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Strengthening Partnerships Across the Landscape: Bridger-Teton National Forest STEW-MAP Report 2021

Lindsay K. Campbell, Michelle Johnson, Erika Svendsen, Brian Goldberg, Evan Guzik, Paul Archual, Chris McCollister, Sophie Plitt, and Molly Radwell



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Abstract

The Bridger-Teton National Forest (BTNF) in western Wyoming comprises over 3.4 million acres of public land. This rich and diverse landscape borders Yellowstone and Grand Teton National Parks and includes the headwaters of the Green, Snake, and Yellowstone Rivers. Robust and diverse partnerships are needed to steward this landscape on behalf of the American public. Currently, these partnerships are not systematically tracked or available as a dataset. The Bridger-Teton Planning Team identified the following priorities for partnership planning: (a) accelerate progress toward forest planning objectives by identifying shared priorities and working across organizational and jurisdictional boundaries to achieve outcomes at scale; (b) improve partnership tracking, inventory, and planning in an environment where both staffing, funding, and partnerships are dynamic; (c) develop a collective partnership knowledge bank among all forest staff; and (d) improve understanding about partner organizations, including who they are, where they work, whom they work with, and their priority interests and capacities. The Stewardship Mapping and Assessment Project (STEW-MAP) research tool was used to develop a better understanding of the number and types of partnerships present on the BTNF and the services the partnerships provide. Among the key results, partners were found to be agents of change, to be working on issues beyond natural resource management, and to be responding to disturbance. This report reflects an important snapshot of the Bridger-Teton National Forest partnership landscape in the year 2020. These data serve as an important baseline that can be updated in 2030 and beyond to identify key shifts in growth, capacity, interest, and engagement with new and existing groups. STEW-MAP data can be integrated with other data layers and initiatives relevant to forest management and revisited in future studies to understand how stewardship groups and their territories, impacts, and networks evolve over time.

Keywords: stewardship, national forest, partnership, networks, collaboration, geography

Cover Art

Top left: Partners work with the USDA Forest Service to engage citizen scientists in the collecting of data on the Bridger-Teton National Forest, Wyoming. USDA Forest Service photo. Top right: April 2021 prescribed fire on the Bridger-Teton National Forest. USDA Forest Service photo.

Middle left: Forest Service staff and partners leading the Blackrock Field Camp, a natural resources and outdoor education program for 4th grade students, held on May 19, 2016, at the Blackrock Ranger Station on Bridger-Teton National Forest, Wyoming. USDA Forest Service photo. Middle right: Friends of Pathways youth crew working on the Jackson Ranger District in Bridger-Teton National Forest, Wyoming, June 20, 2016. USDA Forest Service photo.

Bottom left: Horseback riders on the Wyoming Range National Recreation Trail in the Bridger-Teton National Forest, Wyoming. USDA Forest Service photo. Bottom right: Volunteers worked on rehabilitation projects along Crystal Butte Trail in the Jackson Ranger District of the Bridger-Teton National Forest, Wyoming, during National Trails Day 2015. USDA Forest Service photo.

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EXECUTIVE SUMMARY

What is the STEW-MAP BTNF Project?

The Bridger-Teton National Forest (BTNF) in western Wyoming comprises over 3.4 million acres of public land. This rich and diverse landscape borders Yellowstone and Grand Teton National Parks and includes the headwaters of the Green, Snake, and Yellowstone Rivers. Robust and diverse partnerships are necessary to steward this landscape, yet these partnerships are not currently systematically tracked or available as a dataset.

In 2019, the Bridger-Teton Planning Team launched a Stewardship Mapping and Assessment Project (STEW-MAP) with the following objectives:

- **Accelerate progress toward forest planning objectives** by identifying shared priorities and working across organizational and jurisdictional boundaries to achieve outcomes at scale.
- **Improve partnership tracking, inventory, and planning** in an environment where both staffing, funding, and partnerships are dynamic.
- **Develop a collective partnership knowledge bank** among all forest staff.
- **Improve understanding about partner organizations** and their priority interests and capacities.

How Did We Approach this Collaboration?

BTNF employee survey—In early 2020, the Bridger-Teton team sent out an internal survey to all permanent forest employees. A survey response rate of 33.8 percent resulted in 44 responses received from employees who had a combined 510 years of experience working on the BTNF. Survey responses gathered information on partners each of these employees currently work with and who within the agency maintains these relationships. Survey results are available at <https://arcg.is/0azejy>.

STEW-MAP survey—In December 2020, the STEW-MAP survey was launched and initially sent to 105 organizations identified through the BTNF employee survey. The survey was also shared more broadly via known partners across the region, and these partners were encouraged to disseminate the survey to their networks. A total of 43 completed responses were received through this combined effort. To learn more, visit <https://www.fs.usda.gov/research/projects/stewmapbridgerteton>.

What Did We Discover?

Partnership groups exist and persist over time—Partners working to protect the BTNF have evolved along with the social, political, economic, and environmental histories of the region. For example, a large expansion of groups in the 1970s followed key policy changes such as the Wilderness Act of 1964 and the consolidation of National Forest lands into the Bridger-Teton National Forest.

Partners are agents of change—Partnership groups in the Greater Yellowstone region work on everything from protecting native species and ecosystems, to creating safe and accessible recreational spaces compatible with wildlife. Based on the responding groups, at least 1,350 full and part time staff members; 300,700 members; and 176,500 volunteers contribute to stewardship activities that transform the environment and communities.

Many groups work on issues that go beyond natural resource management—Partnership opportunities emerge from many different sectors. Recreation and education are key points of engagement for over 50 percent of responding groups in the region.

Partners produce ecological knowledge—Over 67 percent of responding groups surveyed actively collect data, track metrics, and monitor the local environment. These insights are critical to supporting effective land management.

Partners work across sectors for collective impact—Natural resource management is accomplished by public agencies working collaboratively with partners and through partnership networks. Civic groups help connect government agencies with other government and civic partners. In the region, BTNF and federal partners are central collaborators, but some nongovernmental organizations (NGOs) are key connectors to other potential partners. County and state agencies are also key connectors of information. Many NGOs are pivotal links to a broader funding network.

Partnership work happens at all scales and across the landscape—Stewardship territory ranges in scale from a single stream to a watershed to the entire region, including a frequent focus on nonmotorized trails, wildlife habitat, and wilderness areas. Areas in BTNF where more groups focus their work tend to mirror areas with higher patterns of visitation and use and areas nearby office locations.

Partners respond to disturbance—Stewardship is one of the ways that communities respond to disturbances and stressors. In this region, a third of responding groups work on fire or climate change and almost two-thirds on invasive insects.

What Key Questions Can Be Examined with These Data?

Building knowledge—Partnership data can be used to establish baseline information at the start of a project and can be shared with new staff and community partners working on projects over time to address many questions. How have partnerships changed over time on the BTNF? What are the gaps? Where are the areas for growth and targeted outreach?

Data integration—Partnership information can be used in combination with other forms of geospatial data including places where it might make tactical sense to collaborate on projects or intensify or adapt land stewardship actions. Where do we find a relationship between partnerships and effective land management, recreation opportunities, and forest health?

Planning and action—This partnership dataset can be used in forest planning actions, for direct community engagement, as well as for specific projects including outreach to diverse communities. The dataset can also be used in efforts to strengthen local community resilience, including in disaster recovery contexts (e.g., wildland fire, extreme weather). Where can we expect to find a strong partnership response post-disturbance? What are indicators of strong social trust? What places that need more engagement?

Looking ahead—To help BTNF staff continue to identify new groups and monitor partnerships dynamically over time, the STEW-MAP group is piloting a new approach called STEW-MAP Live. Using publicly available data, STEW-MAP Live could be used to better understand seasonal activities and to provide annual reporting metrics. In addition, this ongoing data collection can be paired with a full STEW-MAP survey on a regular basis (e.g., 5- or 10-year intervals) to understand how networks and territories of all groups change over time.

Based on this successful BTNF pilot, there is potential to replicate this approach with other national forests, national parks, and other rural areas to better understand the partnership landscape and potential. The ways in which each land manager chooses to mobilize STEW-MAP data toward their mission may differ by location but would continue to center partnership development and sustained stakeholder engagement.

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INTRODUCTION

The Bridger-Teton National Forest (BTNF) in western Wyoming comprises over 3.4 million acres of public land, making it the third largest national forest outside of Alaska. This rich and diverse landscape borders Yellowstone and Grand Teton National Parks and includes the headwaters of the Green, Snake, and Yellowstone Rivers. Robust and diverse partnerships are needed to steward this landscape on behalf of the American public, but these partnerships are not currently systematically tracked or available as a dataset.

In summer 2019, the Bridger-Teton Planning Team began exploring different methodologies for partnership planning. The main objectives outlined by the team included the following:

- **Accelerate progress toward forest planning objectives** by identifying shared priorities and working across organizational and jurisdictional boundaries to achieve outcomes at scale.
- **Improve partnership tracking, inventory, and planning** in an environment where both staffing, funding, and partnerships are dynamic.
- **Develop a collective partnership knowledge bank** among all forest staff.
- **Improve understanding about partner organizations**, including who they are, where they work, whom they work with, and their priority interests and capacities.

Staff on the Bridger-Teton National Forest recognized the benefits of the Stewardship Mapping and Assessment Project (STEW-MAP), a research tool that has previously been applied primarily in urban contexts, and they saw the value of applying this tool to a diverse landscape anchored by the national forest. Both the process and outcomes of this collaboration are currently informing the development of guidelines and a web platform that will allow national forests or other federal, state, or diverse landscapes to use STEW-MAP to increase capacity, improve outcomes, and benefit current and future generations of the communities with which they engage and serve.

About STEW-MAP

The Stewardship Mapping and Assessment Project (STEW-MAP) is a research tool, community organizing approach, and partnership mapping platform developed by scientists at the U.S. Department of Agriculture, Forest Service, Northern Research Station that answers the question, “Who takes care of the local environment?” STEW-MAP provides insights that can foster civic participation, increase social cohesion, and support requests for funding and programming. A better understanding of place-based environmental stewardship can lead to less duplication of efforts and better coordination of land and resource management.

Key STEW-MAP Findings for The Bridger-Teton National Forest Regional Landscape

- **Partnership groups exist and persist over time**—Partners working to protect the Bridger-Teton National Forest (BTNF) have evolved along with the social, political, economic, and environmental histories of the region, including a large expansion of groups in the 1970s following key policy changes such as the Wilderness Act of 1964 and the consolidation of national forest lands into the Bridger-Teton National Forest.
- **Partners are agents of change**—Partnership groups in the Greater Yellowstone region work on everything from protecting native species and ecosystems, to creating safe and accessible recreational spaces compatible with wildlife, to establishing networks for disaster preparedness. Based on the responding groups, at least 1,350 full and part time staff members; 300,700 members; and 176,500 volunteers contributed to these efforts, which transform our environment and communities.
- **Many groups work on issues beyond natural resource management**—Partnership opportunities emerge from many different sectors. Recreation and education are key points of engagement for over 50 percent of responding groups in the region.
- **Partners produce ecological knowledge**—Over 67 percent of responding groups actively collect data, track metrics, and monitor the local environment. These insights are critical to supporting effective land management.
- **Partners work across sectors for collective impact**—Natural resource management is accomplished by public agencies working collaboratively with partners and through partnership networks. Civic groups help connect government agencies with other government and civic partners. In the region, BTNF and federal partners are central *collaborators*, but some non-governmental organizations (NGOs) are key connectors to other potential partners. County and state agencies are key connectors of *information*. Many NGOs are pivotal links to a broader *funding* network.
- **Partnership work happens at all scales and across the landscape**—Stewardship territory ranges in scale from a single stream, to a watershed, to an entire region, including a frequent focus on nonmotorized trails, wildlife habitat, and wilderness areas. Areas in BTNF where more groups focus their work tend to mirror areas with higher patterns of visitation and use and areas nearby office locations.
- **Partners respond to disturbance**—Stewardship is one way that communities respond to disturbances and stressors. In this region, a third of responding groups work on fire or climate change, and almost two-thirds work on invasive insects.

While these findings are unique to BTNF, they follow a pattern that has been discovered in other STEW-MAP locations, including in urban areas, demonstrating the universality of the importance of collaborative partnerships in natural resource management.

Approach

Bridger-Teton National Forest (BTNF) employee survey—In early 2020, the Bridger-Teton team sent out a preliminary internal electronic survey to all 130 permanent forest employees. With a response rate of 33.8 percent, the survey received 44 responses from employees who have a combined 510 years of experience working on the BTNF. This internal survey gathered information on the partners each employee is currently working with and the individual within the agency who is responsible for maintaining these relationships. This first phase of the survey is a useful step to build support from staff for an external survey and also supplies data that will inform the sampling framework. The results of this partnership survey can be found here: <https://arcg.is/0azejy>.

STEW-MAP survey—In December 2020, the STEW-MAP survey was launched and was initially sent to 105 organizations identified through the BTNF employee survey. Of the organizations, 72.3 percent were civic groups (nongovernmental organizations [NGOs] and community groups), 23.8 percent were government, and 3.8 percent were businesses. Responses were received from 14 organizations, for a response rate of 13.3 percent, a rate comparable to other STEW-MAP surveys. The survey was also shared more broadly via known partners across the region, and these partners were encouraged to disseminate the survey to their networks. From this effort, 29 additional responses were received (62.0 percent NGOs, 6.9 percent community groups, 6.9 percent college/universities, 24.1 percent local government), for a total of 43 complete responses. The survey remained open until early March 2021. To learn more, visit: <https://www.fs.usda.gov/research/projects/stewmapbridgerteton>

Defining Environmental Stewardship

Environmental stewardship consists of a range of diverse practices, beliefs, and approaches, including hands-on work, an ethic or ethos, and the knowledge and skills required to take action (see, e.g., Andersson et al. 2017, Bennett et al. 2018, Muñoz-Erickson et al. 2016, Romolini et al. 2016). Stewardship groups take on a wide range of functions in caring for the local environment. The main functions can be categorized into conservation, management, monitoring, advocacy, education, and transformation (Campbell et al. 2019, Connolly et al. 2013, Fisher et al. 2012, Svendsen et al. 2016). Definitions and examples of each of these functions are outlined in Table 1, and references for further reading are provided.

Table 1.—Examples of stewardship functions (adapted from Campbell et. al 2019)

Function	Examples	Context and Description	References for Further Reading
Conserve	• Collaborative conservation of landscapes • Land trusts • Historic preservation • Protecting open space from development	Conservation practitioners and scholars have highlighted the capacities of communities to engage in collaborative conservation efforts, including through the creation of land trusts and community land trusts (CLTs) that purchase and set aside land for preservation. These land trusts are located in both rural and urban areas, and some forms of CLTs conserve not only open space, but also affordable housing. Biocultural conservation offers an alternative framework for thinking about the relationships between humans and their environments that acknowledges nature and culture are fundamentally entwined, integrated, and reciprocal; thus, conservation planning and efforts must include socio-cultural dimensions and understanding of the people connected to the places to be conserved.	• Avins 2015 • Berkes 2012 • Campbell and Salus 2003 • Gavin et al. 2015 • Merenlender et al. 2004 • Soifer 1990 • Sterling et al. 2017 • Turner et al. 2000
Manage	• Forest management • Land maintenance • Site-based programming	The natural resource management literature has variously described community roles through the lenses of community-based natural resource management, co-management, adaptive co-management, and civic ecology. These literatures describe the governance arrangements and practices through which communities work in managing green and blue places, including how they operate both independent of or in collaboration with public agencies and the private sector.	• Koontz et al. 2004 • Krasny and Tidball 2015 • Olsson et al. 2004 • Weber 2000 • Wondolleck and Yaffee 2000
Monitor	• Measuring water quality • Tracking forest health • Determining social impact	Communities are involved in diverse forms of knowledge production, with monitoring and sensing of the local environment being important components of those processes. Stewardship is connected to traditions of public participation in scientific research, citizen science or civic science, and environmental “bucket brigades.”	• Bonney et al. 2009 • O’Rourke and Gregg 2003 • Silva and Krasny 2014 • Sorensen et al. 2018
Educate	• Youth engagement • Public education events • Job training	Environmental education seeks to enhance the ecological literacy of the public, particular communities, or both, such as urban youth, through in-class curriculum and STEAM-based education, as well as through field-based and informal education approaches.	• Husler and Krasny 2010 • Schusler et al. 2009
Advocate	• Lobbying • Environmental justice activism • Promoting sustainable policies	Civic stewards seek not only to understand and manage their local environments but also to advocate for and envision new forms of environmental equity, justice, and sustainability. There is a long tradition of civic engagement, activism, and local social movements related to the quality of the environment and community well-being.	• Andrews and Edwards 2005 • Carmin and Balser 2002 • Fisher et al. 2015
Transform	• Composting food waste • Alternate energy uses • Recycling	Community-organized initiatives can be a source of transformations in environmental systems (e.g., waste systems, energy systems, food systems) and ecosystem service provision, and in environmental governance by introducing innovations that may lead to reconfigured feedbacks that govern the state of the system.	• Andersson et al. 2007 • Chapin et al. 2009, 2010 • Colding et al. 2006 • Westley et al. 2013

SURVEY RESULTS

Part I–Geographic Scope

Where do groups work?

This report highlights results from the 43 stewardship groups that responded to the Bridger-Teton National Forest (BTNF) STEW-MAP survey. Groups work at different geographic scales, so areas of stewardship, or “turfs,” vary, ranging from a single 172 acre rocky crag (Rodeo Wall in BTNF; Teton Climbers’ Coalition partnership) to a multiple-state area covering 485,463,393 acres (The Cougar Fund partnership). On the BTNF, the entire forest is stewarded by partners working alongside BTNF staff, showing the extent of contributions our partners make to land management on the regional landscape. The largest number of groups working in a single part of the BTNF is 29 (Fig. 1). With multiple groups working in the same sections of the forest, coordination may be useful, depending upon their activities.

Part II–Stewardship Networks

Creating social networks between organizations is critical to the flow of information, ideas, and resources as well as for strengthening social trust and impact. Networks are dynamic and can be shaped by any number of factors including shared experiences, missions, or spatial proximity.

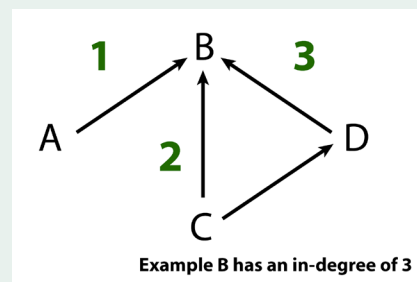
There are many ways to represent these networks to show the combination, arrangement, and distribution of collaboration, information, or resource relationships between stewardship organizations connected to the Bridger Teton National Forest. The number and direction of ties that exist to and from a group can indicate how the group operates within the network. For example, the in-degree statistic measures the number of ties from other groups to a particular organization (see “Connections of a Group”). In the diagrams in Figures 2–4, organizations are shown as circles and the connections are shown as lines. Circles are color-coded by sector to reflect the type of organization, which includes community groups, nonprofits, government organizations, universities, private groups, foundations, and partnerships. The size of the circle varies and reflects the number of groups that have mentioned collaborating with the organization (in-degree).

Connections of a Group: In-Degree

How many incoming connections does a group have?

In-degree measures the number of times other groups identify a particular group. For example, if three groups name Group B, then the in-degree for Group B is 3.

In general, groups with high in-degree are the leaders and are looked to by others as a source of advice, expertise, or information.



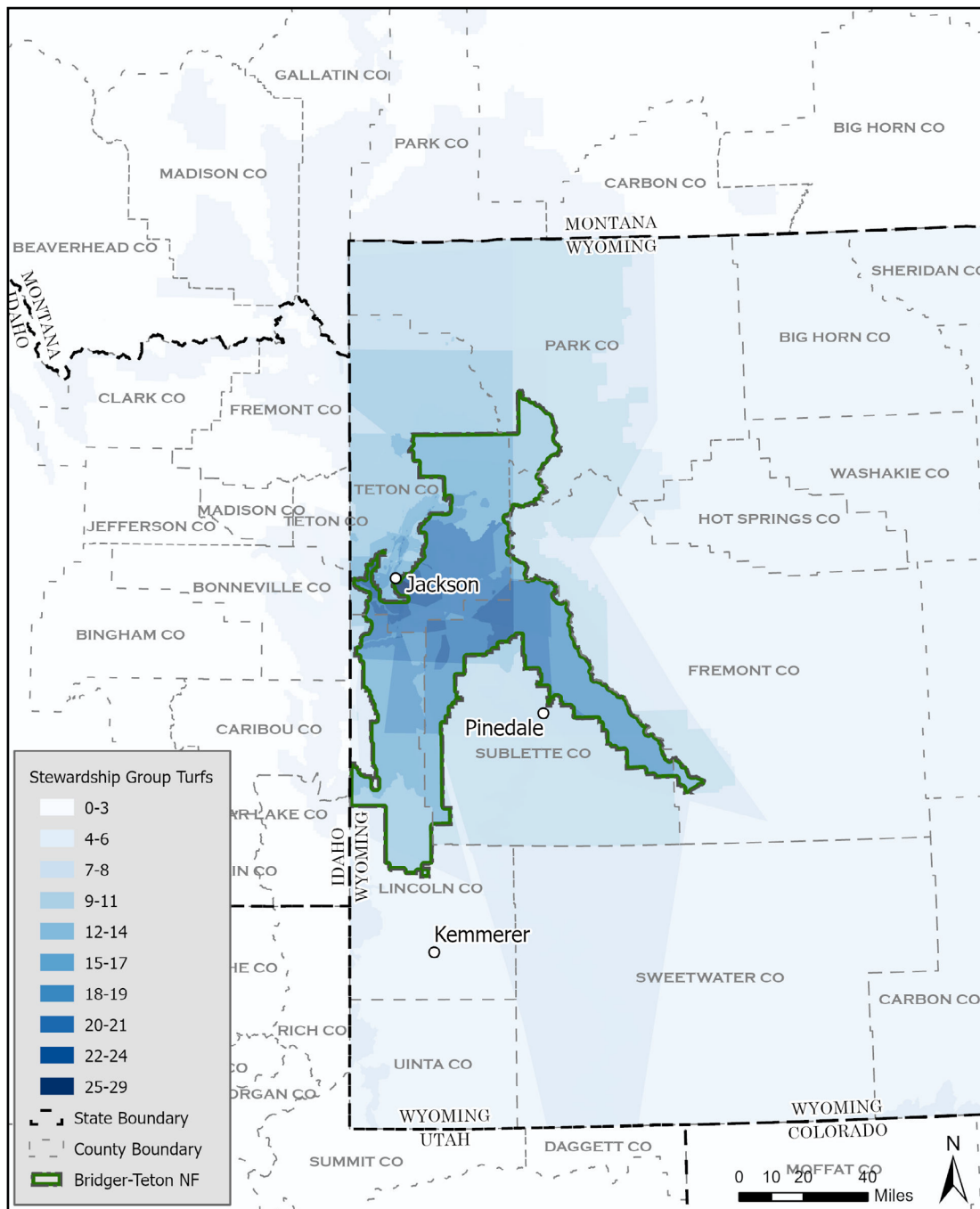


Figure 1.—Geographic map showing number of partnership groups working in Bridger-Teton National Forest and the surrounding area.

Collaboration Network

Who do groups regularly collaborate with on land management projects or programs?

The collaboration network is represented by the 43 groups who responded to the survey, along with the organizations they name as collaborators (Fig. 2). Collaboration can involve working together on shared projects and networked activities, such as participating in shared working groups or coalitions. The top partners in the collaboration network with the highest in-degree metrics for collaboration include the following, with each having at least four ties with other groups:

1. USDA Forest Service
2. Bureau of Land Management
3. Teton County
4. Wyoming Game and Fish Department
5. National Park Service
6. Trout Unlimited
7. Greater Yellowstone Coalition
8. Jackson Hole Wildlife Foundation
9. U.S. Fish and Wildlife Service
10. The Nature Conservancy

The U.S. Department of Agriculture (USDA), Forest Service is the partner most often named as a collaborator by other groups. Other organizations with the highest in-degree metrics include other federal, state, and county agencies. Additionally, several local and regional NGOs and chapters of national NGOs were often named. Explore the collaboration network at <https://embed.kumu.io/017695c92f0acc35b1a75378b423d276>.

Information Network

Who do groups go to for knowledge, data or expertise related to environmental issues?

The information network is represented by the 43 groups who responded to the survey, along with the organizations they go to for information (Fig. 3). This question reveals how knowledge, data, and expertise flow through the BTNF partnership network. The partners in the information network with the highest in-degree metrics for information include the following, with each having at least three ties with other groups:

1. USDA Forest Service
2. National Park Service
3. Wyoming Game and Fish Department
4. Bureau of Land Management

5. Teton County
6. U.S. Fish and Wildlife Service
7. Lincoln County
8. Friends of the Bridger-Teton National Forest
9. Greater Yellowstone Coalition
10. Wyoming State Parks and Trails
11. Teton Conservation District
12. Jackson Hole Land Trust
13. The Nature Conservancy
14. Advocates for Multiple Use of Public Lands

The USDA Forest Service is the most named partner for collaboration by other groups. Other organizations with the highest in-degree metrics include other federal, state, and county agencies. Additionally, several local and regional civic organizations and chapters of national civic organizations were often named. Explore the information network at <https://embed.kumu.io/1a83b01684f1744d6d7bd9e15dda22bd>.

Funding Network

Who do groups receive resources from - funding or materials?

The funding network is represented by the 43 groups who responded to the survey, along with the organizations from whom they receive resources (Fig. 4). This shows the way in which resources—including funding and materials—flow through the known BTNF partnership network. The groups with the highest in-degree metrics for collaboration include the following, with nine partners having at least three ties with other groups:

1. USDA Forest Service
2. Bureau of Land Management
3. Wyoming Game and Fish Department
4. Greater Yellowstone Coalition
5. National Park Service
6. Sublette County
7. The Nature Conservancy
8. Trout Unlimited
9. Wyoming State Parks and Trails

The USDA Forest Service is the most named partner for collaboration by other groups. Other organizations with the highest in-degree metrics include other federal, state, and county agencies. Additionally, several local and regional civic groups and chapters of national civic organizations were often named. Explore the funding network at <https://embed.kumu.io/a44c2d11333f19b05b78b1f144981790>.

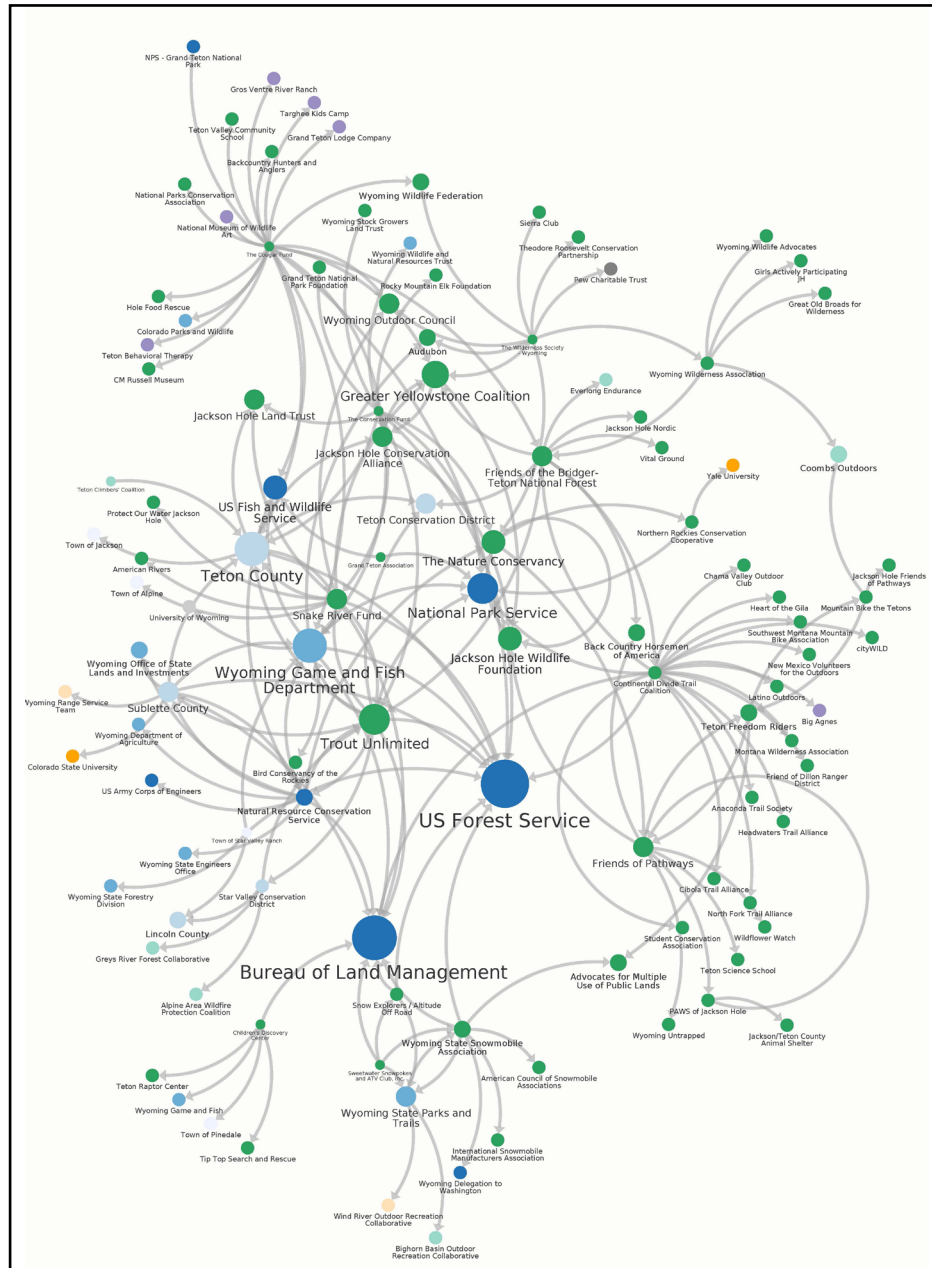


Figure 2.—Collaboration network from the Bridger-Teton National Forest STEW-MAP survey. Organizations are represented by circles (sized by in-degree, colored by sector), and connections between organizations are represented as lines.

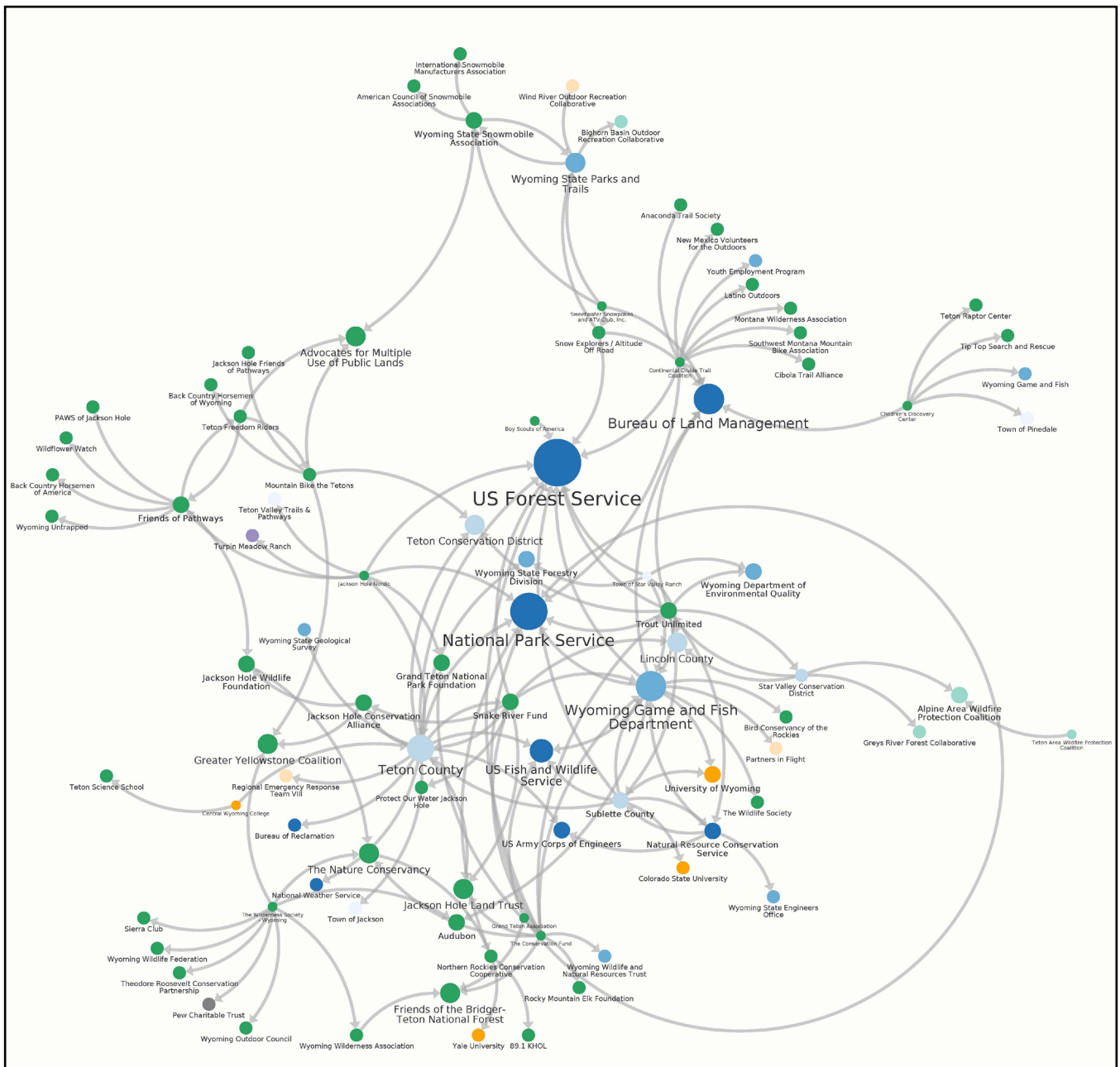


Figure 3.—Information network from the Bridger-Teton National Forest STEW-MAP survey. Organizations are represented by circles (sized by in-degree, colored by sector), and connections between organizations are represented as lines.

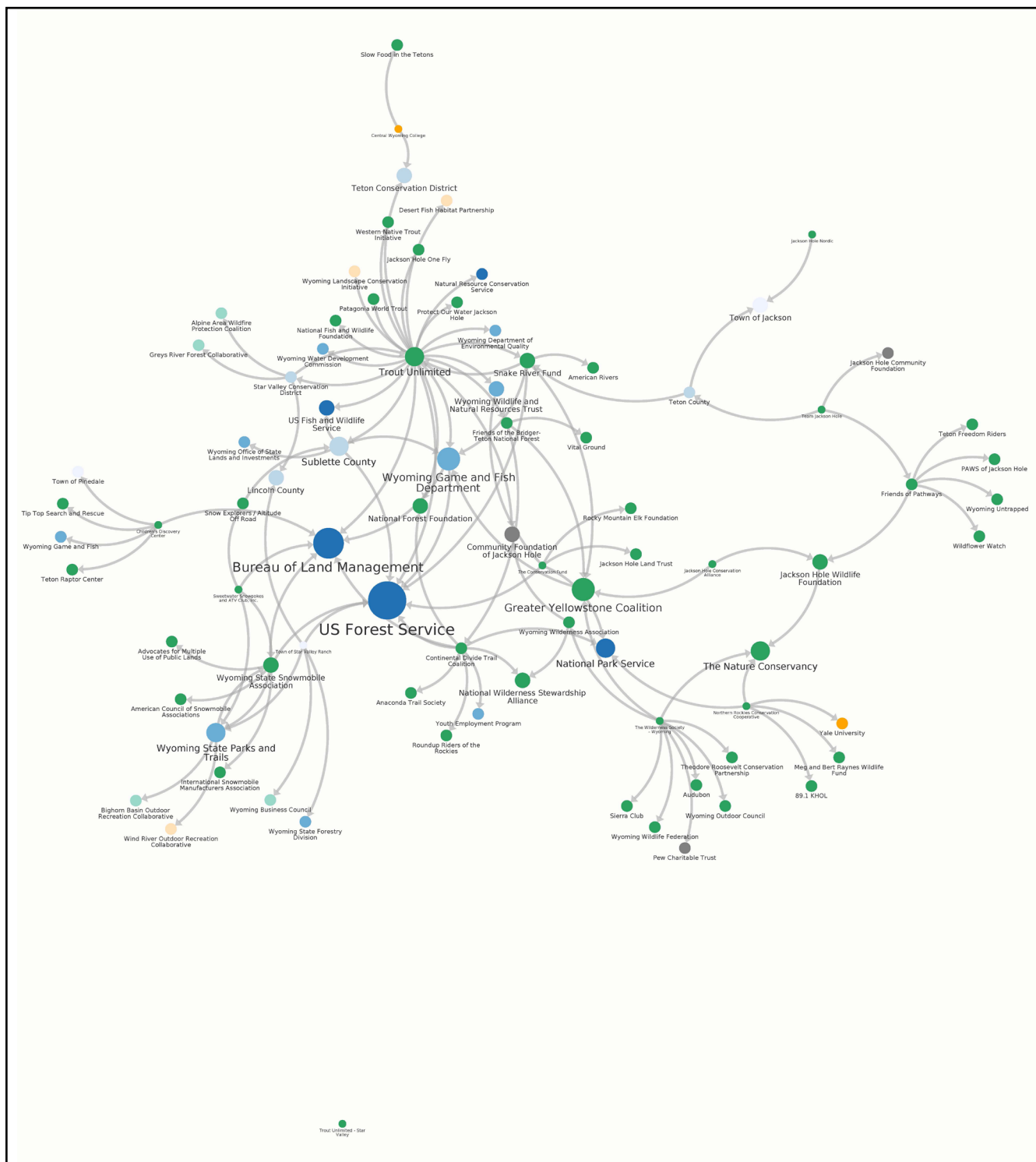


Figure 4.—Funding network from the Bridger-Teton National Forest STEW-MAP survey. Organizations are represented by circles (sized by in-degree, colored by sector), and connections between organizations are represented as lines.

Part III–Group Characteristics

These survey results represent stewardship groups engaged in conservation, preservation, management, restoration, monitoring, advocacy, or education activities throughout the Bridger Teton National Forest and surrounding landscape. Here we highlight a series of responses to questions from the STEW-MAP survey.

Year Founded

In what year was each group established?

Organizations were asked to identify the year the group was established. Sectors are divided into civic (registered nonprofit organizations and community groups), government (local, county, state, federal), and public-private partnerships and are presented cumulatively by decade founded (Fig. 5). Pivotal legislation and administrative actions affecting the Forest Service are also displayed on this timeline and include the Transfer Act of 1905 (33 Stat. 628; 16 U.S.C. 472, 524, 554), the Wilderness Act of 1964 (Public Law 88-577; 16 U.S.C. 1131–1136), and the National Forest Management Act of 1976 (88 Stat. 476; 16 U.S.C. 1601–1610).

Key findings:

- Responding groups founded before the 1970s were primarily state government-related or organizations with 501(c)(3) status.
- The 1970s was the decade with the largest number of new groups created, with eight new groups established. This coincides with the introduction of major legislation such as the Wilderness Act of 1964 and the National Forest Management Act of 1976, which require forest plans and public planning for national forest management.

Organization Type

What types of groups by sector are engaging in stewardship?

Organizations engaged in stewardship were asked to identify what type of group they are, and responses were categorized into civic, government, or public-private partnership sectors (Fig. 6). The civic sector includes registered nonprofit organizations and community groups; government refers to agencies at all levels, including local, county, state, and federal; and public-private partnerships include other organizations.

Key findings:

- Civic groups comprise 66 percent of responding organizations; the majority have 501(c)(3) nonprofit status.
- The three civic groups without 501(c)(3) nonprofit status are community groups.
- Government respondents are from local and state government agencies.

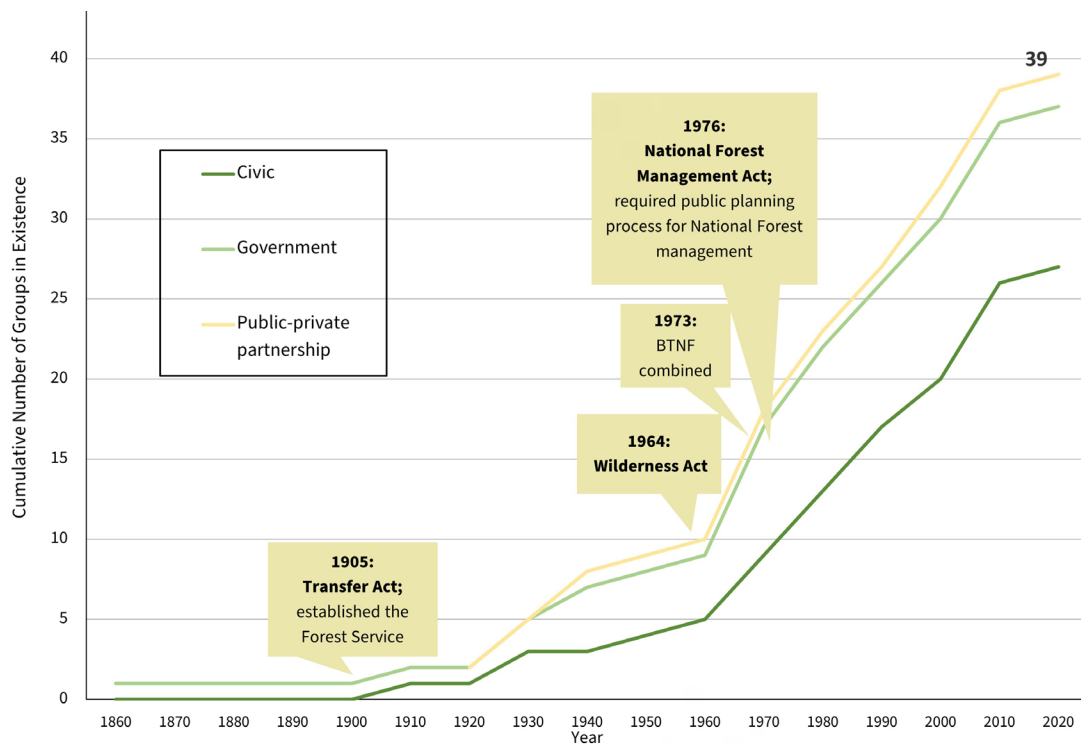


Figure 5.—Timeline of the number of partnership organizations founded each decade for groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=39) and years for pivotal legislation and administrative actions affecting the Forest Service from 1860 to 2020.

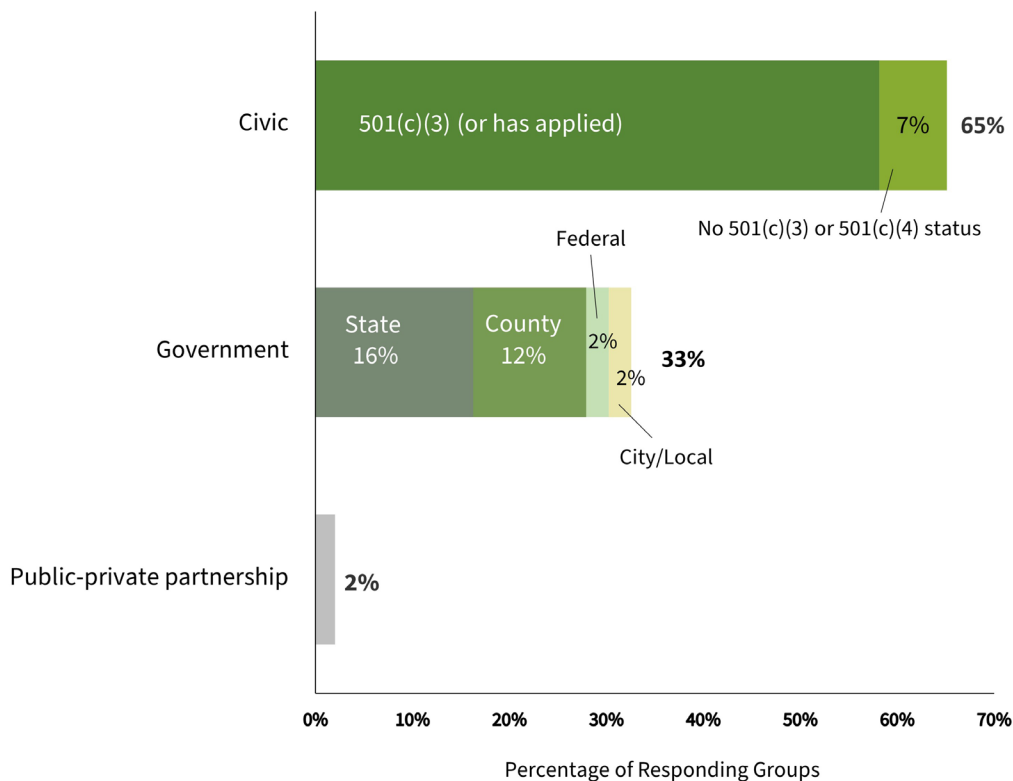


Figure 6.—Distribution of stewardship groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=43) by sector, displayed as percentage of total number of responding groups.

Group Focus

What issues or topics are each group working on? Which issues are the primary focus of each group?

Stewardship organizations work on a range of issues. As part of the survey, organizations were asked to select the issues and topics they work on in general and identify the primary focus issue for their group. Results are presented as a percentage of all responding groups (Fig. 7).

Key findings:

- Recreation and sports was selected by 13 groups as their primary issue and by 25 groups as one issue of focus.
- Over 75 percent of groups engage with three or more issues.

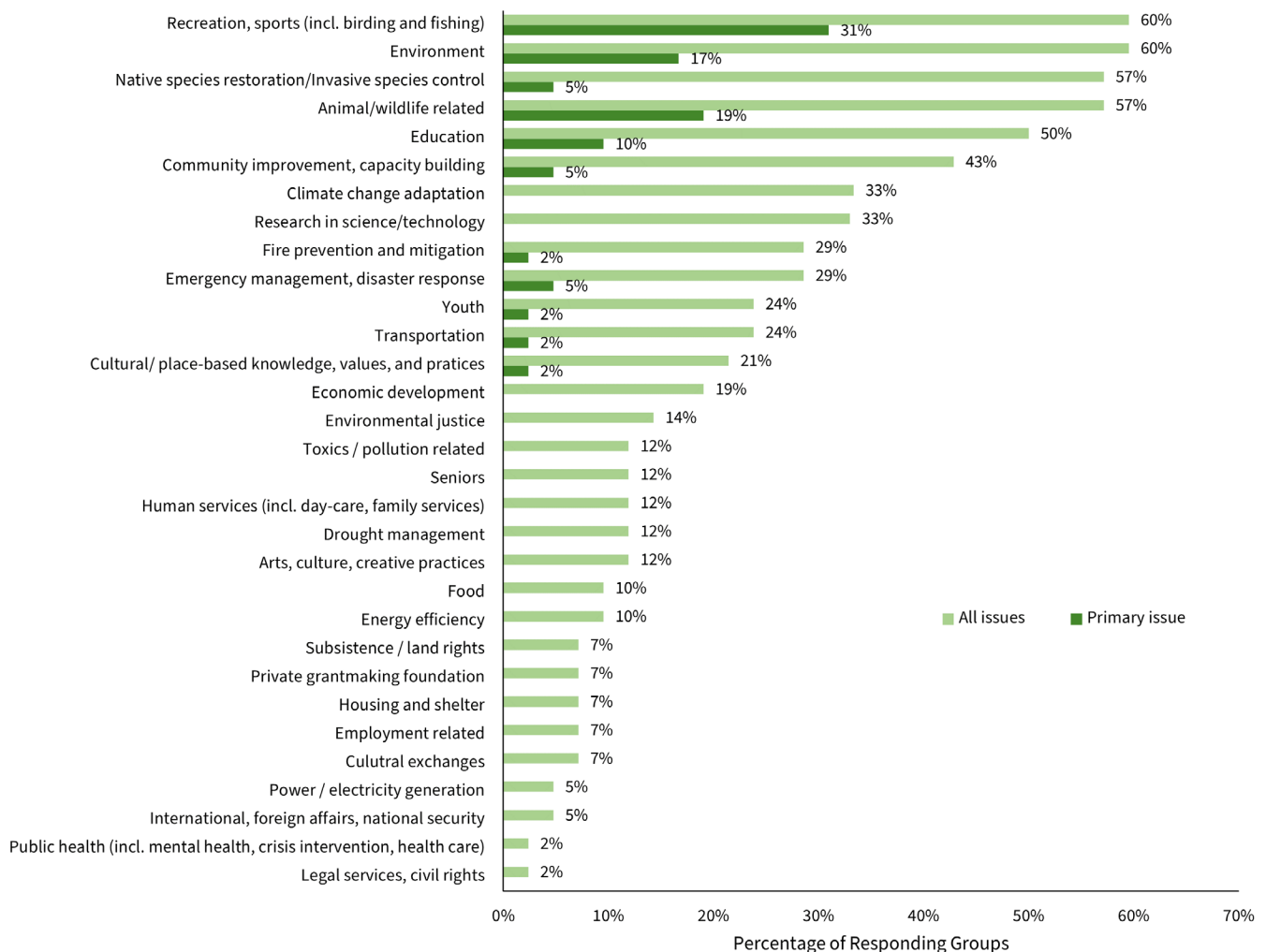


Figure 7.—Issues focused on by partnership groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=42) presented as percentage of all responding groups, and the primary issue of focus identified by each group.

Stewardship Activities

What types of environmental stewardship activities—including management, education, advocacy, monitoring, conservation, and restoration—are conducted in the Bridger-Teton National Forest and surrounding landscape?

Organizations were asked to indicate the types of stewardship activities or functions they conduct on the BTNF and the surrounding landscape and identify the primary activity. (See Table 1 on page 4 for more information on the types of stewardship functions.) Results are presented as a percentage of all responding groups (Fig. 8).

Key findings:

- Over 90 percent of groups identify more than one form of stewardship activity and 56 percent (24 groups) engage with more than three forms of stewardship activities.
- The one group that chose “None” identifies stewardship activities elsewhere, working within a forest ecosystem to protect vulnerable species.

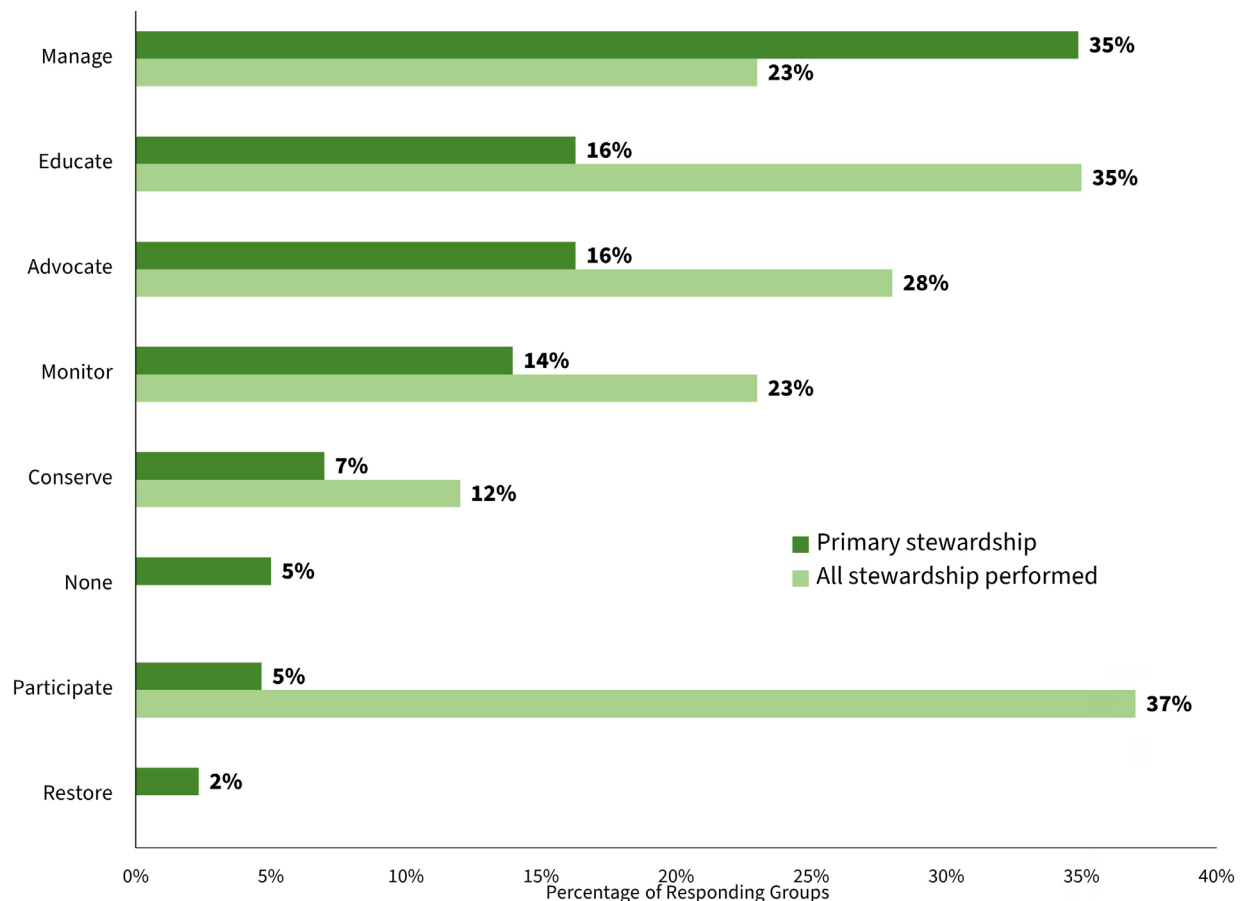


Figure 8.—Types of stewardship activities groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=43) engage in, as a percentage of all responding groups, and the primary activity identified by each group.

Time Focused on Stewardship

What percentage of groups' effort has been for natural resources stewardship during the past year?

What proportion of groups' time devoted to stewardship in the past year focused on the Bridger-Teton National Forest?

Respondents were asked to identify the amount of time over the past year their organization spent in natural resources stewardship in general (Fig. 9), and more specifically, what percentage is stewardship work conducted on the BTNF (Fig. 10).

Key findings:

- In all, 56 percent of the groups (23 groups) identify stewardship as making up over 60 percent of their activities.
- Of the groups, 24 percent (10 groups) indicated that 60 percent or more of their stewardship activities were related to BTNF.

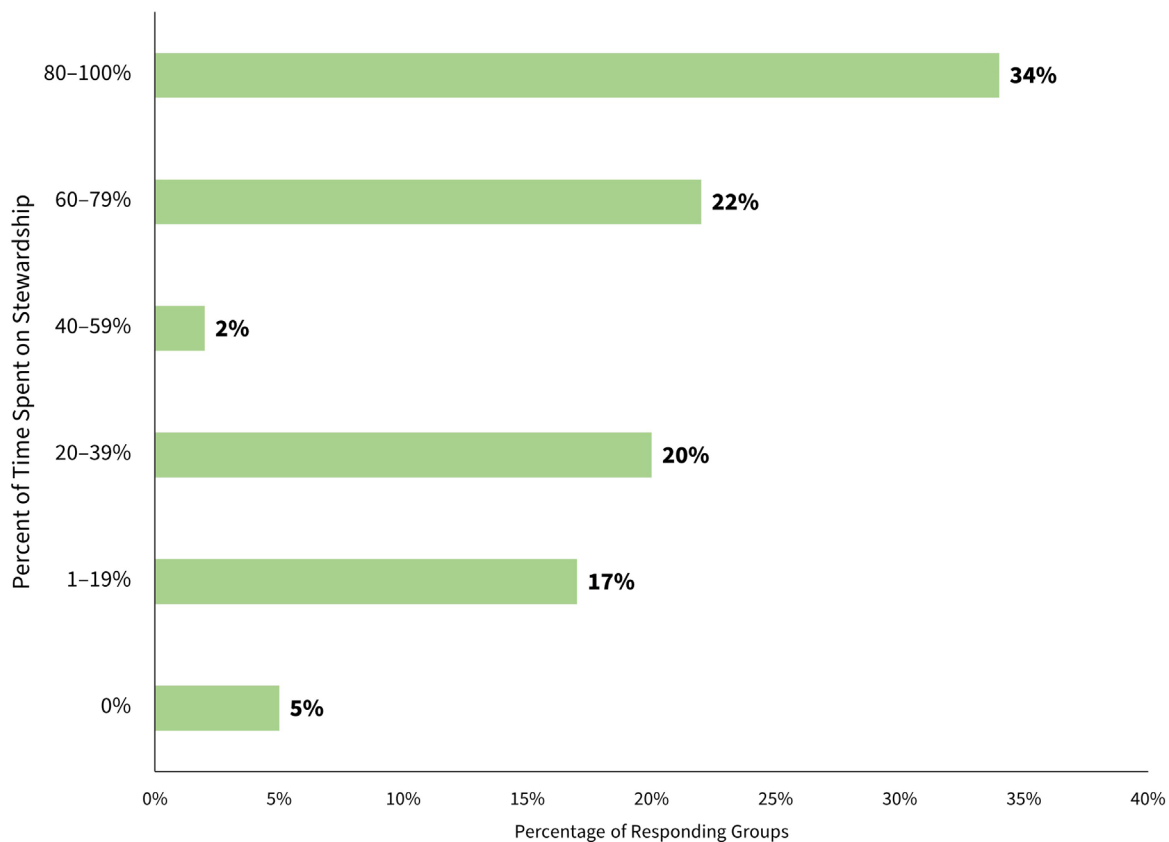


Figure 9.—Proportion of time groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=41) spent on stewardship, presented as percentage of all responding groups.

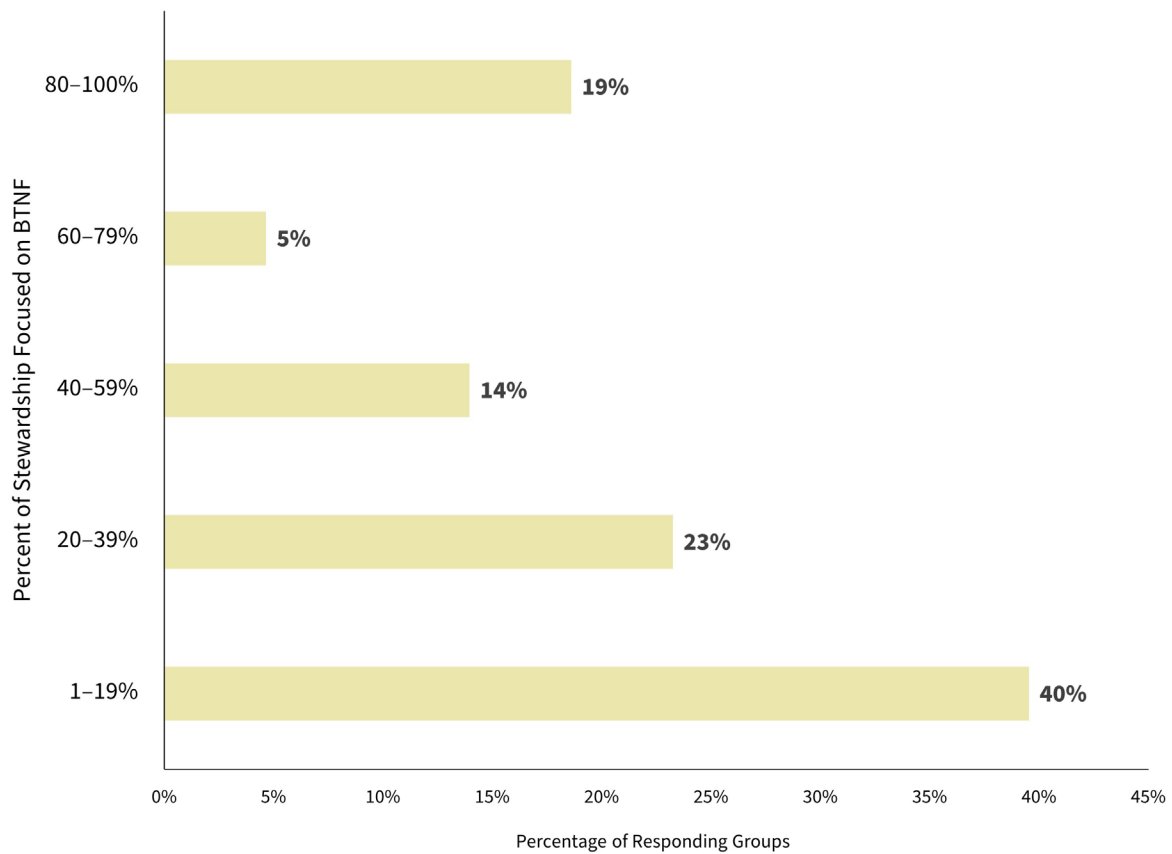


Figure 10.—Proportion of time groups who responded to the Bridger-Teton National Forest (BTNF) STEW-MAP survey (n=43) spent on stewardship activities at the BTNF, presented as percentage of all responding groups (n=43).



Volunteers doing trail work at Cache Creek Trail on the Bridger-Teton National Forest near Jackson, Wyoming on August 26, 2012. USDA Forest Service photo.

Site Type

What sites do groups work on?

Each organization was asked to select all site types they work on and identify the primary site type of all those selected. Results are presented as a percentage of all responding groups (Fig. 11).

Key findings:

- Groups identified working on an average of five sites.
- One fifth (21 percent) of groups engage with 10 or more site types.
- “Other” responses include dog friendly areas, wildland-urban interface, recreational conflicts with ecosystem values and wildlife habitat, national parks, and the Wyoming Range Legacy Act.

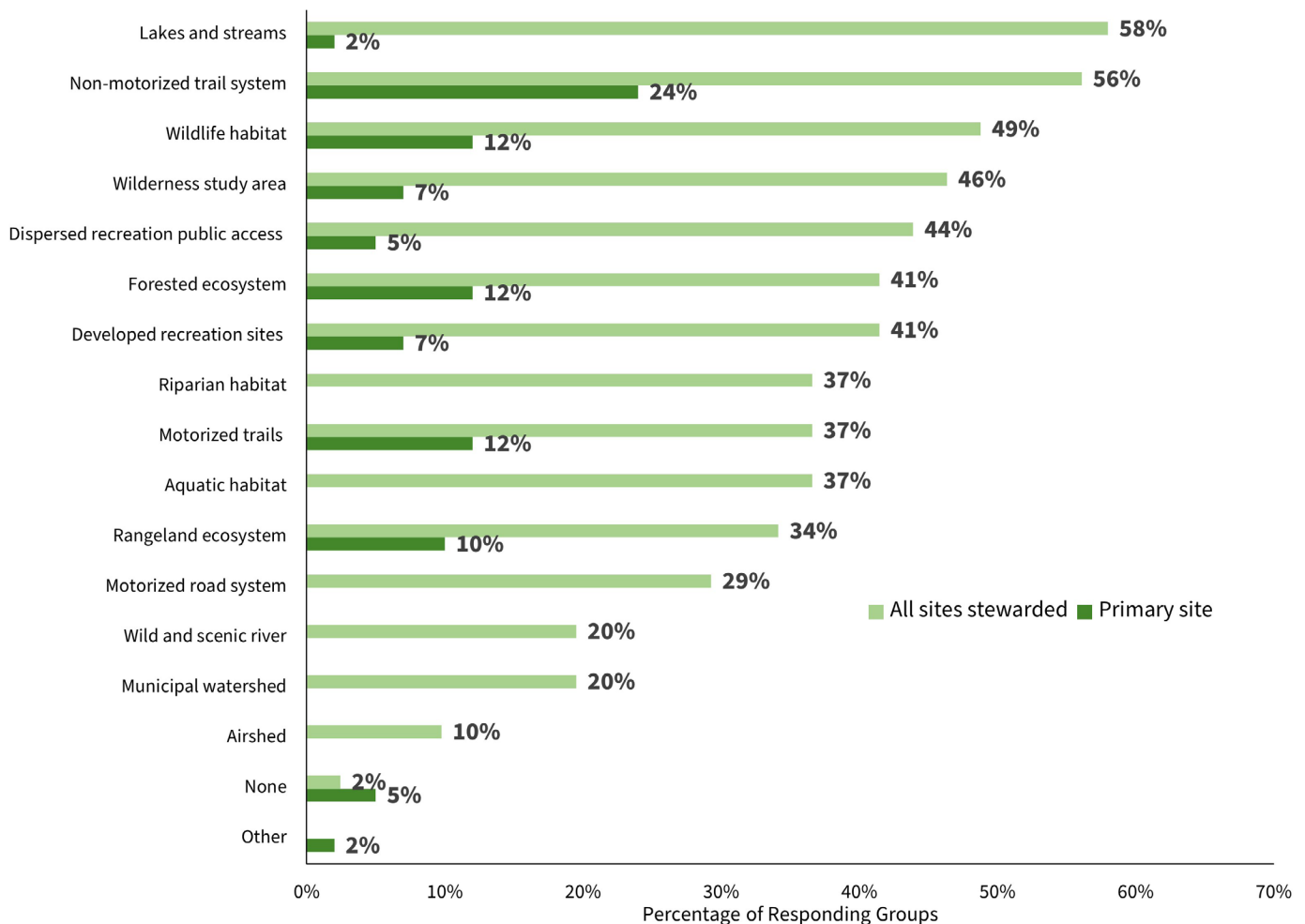


Figure 11.—Site type groups who responded to the Bridger-Teton National Forest STEW-MAP work at (n=43), presented as a percentage of all responding groups, and primary site type where each group works.

Services

What types of services do groups provide?

Respondents were asked to identify the types of services their organization provides (Fig. 12). Results are presented as a percentage of all responding groups, categorized into civic, government, and other sectors. The civic sector includes registered nonprofit organizations and community groups; government includes local, county, state, and federal agencies; and other includes remaining groups. Responding groups could select more than one option, so the total is greater than 100 percent.

Key findings:

- Education and trainings are provided by 77 percent of groups, the most common service for civic and government groups.
- Other responses for services provided include recreational activities, conservation transactions expertise, and cost share opportunities to benefit the grizzly bear.

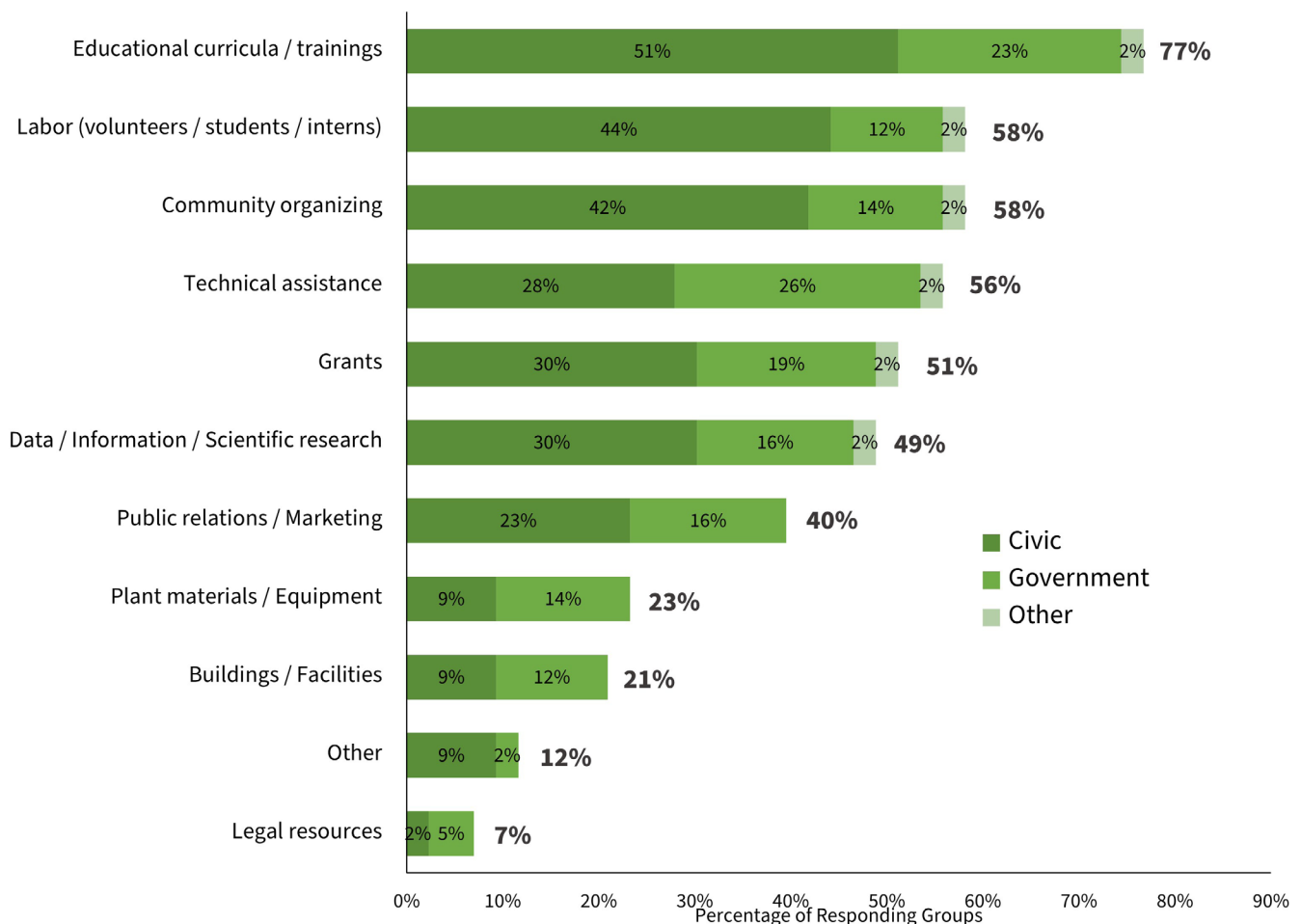


Figure 12.—Services provided by stewardship groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=43), presented as percentage of all responding groups, color-coded by sector.

Information Sharing

How do groups share information with the public?

Organizations were asked to identify the different ways in which they share information with the public (Fig. 13). General categories of information sharing include through broadcast media, relaying information in person, and sharing information through either digital or printed media.

Key findings:

- Local media was the most common category for information sharing overall, followed by social media.
- Other responses include “trail maps” and using local government facilities.

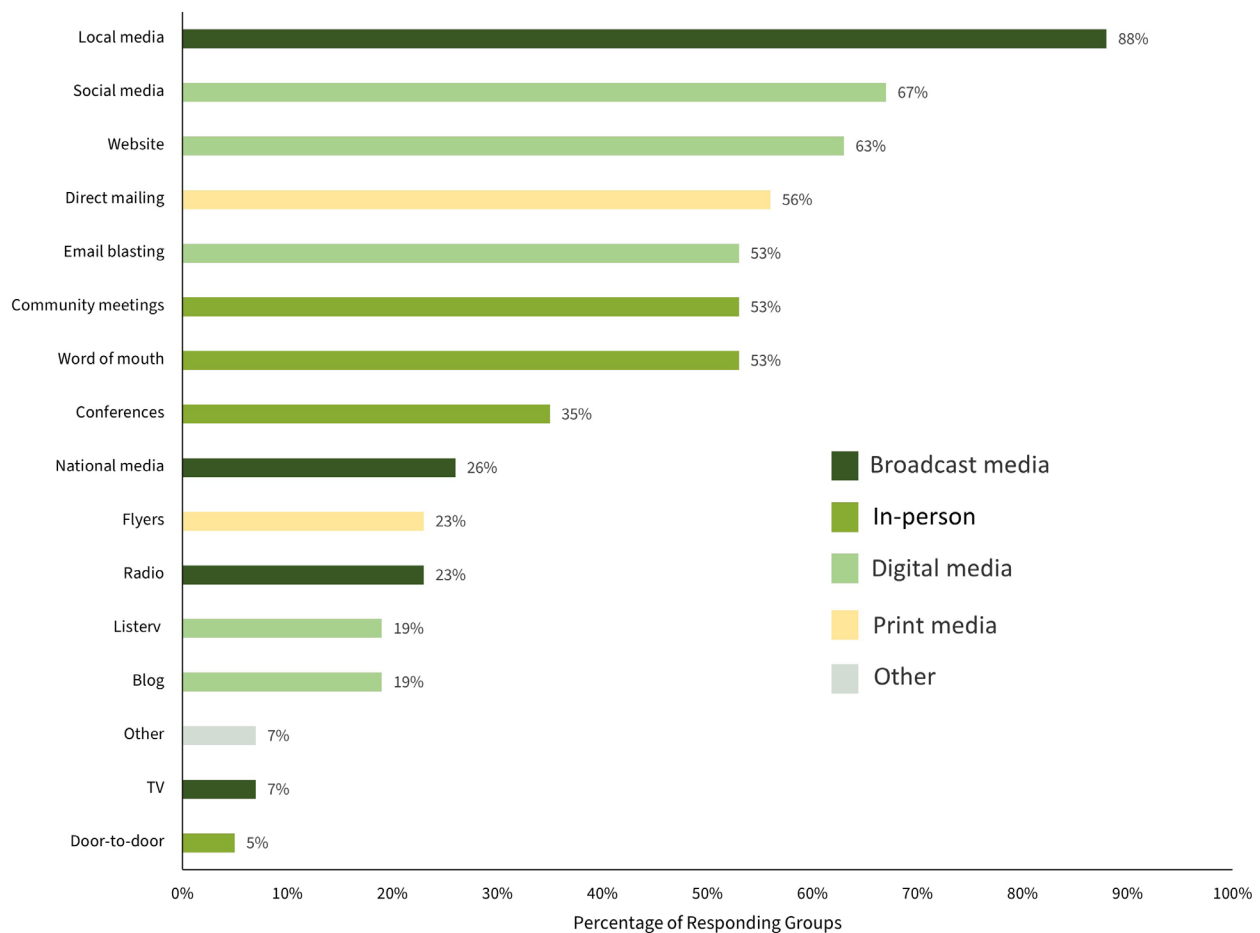


Figure 13.—Ways groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=43) share information with the public, shown by category of information sharing, as a percentage of all responding groups.

Influential Events

What events have impacted groups' activities?

Groups were asked to identify the degree of influence that external events have had on organizational operations and rank them from 1 (not influential) to 7 (highly influential). All events had some level of influence on groups' activities. The average influence ranged from largest to smallest for the following events:

- neighborhood development or rezoning (5.50)
- COVID-19 (5.31)
- climate change (4.90)
- changes in elected officials (4.84)
- financial crises (4.77)
- extreme weather (4.56)
- social movements (4.52)

Neighborhood zoning was the only event where all respondents marked 4 or higher, and the majority of respondents (94.9 percent) selected 4 or higher for COVID-19. Average values were similar for civic and government organizations, but civic groups were more influenced by social movements (Mann Whitney U test, $W = 165$, $p = 0.04219$) and government agencies were more influenced by extreme weather ($W = 77.5$, $p = 0.004076$).



Volunteers collecting data along transects on the Jackson Ranger District, Bridger-Teton National Forest, Wyoming. USDA Forest Service photo.

Improvement of Outcomes

How has your stewardship group contributed to social and environmental outcomes in the community?

Groups were asked to identify the degree of influence they have on a series of social and environmental factors and rank them from 1 (not influential) to 7 (highly influential). All groups reported having at least some level of influence on social and environmental outcomes, with self-reported influences being higher for all social factors than environmental factors. The average influence ranged from largest to smallest for the following factors:

- community participation (5.32)
- influence on policies and programs (5.30)
- trust between neighbors (4.98)
- trust in management agencies (4.98)
- urban sustainability (4.77)
- plants and habitat quality (4.55)
- land protection (4.5)
- air and water quality (3.98, below the midpoint)

The range of responses was tightest for community participation and influence on policies and programs, showing agreement among groups. The difference in group responses was highest for air and water quality, likely because not all groups focus on these aspects of the environment (see Fig. 11). Average values for social outcomes were similar for civic and government organizations, but government agencies reported higher values for plants and habitat quality (Mann Whitney U test, $W = 81.5$, $p = 0.0491$), air and water quality ($W = 63.5$, $p = 0.0175$), and urban sustainability ($W = 99$, $p = 0.04931$).



Forest Service staff and partners provide information to participants during the 2018 National Free Fishing Day on the Bridger-Teton National Forest, Wyoming. USDA Forest Service photo.

Land Ownership

Who manages the primary properties where groups work?

Organizations were asked to identify who manages the primary property where their group works (Fig. 14). Categories include government, both public and private lands, nonprofit, and private only, with government presented by scale: city/local, county, state, and federal.

Key findings:

- The majority (79 percent) of responding groups work primarily on lands managed by federal, state, local, or some combination of government ownership.

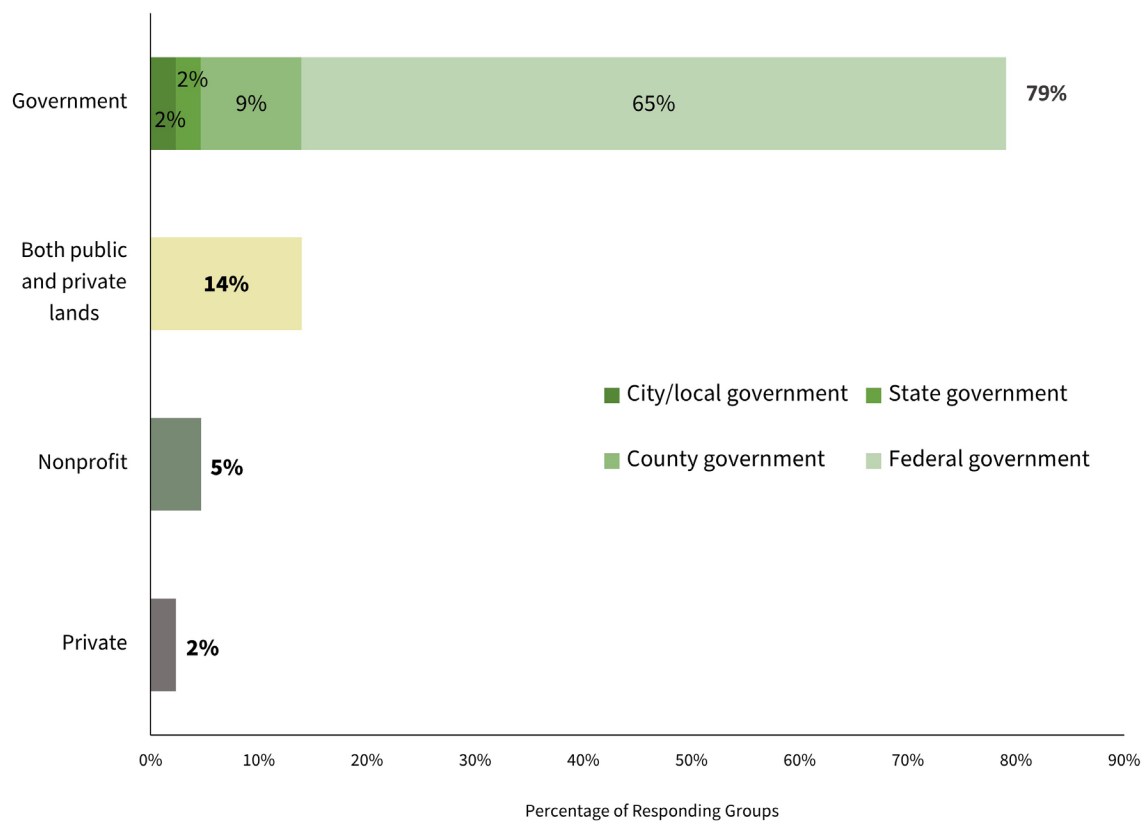


Figure 14.—Primary land ownership of areas where groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=43) engage in stewardship, shown by category.

Staff and Volunteers

How many staff, members, and volunteers do groups have? What is groups' labor capacity?

Respondents were asked to identify the number of staff (full and part time), members, and volunteers within their group (Table 2). Results are displayed by sector and include government (local, county, state, federal), civic (registered nonprofit organizations and community groups), and public-private partnerships. The mean values highlight the average group staff and volunteers, while range shows the smallest and largest group staff and volunteer numbers, and sum highlights the total staff and volunteer numbers for all responding groups.

Key findings:

- A total of 1,350 full and part time staff manage operations for all the stewardship groups who work on and around the BTNF.
- Some groups operate with no staff or volunteers, while others have hundreds of staff and thousands of volunteers.
- Groups receive assistance from a total of 300,742 members and 176,506 volunteers.
- Volunteer hours contribute an average of \$744,660-valued labor per year (valued at \$15/hour).

Table 2.—Number of staff, members, volunteers for groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=43)

Group / metric	Full time staff	Part time staff	Members	Volunteers	Volunteer hours per month
Government					
Mean	14	4	46	52	133
Range	1-80	0-20	0-552	0-500	0-1,430
Total	178	50	598	671	1,728
Civic					
Mean	23	15	10,348	6,063	36,553
Range	1-233	0-350	0-157,190	0-150,000	0-905,940
Total	681	441	300,079	175,823	1,060,041
Public-private partnerships (n=1)					
Mean	0	0	65	12	17
Range	0	0	65	12	17
Total	0	0	65	12	17
Overall total	859	491	300,742	176,506	1,061,785

Budget

What are groups' estimated annual budgets?

Groups were asked to self-estimate their annual budget (Fig. 15). Results are reported in binned categories by sector and include civil groups, government, and other. The civic sector includes registered nonprofit organizations and community groups; government includes local, county, state, and federal agencies, and other includes remaining groups.

Key findings:

- The median budget is \$5.74 million for civic groups and \$2.45 million for government groups.
- The two largest budgets are \$54 million and \$40 million, both held by civic organizations with a national scope.
- Two-thirds of the groups had annual incomes of \$200,000 or greater.

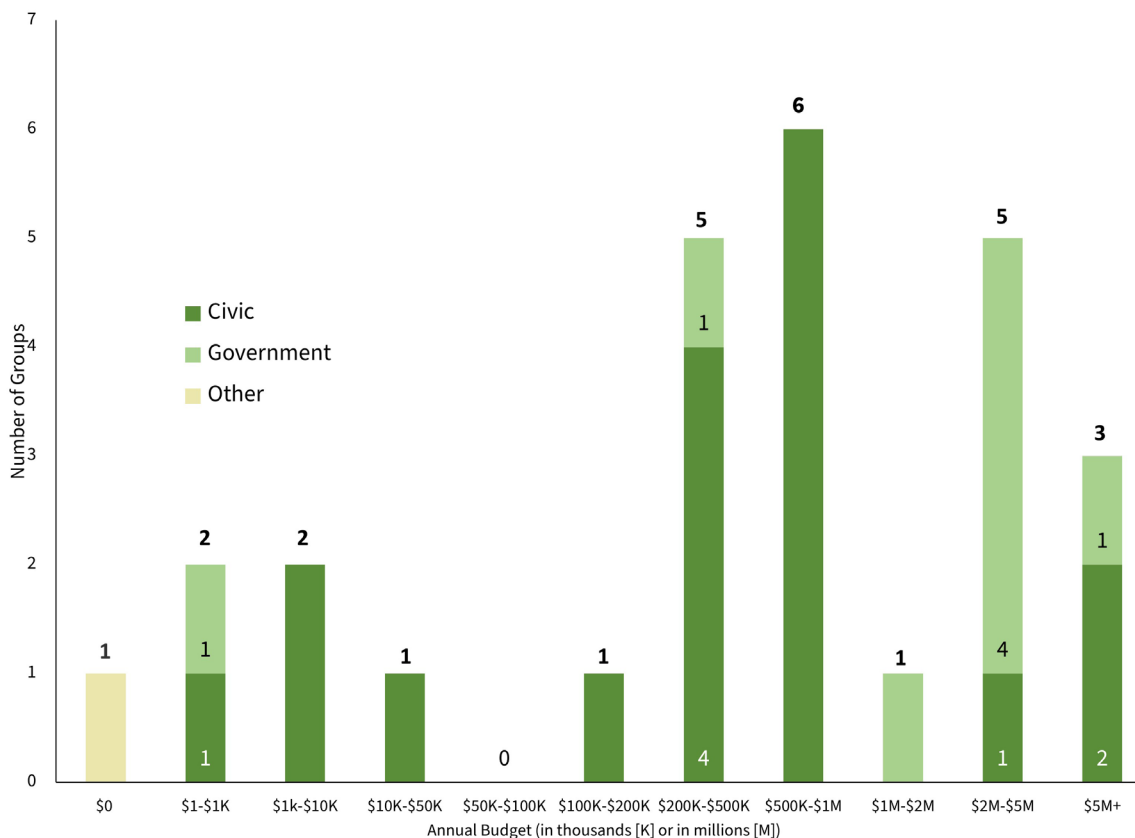


Figure 15.—Self-estimated annual budgets of groups who responded to the Bridger-Teton National Forest STEW-MAP survey (n=27), by sector. Annual budget is reported in binned categories in thousands (K) or in millions (M).

Funding Sources

Where are funds coming from?

Sources of funding for government and civic groups vary widely. A breakdown of total budget by source is provided for government (Fig. 16a) and civic (Fig. 16b) groups.

Key findings:

- Overall, civic groups received funding from a wide range of sources, led by individual giving and local foundations.
- Government agencies relied primarily on government support, followed by fees for services.

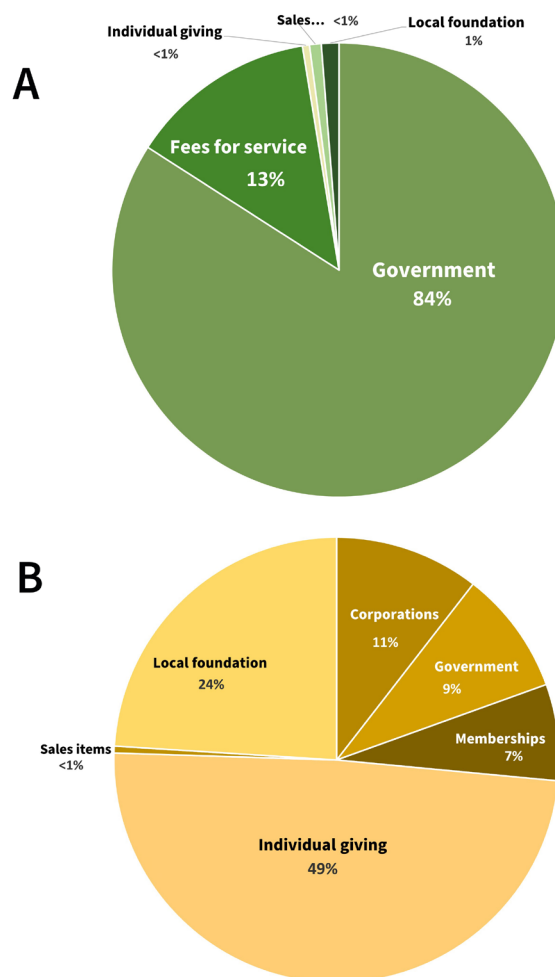


Figure 16.—Distribution of total budget by source for (A) government organizations (n=12) and (B) civic organizations (n=29) who responded to the Bridger-Teton National Forest STEW-MAP survey.

CONCLUSIONS

Just as biophysical resources such as tree canopy, forest stands, and land cover are tracked and mapped in order to manage them more effectively, STEW-MAP provides a systematic approach for tracking and mapping partnerships. In the Bridger-Teton National Forest landscape, results show that partners provide not only labor in support of land management and restoration, but also contain critical local knowledge about ecosystems and places. These local civic groups are helping to foster social trust, strengthen local social cohesion, and enhance social-ecological resilience. Because these groups work both within and beyond the footprint of the BTNF, they are crucial to partner with to develop landscape-level collaborative management approaches. Partner groups adopt areas that range in geographic scale. While most work at larger scales, one local climbing group adopted a single crag. Partnerships in this region are dynamic, changing, and networked. New civic groups and coalitions are forming over time as new issues arise and as populations shift. Social networks shape the flow of information, resources, and collaborative ties, and it is important to identify both the most central actors in the network as well as groups that are more peripheral, as these groups can be pathways to widening and diversifying partnerships. Government-to-civic linkages remain critical in this landscape, and there are benefits to caring for these partnerships over time.

New stewardship groups work with the BTNF each year, so it is important to track and update new data. In this way, program managers can understand where and why groups are shifting in geographic scope, capacity, interest, and engagement with the landscape. The BTNF and STEW-MAP collaborative team is piloting a new approach called STEW-MAP Live to help monitor partnerships dynamically over time. This effort could leverage existing public data about nonprofit groups, such as Internal Revenue Service form 990 filings. STEW-MAP Live data could be used to better understand seasonal activities and to provide annual reporting metrics. In addition, this ongoing data collection can be paired with a full STEW-MAP survey on a regular basis (e.g., 5 years, 10 years) to understand how networks and territories of all groups change over time. Based on this successful Bridger-Teton National Forest pilot, there is potential to replicate this approach with other national forests, national parks, and other urban and rural areas to better understand the partnership landscape and potential. This type of data is essential to our future management and can be used across a range of mission areas and partnership-based positions within the agency.

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