



Big Sky Watershed Corps Evaluation Project

Natural Resource Planning and Protection Survey Analysis Results

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1. Introduction

The Big Sky Watershed Corps (BSWC) is an AmeriCorps program implemented through a partnership between the Montana Conservation Corps, the Montana Watershed Coordination Council, and the Soil and Water Conservation Districts of Montana. Individual Corps members are paired with water resource-related organizations and agencies, known as host-sites, to promote professional development and increase the operating capacity of host-sites to achieve their missions and/or purpose. This study is driven by two primary research questions and several sub-questions:

- 1) Do Watershed Groups/Conservation Districts (CDs) that host a BSWC AmeriCorps member:
 - a. Treat and improve more miles of rivers and streams than comparable non-host sites?
 - b. Educate and engage more individuals in environmental stewardship curriculum and activities than comparable non-host sites?
- 2) How, if at all, do BSWC AmeriCorps members increase their host-site capacity, as compared with non-host sites, to:
 - a. Implement mission-oriented programming and initiatives?
 - b. Execute river and stream stewardship and restoration projects?
 - c. Recruit, engage, and maintain volunteers?
 - d. Form new partnerships or collaborative efforts?
 - e. Deepen relationships with existing partners or collaborators?
 - f. Educate various stakeholders about environmental stewardship?

To answer these questions, we conducted a pre-survey administered during the first half of the 2021 cohort of BSWC members term of service (see Gilbert et al., 2021¹), a post-survey administered after the Corps members term of service concluded (see Gilbert et al., 2022²), and 33 semi-structured interviews with 36 interview participants. However, this report details the quantitative analysis and results from the pre- and post-surveys. To view results from the semi-structured interviews, refer to the following report: Gilbert et al. (2022)³.

¹ Gilbert, A., Church, S.P., and Wilson, B. (2021). *Big Sky Watershed Corps Evaluation Project: Natural Resource Planning and Protection Survey, Pre-survey Results*. Bozeman: Montana State University.

² Gilbert, A., Church, S.P., and Wilson, B. (2022). *Big Sky Watershed Corps Evaluation Project: Natural Resource Planning and Protection Survey, Post-survey Results*. Bozeman: Montana State University.

³ Gilbert, A., Church, S.P., and Wilson, B. (2022). *Big Sky Watershed Corps Evaluation Project: Natural Resource Planning and Protection, Semi-Structured Interview Results*. People Places Water Lab. Bozeman: Montana State University.

2. Data Analysis

Data collection procedures for the survey tools used in this report are documented in prior reports. Refer to Gilbert et al. 2021¹ and Gilbert et al. 2022² for details on data collection procedures. The surveys received approval from Montana State University's Institutional Review Board (AG033031-EX).

To address our research questions, we compared responses from BSWC host-site to non-host-sites and non-governmental organizations (NGOs) to conservation districts (CDs). We used R (v.3.6.1) to conduct our comparisons between groups. We used the Welch two-sample t-test to examine differences between groups for continuous dependent variables (e.g., numerical questions). For categorical dependent variables (e.g., Likert or closed questions), we used the Pearson's Chi-squared test to determine significant differences between groups. We used p-values to determine significant statistical differences between groups for each variable, with our significance threshold being $p < .1$ to account for different degrees in significant statistical differences. In addition to reporting on our analyses, descriptive statistics are included for all variables analyzed. For continuous variables, response rates, means, standard deviations, medians, and ranges are reported. For categorical variables, response rates, response distributions, and means are reported.

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3. Results

3.1 Comparison between BSWC host sites and non-host sites

The first portion of the results detail comparisons between BSWC host sites and non-host sites across multiple variables that address our research questions, including differences in organization/agency finances, outreach and education efforts, geographical scale of work, collaboration priorities, priority programs and/or initiatives, workforce capacity, and river restoration project execution.

Regarding finances, BSWC host sites have larger annual budgets than non-host sites ($p < .0005$). More host sites received large grant awards than non-host sites ($p < .005$; Table 1).

Table 1: Comparing finances between BSWC host site and non-host sites.

Variable	All	Host	Non-host	Pearson's Chi Squared Test
Annual Budget (n)	71	25	43	p<.0005
(1) \$0-\$49,999 (%)	33.8	12.0	46.5	
(2) \$50,000-\$99,999 (%)	16.9	12.0	20.9	
(3) \$100,000-\$249,999 (%)	19.7	12.0	23.3	
(4) \$250,000-\$499,999 (%)	14.1	32.0	4.7	
(5) \$500,000-\$999,999 (%)	4.2	12.0	0.0	
(6) \$1,000,000-\$1,999,999 (%)	7.0	12.0	4.7	
(7) \$2M+ (%)	4.2	8.0	0.0	
Likert mean	2.8	3.9	2.0	
Awarded large grants (n)	76	28	44	p<.0005
(1) Yes (%)	71.1	89.3	61.4	
(2) No (%)	28.9	10.7	38.6	
Likert mean	1.3	1.1	1.4	

An equal portion of host-sites and non-host sites use Facebook, Twitter, and YouTube (i.e., there are no significant differences between how many host sites and how many non-host sites use these platforms). Additionally, there are no differences between how many host sites and non-host sites do not use social media platforms. However, more host sites use Instagram than non-host sites ($p < .005$; Table 2).

Table 2: Comparing social media presence between BSWC host sites and non-host sites.

Social media presence	All	Host	Non-host	Pearson's Chi Squared Test
Facebook (n)	77	30	44	p=.2909
(0) No (%)	24.7	16.7	29.5	
(1) Yes (%)	75.3	83.3	70.5	
Likert Mean	0.8	0.8	0.7	
Instagram (n)	77	30	44	p<.005
(0) No (%)	53.2	30.0	68.2	
(1) Yes (%)	46.8	70.0	31.8	
Likert Mean	0.5	0.7	0.3	
Twitter (n)	77	30	44	p=.3558
(0) No (%)	83.1	76.7	86.4	
(1) Yes (%)	16.9	23.3	13.6	
Likert Mean	0.2	0.2	0.1	

Social media presence	All	Host	Non-host	Pearson's Chi Squared Test
YouTube (n)	77	30	44	p=.1519
(0) No (%)	62.3	50.0	68.2	
(1) Yes (%)	37.7	50.0	31.8	
Likert Mean	0.4	0.5	0.3	
None (n)	77	30	44	p=.5082
(0) No (%)	85.7	90.0	84.1	
(1) Yes (%)	14.3	10.0	15.9	
Likert Mean	0.1	0.1	0.2	

In terms of scale of organization/agency work, an equal portion of host sites and non-host sites work within town/city limits, within county limits, within watersheds, and regions of a state. However, more host-sites work statewide, nationwide, and internationally than non-host sites ($p < .005$; $p < .001$; $p < .1$, respectively; Table 3).

Table 3: Comparing scale of work between BSWC host sites and non-host sites.

Scale of work	All	Host	Non-host	Pearson's Chi Squared Test
Within town/city limits (n)	77	31	43	p=.7436
(0) No (%)	83.1	80.6	86.0	
(1) Yes (%)	16.9	19.4	14.0	
Likert Mean	0.2	0.2	0.1	
Within county limits (n)	77	31	43	p=.2259
(0) No (%)	61.0	71.0	55.8	
(1) Yes (%)	39.0	29.0	44.2	
Likert Mean	0.4	0.3	0.4	
Within a watershed (n)	77	31	43	p=.3373
(0) No (%)	45.5	38.7	51.2	
(1) Yes (%)	54.5	61.3	48.8	
Likert Mean	0.5	0.6	0.5	
Within a region of a state (n)	77	31	43	p=.2429
(0) No (%)	76.6	71.0	83.7	
(1) Yes (%)	23.4	29.0	16.3	
Likert Mean	0.2	0.3	0.2	
Statewide (n)	77	31	43	p<.005
(0) No (%)	77.9	61.3	90.7	
(1) Yes (%)	22.1	38.7	9.3	
Likert Mean	0.2	0.4	0.1	
Nationwide (n)	77	31	43	p<.001
(0) No (%)	89.6	77.4	100.0	
(1) Yes (%)	10.4	22.6	0.0	
Likert Mean	0.1	0.2	0.0	
Internationally (n)	77	31	43	p<.1
(0) No (%)	96.1	90.3	100.0	
(1) Yes (%)	3.9	9.7	0.0	
Likert Mean	0.0	0.1	0.0	

Regarding collaboration priorities, there are no differences between how host sites and non-host sites prioritize collaboration, including both collaborating and sharing information with other organizations/agencies (Table 4).

Table 4: Comparing organization/agency collaboration priorities between BSWC host sites and non-host sites.

Collaboration priority	All	Host	Non-host	Pearson's Chi Squared Test
Collaborating with other organizations/agencies (n)	74	29	42	p=.9105
(1) Not a priority (%)	1.4	0.0	2.4	
(2) Low priority (%)	1.4	0.0	2.4	
(3) Medium priority (%)	17.6	20.7	14.3	
(4) High priority (%)	79.7	79.3	81.0	
Likert mean	3.8	3.8	3.7	
Sharing information with other organizations/agencies (n)	73	29	41	p=.8076
(1) Not a priority (%)	1.4	3.4	0.0	
(2) Low priority (%)	2.7	3.4	2.4	
(3) Medium priority (%)	21.9	20.7	24.4	
(4) High priority (%)	74	72.4	73.2	
Likert mean	3.7	3.6	3.7	

An equal portion of host sites and non-host sites prioritize most programs and/or initiatives asked about in the survey (i.e., there are few significant statistical differences between how many host sites and non-host sites prioritizes programs/initiatives). However, more host-sites prioritize the following programs or initiatives than non-host sites: building collaborative networks or initiatives (p<.05), creating planning documents (p<.005), and educating kindergarten through 12th grade students about environmental practices (p<.05; Table 5).

Table 5: Comparing priority programs and/or initiatives between BSWC host sites and non-host sites.

Priority programs/initiatives	All	Host	Non-host	Pearson's Chi Squared Test
Administering grants to other organizations (n)	76	31	42	p=.7781
(0) No (%)	77.6	77.4	81.0	
(1) Yes (%)	22.4	22.6	19.0	
Likert Mean	0.2	0.2	0.2	
Administering grants to landowners (n)	76	31	42	p=.5522
(0) No (%)	80.3	83.9	76.2	
(1) Yes (%)	19.7	16.1	23.8	
Likert Mean	0.2	0.2	0.2	
Administering grants to students (n)	76	31	42	p=.1659
(0) No (%)	97.4	93.5	100.0	
(1) Yes (%)	2.6	6.5	0.0	
Likert Mean	0.0	0.1	0.0	
Building collaborative networks/initiatives (n)	76	31	42	p<.05
(0) No (%)	30.3	12.9	42.9	
(1) Yes (%)	69.7	87.1	57.1	
Likert Mean	0.7	0.9	0.6	
Collecting water quality data (n)	76	31	42	p=1.0
(0) No (%)	64.5	64.5	64.3	
(1) Yes (%)	35.5	35.5	35.7	
Likert Mean	0.4	0.4	0.4	
Collecting stream/river flow data (n)	76	31	42	p=.7951
(0) No (%)	72.4	71.0	73.8	
(1) Yes (%)	27.6	29.0	26.2	
Likert Mean	0.3	0.3	0.3	

Priority programs/initiatives	All	Host	Non-host	Pearson's Chi Squared Test
Collecting natural resource/conservation related data (not water quality) (n) (0) No (%) (1) Yes (%) Likert Mean	76 65.8 34.2 0.3	31 64.5 35.5 0.4	42 66.7 33.3 0.3	p=1.0
Creating planning documents (n) (0) No (%) (1) Yes (%) Likert Mean	76 61.8 38.2 0.4	31 41.9 58.1 0.6	42 76.2 23.8 0.2	p<.005
Delivering professional development/workshop opportunities (n) (0) No (%) (1) Yes (%) Likert Mean	76 71.1 28.9 0.3	31 67.7 32.3 0.3	42 73.8 26.2 0.3	p=.5992
Enforcing government policies (n) (0) No (%) (1) Yes (%) Likert Mean	76 76.3 23.7 0.2	31 77.4 22.6 0.2	42 76.2 23.8 0.2	p=1.0
Encouraging civic engagement (n) (0) No (%) (1) Yes (%) Likert Mean	76 78.9 21.1 0.2	31 77.4 22.6 0.2	42 78.6 21.4 0.2	p=1.0
Educating kindergarten-12 th grade students about environmental practices (n) (0) No (%) (1) Yes (%) Likert Mean	76 44.7 55.3 0.6	31 29 71 0.7	42 57.1 42.9 0.4	p<.05
Educating adults about environmental practices (n) (0) No (%) (1) Yes (%) Likert Mean	76 43.4 56.6 0.6	31 38.7 61.3 0.6	42 47.6 52.4 0.5	p=.4913
Monitoring aquatic invasive species (n) (0) No (%) (1) Yes (%) Likert Mean	76 81.6 18.4 0.2	31 77.4 22.6 0.2	42 83.3 16.7 0.2	p=.5542
Mitigating aquatic invasive species (n) (0) No (%) (1) Yes (%) Likert Mean	76 88.2 11.8 0.1	31 80.6 19.4 0.2	42 92.9 7.1 0.1	p=.1754
Monitoring noxious weeds (n) (0) No (%) (1) Yes (%) Likert Mean	76 73.7 26.3 0.3	31 80.6 19.4 0.2	42 69.0 31.0 0.3	p=.2919
Mitigating noxious weeds (n) (0) No (%) (1) Yes (%) Likert Mean	76 75.0 25.0 0.2	31 74.2 25.8 0.3	42 73.8 26.2 0.3	p=1.0
Providing landowner assistance/education (n) (0) No (%) (1) Yes (%) Likert Mean	76 39.5 60.5 0.6	31 35.5 64.5 0.6	42 42.9 57.1 0.6	p=.6147

Priority programs/initiatives	All	Host	Non-host	Pearson's Chi Squared Test
Recycling/waste management (n) (0) No (%) (1) Yes (%) Likert Mean	76 94.7 5.3 0.1	31 93.5 6.5 0.1	42 97.6 2.4 0.0	p=.5807
Restoring fish and/or wildlife habitat (n) (0) No (%) (1) Yes (%) Likert Mean	76 65.8 34.2 0.3	31 67.7 32.3 0.3	42 64.3 35.7 0.4	p=.8046
Restoring/maintaining riparian areas (n) (0) No (%) (1) Yes (%) Likert Mean	76 48.7 51.3 0.5	31 54.8 45.2 0.5	42 47.6 52.4 0.5	p=.6412
Stabilizing stream/riverbanks (n) (0) No (%) (1) Yes (%) Likert Mean	76 55.3 44.7 0.4	31 58.1 41.9 0.4	42 57.1 42.9 0.4	p=1.0

When asked about their opinions on water needs and collaboration in their **local watersheds**, host sites and non-host sites generally had similar levels of agreement. The following statements are where responses from host sites significantly varied from non-host sites, with host sites agreeing less with the statements than non-host sites: in agreement about what constitutes good water quality ($p<.01$) and good at working together on natural resource issues ($p<.1$).

Table 6: Comparing attitudes about water needs and collaboration in local watersheds between host sites and non-host sites.

In my <u>local watershed</u> , we (natural resource users/managers and general public) are...	All	Host	Non-host	Pearson's Chi Squared Test
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) in drought conditions (n) (1) Strongly disagree (%) (2) Disagree (%) (3) Neither agree nor disagree (%) (4) Agree (%) (5) Strongly agree (%) Likert mean	37 16.2 40.5 21.6 21.6 0.0 2.5	15 26.7 40.0 26.7 6.7 0.0 2.1	21 9.5 38.1 19.0 33.3 0.0 2.8	p=.2334
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) under development/growth pressures (n) (1) Strongly disagree (%) (2) Disagree (%) (3) Neither agree nor disagree (%) (4) Agree (%) (5) Strongly agree (%) Likert mean	37 16.2 32.4 24.3 27.0 0.0 2.6	15 33.3 20 20 26.7 0.0 2.4	21 4.8 38.1 28.6 28.6 0.0 2.8	p=.1559
Well-positioned to handle severe flooding events (n) (1) Strongly disagree (%) (2) Disagree (%) (3) Neither agree nor disagree (%) (4) Agree (%) (5) Strongly agree (%) Likert mean	37 8.1 32.4 37.8 21.6 0.0 2.7	15 20.0 33.3 33.3 13.3 0.0 2.4	21 0.1 28.6 42.9 28.6 0.0 3.0	p=.1464

In my <u>local watershed</u> , we (natural resource users/managers and general public) are...	All	Host	Non-host	Pearson's Chi Squared Test
In agreement about what constitutes good water quality (n)	36	15	20	p<.01
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	22.2	20.0	25.0	
(3) Neither agree nor disagree (%)	19.4	40.0	0.0	
(4) Agree (%)	47.2	40.0	55.0	
(5) Strongly agree (%)	11.1	0.0	20.0	
Likert mean	3.5	3.2	3.7	
Good at working together on water quality issues (n)	38	16	21	p=.1449
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	10.5	18.8	4.8	
(3) Neither agree nor disagree (%)	21.1	31.2	14.3	
(4) Agree (%)	50.0	43.8	52.4	
(5) Strongly agree (%)	18.4	6.2	28.6	
Likert mean	3.8	3.4	4.0	
In agreement about how water availability should be addressed (n)	38	16	21	p=.6837
(1) Strongly disagree (%)	7.9	6.2	9.5	
(2) Disagree (%)	26.3	37.5	19	
(3) Neither agree nor disagree (%)	36.8	37.5	33.3	
(4) Agree (%)	26.3	18.8	33.3	
(5) Strongly agree (%)	2.6	0.0	4.8	
Likert mean	2.9	2.7	3.0	
Good at working together on water availability issues (n)	38	16	21	p=.4448
(1) Strongly disagree (%)	2.6	6.2	0.0	
(2) Disagree (%)	21.1	31.2	14.3	
(3) Neither agree nor disagree (%)	36.8	31.2	38.1	
(4) Agree (%)	26.3	25	28.6	
(5) Strongly agree (%)	13.2	6.2	19.0	
Likert mean	3.3	2.9	3.5	
Good at working together on general natural resource issues	38	16	21	p<.1
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	2.6	0.1	4.8	
(3) Neither agree nor disagree (%)	18.4	31.2	9.5	
(4) Agree (%)	55.3	62.5	47.6	
(5) Strongly agree (%)	23.7	6.2	38.1	
Likert mean (n)	4.0	3.8	4.2	

When asked about their opinions on water needs and collaboration at a **state-level**, host sites and non-host sites generally had similar levels of agreement. The following statements are where responses from host sites significantly varied from non-host sites, with host sites agreeing less with the statements than non-host sites: good at working together on water quality issues (p<.05).

Table 7: Comparing attitudes about water needs and collaboration at a state-level between host sites and non-host sites.

As a <u>state</u> , we (natural resource users/managers and general public) are...	All	Host	Non-host	Pearson's Chi Squared Test
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) in drought conditions (n)	38	17	20	p=.2204
(1) Strongly disagree (%)	15.8	17.6	15.0	
(2) Disagree (%)	63.2	76.5	50.0	
(3) Neither agree nor disagree (%)	7.9	0.0	15.0	
(4) Agree (%)	13.2	5.9	20.0	
(5) Strongly agree (%)	0.0	0.0	0.0	
Likert mean	2.2	1.9	2.4	

As a <u>state</u> , we (natural resource users/managers and general public) are...	All	Host	Non-host	Pearson's Chi Squared Test
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) under development/growth pressures (n)	39	17	21	p=.4763
(1) Strongly disagree (%)	25.6	35.3	19	
(2) Disagree (%)	46.2	41.2	52.4	
(3) Neither agree nor disagree (%)	7.7	0.0	9.5	
(4) Agree (%)	20.5	23.5	19.0	
(5) Strongly agree (%)	0.0	0.0	0.0	
Likert mean	2.2	2.1	2.3	
Well-positioned to handle severe flooding events (n)	37	17	19	p<.1
(1) Strongly disagree (%)	10.8	5.9	15.8	
(2) Disagree (%)	35.1	52.9	15.8	
(3) Neither agree nor disagree (%)	37.8	29.4	47.4	
(4) Agree (%)	13.5	5.9	21.1	
(5) Strongly agree (%)	2.7	5.9	0	
Likert mean	2.6	2.5	2.7	
In agreement about what constitutes good water quality (n)	38	17	20	p=.1374
(1) Strongly disagree (%)	7.9	5.9	10.0	
(2) Disagree (%)	23.7	29.4	20.0	
(3) Neither agree nor disagree (%)	23.7	35.3	10.0	
(4) Agree (%)	34.2	29.4	40.0	
(5) Strongly agree (%)	10.5	0.0	20.0	
Likert mean	3.2	2.9	3.4	
Good at working together on water quality issues (n)	38	17	20	p<.05
(1) Strongly disagree (%)	2.6	0.0	5.0	
(2) Disagree (%)	26.3	35.3	20.0	
(3) Neither agree nor disagree (%)	31.6	47.1	15.0	
(4) Agree (%)	31.6	17.6	45.0	
(5) Strongly agree (%)	7.9	0.0	15.0	
Likert mean	3.2	2.8	3.5	
In agreement about how water availability should be addressed (n)	38	17	20	p=.8226
(1) Strongly disagree (%)	13.2	17.6	10.0	
(2) Disagree (%)	36.8	41.2	35.0	
(3) Neither agree nor disagree (%)	28.9	29.4	25.0	
(4) Agree (%)	18.4	11.8	25.0	
(5) Strongly agree (%)	2.6	0.0	5.0	
Likert mean	2.6	2.4	2.8	
Good at working together on water availability issues (n)	38	17	20	p=.8906
(1) Strongly disagree (%)	10.5	11.8	10.0	
(2) Disagree (%)	36.8	47.1	30.0	
(3) Neither agree nor disagree (%)	36.8	29.4	40.0	
(4) Agree (%)	7.9	5.9	10.0	
(5) Strongly agree (%)	7.9	5.9	10.0	
Likert mean	2.7	2.5	2.8	
Good at working together on general natural resource issues	38	17	20	p=.7116
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	23.7	29.4	20.0	
(3) Neither agree nor disagree (%)	18.4	23.5	15.0	
(4) Agree (%)	47.4	35.3	55.0	
(5) Strongly agree (%)	10.5	11.8	10.0	
Likert mean (n)	3.4	3.3	3.5	

More host-sites have a member program and newsletter than non-host sites ($p < .05$; $p < .001$). Host sites also had more full-time staff; volunteers in 2019, 2020; and more anticipated volunteers in 2021 than non-host sites ($p < .005$; $p < .005$; $p < .01$; $p < .05$, respectively). In 2021, host sites anticipated having more events than non-host sites ($p < .1$). For this year, host sites also anticipated having more people attending events than non-host sites ($p < .1$). Finally, for 2019 and 2020, host sites restored more miles of riparian area than non-host sites ($p < .1$ and $p < .1$, respectively; Table 6).

Table 8: Comparing various variables between BSWC host sites and non-host sites.

Variable	All	Host	Non-host	P-value (Pearson's Chi-Squared Test, or Welch Two-Sample T-Test)
Presence of newsletter (n)	78	31	44	$p < .001$
(1) Yes (%)	70.5	93.5	59.1	
(2) No (%)	29.5	6.5	40.9	
Likert mean	1.3	1.1	1.4	
Presence of membership program (n)	78	31	44	$p < .05$
(1) Yes (%)	21.8	25.8	20.5	
(2) No (%)	78.2	74.2	79.5	
Likert mean	1.8	1.7	1.8	
Number of full-time staff (n)*	75	29	44	$p < .005$
Mean	2.9	5.7	1.1	
Standard Deviation	5.4	7.5	2.0	
Median	1.0	3.0	1.0	
Range	0.0-30.0	0.0-30.0	0.0-8.0	
Number of volunteers in 2019 (n)	33	15	17	$p < .005$
Mean	43.0	70.9	17.9	
Standard Deviation	43.4	50.4	11.7	
Median	30.0	50.0	15.0	
Range	2.0-166.0	10.0-166.0	2.0-50.0	
Number of volunteers in 2020 (n)	37	17	18	$p < .01$
Mean	37.2	56.2	20.2	
Standard Deviation	37.8	46.1	17.0	
Median	25.0	40.0	14.50	
Range	3.0-180.0	15.0-180.0	3.0-68.0	
Number of volunteers in 2021 (n)	39	17	20	$p < .05$
Mean	45.6	72.2	23.6	
Standard Deviation	53.5	68.5	22.4	
Median	25.0	40.0	15.5	
Range	3.0-200.0	5.0-200.0	3.0-100.0	
Hosts in-person/online events (n)	76	30	43	$p = .5492$
(1) Yes (%)	82.9	86.7	81.4	
(2) No (%)	15.8	13.3	16.3	
Unsure/don't know (%)	1.3	0	2.3	
Likert mean	1.2	1.1	1.2	
Number of events in 2019 (n)	45	16	29	$p = .1124$
Mean	7.2	11.4	4.9	
Standard Deviation	10.3	15.1	5.3	
Median	3.0	4.5	3.0	
Range	1.0-58.0	1.0-58.0	1.0-25.0	
Number of events in 2020 (n)	33	16	16	$p = .1692$
Mean	4.1	5.7	2.6	
Standard Deviation	6.1	8.2	2.4	
Median	2.0	2.5	2.0	
Range	1.0-33.0	1.0-33.0	1.0-10.0	

Variable	All	Host	Non-host	P-value (Pearson's Chi-Squared Test, or Welch Two-Sample T-Test)
Number of events in 2021 (n)	47	15	31	p<.1
<i>Mean</i>	7.8	13.7	5.0	
<i>Standard Deviation</i>	11.8	18.6	5.2	
<i>Median</i>	4.0	8.0	3.0	
<i>Range</i>	1.0-75.0	1.0-75.0	1.0-25.0	
Number of people attending events in 2019 (n)	79	31	44	p=.1341
<i>Mean</i>	8.3	6.7	10.1	
<i>Standard Deviation</i>	9.4	8.9	9.8	
<i>Median</i>	3.0	1.0	5.0	
<i>Range</i>	1.0-30.0	1.0-29.0	1.0-30.0	
Number of people attending events in 2020 (n)	79	31	44	p=.3108
<i>Mean</i>	5.9	7.1	5.4	
<i>Standard Deviation</i>	6.9	7.7	6.4	
<i>Median</i>	3.0	2.0	3.0	
<i>Range</i>	1.0-23.0	1.0-23.0	1.0-23.0	
Number of people attending events in 2021 (n)	79	31	44	p<.1
<i>Mean</i>	7.6	6.1	9.2	
<i>Standard Deviation</i>	7.6	6.8	8.0	
<i>Median</i>	5.0	2.0	9.5	
<i>Range</i>	1.0-25.0	1.0-20.0	1.0-25.0	
Miles of riparian area restored in 2019 (n)	13	6	7	p<.1
<i>Mean</i>	5.9	11.8	0.8	
<i>Standard Deviation</i>	8.8	10.4	0.6	
<i>Median</i>	1.0	9.0	1.0	
<i>Range</i>	0.3-25.0	1.0-25.0	0.3-2.0	
Miles of riparian area restored in 2020 (n)	11	6	4	p<.1
<i>Mean</i>	9.9	17.0	0.9	
<i>Standard Deviation</i>	15.9	19.2	0.8	
<i>Median</i>	2.5	12.5	0.6	
<i>Range</i>	0.3-50.0	0.5-50.0	0.3-2.0	
Miles of riparian area restored in 2021 (n)	16	7	8	p=.1411
<i>Mean</i>	7.1	13.5	1.7	
<i>Standard Deviation</i>	13.1	18.3	2.6	
<i>Median</i>	1.5	4.0	1.0	
<i>Range</i>	0.3-50.0	0.5-50.0	0.3-8.0	

*Note: outlier values were dropped for this analysis.

3.2 Proposed models for investigating the role of different variables on organization/agency outcomes

To further examine the role of host site-status on organization or agency performance, it would be necessary to build regression models. These models would regress outcome variables (e.g., miles of riparian area restored, number of volunteers, number of events) on host site-status along with other key variables to control for in the proposed regressions (e.g., organization/agency annual budget, whether an organization has received large grants, number of full-time employees, etc.) that could impact the outcome variables. We would test outcome variables that have significantly different outcomes based on host-site status, which are reported on in the former tables of the current section in this report. We provide examples of these models below in a series of figures, where the distributions of outcome variables are shown graphed by the distributions of predictor variables (Figures 1-4). These predictor variables include (A) an organization/agency's number of fulltime staff; (B) whether an organization/agency has received a large grant in the past, (C) the organization/agency's annual budget, and (D) the BSWC host-site status of the organization/agency.

These figures include histograms and box and whisker plots to display this data. Histograms show outcome variable distributions for continuous or numerical variables. Box and whisker plots show outcome variable distributions for categorical variables through plotting quantiles in the data, where the middle line in the bar indicates the median value, the top of the box indicates the 3rd quantile, the bottom of the box indicates the 1st quantile, and the whiskers indicate minimums and maximums. Some box plots may not contain whiskers due to the minimums and maximums being the same value as the 1st and 3rd quartile values. Categories labeled on the X-axis of these plots will not display any data if there are no responses associated with the categories (e.g., Figure 1C). To further understand how to interpret box and whisker plots, please refer to Banacos (2011)³.

Due to limitations in current methods for handling missing data for small sample sizes, we are unable to get accurate results from any calculated models. To obtain accurate results while minimizing the possibilities of encountering Type I and II errors, we need to increase the sample size and/or use different methods to address missing data in our sample. For regressions with continuous variables as dependent variables, sample sizes, researchers recommend using a minimum sample size of $N=25$ ¹. For regressions with categorical variables as dependent variables, sample sizes need to exceed $N=500$ with at least 10 cases per independent variable to calculate an adequate regression model².

¹Jenkins, D. G., & Quintana-Ascencio, P. F. (2020). A solution to minimum sample size for regressions. *PloS one*, 15(2), e0229345.

²Long, J. S., & Freese, J. (2006). *Regression models for categorical dependent variables using Stata* (Vol. 7). Stata press.

³Banacos, P. C. (2011). *Box and whisker plots for local climate datasets interpretation and creation using Excel* 2007/2010.

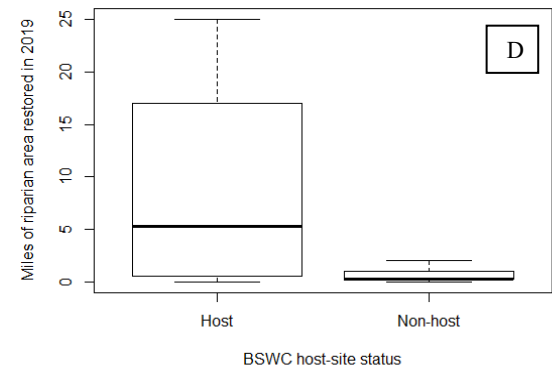
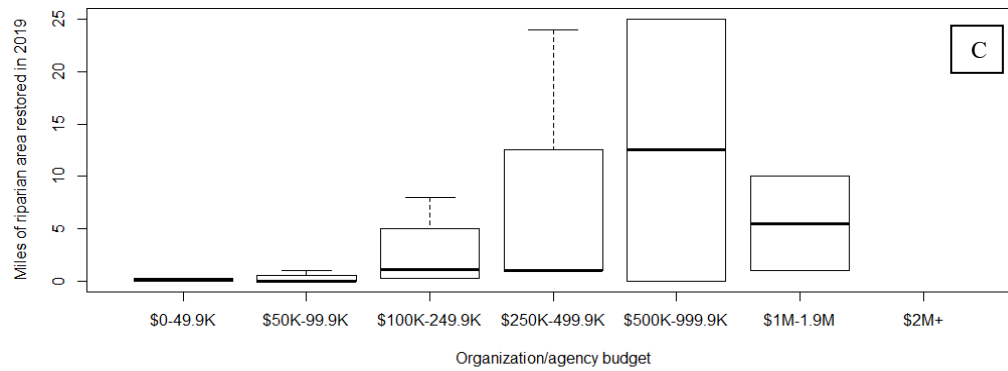
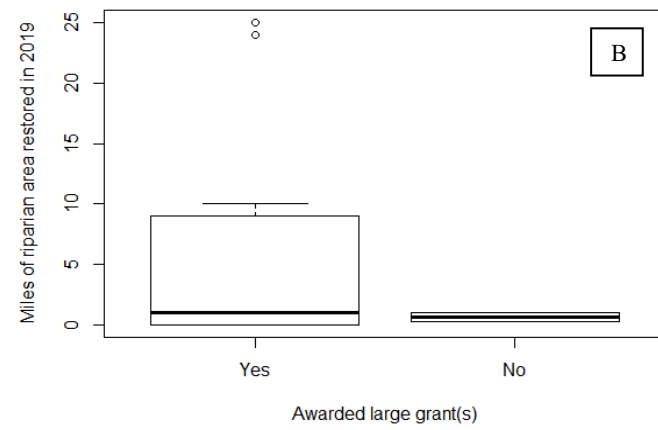
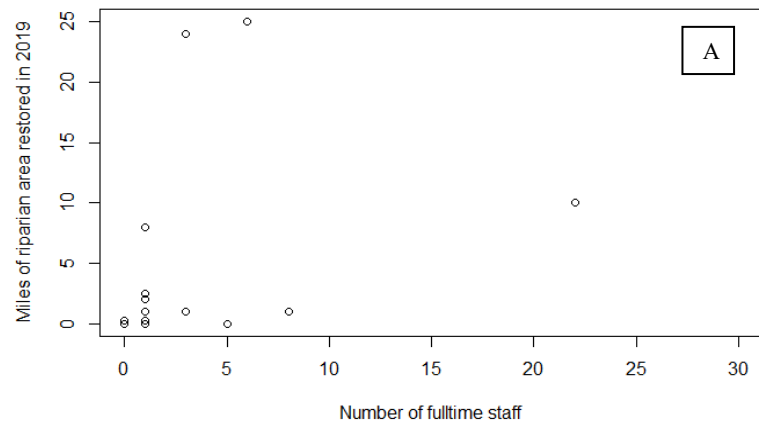


Figure 1: Riparian area outcomes for 2019 distributed by (A) number of fulltime staff, (B) whether the organization/agency was awarded a large grant(s) in the past, (C) the organization/agency's annual budget, and (D) the BSWC host-site status of the organization/agency.

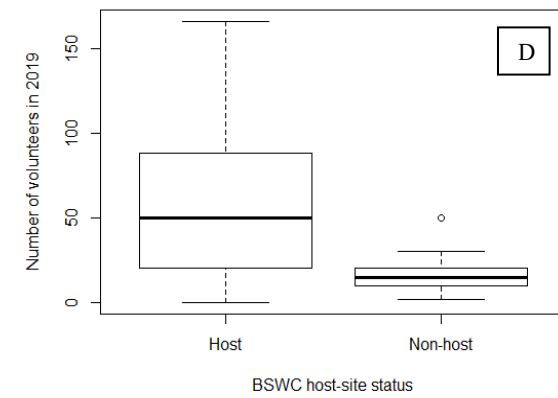
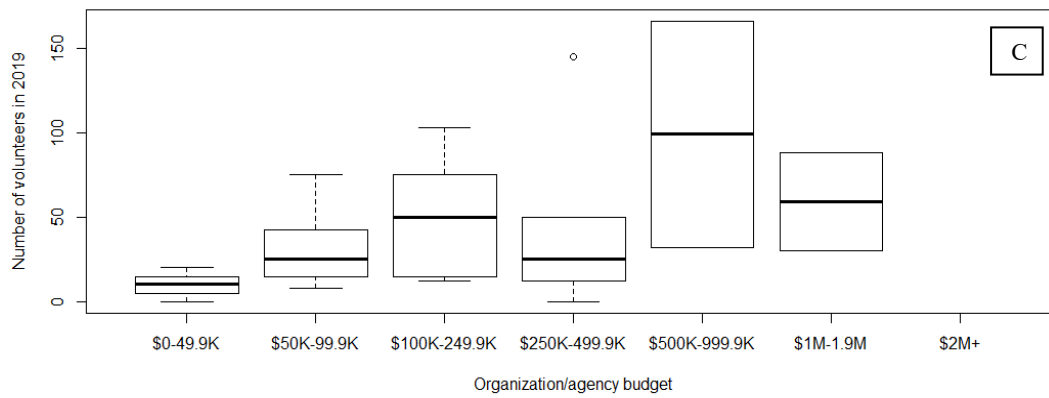
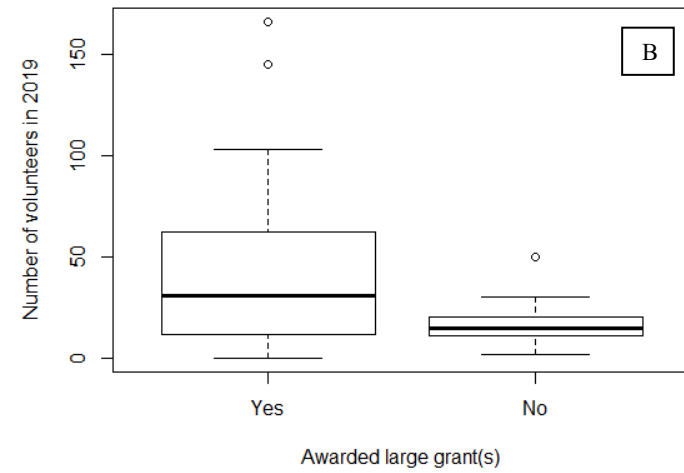
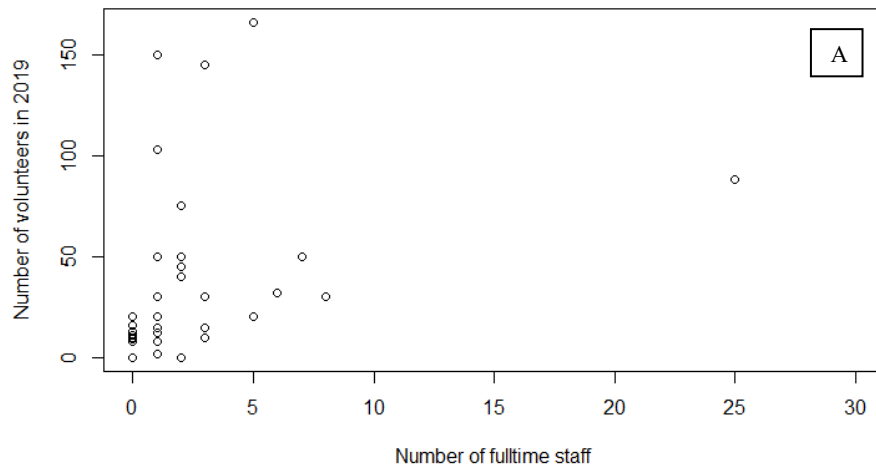


Figure 2: Volunteer outcomes in 2019 distributed by (A) number of fulltime staff, (B) whether the organization/agency was awarded a large grant(s) in the past, (C) the organization/agency's annual budget, and (D) the BSWC host-site status of the organization/agency.

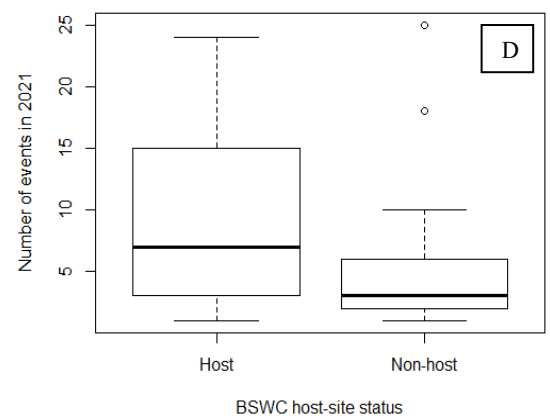
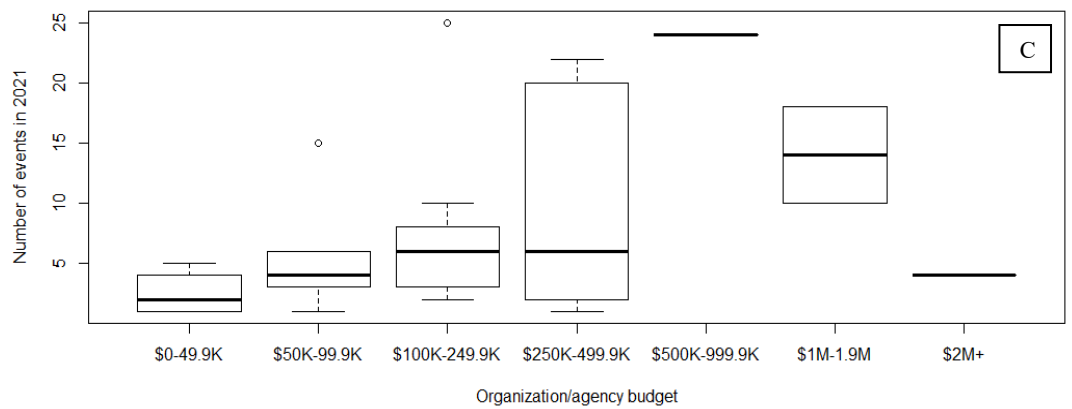
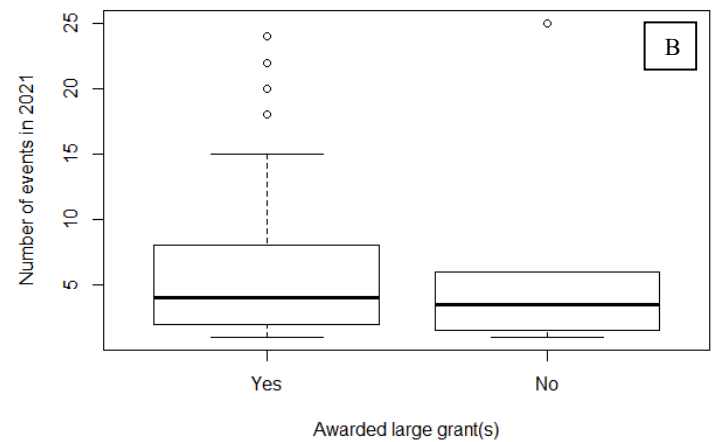
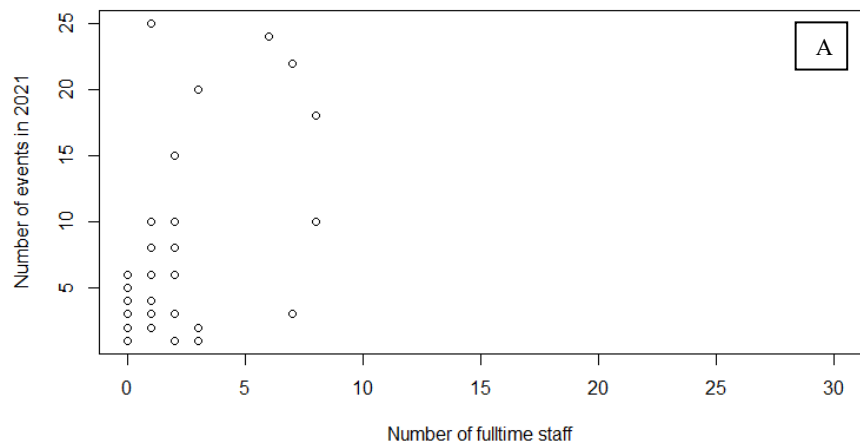


Figure 3: Event outcomes in 2021 distributed by (A) number of fulltime staff, (B) whether the organization/agency was awarded a large grant(s) in the past, (C) the organization/agency's annual budget, and (D) the BSWC host-site status of the organization/agency.

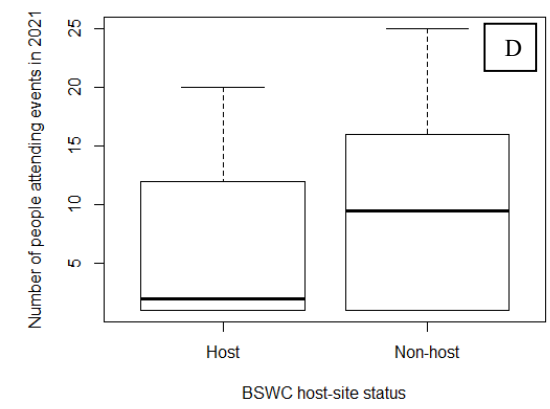
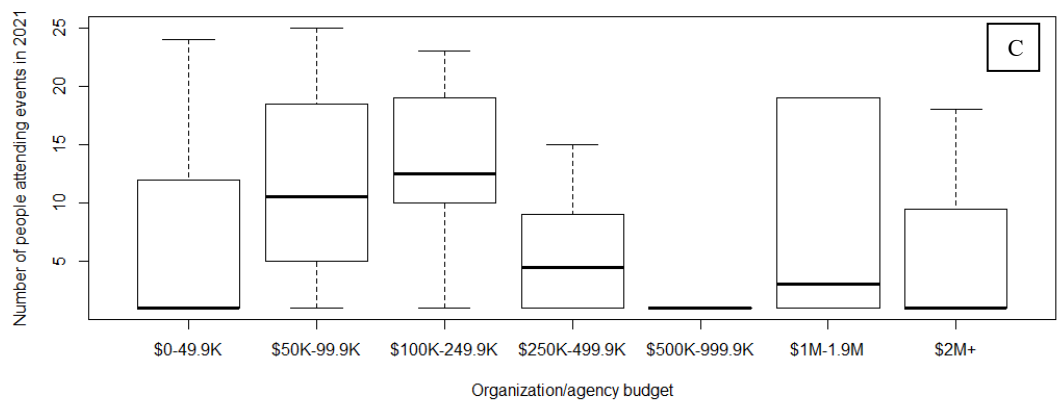
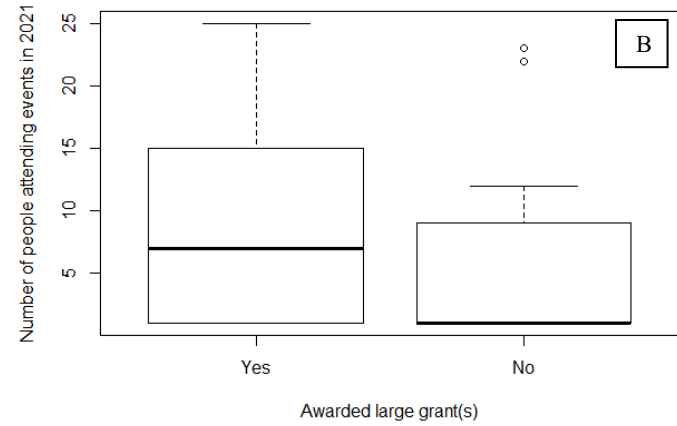
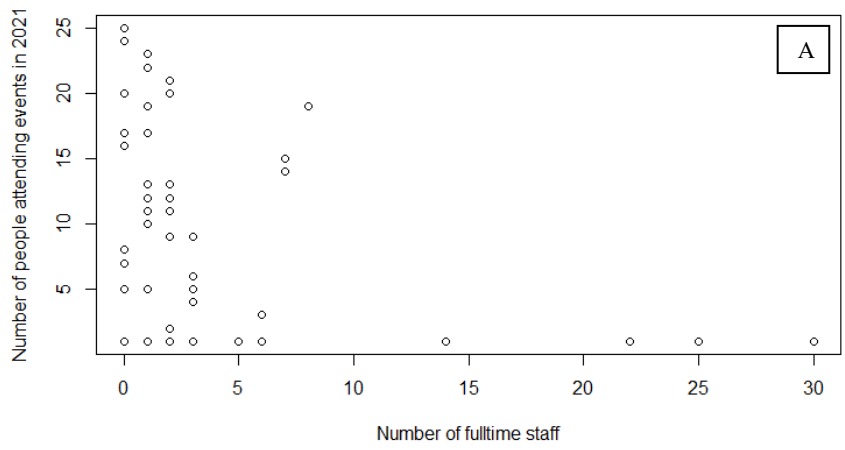


Figure 4: Event attendance outcomes distributed by (A) number of fulltime staff, (B) whether the organization/agency was awarded a large grant(s) in the past, (C) the organization/agency's annual budget, and (D) the BSWC host-site status of the organization/agency.

3.3 Comparison between conservation districts (CD) and non-governmental organizations (NGOs)

The second portion of the results detail's comparisons between CDs and NGOs across multiple variables that address our research questions, including differences in organization/agency finances, outreach ability, scale of work, collaboration, priority programs and/or initiatives, workforce capacity, education ability, and river restoration project execution.

Regarding organization or agency finances, there are no differences between CD and NGO annual budgets or between the number of CDs and NGOs that received large grants (Table 7).

Table 9: Comparing finances between CDs and NGOs.

Variable	All	CD	NGO	Pearson's Chi Squared Test
Annual Budget (n)	71	29	42	p=.2234
(1) \$0-\$49,999 (%)	33.8	31.0	35.7	
(2) \$50,000-\$99,999 (%)	16.9	17.2	16.7	
(3) \$100,000-\$249,999 (%)	19.7	24.1	16.7	
(4) \$250,000-\$499,999 (%)	14.1	6.9	19.0	
(5) \$500,000-\$999,999 (%)	4.2	6.9	2.4	
(6) \$1,000,000-\$1,999,999 (%)	7.0	3.4	9.5	
(7) \$2M+ (%)	4.2	10.3	0.0	
Likert mean	2.8	2.9	2.6	
Awarded large grants (n)	76	29	47	p=.6002
(1) Yes (%)	71.1	75.9	68.1	
(2) No (%)	28.9	24.1	31.9	
Likert mean	1.3	1.2	1.3	

Regarding social media presence, more NGOs use Instagram and YouTube than CDs ($p < .1$ and $p < .1$, respectively). More CDs do not have a social media presence than NGOs ($p < .05$; Table 8).

Table 10: Comparing social media presence between CDs and NGOs.

Social media presence	All	CD	NGO	Pearson's Chi Squared Test
Facebook (n)	77	31	46	p=.1144
(0) No (%)	24.7	35.5	17.4	
(1) Yes (%)	75.3	64.5	82.6	
Likert Mean	0.8	0.6	0.8	
Instagram (n)	77	31	46	p<.1
(0) No (%)	53.2	67.7	43.5	
(1) Yes (%)	46.8	32.3	56.5	
Likert Mean	0.5	0.3	0.6	
Twitter (n)	77	31	46	p=.5302
(0) No (%)	83.1	87.1	80.4	
(1) Yes (%)	16.9	12.9	19.6	
Likert Mean	0.2	0.1	0.2	
YouTube (n)	77	31	46	p<.1
(0) No (%)	62.3	74.2	54.3	
(1) Yes (%)	37.7	25.8	45.7	
Likert Mean	0.4	0.3	0.5	

Social media presence	All	CD	NGO	Pearson's Chi Squared Test
None (n)	77	31	46	p<.05
(0) No (%)	85.7	74.2	93.5	
(1) Yes (%)	14.3	25.8	6.5	
Likert Mean	0.1	0.3	0.1	

More CDs work within town/city limits, within county limits, or within a watershed than NGOs (p<.05; p<.0005; p<.0005, respectively). Otherwise, there are no differences between the number of CDs and NGOs working at other geographic scales (Table 9).

Table 11: Comparing scale of work between CDs and NGOs.

Scale of work	All	CD	NGO	Pearson's Chi Squared Test
Within town/city limits (n)	77	31	46	p<.05
(0) No (%)	83.1	71.0	91.3	
(1) Yes (%)	16.9	29.0	8.7	
Likert Mean	0.2	0.3	0.1	
Within county limits (n)	77	31	46	p<.0005
(0) No (%)	61.0	35.5	78.3	
(1) Yes (%)	39.0	64.5	21.7	
Likert Mean	0.4	0.6	0.2	
Within a watershed (n)	77	31	46	p<.0005
(0) No (%)	45.5	71.0	28.3	
(1) Yes (%)	54.5	29.0	71.7	
Likert Mean	0.5	0.3	0.7	
Within a region of a state (n)	77	31	46	p=.4268
(0) No (%)	76.6	71.0	80.4	
(1) Yes (%)	23.4	29.0	19.6	
Likert Mean	0.2	0.3	0.2	
Statewide (n)	77	31	46	p=.1024
(0) No (%)	77.9	67.7	84.8	
(1) Yes (%)	22.1	32.3	15.2	
Likert Mean	0.2	0.3	0.2	
Nationwide (n)	77	31	46	p=.2569
(0) No (%)	89.6	83.9	93.5	
(1) Yes (%)	10.4	16.1	6.5	
Likert Mean	0.1	0.2	0.1	
Internationally (n)	77	31	46	p=1.0
(0) No (%)	96.1	96.8	95.7	
(1) Yes (%)	3.9	3.2	4.3	
Likert Mean	0.0	0.0	0.0	

Regarding collaboration priorities, CDs and NGOs equally prioritize collaboration with other organizations/agencies. However, NGOs prioritize sharing information with other organizations/agencies more than CDs ($p < .1$; Table 10).

Table 12: Comparing organization/agency collaboration priorities between CDs and NGOs.

Collaboration Priority	All	CD	NGO	Pearson's Chi Squared Test
Collaborating with other organizations/agencies (n)	74	30	44	p=.3723
(1) Not a priority (%)	1.4	3.3	0.0	
(2) Low priority (%)	1.4	0.0	2.3	
(3) Medium priority (%)	17.6	23.3	13.6	
(4) High priority (%)	79.7	73.3	84.1	
Likert mean	3.8	3.7	3.8	
Sharing information with other organizations/agencies (n)	73	29	44	p<.1
(1) Not a priority (%)	1.4	0.0	2.3	
(2) Low priority (%)	2.7	6.9	0.0	
(3) Medium priority (%)	21.9	31	15.9	
(4) High priority (%)	74	62.1	81.8	
Likert mean	3.7	3.6	3.8	

An equal portion of host sites and non-host sites prioritize most programs and/or initiatives asked about in the survey. More CDs prioritize the following programs or initiatives than NGOs: administering grants to other organizations ($p < .05$), enforcing government policies ($p < .0005$), and educating kindergarten through 12th grade students about environmental practices ($p < .05$). More NGOs prioritize the following programs or initiatives than CDs: building collaborative networks or initiatives ($p < .05$) and restoring fish and/or wildlife habitat ($p < .05$; Table 11).

Table 13: Comparing priority programs and/or initiatives between CDs and NGOs.

Priority programs/initiatives	All	CD	NGO	Pearson's Chi Squared Test
Administering grants to other organizations (n)	76	31	45	p<.05
(0) No (%)	77.6	64.5	86.7	
(1) Yes (%)	22.4	35.5	13.3	
Likert Mean	0.2	0.4	0.1	
Administering grants to landowners (n)	76	31	45	p=.2599
(0) No (%)	80.3	87.1	75.6	
(1) Yes (%)	19.7	12.9	24.4	
Likert Mean	0.2	0.1	0.2	
Administering grants to students (n)	76	31	45	p=1.0
(0) No (%)	97.4	96.8	97.8	
(1) Yes (%)	2.6	3.2	2.2	
Likert Mean	0.0	0.0	0.0	
Building collaborative networks/initiatives (n)	76	31	45	p<.05
(0) No (%)	30.3	45.2	20.0	
(1) Yes (%)	69.7	54.8	80.0	
Likert Mean	0.7	0.5	0.8	
Collecting water quality data (n)	76	31	45	p=.1534
(0) No (%)	64.5	74.2	57.8	
(1) Yes (%)	35.5	25.8	42.2	
Likert Mean	0.4	0.3	0.4	

Priority programs/initiatives	All	CD	NGO	Pearson's Chi Squared Test
Collecting stream/river flow data (n) (0) No (%) (1) Yes (%) Likert Mean	76 72.4 27.6 0.3	31 77.4 22.6 0.2	45 68.9 31.1 0.3	p=.4258
Collecting natural resource/conservation related data (not water quality) (n) (0) No (%) (1) Yes (%) Likert Mean	76 65.8 34.2 0.3	31 61.3 38.7 0.4	45 68.9 31.1 0.3	p=.6247
Creating planning documents (n) (0) No (%) (1) Yes (%) Likert Mean	76 61.8 38.2 0.4	31 64.5 35.5 0.4	45 60.0 40.0 0.4	p=.8301
Delivering professional development/workshop opportunities (n) (0) No (%) (1) Yes (%) Likert Mean	76 71.1 28.9 0.3	31 67.7 32.3 0.3	45 73.3 26.7 0.3	p=.6147
Enforcing government policies (n) (0) No (%) (1) Yes (%) Likert Mean	76 76.3 23.7 0.2	31 51.6 48.4 0.5	45 93.3 6.7 0.1	p<.0005
Encouraging civic engagement (n) (0) No (%) (1) Yes (%) Likert Mean	76 78.9 21.1 0.2	31 80.6 19.4 0.2	45 77.8 22.2 0.2	p=.7816
Educating kindergarten-12 th grade students about environmental practices (n) (0) No (%) (1) Yes (%) Likert Mean	76 44.7 55.3 0.6	31 29 71 0.7	45 55.6 44.4 0.4	p<.05
Educating adults about environmental practices (n) (0) No (%) (1) Yes (%) Likert Mean	76 43.4 56.6 0.6	31 48.4 51.6 0.5	45 40.0 60.0 0.6	p=.4878
Monitoring aquatic invasive species (n) (0) No (%) (1) Yes (%) Likert Mean	76 81.6 18.4 0.2	31 77.4 22.6 0.2	45 84.4 15.6 0.2	p=.5637
Mitigating aquatic invasive species (n) (0) No (%) (1) Yes (%) Likert Mean	76 88.2 11.8 0.1	31 83.9 16.1 0.2	45 91.1 8.9 0.1	p=.4758
Monitoring noxious weeds (n) (0) No (%) (1) Yes (%) Likert Mean	76 73.7 26.3 0.3	31 74.2 25.8 0.3	45 73.3 26.7 0.3	p=1.0
Mitigating noxious weeds (n) (0) No (%) (1) Yes (%) Likert Mean	76 75.0 25.0 0.2	31 80.6 19.4 0.2	45 71.1 28.9 0.3	p=.4398

Priority programs/initiatives	All	CD	NGO	Pearson's Chi Squared Test
Providing landowner assistance/education (n) (0) No (%) (1) Yes (%) Likert Mean	76 39.5 60.5 0.6	31 41.9 58.1 0.6	45 37.8 62.2 0.6	p=.8146
Recycling/waste management (n) (0) No (%) (1) Yes (%) Likert Mean	76 94.7 5.3 0.1	31 96.8 3.2 0.0	45 93.3 6.7 0.1	p=.6552
Restoring fish and/or wildlife habitat (n) (0) No (%) (1) Yes (%) Likert Mean	76 65.8 34.2 0.3	31 80.6 19.4 0.2	45 55.6 44.4 0.4	p<.05
Restoring/maintaining riparian areas (n) (0) No (%) (1) Yes (%) Likert Mean	76 48.7 51.3 0.5	31 58.1 41.9 0.4	45 42.2 57.8 0.6	p=.2409
Stabilizing stream/riverbanks (n) (0) No (%) (1) Yes (%) Likert Mean	76 55.3 44.7 0.4	31 54.8 45.2 0.5	45 55.6 44.4 0.4	p=1.0

When asked about their opinions on water needs and collaboration in their **local watersheds**, CDs and NGOs generally had similar levels of agreement. There were no significant statistical differences between CD and NGOs' responses.

Table 14: Comparing attitudes on water needs and collaboration in local watersheds between CDs and NGOs.

In my <u>local watershed</u> , we (natural resource users/managers and general public) are...	All	CD	NGO	Pearson's Chi Squared Test
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) in drought conditions (n) (1) Strongly disagree (%) (2) Disagree (%) (3) Neither agree nor disagree (%) (4) Agree (%) (5) Strongly agree (%) Likert mean	37 16.2 40.5 21.6 21.6 0.0 2.5	12 16.7 41.7 25 16.7 0.0 2.4	25 16.0 40.0 20.0 24.0 0.0 2.5	p=.9594
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) under development/growth pressures (n) (1) Strongly disagree (%) (2) Disagree (%) (3) Neither agree nor disagree (%) (4) Agree (%) (5) Strongly agree (%) Likert mean	37 16.2 32.4 24.3 27.0 0.0 2.6	12 16.7 25.0 25.0 33.3 0.0 2.8	25 16.0 36.0 24.0 24.0 0.0 2.6	p=.9520
Well-positioned to handle severe flooding events (n) (1) Strongly disagree (%) (2) Disagree (%) (3) Neither agree nor disagree (%) (4) Agree (%) (5) Strongly agree (%) Likert mean	37 8.1 32.4 37.8 21.6 0.0 2.7	12 16.7 25 41.7 16.7 0.0 2.6	25 4.0 36.0 36.0 24.0 0.0 2.8	p=.5732

In my <u>local watershed</u> , we (natural resource users/managers and general public) are...	All	CD	NGO	Pearson's Chi Squared Test
In agreement about what constitutes good water quality (n)	36	12	24	p=.7081
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	22.2	25.0	20.8	
(3) Neither agree nor disagree (%)	19.4	25.0	16.7	
(4) Agree (%)	47.2	33.3	54.2	
(5) Strongly agree (%)	11.1	16.7	8.3	
Likert mean	3.5	3.4	3.5	
Good at working together on water quality issues (n)	38	12	26	p=.7601
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	10.5	16.7	7.7	
(3) Neither agree nor disagree (%)	21.1	16.7	23.1	
(4) Agree (%)	50.0	41.7	53.8	
(5) Strongly agree (%)	18.4	25.0	15.4	
Likert mean	3.8	3.8	3.8	
In agreement about how water availability should be addressed (n)	38	12	26	p=.1354
(1) Strongly disagree (%)	7.9	0.0	11.5	
(2) Disagree (%)	26.3	33.3	23.1	
(3) Neither agree nor disagree (%)	36.8	50	30.8	
(4) Agree (%)	26.3	8.3	34.6	
(5) Strongly agree (%)	2.6	8.3	0.0	
Likert mean	2.9	2.9	2.9	
Good at working together on water availability issues (n)	38	12	26	p=.5992
(1) Strongly disagree (%)	2.6	8.3	0.0	
(2) Disagree (%)	21.1	25.0	19.2	
(3) Neither agree nor disagree (%)	36.8	25.0	42.3	
(4) Agree (%)	26.3	25.0	26.9	
(5) Strongly agree (%)	13.2	16.7	11.5	
Likert mean	3.3	3.2	3.3	
Good at working together on general natural resource issues	38	12	26	p=.8551
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	2.6	0.0	3.8	
(3) Neither agree nor disagree (%)	18.4	16.7	19.2	
(4) Agree (%)	55.3	66.7	50	
(5) Strongly agree (%)	23.7	16.7	26.9	
Likert mean (n)	4.0	4.0	4.0	

When asked about their opinions on water needs and collaboration at a **state-level**, CDs and NGOs generally had similar levels of agreement. There were no significant statistical differences between CD and NGOs' responses.

Table 15: Comparing attitudes on water needs and collaboration at a state-level between CDs and NGOs.

In my <u>state</u> , we (natural resource users/managers and general public) are...	All	CD	NGO	Pearson's Chi Squared Test
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) in drought conditions (n)	38	13	25	p=.6617
(1) Strongly disagree (%)	15.8	7.7	20.0	
(2) Disagree (%)	63.2	76.9	56.0	
(3) Neither agree nor disagree (%)	7.9	7.7	8.0	
(4) Agree (%)	13.2	7.7	16.0	
(5) Strongly agree (%)	0.0	0.0	0.0	
Likert mean	2.2	2.2	2.2	

In my <u>state</u> , we (natural resource users/managers and general public) are...	All	CD	NGO	Pearson's Chi Squared Test
Well-positioned to meet our future water needs for most water uses (e.g., agricultural, municipal, recreational, environmental, etc.) under development/growth pressures (n)	39	13	26	p=.5217
(1) Strongly disagree (%)	25.6	15.4	30.8	
(2) Disagree (%)	46.2	46.2	46.2	
(3) Neither agree nor disagree (%)	7.7	15.4	3.8	
(4) Agree (%)	20.5	23.1	19.2	
(5) Strongly agree (%)	0.0	0.0	0.0	
Likert mean	2.2	2.5	2.1	
Well-positioned to handle severe flooding events (n)	37	13	24	p=.8991
(1) Strongly disagree (%)	8.1	15.4	8.3	
(2) Disagree (%)	32.4	38.5	33.3	
(3) Neither agree nor disagree (%)	37.8	38.5	37.5	
(4) Agree (%)	21.6	7.7	16.7	
(5) Strongly agree (%)	0.0	0.0	4.2	
Likert mean	2.7	2.4	2.8	
In agreement about what constitutes good water quality (n)	38	13	25	p=.2494
(1) Strongly disagree (%)	7.9	7.7	8.0	
(2) Disagree (%)	23.7	23.1	24.0	
(3) Neither agree nor disagree (%)	23.7	30.8	20.0	
(4) Agree (%)	34.2	15.4	44.0	
(5) Strongly agree (%)	10.5	23.1	4.0	
Likert mean	3.2	3.2	3.1	
Good at working together on water quality issues (n)	38	13	25	p=.6962
(1) Strongly disagree (%)	2.6	0.0	4.0	
(2) Disagree (%)	26.3	23.1	28.0	
(3) Neither agree nor disagree (%)	31.6	38.5	28.0	
(4) Agree (%)	31.6	23.1	36.0	
(5) Strongly agree (%)	7.9	15.4	4.0	
Likert mean	3.2	3.3	3.1	
In agreement about how water availability should be addressed (n)	38	13	25	p=.5672
(1) Strongly disagree (%)	13.2	7.7	16.0	
(2) Disagree (%)	36.8	30.8	40.0	
(3) Neither agree nor disagree (%)	28.9	38.5	24.0	
(4) Agree (%)	18.4	15.4	20.0	
(5) Strongly agree (%)	2.6	7.7	0.0	
Likert mean	2.6	2.8	2.5	
Good at working together on water availability issues (n)	38	13	25	p=.1804
(1) Strongly disagree (%)	10.5	0.0	16.0	
(2) Disagree (%)	36.8	53.8	28.0	
(3) Neither agree nor disagree (%)	36.8	23.1	44.0	
(4) Agree (%)	7.9	7.7	8.0	
(5) Strongly agree (%)	7.9	15.4	4.0	
Likert mean	2.7	2.8	2.6	
Good at working together on general natural resource issues	38	13	25	p=.3178
(1) Strongly disagree (%)	0.0	0.0	0.0	
(2) Disagree (%)	23.7	15.4	28.0	
(3) Neither agree nor disagree (%)	18.4	15.4	20.0	
(4) Agree (%)	47.4	46.2	48.0	
(5) Strongly agree (%)	10.5	23.1	4.0	
Likert mean (n)	3.4	3.8	3.3	

More NGOs have a membership program and newsletter than CDs ($p < .001$ and $p < .001$, respectively). However, for the remaining variables, there are no differences between responses from CDs and NGOs (Table 12).

Table 16: Comparing various variables between CDs and NGOs.

Variable	All	CD	NGO	P-value (Pearson's Chi-Squared Test, or Welch Two-Sample T-Test)
Presence of newsletter (n)	78	31	47	p<.001
(1) Yes (%)	70.5	45.2	87.2	
(2) No (%)	29.5	54.8	12.8	
Likert mean	1.3	1.5	1.1	
Presence of membership program (n)	78	31	47	p<.001
(1) Yes (%)	21.8	0.0	36.2	
(2) No (%)	78.2	100.0	63.8	
Likert mean	1.8	2.0	1.6	
Number of full-time staff (n)*	75	28	47	p=.1860
Mean	2.9	2.0	3.4	
Standard Deviation	5.4	2.2	6.5	
Median	1.0	1.0	1.0	
Range	0.0-30.0	0.0-7.0	0.0-30.0	
Number of volunteers in 2019 (n)	33	7	26	p=.7073
Mean	43.0	38.7	44.1	
Standard Deviation	43.4	28.3	47.0	
Median	30.0	32.0	25.0	
Range	2.0-166.0	9.0-75.0	2.0-166.0	
Number of volunteers in 2020 (n)	37	8	29	p=.1506
Mean	37.1	25.4	40.4	
Standard Deviation	37.8	18.9	41.2	
Median	25.0	24.0	25.0	
Range	3.0-180.0	3.0-180.0	3.0-180.0	
Number of volunteers in 2021 (n)	39	10	29	p=.3036
Mean	45.6	34.0	49.6	
Standard Deviation	53.5	31.8	59.2	
Median	25.0	21.0	25.0	
Range	3.0-200.0	4.0-75.0	3.0-200.0	
Hosts in-person/online events (n)	76	30	46	p=.1484
(1) Yes (%)	82.9	90	78.3	
(2) No (%)	15.8	10	19.6	
Unsure/don't know (%)	1.3	0.0	2.2	
Likert mean	1.2	1.1	1.2	
Number of events in 2019 (n)	45	20	25	p=.9021
Mean	7.2	7.0	7.4	
Standard Deviation	10.2	13.2	7.4	
Median	3.0	3.0	4.0	
Range	1.0-58.0	1.0-58.0	1.0-25.0	
Number of events in 2020 (n)	33	12	21	p=.8312
Mean	4.1	4.5	3.9	
Standard Deviation	6.1	9.1	3.6	
Median	2.0	1.0	3.0	
Range	1.0-33.0	1.0-33.0	1.0-15.0	
Number of events in 2021 (n)	47	20	27	p=.9696
Mean	7.8	7.7	7.9	
Standard Deviation	11.8	16.6	6.7	
Median	4.0	3.0	6.0	
Range	1.0-75.0	1.0-75.0	1.0-25.0	

Variable	All	CD	NGO	P-value (Pearson's Chi-Squared Test, or Welch Two-Sample T-Test)
Number of people attending events in 2019 (n)	79	31	48	p=.3724
<i>Mean</i>	8.3	9.5	7.5	
<i>Standard Deviation</i>	9.4	9.5	9.4	
<i>Median</i>	3.0	5.0	1.0	
<i>Range</i>	1.0-30.0	1.0-30.0	1.0-29.0	
Number of people attending events in 2020 (n)	79	31	48	p=.5125
<i>Mean</i>	5.9	5.3	6.3	
<i>Standard Deviation</i>	6.9	5.8	7.5	
<i>Median</i>	3.0	3.0	1.0	
<i>Range</i>	1.0-23.0	1.0-20.0	1.0-23.0	
Number of people attending events in 2021 (n)	79	31	48	p=.8925
<i>Mean</i>	7.6	7.7	7.5	
<i>Standard Deviation</i>	7.6	8.0	7.4	
<i>Median</i>	5.0	4.0	5.0	
<i>Range</i>	1.0-25.0	1.0-25.0	1.0-22.0	
Miles of riparian area restored in 2019 (n)	13	2	11	p=.6343
<i>Mean</i>	5.9	12.6	4.6	
<i>Standard Deviation</i>	8.8	17.5	7.2	
<i>Median</i>	1.0	12.6	1.0	
<i>Range</i>	0.3-25.0	0.3-25.0	0.3-24.0	
Miles of riparian area restored in 2020 (n)	11	3	8	p=.5749
<i>Mean</i>	9.9	17.8	6.9	
<i>Standard Deviation</i>	15.9	28.0	10.1	
<i>Median</i>	2.5	3.0	2.3	
<i>Range</i>	0.3-50.0	0.3-50.0	0.3-24.3	
Miles of riparian area restored in 2021 (n)	16	3	13	p=.4720
<i>Mean</i>	7.1	18.4	4.5	
<i>Standard Deviation</i>	13.1	27.5	7.1	
<i>Median</i>	1.5	5.0	1.0	
<i>Range</i>	0.3-50.0	0.3-50.0	0.3-25.0	

*Note: outlier values were dropped for this analysis.

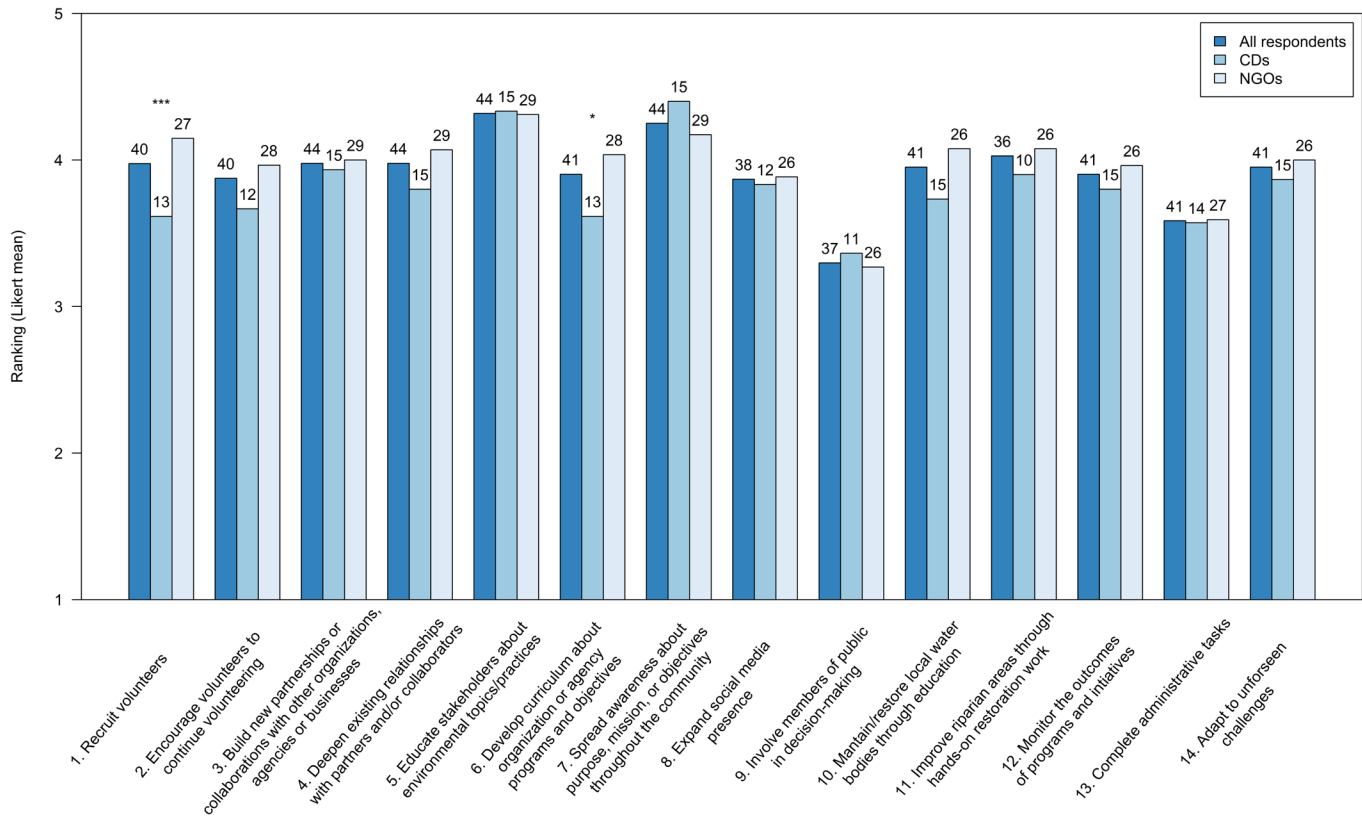


Figure 5: Comparing responses between CDs and NGOs for the following statement: "Please indicate your level of agreement with the following statements. Hosting BSWC member(s) increases/increased my organization's/agency's capacity to..." where respondents had to rank a variety of statements on a scale of 1-5. 1=strongly disagree, 2=disagree, 3=neither, 4=agree, 5=strongly agree. * Indicates a significant statistical difference between CDs and NGOs' responses at $p < .1$; *** indicates a significant statistical difference at $p < .005$. The number at the top of the bar indicates the number of responses for each group/statement.

Respondents who hosted BSWC members (i.e., respondents representing host-sites) were asked to rank their agreement with a variety of outcomes related to hosting BSWC member(s) in the past or present. Both CDs and NGOs generally ranked each statement similarly. However, NGOs ranked the following statements higher than CDs: (1) recruit volunteers and (2) develop curriculum about organization or agency programs and objectives ($p < .005$ and $p < .1$, respectively; see Figure 1).

3.4 Comparisons between expected and actual outcomes in 2021

The pre-survey asked respondents about expected outcomes in 2021, including expected miles of riparian area restored, number of volunteers, and number of online and in-person events held by the organizations that respondents represented. The post-survey asked about the actual outcomes for these variables. We compared these values to measure differences in expected and actual outcomes for 2021 among respondents who completed both the pre- and post-surveys (Table 17). For both miles of riparian area restored in 2021 and number of events in 2021, the expected and actual outcomes did not differ statistically. The expected and actual outcomes for number of volunteers in 2021 did however statistically differ, with the actual outcome being larger than the expected outcome ($p < .01$).

Table 17: Comparisons between expected and actual outcomes in 2021.

	Expected outcomes (pre-survey results)	Actual outcomes (post-survey results)	P-value (Welch Two Sample T-Test)
Miles of riparian area restored (n)	9	9	p=.2041
Mean	4.9	16.4	
Standard Deviation	7.9	24.1	
Median	2.0	3.0	
Range	0.3-25.0	0.5-70	
Number of volunteers (n)	25	27	p<.01
Mean	6.8	424.9	
Standard Deviation	6.7	753.7	
Median	4.0	300.0	
Range	1.0-25.0	10.0-4000.0	
Number of events (n)	25	29	p=.2088
Mean	40.4	74.1	
Standard Deviation	49.2	131.8	
Median	25.0	20.0	
Range	3.0-200.0	1.0-600.0	