it vertically oriented on the left side to distinguish it from the primary menu. That would function a little bit more like a filter. A third user discovers the hamburger menu within

the secondary menu for the first time and is perplexed by it—they interpret it as a settings button. A fourth user clicks on Home within the project page and expects it to take them to the Journey North homepage, but it actually takes them to the homepage of the project page. They expected interoperability between the two navigation bars, which there is not.

When asked to evaluate the visual design of the site, all users remarked that they enjoy the photos on the site, but many find the volume of content (both photographic and textual) overwhelming and confusing. They attribute their confusion to design inconsistencies across the site, which cause users to lose their sense of place. One user explains it is not visually intuitive how things are connected and the page layout is sometimes confusing. Many of the image indexes (e.g. News, Projects, Resources, etc.) lack context, which also confuses user.

Recommendations

Site Responsiveness & Social Networking:

- Prioritize developing a mobile friendly/responsive design for aiding data entry.
- While the aging demographic of primary Journey North users may not utilize social media, given the highly visual content of the site, it may be beneficial to leverage Instagram for marketing. Incorporating an Instagram feed on the site in lieu of updating image banners and indexes would reduce administrative labor, simplify visually dense and difficult to navigate pages, ease mobile submission of images, and improve the organization's visibility beyond the website.

Site Design

- Eliminate legacy html pages, which have an incongruent design. As time and budget allows, curate content from these pages into site redesign.
- Simplify page design by eliminating redundant content (e.g.: secondary navigation bar, project news, news highlights, etc).
- Graphics like "Report Sightings" and "Map", which are supposed to function globally for the site, should be replaced with generic icons and accompanied text, so that users recognize them as action oriented buttons that apply across projects.
- Use photos sparingly and as consistent banner images that help orient the viewer.
- Use headings consistently across all pages.
- Break up large blocks of text with subheadings.

Primary & Secondary Navigation:

- Eliminate the secondary navigation to reduce redundancies and confusion between the two operations.
- Unique headings from the secondary navigation are Kids and Resources. Eliminate Kids, as the content within this page is better suited Educators. Incorporate Resources into the primary navigation, which would promote full site access from the homepage.

Homepage:

- Logo: Consider renaming and rebranding for mission clarity.
- Home: While most 21st century users intuit that the logo functions as a homepage link, this is not always the case with seniors, who comprise the majority of the Journey North membership base. Conduct A/B testing during the prototype phase to determine whether including Home in the top nav is necessary.
- Mission Statement: Remove the yellow "Welcome to Journey North" banner on the homepage and replace with succinct mission/vision tagline that orients the viewer to the site. This should be visible within the first scroll of the homepage.
- Image Index: If the image index is maintained, include a header and description to orient viewers.

Google Custom Search

- Remove this function from the site as the search algorithm is poor and it takes users out of the site.

About:

- Move About from the footer to top nav.
- Update content for timeless association.
- Reduce amount of text and incorporate headings for greater scanability.
- Include a brief mission statement and history of the organization.

Registration:

- Unify Registration page design with the rest of the site.
- Rename Registration “Get Involved” to more clearly convey its function.
- Explicitly state what registration does.
- Make Profile page easily accessible from within Registration
- Consolidate the redundant “Go now” and “Registration form” links into a single button.
- Consider removing subscription from the registration operations and/or being more transparent about the process of subscribing through a checkbox field in the registration. (Users did not intuitively understand what subscription meant and that it was an automatic operation of registration.)
- Make email subscription/unsubscription function available elsewhere on the site (e.g. link in the footer).

Sightings:

- Rename Sightings page “Report & View Sightings” to reflect its dual function.
- Redesign Sightings page with clearer naming, hierarchy, alignment, and proximity to guide the order of reading and operations.
- Ensure that this page is fully responsive and accessible on mobile, so that people can report in live time from the field.
- Include general reporting protocols on Sightings page and species specific protocols within individual project pages. Clarify reporting protocols, as the guidance under “What to Report” resource pages contradicts the dropdown options within the sightings page (e.g. dropdown includes “None Sighted” option, but guidance says to stop reporting when you no longer see a species).
- Users are confused by a number of the functions on the reporting page within Sightings, which need addressing:
 - Add geolocation to the map. Some users falsely assumed that it geolocates, but it actually defaults to the user’s home registration. This feature is confusing for users who wish to enter observations while traveling.
 - Photos are difficult to upload and appear distorted. Provide guidance for the process and/or allow for varied formats.
 - Explain what should be added to the comments field?

- "What did you see?" dropdown items are vague and use inconsistent typography and punctuation (e.g.: What do you report if you see a mixed group of hummingbirds—male and female?). Rename and clarify according to report protocols.
- Consider limiting the Report dropdown options to species level distinction and then provide metadata tags that could be added to the report sighting. Include clear protocols for tagging.
- Redesign the interface for accessing sighting reports so that users can access their complete dataset and then filter accordingly. Initial dropdown filter should be shortened to project (species) name.

Projects:

- Consider renaming this page—users find it vague.
- Add a header and description to the Project page that contextualizes them.
- Remove the dropdown menu from Projects in top nav—only 9 projects are visible from the menu and the majority of users prefer to navigate through the image index.

Individual Project Pages (e.g. Hummingbird)

- Remove the news index and news update from the individual project pages. These images, while enticing, ultimately distract viewers from the primary objectives of the project.
- Replace the news update with a static hero image. Maintaining a constant image will aid users with site memorability and eliminate confusion surrounding dated materials. Eliminating this page element would also greatly reduce staff labor required to maintain dynamic site content.
- Eliminate the secondary project menu entirely. If the secondary menu is maintained, omit the hamburger menu. This is an issue of the page's responsive parameters being set too narrowly (e.g. the hamburger menu appears on screens 13" or less). This icon should never appear in desktop viewing, only mobile. Furthermore, the primary user group (seniors) are largely unfamiliar with this symbol and one user even interprets it as a setting symbol. Finally, the only heading buried within this menu is "About", which contains critical content for understanding this project.
- Prominently feature clear headings, contextualizing description, and list of project objectives on these pages.
- Include species specific sighting protocols and identification guides.

News:

- Rename news to "Migration updates" to accurately reflect its function.
- Eliminate news and banner updates from Project pages so that users are navigating to a comprehensive News page from the homepage top nav. Include a link to News on the project pages.
- Make News searchable through project-based metadata tagging (filters)

Maps:

- Improve loading speed for maps.
- Eliminate the image index as a way of navigating to maps—there are too many to sort through with no clear visual distinction and the dual operations of this button (e.g. data & mapping) confuse users.
- Clarify dropdown options.
- Redesign map data visualization to show data points moving from one location to another shifting between two high-contrast colors representing where they were before and where they are now or fading/disappearing as they move.
- In legend indicate what each data point conveys (e.g. from a single observation or many?)
- Clean up the map interface to eliminate unnecessary buttons. People are not fully exploring and are confused by certain functions. Remove play. Just let it happen automatically.
- Replace “link to map” with “share link”

Resources:

- Eliminate the resource and archived pages from the site until there is time and funding to tackle content curation.
- If the Resource and archived pages are resurrected, they should be accessible from the homepage as a top level navigation category.
- Within the Resource page, content should be categorized and searchable by project (species) rather than season or resource type.

Educators & Kids:

- Eliminate the instructional pages from the site until there is time and funding to tackle content curation.
- There are too many ways to access educational resources that lead to very different page layouts, which are organized in different ways using different naming conventions. Notice the difference between Educators from the homepage, Educators from within a specific project page, and Kids from within a project page. If the instructional pages are resurrected, combine Educators and Kids pages into a single top nav category named “Instructional Materials”.
- Within this page, rethink naming and categorization of content, so that it is more searchable. Categorize content by project and include additional metadata tags that allow users to filter by audience (e.g. pre-k, elementary, middle school, high school, adult education, etc) and format (e.g. presentation, lesson plan, video, etc).

Footer:

- Omit Calendar from the website—this is meaningless to users
- Consider moving Contact to the top nav. Eliminate secondary contact links within contact.
- Renaming Privacy “Data Privacy”—users are confused by this category
- Add “unsubscribe” link to footer—users expect unsubscribe option here and do not intuit that email subscription is a part of registration.

Appendix

Metrics Table 1: Interview Question “Starting from the homepage, show me where you would go on the website to understand the mission of the Journey North program.”

User	Time on task	# of clicks/pathway	S/H/F
1	7:30-8:10 = 40 seconds	Read through top nav, scrolled homepage, and clicked About in footer > identified “About Journey North” paragraph as mission = 1 click	Hesitation
2	8:03-9:38 = 95 seconds	Scrolled homepage and clicked Projects (top nav) > clicked All species & projects > clicked on News > clicked on educators > clicked back to home = 5 clicks	Fail
3	18:22-22:01 = 219 seconds	Attempted to click on “Welcome to Journey North” yellow button > clicked on registration (top nav) > clicked back on home > clicked All species & projects from projects menu > clicked on News > scrolled to the bottom of page and clicked on About in footer and identified “About Journey North” paragraph as the mission statement = 6 clicks	Hesitation
4	8:15-9:32 = 77 seconds	Scroll down homepage and clicked on About in footer > reads “About Journey North” paragraph and types in “mission” on the search box > types in “Journey North mission” = 3 clicks	Hesitation
5	3:44-4:29 = 45 seconds	Read through top nav, scrolled homepage, and clicked About in footer > identified “About Journey North” paragraph as mission = 1 click	Hesitation
AGG	Min: 40 sec Max: 219 sec AGG: 95.2 sec	Min: 1 click Max: 6 clicks AGG: 3.2 clicks	S: 0 H: 4 F: 1 AGG: H

Metrics Table 2: Interview Question “From the homepage, show me how would you register to become a participant of Journey North.

User	Time on task	# of clicks/pathway	S/H/F
1	11:19-11:43 = 24 seconds	Clicked on Registration (top nav) > clicked on Registration form > would fill it out & click register now = 3 clicks	Success
2	12:08-12:43 = 25 seconds	Clicked on Registration > clicked on Registration form > would fill it out & click register now = 3 clicks	Success
3	26:12-26:34 = 22 seconds	Clicked on Registration > clicked on Registration form > would fill it out & click register now = 3 clicks	Success
4	13:37-14:12 = 35 seconds	Clicked on Registration > clicked on Registration form > would fill it out & click register now = 3 clicks	Success
5	10:15-11:12 = 57 seconds	Clicked on Registration > clicked Go Now > would fill it out & click register now = 3 clicks	Success
AGG	Min: 22 sec Max: 57 sec AGG: 32.6 sec	Min: 3 Max: 3 AGG: 3	S: 5 H: 0 F: 0 AGG: S

Metrics Table 3: Interview Question “Show me where you would go to subscribe/unsubscribe to emails.”

User	Time on task	# of clicks/pathway	S/H/F
1	12:20-13:30 = 70 seconds	Clicked back to homepage > clicked Contact in footer & hesitated with contact form > clicked back to homepage > clicked on About in footer > clicked News in top nav > clicked Registration > clicked “unsubscribe” = 7 clicks	Hesitation
2	13:12-13:55 = 43 seconds	Clicked back to homepage > clicked Privacy in footer & read the communications policy that indicated they could unsubscribe by clicking the link at the bottom of fundraising emails & assumed that they would have to wait until they received an email = 2 clicks	Fail
3	26:36-26:40 = 4 seconds	Clicked on unsubscribe within Registration page = 1 click	Success
4	14:23-14:59 = 36 seconds	Clicked back to homepage > clicked Contact in footer and would send an email asking how to unsubscribe = 2 clicks	Fail
5	12:01-12:25 = 24 seconds	Clicked back to Registration homepage > clicked unsubscribe = 2 clicks	Success
AGG	Min: 4 sec Max: 70 sec AGG: 35.4 sec	Min: 1 clicks Max: 7 clicks AGG: 2.8 clicks	S: 2 H: 1 F: 2 AGG: H

Metrics Table 4: Interview Question “Show me how you would change your profile password.”

User	Time on task	# of clicks/pathway	S/H/F
1	14:57-15:09 = 12 seconds	From homepage clicked Registration > clicked change / forgot password = 2 clicks	Success
2	15:51-16:08 = 17 seconds	From homepage clicked on Registration > clicked on change / forgot your password = 2 clicks	Success
3	26:52-26:55 = 3 seconds	From within Registration clicked on change/forgot your password = 1 click	Success
4	15:07-15:27 = 20 seconds	From homepage clicked Registration > click on change/forgot your password = 2 clicks	Success
5	14:28-15:44 = 76 seconds	Scrolled around Registration form and then gave up = 0 clicks	Fail
AGG	Min: 3 sec Max: 76 sec AGG: 25.6 sec	Min: 0 clicks Max: 2 clicks AGG: 1.4 clicks	S: 4 H: 0 F: 1 AGG: S

Metrics Table 5: Interview Question “Where would you go if you experience a problem with a registration?”

User	Time on task	# of clicks/pathway	S/H/F
1	15:27-15:40 = 13 seconds	Clicked back to the main registration page > clicked on contact us = 2 clicks	Success
2	16:39-16:52 = 13 seconds	Within registration page clicked on contact us = 1 click	Success
3	31:46-31:48 = 2 seconds	Within registration page clicked on contact us = 1 click	Success
4	18:00-18:55 = 55 seconds	Clicked Contact in footer and would type in the problem > clicked on Registration > clicked on contact us = 3 clicks	Hesitation
5	15:55-16:00 = 5 sec	Clicked on Contact Us in registration form = 1 click	Success
AGG	Min: 2 sec Max: 55 sec AGG: 17.6 sec	Min: 1 click Max: 3 clicks AGG: 1.6 clicks	S: 4 H: 1 F: 0 AGG: S

Metrics Table 6: Interview Question “From the homepage, show me how you would find the migration pattern of monarchs.”

User	Time on task	# of clicks/pathway	S/H/F
1	19:54-20:43 = 46 seconds	Clicked on “view maps” button > scanned over the different images & clicked on monarchs adult sighted > clicked “play” = 3 clicks	Success
2	20:38-21:44 = 66 seconds	Thought about clicking on Monarch Butterflies in the image index, but ultimately clicked on Maps in top nav where they saw many different options they could click on related to monarchs > clicked on Home > clicked on Projects in top nav > clicked on Monarch Butterflies > clicked on map icon from within the project page = 5 clicks	Hesitation
3	32:45-37:05 = 260 seconds	Clicked on Sightings in top nav > attempted to click on Monarch Butterfly within Select Species or Event, but clicked on Hummingbird > clicked on continue > clicked back > clicked on Monarch in dropdown > clicked on Fall: Monarch: Peak Migration under View Sightings > clicked continue and saw raw data > clicked back > clicked My Sightings > clicked back > clicked continue under Select Species or Event > typed Wisconsin > clicked on Maps > clicked on Monarch Peak Migration but took them to query data again > clicked back > clicked on Monarch Peak Migration again and landed on maps = 16 clicks	Hesitation
4	23:20-24:05 = 45 seconds	Clicked Maps from top nav > clicked on Monarch Adult Sighted = 2 clicks	Success
5	18:20-19:30 = 70 sec	Clicked on Monarch Butterflies from image index > clicked on “migration map” hyperlink within the paragraph of text “Track Monarch Butterfly Migration” = 2 clicks	Success
AGG	Min: 45 sec Max: 260 sec AGG: 97.4 sec	Min: 2 clicks Max: 16 clics AGG: 5.6 clicks	S: 3 H:2 F:0 AGG: S/H

Metrics Table 7: Interview Question “From the homepage, where you would go to find projects of the program?”

User	Time on task	# of clicks/pathway	S/H/F
1	33:20-33:26 = 6 seconds	Clicked on Projects from top nav = 1 click	Success
2	28:52-28:55 = 3 seconds	Clicked on Projects from top nav = 1 click	Success
3	42:19-42:25 = 6 seconds	Clicked on Projects from top nav = 1 click	Success
4	29:12-29:25 = 13 seconds	Clicked on Projects from top nav = 1 click	Success
5	26:54-27:02 = 8 seconds	Clicked on Projects from top nav = 1 click	Success
AGG	Min: 3 sec Max: 13 sec AGG: 7 sec	Min: 1 click Max: 1 click AGG: 1 click	S: 5 H: 0 F: 0 AGG: 5

Metrics Table 8: Interview Question “You are most interested in hummingbirds. From the homepage, show me how to get to this project page.”

User	Time on task	# of clicks/pathway	S/H/F
1	35:31-35:35 = 5 seconds	Clicked Projects from top nav > clicked Hummingbirds from the dropdown = 2 clicks	Success
2	35:47-36:20 = 33 seconds	Considered clicking Projects from top nav & clicking Hummingbirds from this menu, also considered clicking on the image of the hummingbird that says “Report your Sightings”, but ultimately clicked on Hummingbirds from within the image index on the homepage = 1 click	Hesitation
3	44:58-45:30 = 32 seconds	Clicked on “Report your sightings” button with image of a hummingbird > clicked on Hummingbird from the Select Species or Event dropdown menu > accidentally clicked back to the homepage > clicked Hummingbirds from top nav project menu = 4 clicks	Hesitation
4	31:49-32:02 = 13 seconds	Clicked on Projects from top nav > Clicked on Hummingbird from image index = 2 clicks	Success
5	29:42-29:51 = 9 seconds	Clicked on Projects from top nav > Clicked on Hummingbird from image index = 2 clicks	Success
AGG	Min: 5 sec Max: 33 sec AGG: 18 sec	Min: 1 click Max: 4 clicks AGG: 2 clicks	S: 3 H: 2 F: 0 AGG: S/H

Metrics Table 9: Interview Question “Show me how you would report a hummingbird sighting.”

User	Time on task	# of clicks/pathway	S/H/F
1	37:36-38:07 = 31 seconds	Clicked “report” hyperlink within the text under “Track Hummingbird Migration” > clicked on dropdown “View Sightings” = 2 clicks	Fail
2	38:59-39:43 = 44 seconds	Clicked “report” hyperlink within the text under “Track Hummingbird Migration” > clicked on Hummingbird from dropdown menu “Select Species or Event” > clicked momentarily on “View Sightings” dropdown > clicked continue under “Select Species or Event” > clicked on the “What did you see” menu = 5 clicks	Hesitation
3	47:19-53:08 = 349 seconds	Scrolling through the project page & reading the migration news clicked on “Fall Migration Starts this Month” > clicked on “Report your sightings” image with hummingbird > selects hummingbird from within the “Select Species or Event” menu > clicked “fall hummingbird sighting” within the “view sightings” dropdown menu > clicked on “my sightings > clicked on “hummingbird sighting” under Fall: select event dropdown menu > has to re-click because mistakenly selects the wrong option > types email address > clicked view records = 9 clicks	Fail (test stopped)
4	39:50-40:38 = 48 seconds	From the hummingbird project page clicked on “report” hyperlink > clicked on project from Select Species or Event > clicked back > clicked “report” again > click continue = 5 clicks	Hesitation
5	33:21-35:21 = 120 sec	From the hummingbird project page clicked on the image icon of the hummingbird that says “report your sightings” > would select hummingbird from “Select Species or Event” dropdown > clicked continue > clicked on the “What did you see dropdown menu = 4 clicks	Hesitation
AGG	Min: 31 sec Max: 349 sec AGG: 118.4	Min: 2 clicks Max: 9 clicks AGG: 5 clicks	S: 0 H: 3 F: 2 AGG: H/F

Metrics Table 10: Interview Question “Show me how you would enter a practice sighting.”

User	Time on task	# of clicks/pathway	S/H/F
1	42:22-43:53 = 91 seconds	Clicked on report your sightings (or sighting on the top nav) > clicked on hummingbird from the “Select species or event” dropdown menu > clicked continue > moved the point on the map > chose a sighting > clicked on calendar > clicked on number > clicked on file for uploading a photo > clicked into comments field > clicked “submit a report” = 10	Success
2	50:05-50:35 = 30 seconds	From within the sightings page clicked “hummingbird, nectaring from flowers” from the What did you see menu > clicked on calendar for when > typed number > clicked for photo upload > clicked into comments field > submit = 6 clicks	Success
3	Skipped	User was so confused by the report sightings tasks that we had to skip this task for expediency	Skipped/ Fail
4	51:25-53:49 = 144 seconds	From homepage clicked blue report sightings button > clicked practice report from “Select species or event” dropdown menu > clicked continue > typed in city > clicked search > clicked on calendar > clicked choose file to load photo > typed in comments > clicked submit = 9 clicks	Success
5	Skipped	User was so confused by the report sightings tasks that we skipped this task for expediency	Skipped/ Fail
AGG	Min: 30 sec Max: 144 sec AGG: 88 sec (of those who completed the task)	Min: 6 clicks Max: 10 clicks AGG: 8 clicks (of those who completed the task)	S: 3 H: 0 F: 2 AGG: H

Metrics Table 11: Interview Question “Show me how you would access your report?”

User	Time on task	# of clicks/pathway	S/H/F
1	45:12-45:31 = 20 seconds	Clicked sightings > clicked my sightings > chose hummingbird sighting under fall event > entered email > clicked view record = 5 clicks	Success
2	50:42-52:26 = 104 seconds	Clicked on registration > clicked on edit or delete your registration > clicked on look up my registration > clicked on sightings button in top nav > clicked on my sightings > chose monarch egg sighting under fall event > enter email > click view record = 8 clicks	Hesitation
3	58:13-59:30 = 87 seconds	Clicked on homepage > re-clicked on homepage after mistakenly advancing forward a screen > clicked on Monarch butterflies from within the project page > clicked on sightings from within the monarch project nav > would login with email > would click on My Sightings = 6 clicks	Hesitation
4	1:00:39-1:02 = 81 seconds	Clicked back to homepage > clicked sightings in top nav > clicked my sightings > would select a type of observation within Fall events > would enter email > would view record = 6 clicks	Hesitation
5	39:45-40:35 = 50 seconds	From within the sightings page clicked My Sightings > selected Hummingbird Sighting from the Fall event dropdown menu > would enter email > would click view records = 4 clicks	Success
AGG	Min: 20 sec Max: 104 sec AGG: 68 sec	Min: 4 clicks Max: 8 clicks AGG: 6 clicks	S: 2 H: 3 F: 0 AGG: H/S

Metrics Table 12: Interview Question “You are trying to enter a hummingbird sighting and need to distinguish between a Ruby-throated and Rufous hummingbird. Show me how you would find this information on this site?”

User	Time on task	# of clicks/pathway	S/H/F
1	46:03-47:43 = 100 seconds	Clicked on projects in top nav > clicked hummingbirds > clicked resources > clicked “who’s who?” article > clicked on educators = 5 clicks	Fail
2	55:45-59:25 = 220 seconds	Clicked on sightings > clicked on hummingbird from under “select species or events” dropdown menu > clicked home > Clicked hummingbird project page from image index > clicked “watch” > clicked resource button within hummingbird page > Clicked article “who’s who?” which provided a hummingbird = 7 clicks	Fail
3	1:00:26- 1:03:03 = 157 seconds	Clicked on hummingbird project page from homepage top nav > clicked on “more” link within the “track migration paragraph” > clicked on “watch for” = 3 clicks	Fail
4	1:05:54- 1:08:15 = 141 seconds	Clicked on hummingbird from project menu in top nav > clicked on resources > clicked on view archived resources = 3 clicks	Fail
5	41:30-46:30 = 300 seconds	Clicked on educators in top nav > clicked on Sightings > typed “ruby throated hummingbird vs rufus” in the Google search bar > clicks on an Ad “We Found Ruby Rufus - Risk-Free Public Record Search - Been Verified Official Site” = 4 clicks	Fail
AGG	Min: 100 sec Max: 300 sec AGG: 183.6	Min: 3 clicks Max: 7 AGG: 3.4	S: 0 H: 0 F: 0 AGG: F

Metrics Table 13: Interview Question “You are interested in finding out more information on hummingbirds. (e.g.: How many babies do they have?) Where would you go?”

User	Time on task	# of clicks/pathway	S/H/F
1	48:13-49:30 = 77 seconds	From educators > clicked on “How do hummingbirds eat” > clicked on Resources > clicked “fall” from into season filter > typed “babies” under type filter > clicked on “Hummingbirds” Fact > clicked on “Life Cycle” = 6 clicks	Fail
2	1:02:09-1:03:08 = 59 seconds	Clicked to home within the hummingbird project page > clicked on resources > clicked on facts “Hummingbird” > clicked on life cycle = 4 clicks	Fail
3	1:03:47 - 1:04:55 = 72 seconds	Clicked on resources within the hummingbird project page = 1 click	Fail
4	Skipped	User said they would google it instead.	Fail
5	47:45-48:45 = 60 sec	From the homepage clicked on hummingbird within the image index > clicked “More” hyperlink in “Track Hummingbird Migration” paragraph > clicked “Watch for Hummingbirds” = 3 clicks	Fail
AGG	Min: 59 sec Max: 77 sec AGG: 67 sec (of those who completed the task)	Min: 1 click Max: 6 clicks AGG: 4 clicks (of those who completed the task)	S: 0 H: 0 F: 5 AGG: F

Metrics Table 14: Interview Question “Where would you go to find news about hummingbirds?”

User	Time on task	# of clicks/pathway	S/H/F
1	50:05-50:20 = 15 seconds	From hummingbird project page clicked on news > clicked on an article = 2 clicks	Success
2	1:03:57- 1:04:15 = 18 seconds	From within hummingbird project page clicked on news = 1 click	Success
3	1:05:55- 1:06:01 = 6 seconds	From within hummingbird project page clicked on news = 1 click	Success
4	1:13:57- 1:15:44 = 107 seconds	From top nav clicked News in top nav > clicked hummingbird within Project dropdown in top nav > clicked on news within the secondary project nav = 3 clicks	Hesitation
5	49:15-51:45 = 150 sec	Does not find the news on their own. Must be prompted to click back to Hummingbird project home = 1 click	Fail
AGG	Min: 6 sec Max: 150 sec AGG: 59 sec	Min: 1 clicks Max: 3 clicks AGG: 2 clicks	S: 3 H: 1 F: 1 AGG: S/H

Metrics Table 15: Interview Question “Using the whole site, find an example of a slideshow on monarchs that you could use in a public presentation or classroom setting.”

User	Time on task	# of clicks/pathway	S/H/F
1	1:01:46-1:03:20 = 94 seconds	Clicked on Educators from top nav > clicked on instructional activities under heading “educational planning tools” > clicked on teachers in page-level nav > clicked back on home > clicked on Monarch project page from image index > clicked on educators from within monarch project page > clicked on journal “How far to Mexico” > clicked back > clicked back a second level > clicked on resources > clicked on a slideshow “Magic of Monarch Migration” = 11 clicks	Hesitation
2	1:11:47-1:13:21 = 94 seconds	From homepage clicked on Educators > clicked on instructional activities > clicked back on home > clicked on monarch butterfly page within image index > clicked on resources > clicked on slideshow = 6 clicks	Success
3	1:16:10-1:17:32 = 82 seconds	From homepage clicked on Educators > clicked on Teaching tool: mentor text activities > click on anchor chart = 3 clicks	Fail
4	Skipped	Ran out of time & user would google	Fail
5	1:02:24-1:03:29 = 65 seconds	From the homepage clicked on Monarchs from Projects in the top nav > clicked on Resources > clicked on “Magic of Monarch Migration” slideshow = 3 clicks	Success
AGG	Min: 65 sec Max: 94 sec AGG: 84 sec (of those who attempted the task)	Min: 3 clicks Max: 11 clicks AGG: 6 clicks (of those who attempted the task)	S: 2 H: 1 F: 2 AGG: H

Metrics Table 16: Interview Question “Starting from the homepage, find an “activity” related to monarchs.”

User	Time on task	# of clicks/pathway	S/H/F
1	1:04:53-1:06:12 = 79 seconds	Clicked on Educators in top nav > Clicked on Instructional activities under heading “educational planning tools” > clicked on artifact box > clicked back > clicked on projects > clicked on monarchs > clicked on Educators > clicked on kids > clicked on “How many monarch can you find?” = 9 clicks	Hesitation
2	1:13:46-1:14:36 = 50 seconds	Clicked on monarch butterflies from image index > clicked on kids in monarch nav > clicked on “when, where and how to watch fall monarch migration” > clicked on teacher guide = 4 clicks	Success
3	1:17:53-1:18:45 = 52 seconds	Clicked on Educators from homepage top nav > clicked on teaching tool: instructional activities = 2 clicks	Fail (ended to keep interview on time).
4	Skipped	User would Google and ran out of time	Fail
5	1:05:03-1:07:10 = 127 seconds	From the homepage clicked on Monarch Butterflies from Projects in top nav > Clicked on Resources = 2 clicks	Fail
AGG	Min: 50 sec Max: 127 sec AGG: 77 sec (of those who attempted the task)	Min: 2 clicks Max: 9 clicks AGG: 4 clicks (of those who attempted the task)	S: 1 H: 1 F: 3 AGG: F/H