

Northwest Trail Alliance User Survey Results 2023

Daniel Stuart August 2024

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EXECUTIVE SUMMARY

Mountain biking is a diverse sport that encompasses different riding styles and skill levels. To best steward our local trails the Northwest Trail Alliance (NWTA) wanted to better understand rider preferences through a survey that looks at the types of riding desired and the prevalence of different riding styles. What other works lacked that motivated this survey was collecting information that is more current and more specific to the Portland Metro region.

The target population of this survey was mountain bikers who ride in the regions that NWTA stewards, which include trails within an approximately 60 mile radius of Portland, Oregon. This was intended to reach both members and non-members. The survey was hosted on Google Forms and available from 5/28/23 to 6/24/23 to the general public. The link to the survey was distributed in a number of ways including email, social media, and flyers at local trailheads and bike shops. There were 912 unique responses for this survey with about 20% of current members responded to the survey.

Highlight survey findings include:

Demographics

• There are good opportunities for growth in communities that are non-white, non-male, under 25, non-high-income, living east of 205 or west of Beaverton.

Events

 Overall, NWTA is providing enough opportunities for events, especially trail building ones.

Priorities

Respondents think NWTA should put the most effort into trails and access, and that the
most important stewarded properties are Sandy Ridge and Rocky Point.

Motivation

• Time for transportation is a much bigger barrier to riding than is the cost of transportation.

Riding types

- Most respondents considered themselves "trail" rides and were most excited about blue and black trails, while green and double black were the less exciting.
- For trail features, most respondents like berms/rollers, blue jumps, rocks and roots, and drops. Most riders do not like double black jumps.

1 Introduction

Mountain biking is a diverse sport that encompasses different riding styles and skill levels. Riders range from beginners to pro level riders and everything in between with just as many different styles of trail as there are riders. To best steward our local trails we wanted to better understand rider preferences through a survey that looks at the types of riding desired and the prevalence of different riding styles. Growing access to the mountain biking means knowing what we have and what we need. The 2023 survey is one tool in gathering the data needed to better advocate for riders and trails. This report summarizes those findings and provides recommendations based on the findings.

NWTA is a 501(c)(3) non-profit trail stewardship organization located in Portland, OR. NWTA sustainably steward trails within a roughly 60-mile radius from Portland extending from the Oregon coast, to the western slopes of Mount Hood, and into parts of Southern Washington. NWTA's mission is to create, enhance, and protect mountain bike riding opportunities; to advocate for trail access; to promote responsible mountain biking; and to build, maintain, and ride sustainable trails.

For the survey NWTA set the following objectives:

- Determine what the community is looking for in trails at the different regions NWTA stewards.
- Understand the demographics of riders and understand where energy could be put to expand access to the sport.
- Assess opinions about NWTA's priorities as an organization.

2 BACKGROUND

A review of similar works was conducted to understand what other studies have found and how they compare to the results of this survey. Most of the published literature related to the topic of mountain biker preferences and trail usage was found in journals related to tourism. Understandably, the focus of those articles was mainly on the economic benefit of the sport to different areas rather than trail usage preferences and demographics. The emphasis of this work is more narrow, and focuses more specifically on demographics and riding preferences. The following are a few works that are relevant to the scope of this paper:

Bergerson, T. (2018) (n=3039) and Outdoor Foundation (2019) (n=20,069) were reports based on cross sectional surveys that indicate the level of participation in mountain biking in the state of Oregon and nationally for different demographics.

Abernethy et al. (2021) (n=720) and Roberts et al. (2019) (1484) were based on smaller online survey datasets and give demographic and preference information for comparison.

Schulte, S. (2003) (n=506) and Bowker et al. (2002) (n=1359) were based off of in-person surveys at trailheads. These two papers have the advantage of avoiding sampling bias by collecting feedback from every user over the course of months to over a year. These papers also collected demographics and preference data.

Although the above works included some information on demographics, in some cases those statistics were reported in an overly reduced manner making it difficult to compare distributions between papers.

What other works lacked that motivated this survey was collecting information that is more:

- Specific to the Portland Metro region: Riding styles can vary greatly based on local terrain so although generalizations can give good context, region specific data is most relevant.
- Specific to the priorities of NWTA
- Current information: A few of the papers are almost 20 years old. Much has changed as equipment has improved over the last two decades and trends may be different from where they were previously.
- Specific about the types of riding styles and features than has been previously collected.
- Nuanced data about riding preferences that doesn't assume that riders can only enjoy one skill level of trails like previous works (e.g., only blue), but captures the spectrum of preferences to understand the breadth of enjoyment (e.g., mostly blue and black, but also some double black).

3 METHODS

3.1 Survey Design

The target population of this survey was mountain bikers who ride in the regions that NWTA stewards, which include trails within an approximately 60 mile radius of Portland, Oregon. This was intended to reach both members and non-members.

The survey was hosted on Google Forms and available from 5/28/23 to 6/24/23 to the general public. The link to the survey was distributed in a number of ways:

- Announcement of the survey launch at the NWTA May 2023 member meeting
- Direct email about the survey sent to:
 - Current NWTA members
 - o Former members
 - Others who have purchased items like raffle tickets through NWTA's system
- NWTA newsletter
- Social media announcements
- Flyers at local bike shops
- Flyers at local trail heads

The chance to win raffle prizes was offered to respondents to encourage participation.

3.2 Limitation of Methods

Like with most surveys, this survey was subject to some amount of bias. This includes:

- Coverage error Children below a certain age have less chance of being included in the data because of a lack of email and social media access. The lowest aged respondent was 14.
- Sampling error Beginners and non-members are systematically less likely to be sampled than riders with more experience and NWTA members. Those just entering the sport are less likely to be tied into channels where the survey was advertised. Also, the most effective advertisement channel was through connecting with people for which NWTA already had contact. That said, the magnitude of this effect, when evaluated against papers with methods not subject to sampling error bias (Schulte, S. 2003 and Bowker et al. 2002), was found to be minimal. This is discussed more in the "Riding Types" section later in this report.

Attempts to mitigate other biases were included in the design. Non-response bias was combated through offering prizes and keeping the survey length to less than 10 minutes to complete.

3.3 Evaluation of Sample Size

There were 912 unique responses for this survey. Because of the way that the survey was advertised, it can be hard to quantify the exact reach of people who saw the flyers, but chose not to participate. Response rate for this survey can be best characterized in terms of those that responded to the emailed survey. Although emails were sent out to all of the addresses in our database, it is assumed that only the current members are those that still live in the region and are still engaged in the sport. 636 of the responses were from current members. At the time of the survey there were 3332 current members with unique email addresses in the database. Note: many family memberships are signed up under a single email address. For current members, this represents a 19% response rate.

The participation rate from Bergerson, T (2018) and Outdoor Foundation (2019) can be used to approximate the response rate for this survey out of all riders in the Portland Metro area. Bergerson, T (2018) (n=3039) reports that 14.9% of the population of Oregon participated in "Bicycling on unpaved trails". Outdoor Foundation (2019) (n=20,069) reports that 2.9% of the US population participated in "Bicycling (Mountain/Non-Paved Surfaces)". There are 2.51M people in the Portland metropolitan area. Of that, Bergerson, T (2018) estimates that 374k people ride unpaved trails and Outdoor foundation (2019) estimates 73k riders. Considering the Metro population only, the 912 responses reflect between 0.2% and 1.2% of the total estimated population for this survey. This survey's responses also exclusively included mountain bikers as

opposed to the gravel and other similar "unpaved" disciplines captured by the other two surveys. For this reason, it should be assumed the above percentages are conservative estimates of the participation rate for mountain biking.

4 RESULTS AND CONCLUSIONS

4.1 Demographics

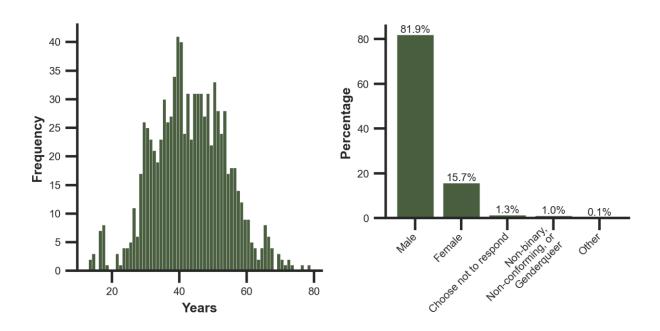
4.1.1 Results

- Respondents were predominantly:
 - o Middle aged (68% between 32 and 52) (Figure 1)
 - o Male (82%) (Figure 2)
 - o White (87%) (Figure 3)
 - o High income (25% plurality making more than \$200k per household) (Figure 4)
 - o From a multi-person household (2 person median, 2.7 person mean) (Figure 5)
 - o Living in central Portland (Figure 8, Figure 9)
- The gender skew measured mirrors the results of many previous works with Roberts et al. (2018), Schulte, S.(2003), Bowker et al. (2002), and Abernethy et al. (2021) reporting between 72% and 84% male.
 - Note: none of the other works included information about gender identities other than male and female.
- The race distribution from the survey data is somewhat similar to the makeup of the Portland metro area (U.S. Census Bureau 2019), 87% vs. 81% white.
- Age distribution for the Portland Metro area has a mostly even distribution until ages over 60 (U.S. Census Bureau 2019) where it drops off. Survey data age is much more concentrated in middle age.
- 90% of survey respondents that provided income information had a family income of >\$75k, while only 50% of Portland Metro residents fall into the same income bracket (U.S. Census Bureau 2019).
- Most of the membership lives in central Portland with fewer living east of 205, north of the Columbia River, south of Milwaukie, or west of Beaverton.
 - The rate of membership, as a function of members per the population of census tracts, is high in the west hills, inner northeast, and north Portland (Figure 10)
 - When considered as a function of members per land area, the relatively sparsely populated west hills have a lower rate, while the inner neighborhoods of Portland have higher rates (Figure 11).

4.1.2 Conclusions

• The results show that there are opportunities to engage certain populations that have lower participation rates. This includes:

- o Women
- Youth
- o People of color
- Lower income people
- o People living outside of central Portland
- The spatial distribution data can be useful for planning where to build new trails and parks. It can also help optimize for the minimum travel distance for riders.



 $Figure \ 1-Age \ of \ respondents$

 $Figure\ 2-Gender\ identity\ of\ respondents$

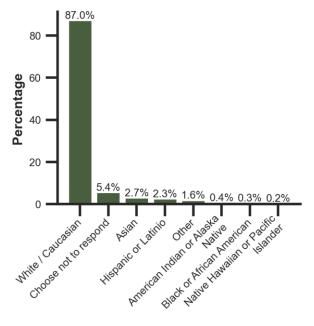


Figure 3 – Race of respondents

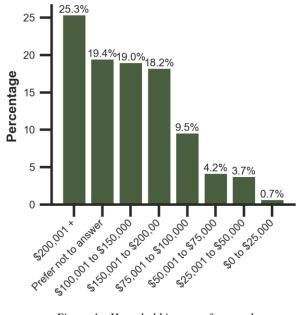


Figure 4 – Household income of respondents

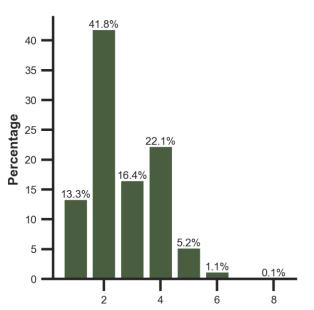


Figure 5 – Number of persons in respondent's household

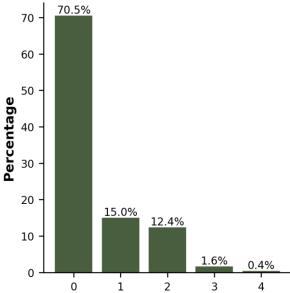


Figure 6 – Number of children in respondent's household

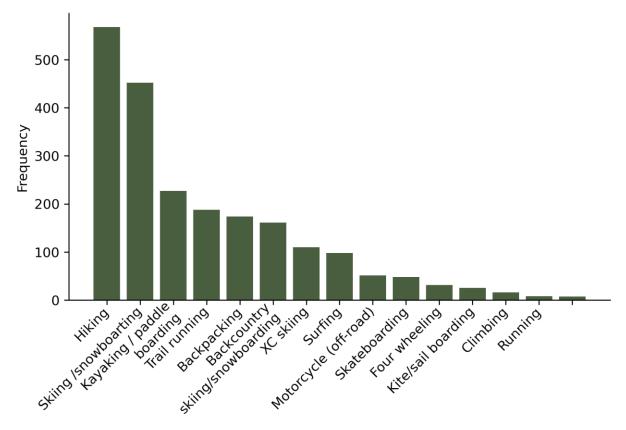
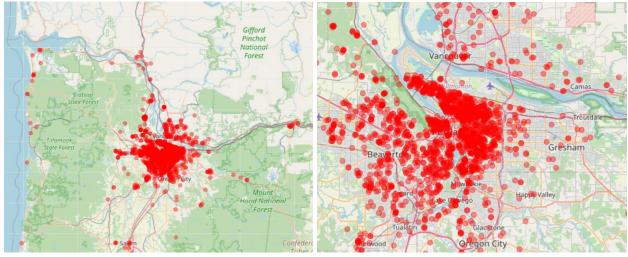


Figure 7 – Top 3 activities outside of cycling

NWTA's dataset of current members at the time of the survey was used to indicate where riders live. Membership data was used because that dataset was three times larger than the survey dataset. Each red dot represents the address of one member. Random jitter was added to the dots to obfuscate exact addresses.



Figure~8-Addresses~of~membership~(regional)

Figure 9 – Addresses of membership (Portland)

Location data was aggregated into census tracts so that survey data could be understood in the context of census data (U.S. Census Bureau 2019). Membership rate captures the percentage of the population of each census tract that are current NWTA members (Figure 10). This helps remove the population density factor for where mountain bikers live.

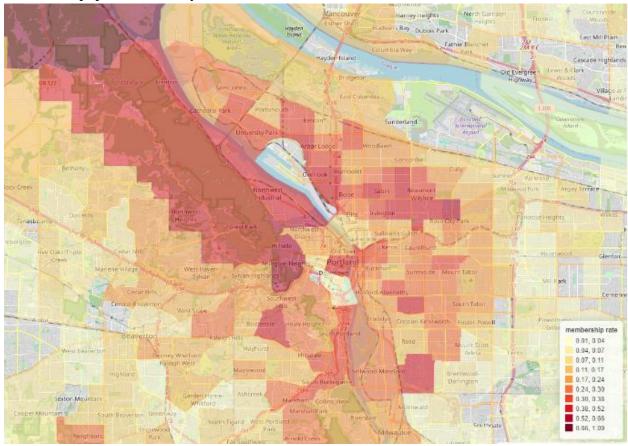


Figure 10 – Membership rate % (number of members divided by number of people living in each census track)

Membership density indicates the number of members per area showing where the greatest concentration of riders live (U.S. Census Bureau 2019) (Figure 11).

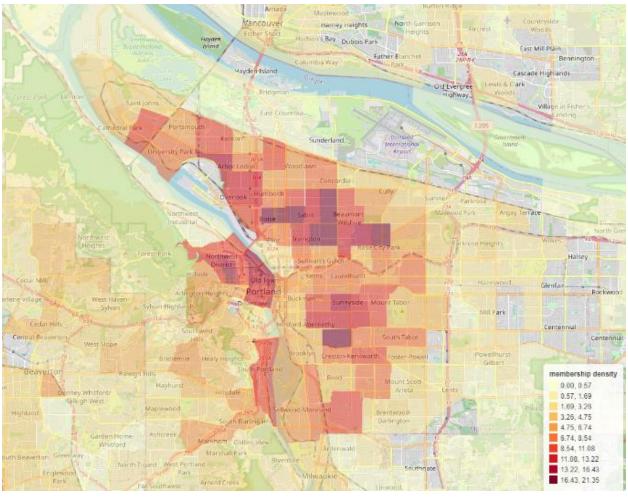


Figure 11 – Membership density % (number of members per square kilometer)

4.2 NWTA Membership

4.2.1 Results

- The vast majority of respondents (90.2%) have been a member at some point (Figure 12).
- 67% are current members, while 16% think they're current, but are unaware they are expired (Figure 12).
- Of those that are members, 34.9% responded Rocky Point was a factor in membership to Rocky Point, but it isn't the only reason they are a member (only 2.6% feel that way) (Figure 13)
- Of respondents that are not members, only 10% were not members because of frustration with the org, and 3.7% because it was too expensive (Figure 14).
 - o Most have "let it lapse", and many are unaware they are expired.

4.2.2 Conclusions

- NWTA needs to improve awareness of membership status.
- Improve messaging to non-members.
- Generally people who responded aren't avoiding membership because of animosity with the organization.

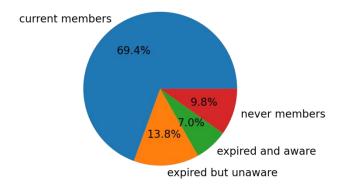


Figure 12 – Membership status of respondents

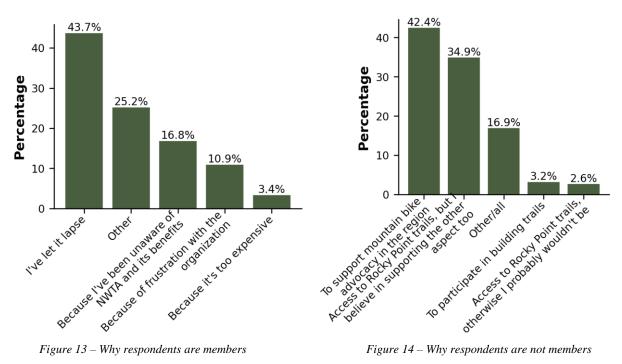


Figure 13 – Why respondents are members

Figure 14 – Why respondents are not members

4.3 NWTA Events

4.3.1 Results

- Most respondents think NWTA provided enough opportunities to participate in trail building events (Figure 15).
- There were more neutral feelings about other event opportunities with ~15% of respondents are interested in more social events (Figure 15).
- The clear top barriers to participation were limited time and timing of events (Figure 16).

4.3.2 Conclusions

- NWTA is doing a great job of providing trail building opportunities.
- Overall NWTA is providing enough opportunities.
- Address "Timing of Event" to increase participation.

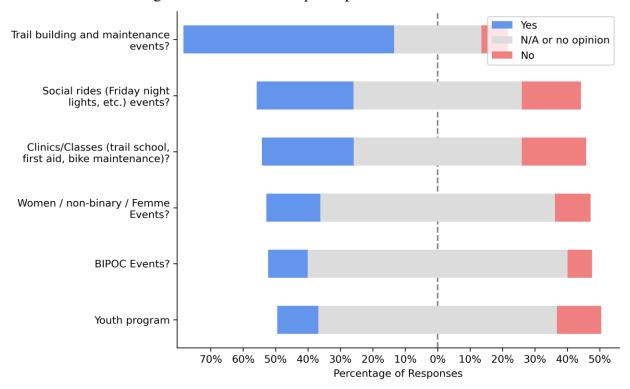


Figure 15 – Were there enough opportunities for respondents to participate in events as they would like

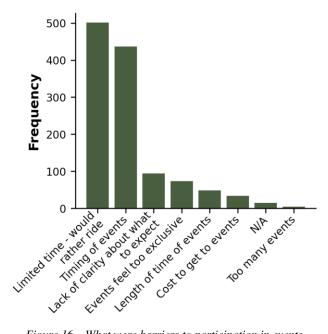


Figure 16 – What were barriers to participation in events

4.4 NWTA Priorities

4.4.1 Results

- Respondents think NWTA should put the most effort into trails (Figure 17). There are a consistent 15% of respondents interested in social events (Figure 17).
- Building trails in general was slightly more popular than advocating for trails close to where one lives (Figure 17).
- Users think the most effort should be put into Rocky Point, Sandy Ridge, and Forest Park (Figure 18).

4.4.2 Conclusions

- NWTA's focus should be on trail building and access.
- Users think Rocky Point, Sandy Ridge, and Forest Park are NWTA's most important properties.

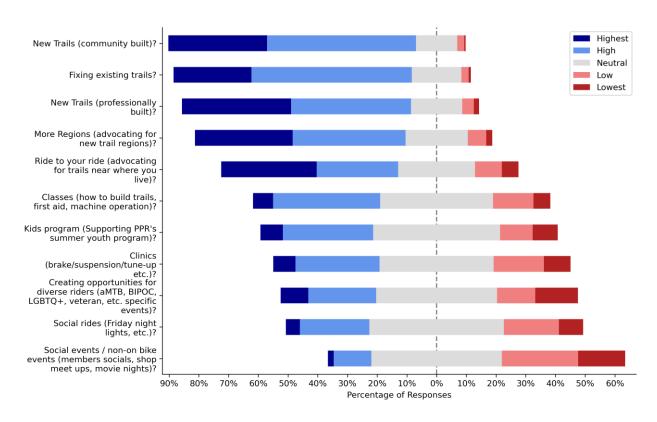


Figure 17 – Where should NWTA prioritize its efforts

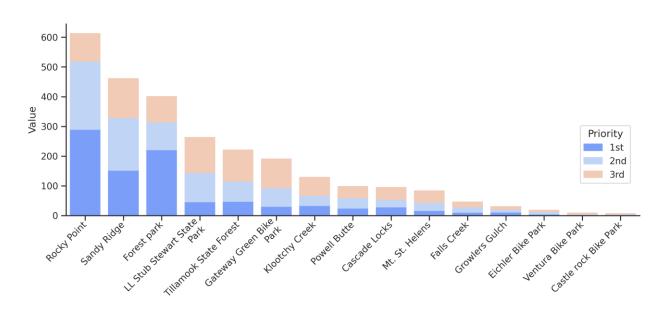


Figure 18 – What are the top three regions NWTA should put the most effort into

4.5 Riding Areas, Frequency, and Motivation

4.5.1 Results

- In aggregate, people ride the most at the places they most enjoy, rather than just places that may be most convenient (Figure 19, Figure 20). The most popular spots are Sandy Ridge and Rocky Point (Figure 19).
- Respondents indicated they ride off-road about once a week on average throughout the year with a median of 45 and mean of 60 yearly rides (Figure 21).
- High scores across all of the Motivations to Ride with socializing being the lowest motivator (Figure 22).
- Time for transportation is a much bigger barrier to riding than is the cost of transportation (Figure 23).

4.5.2 Conclusions

- Respondents generally having less time for transportation than money correlates with the relatively high incomes reported
- Since transportation time is a large factor that affects most respondents' participation, NWTA should advocate for more riding opportunities closer to where people live.
- While "Connect with Nature" scored very high, urban riding opportunities may satisfy the other motivations where exercise/destress/progress in skill and socializing can occur.
- There isn't good awareness of the smaller bike parks and a few of the trail centers. NWTA should work to increase awareness of lower scoring locations.

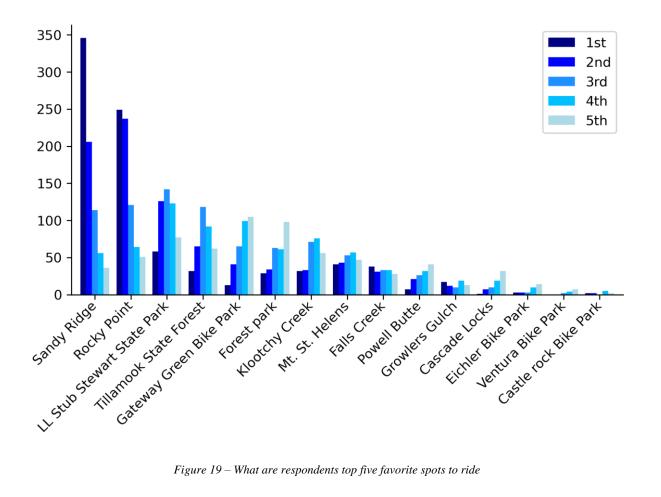


Figure 19 – What are respondents top five favorite spots to ride

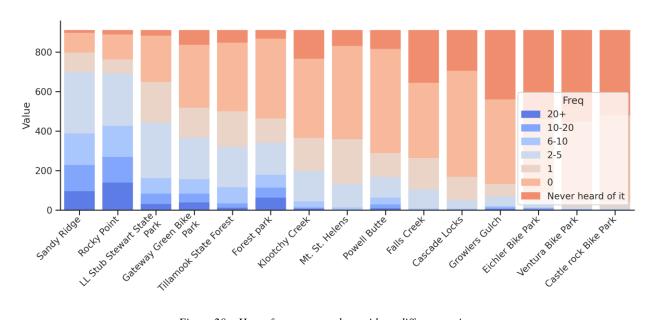


Figure 20 – How often to respondents ride at different regions

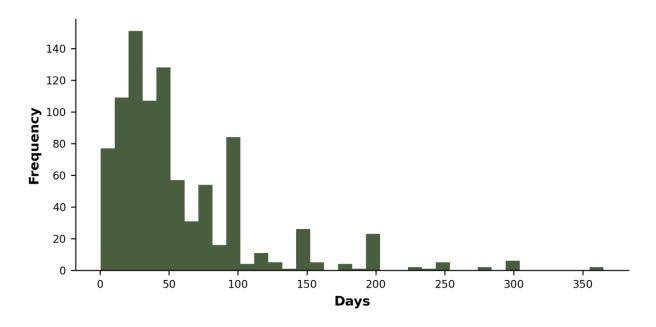


Figure 21 – How many days per year do respondents ride off road

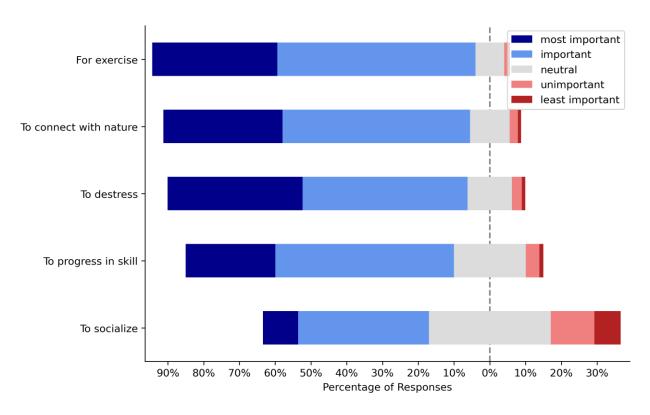


Figure 22 – What motivates respondents to ride

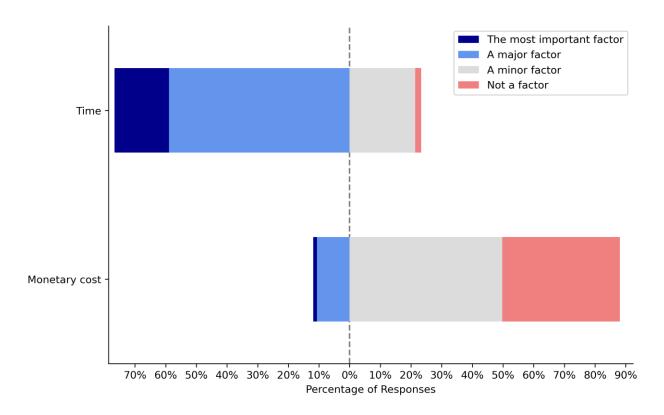


Figure 23 – How much does transport cost factor into how often respondents ride mountain bikes

4.6 Riding types

4.6.1 Results

- Almost all respondents consider themselves a "trail" rider. Other disciplines that fall within mountain biking (enduro, cross country, downhill) follow with gravel and BMX/Dirt-jump having far fewer participants among respondents (Figure 24).
- Regarding preference for a new trail to be up or down when the alternative is to climb a road, opinions are fairly evenly split (Figure 25).
- Most respondents enjoy flow trails, winding single track, and technical descents. Most respondents do not enjoy fireroads (Figure 26).
- Most respondents were most excited about blue and black trails, while green and double black were the least exciting (Figure 27). This is consistent with results from Shulte, S. (2003) and Bowker et al. (2002) where respondents identified most with the middle skill levels and less at the extremes.
- For trail features, most respondents like berms/rollers, blue jumps, rocks and roots, and drops. For most respondents double black jumps stood out as the feature that was least exciting (Figure 28). Both of these are self-consistent with the other findings that respondents like flow trails and technical trails (Figure 26), and not double black difficulty level (Figure 27).

4.6.2 Conclusions

- Blue and black trails are the most favorite among riders. Although NWTA should advocate for all levels, it is important to recognize that the most traffic will be on the middle skill level (blue and black) trails and should advocate accordingly to spread out trail use.
- As discussed in the methods, there is concern that there could be some sampling bias in this survey that doesn't well capture beginner and youth riders. That said, the trends presented in this survey largely mirror that of other works (Bowker et al. 2002 and Schulte 2003) that avoided sampling bias through other methods. The vast majority of riders self-identify in the middle of the skill level curve with far fewer at the lowest and highest level of skill. This indicates that the effect of bias on this survey's dataset is likely minimal.
- NWTA should advocate for the features on trails proportionally to their popularity. All features types should be advocated for so all levels and rider types have opportunities to ride what they enjoy. That said, the most enjoyment overall will come from emphasizing Berms/Rollers, Blue jumps, Rocks and Roots, and Drops on many of the trails.
- NWTA should advocate equally for uphill trails vs. riding fireroad up.

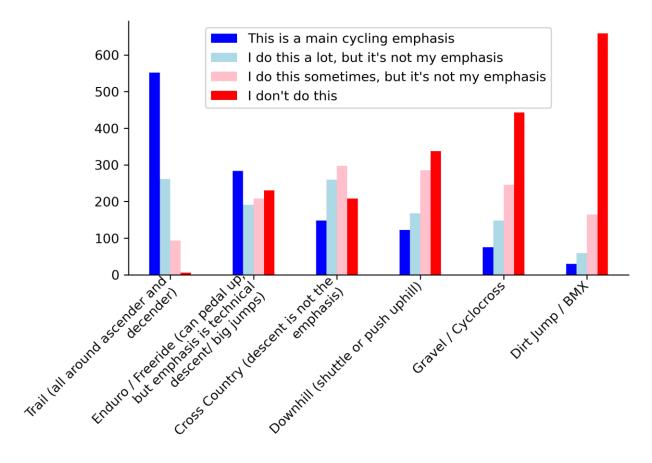


Figure 24 – How often do respondents participate in different cycling disciplines

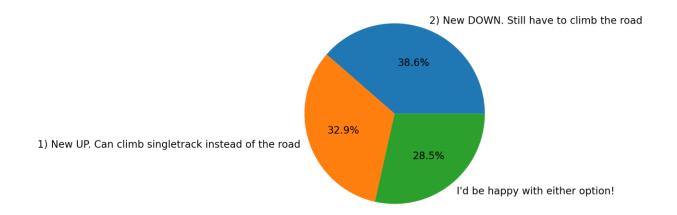


Figure 25 – Hypothetically a new piece of land is available for building a trail at an existing trail region where there are several down trails and climbing is currently done on gravel or pavement roads, which did respondents prefer.

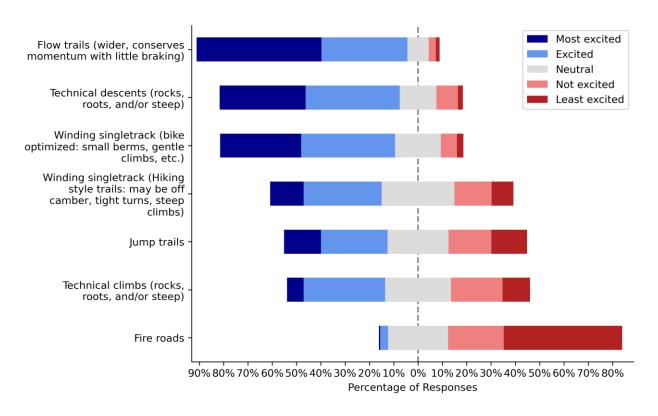


Figure 26 – What types of trail makes respondents more or less excited

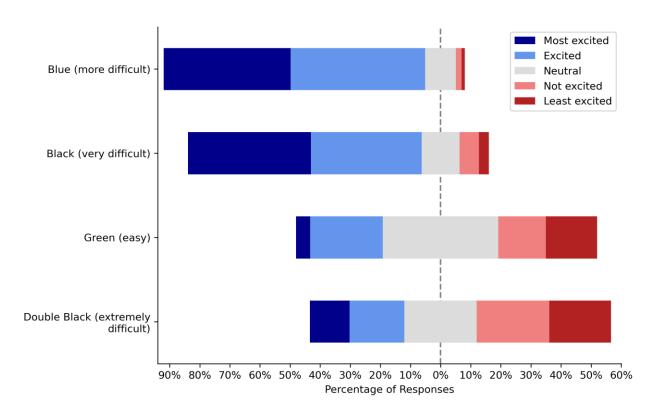
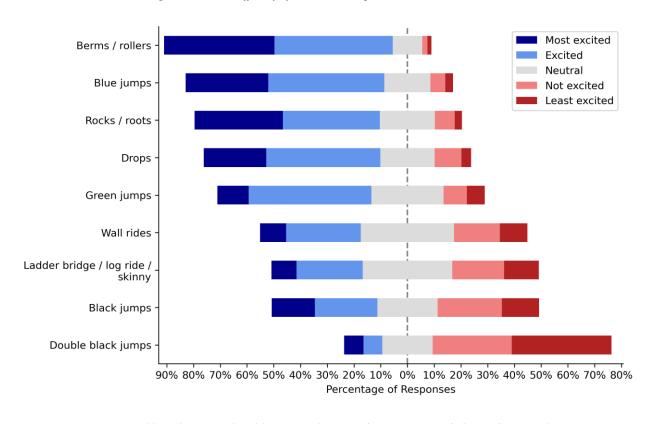


Figure 27 – What difficulty of trail makes respondents more or less excited



 $Figure\ 28-What\ types\ of\ trail\ features\ make\ respondents\ more\ excited\ about\ riding\ a\ trail$

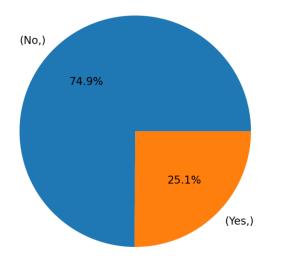
4.7 Alternative Bike Types

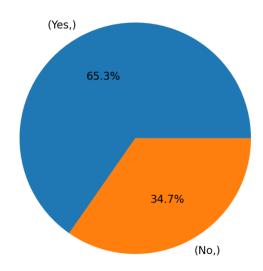
4.7.1 Results

- ¼ of respondents ride ebikes (Figure 29). Of those, 2/3rds thought there are adequate places to ride ebikes (Figure 30).
- 4 respondents mentioned riding adaptive bikes (Figure 31), and all responded that there are insufficient opportunities for riding them.

4.7.2 Conclusions

- Although NWTA should be aware that ~1/4 of riders are currently ebikers some of the time, it appears that there are generally enough trail opportunities for that type of riding at this time.
- There weren't many adaptive respondents. NWTA should understand more about how many potential adaptive riders there are, and what their barriers to riding are.





 $Figure\ 29-Do\ respondents\ own\ an\ ebike$

Figure 30 – Do ebike owning respondents think there are sufficient opportunities to ride their ebike

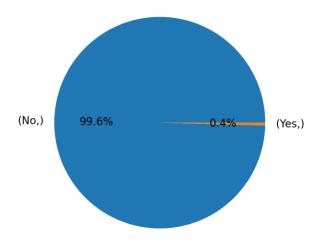


Figure 31 – Do respondents own an adaptive bike

5 RECOMMENDATIONS

The section below summarizes NWTA's takeaways based on the survey results.

With regard to demographics, NWTA recommends:

- Taking the opportunity to reach out further to other communities in the metro area, especially those east of 205 and west of Beaverton.
- Taking the opportunities to reach out to different communities to work to grow their participation as well.

With regard to membership, NWTA recommends:

- That NWTA seek ways to improve the reach of messaging
- Downplaying the importance to revenue of tying paid memberships to access to Rocky Point.

With regard to events, NWTA recommends:

• That the organization addresses barriers to participation with ideas like coupling riding into events.

With regard to priorities, NWTA recommends:

- Continuing to emphasize a focus on trail building and access.
- Looking first at Rocky Point, Sandy Ridge, and Forest Park for opportunities for maintenance and growth.

With regard to riding areas, frequency, and motivation, NWTA recommends:

• Advocating for more riding opportunities closer to where people live because transportation time is a large factor that affects most respondents' participation.

With regard to riding types, NWTA recommends:

- Building trails that will provide entry into, and a sustained interest in the sport for all demographics.
- Advocating for trails for all riding abilities and provide opportunities for riding all feature types. This includes everything from kid-friendly easy trails to big double-black jumps. That said, NWTA should advocate for the most mileage of trails based on what riders ride the most. This survey points to that being:
 - o Blue and black trails fewer riders only ride the easiest and most difficult trails
 - o Flow trails, technical descents, and winding singletrack.
 - o Berms/rollers, blue jumps, rocks/roots, and drops

With regard to alternative bike types, NWTA recommends

- Maintaining the status quo regarding opportunities for e-bike access.
- Working to understand more about how many potential adaptive riders there are, and what their barriers to riding are.

Now that NWTA has summarized the community feedback, we will share that information with land managers and community partners.

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