Assessment Toward Evolution
of the Plant Conservation Alliance's National Framework

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Available at www.bgci.org/usa/PCAProgress

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Executive summary

The Plant Conservation Alliance (PCA) is a unique consortium of organizations and individuals working to advance plant conservation in the United States. The PCA is represented by ten federal government Member agencies and over 285 non-federal Cooperators. In 1995 the PCA developed a National Framework for Progress in Plant Conservation (National Framework) to provide a coordinated approach to plant conservation in the United States. The National Framework consists of six broad strategies, and outlines 30 supporting goals and suggested actions to guide efforts for implementing a national plant conservation strategy at national, regional, and local levels.

In 2011, Botanic Gardens Conservation International U.S. (BGCI US) worked with the PCA to assess plant conservation activities across the United States as they relate to the National Framework. For this, an online survey was developed that allowed individuals involved in any aspect of plant conservation in the United States, whether working at government agencies (federal, state, and local), academic institutions, or private organizations (including botanic gardens, conservation organizations, self-employed or other businesses involved in conservation) to help demonstrate the scale and scope of plant conservation work taking place around the country. Ultimately, the survey was designed to help identify how well the National Framework and other PCA resources incorporate and support current plant conservation activities, and to guide future updates of the National Framework to ensure it remains relevant, continues to catalyze action, and motivates ongoing plant conservation progress in the future.

The survey had an overwhelmingly positive response during the 8 weeks it was open, with nearly 400 respondents providing input on their plant conservation activities and suggestions for updates to the National Framework (see section 2). Results presented in section 3 (Figure 5) reveal different capacities to achieve the Strategies and Goals of the National Framework within and between public and private sectors. Goals that had the least capacity included communication through the media (Goal B5), documenting indigenous knowledge and protecting collection sites (Goal E3) and on the topic of data sharing (Goal F.3). Respondents also provided an array of creative approaches to planning for and conducting plant conservation activities that support the National Framework – these examples are available in a separate Appendix (B).

While respondents generally felt that the National Framework's strategies and goals were appropriate and still useful for guiding plant conservation activities in the United States, they also made many recommendations to update the Rationale and text surrounding the strategies and goals. As explained in section 4, the two most often cited topics that respondents indicated need to be incorporated into an update of the National Framework included climate change and advances in technology for data storage, sharing, and communication. A separate Appendix (A) contains suggested edits to update National Framework text in alignment with the comments made through this survey.

Finally, the survey provided insight into the level of awareness and use of PCA and its resources. While respondents were generally aware of PCA, they were not aware of many of PCA's resources, including the National Framework. Because of this, the survey helped raise awareness about these topics with all respondents, and many indicated an interest in being more engaged in PCA, and in using the National Framework, in the future. This presents a significant opportunity to engage current PCA members and to add new members. In particular, results showed that respondents would like to be able to engage with PCA more by attending PCA meetings via conference call. A more challenging result to tackle is the lack of engagement from the academic community with PCA, particularly on actions to implement Strategy D (research). New approaches may be necessary to fill this important gap in the PCA network.

1. Introduction

The Plant Conservation Alliance (PCA) adopted its National Framework for Progress in 1995. This innovative approach aimed to support efficient and effective collaboration to conserve native plants in the United States and, as an extension, to conserve the ecosystem services they provide and the innumerable insect, bird, mammal and fish species that depend upon them for survival. Since then, the PCA's ten federal members and over 285 non-federal cooperating organizations (including botanic gardens, universities, and other plant conservation organizations) have worked toward the thirty common goals outlined by the Framework to "protect native plants by ensuring that native plant populations and their communities are maintained, enhanced, and restored".

The National Framework has remained a static document since its development more than 15 years ago, and until now no formal evaluation of its use and success has been carried out. In that time, the resources and challenges surrounding plant conservation have evolved, and the National Framework needs to be flexible enough to be useful in this changing environment. To address these needs, this project was designed to: 1) document the collective actions of the U.S. plant conservation community in order to assess progress toward all 30 goals of the National Framework (and as an extension, the GSPC); 2) to determine if the National Framework was still appropriate and relevant to current plant conservation needs and, if not, to make recommendations to update; 3) to produce and distribute a report summarizing results; and 4) to help raise awareness about PCA and the National Framework, and improve their ability to support plant conservation in the U.S.

To assess plant conservation activities across the United States, a 20-question electronic survey was developed by BGCI US (with input from PCA members) allowing individuals involved in any aspect of plant conservation in the United States, whether working at government agencies (federal, state, and local), academic institutions, or private organizations (including botanic gardens, conservation organizations, self-employed or other businesses involved in conservation) to easily report their plant conservation contributions to the National Framework. For the purposes of this project, plant conservation was broadly defined as any activity that helps protect native plants by ensuring that native plant populations and their communities are maintained, enhanced, and restored. This includes research, monitoring, restoration, management, as well as education and outreach.

Survey questions covered the following four topics:
1. Respondent background, awareness and use of PCA and the National Framework
2. Progress toward National Framework Goals
3. Suggested changes to National Framework goals
4. Awareness and use of PCA resources

The survey was made publicly available for 8 weeks in spring 2011. It was posted on all PCA listservs and the PCA Facebook page, and distributed to all BGCI US members, plant conservation section members of the American Public Gardens Association, and members of the Society for Ecological Restoration (via their monthly newsletter). We also asked users to forward the link to anyone they knew who might be interested in taking it. Upon survey completion, responses were compiled by BGCI US. The survey was anonymous, with results reported by sector (government, nonprofit, For Profit or academic). Results are presented here to demonstrate the contributions of each sector while helping ensure the National Framework remains relevant, continues to catalyze action, and motivates ongoing plant conservation progress in the future. In summarizing survey responses, making recommendations, and providing examples of implementation, this report is intended to be useful to PCA, its members, and the wider U.S. plant conservation community.

2. Survey respondent background

2a. Respondents by geography and sector

In all, 398 individuals took this survey, with 80% completing the entire survey. Respondents represented forty states and the District of Columbia: ten states were not represented (Alabama, Arkansas, Connecticut, Kansas, Kentucky, Louisiana, Maine, North Dakota, New Jersey, and Pennsylvania).

All respondents were required to select an employer category from one of seven categories (Table 1). For simplicity in presenting results, each selected employer category was assigned a broader sector category, as in Table 1. More than half of all respondents (65%) were employed in the government sector (Figure 1), with federal government respondents making up the largest group (51%). The Non Profit sector represented 22%, academia only 5%, and For Profit respondents made up the remaining 8% of respondents.

Table 1: Respondent employer categories, assigned sectors, and the number of respondents.

Employer category	Sector	# of respondents
Federal government	Government	205
State government	Government	31
Local government	Government	23
Botanic gardens/arboretum	Non Profit	28
Non-profit organization	Non Profit	60
Academic institution	Academic	20
Self-employed/consultant	For profit	20
For-profit business	For profit	11

Figure 1: Survey respondents by sector (n=398).
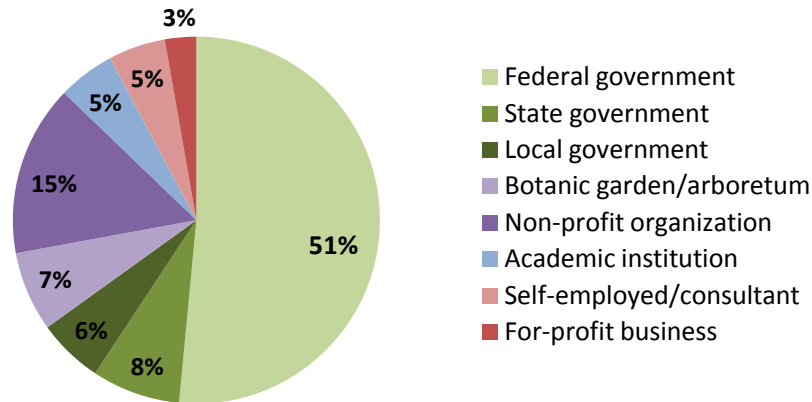
2b. Primary job activity of respondents

A majority of respondents (62%) carry out land management and/or species conservation activities as their primary job activity. Other activities including research, education/outreach, administration and policy development were much less often reported as primary activities of respondents (between 7% and 14%). See Table 2 for more information.
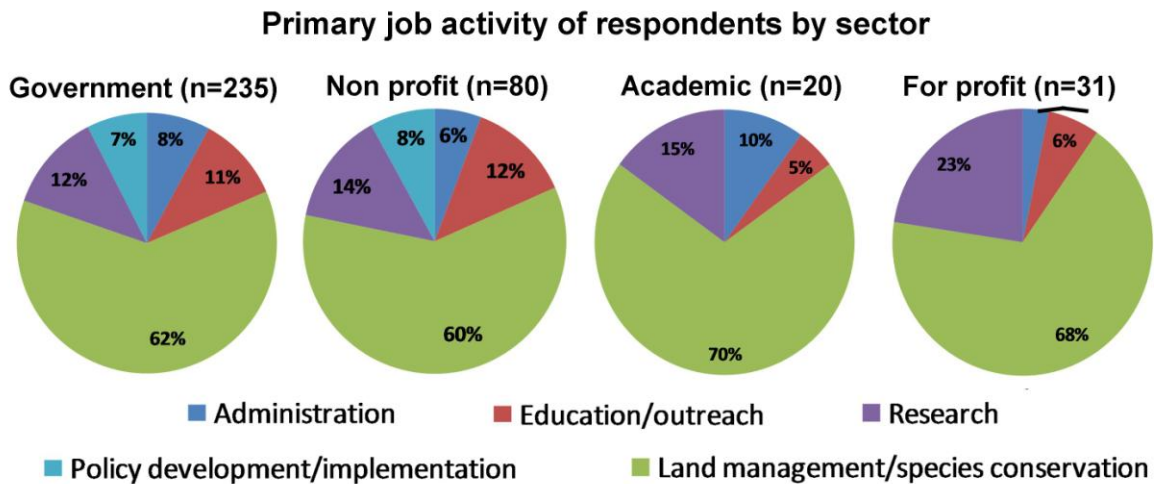
Table 2: Primary job activity of respondents.

Primary activity	% of respondents
Land management/species conservation	62%
Research	14%
Education/outreach	10%
Administration	7%
Policy development/implementation	7%

2c. Primary activity by sector

Regardless of sector, land management/species conservation was the primary activity of a majority of respondents (Figure 2). This was also true of the academic sector, which employs many individuals engaged primarily in research and education. This suggests that academic staff primarily involved in research or education either did not receive the invitation to participate in the survey, or they received the invitation but decided not to participate. Both scenarios are likely true, as very few academicians are involved with PCA, and very few universities have PCA membership.

Figure 2: Primary job activities by sector.

Primary job activity of respondents by sector

2d. Additional job-related activities

In addition to primary job activities, respondents were asked what other activities they carried out as part of their job (Figure 3). More than 60% of respondents from each sector identified education/outreach as a secondary job activity, followed by research (non-profit and academic) and administration (government).

Figure 3: Other job-related activities by sector

Percent of respondents
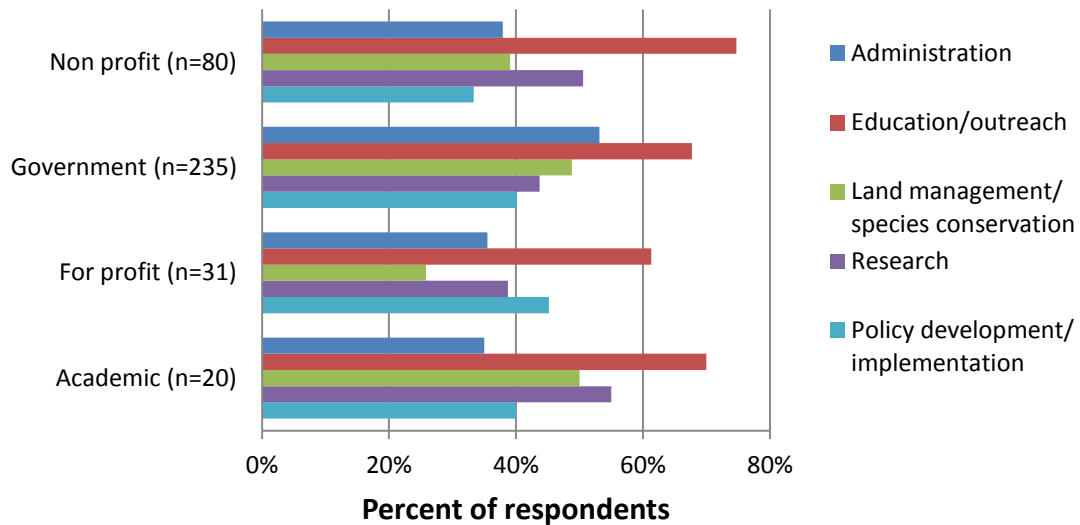
2e. Limitations in interpreting survey responses
With 398 respondents, survey results represent a subset of the population of individuals working on native plant conservation (and therefore contribute to the National Framework) in the U.S. For reference, a survey carried out by BGCI US and other PCA partners on the subject of botanical capacity in 2009 registered more than 1,500 respondents. The individuals and sectors that did not participate in this National Framework survey could alter the results and conclusion presented below. This is particularly true for respondents from the academic sector, which was greatly underrepresented relative to the 2009 botanical capacity survey.

3. National Framework Progress Assessment

3a. Awareness of National Framework
Survey respondents as a whole were not aware of the National Framework prior to taking this survey (Figure 4). The sector with the lowest percent of respondents reporting an awareness of the National Framework included the For Profit sector (12% of respondents aware) and Government sector (16% of respondents aware). The greatest rate of awareness was in the Academic sector (44%) and Non Profit sector (25%). The high rate of awareness in the Academic sector is likely a result of the fact that few individuals responded from this sector (only 16 people answered this question) and those that did respond are carrying out job activities closely related to PCA priorities.

Figure 4: Awareness about the National Framework prior to survey.
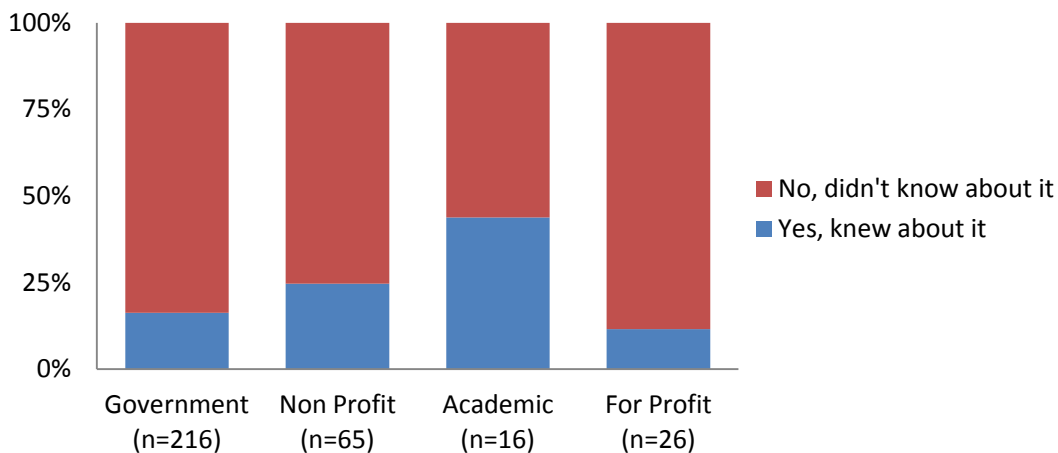
3b. Progress toward the National Framework

All respondents were asked how related they believed their activities over the past 5 years have been to each of the 30 goals of the National Framework (choosing on a scale of 1 to 4, with 1=goal very related to work and 4=goal not related to work). The capacity of each sector to support each goal was determined by adding: 1) the number of respondents selecting 1; 2) the number of respondents selecting 2 multiplied by 0.5; and 3) the number of respondents selecting 3 multiplied by 0.25. Respondents selecting 4 (indicating the goal was not related to their work) were not included in this tally. Results are depicted in Figure 5, which reveals a significant range in capacity to support each goal. Greatest capacity was demonstrated for goal A.3 (sharing expertise), followed closely by goal C.8 (providing training). The least capacity was found for goal E.3 (documenting indigenous knowledge and safeguarding collecting sites), as well as B.5 (encouraging creative use of the media) and F.3 (information system coordination and development).

Results also demonstrate the capacity provided by government staff relative to the other sectors. In all cases government staff provides the greatest proportion of capacity for all goals. This is not surprising given that 3 times more respondents were from the government sector than the other three sectors. What is not clear is whether this reflects true capacity in the field, or is just an artifact of greater awareness about PCA and use of the routes of communication used to distribute the survey.

Figure 5: Relative capacity of each sector to support National Framework goals, based on survey responses.

Strategy A (CONSERVATION) Goals are designed to bring people and organizations together to share resources and talents to effectively conserve the nation's native plants.
A.1 Establish common goals and priorities.
A.2 Promote effective and innovative partnerships that encompass diverse perspectives.
A.3 Share expertise among organizations and individuals.
A.4 Develop networking tools to facilitate communication and coordination.
A.5 Utilize innovative approaches and nontraditional sources to increase funding.
A.6 Promote consistent policies for plant conservation.

Strategy B (EDUCATION) Goals are designed to provide opportunities for people to enjoy, understand, and value native plants and plant communities.
B.1 Educate the public, policymakers, and land managers about native plant conservation.
B.2 Provide opportunities for the public to participate in hands-on native plant conservation activities.
B.3 Broaden participation of national and local educational, conservation, and professional organizations in plant conservation.
B.4 Encourage plant appreciation and enjoyment activities.
B.5 Encourage creative uses of the media.

Strategy C (RESTORATION) Goals are designed to ensure conservation and restoration of native plants and natural plant communities through ecosystem-based management.
C.1 Identify and act on extremely urgent plant conservation needs.
C.2 Promote coordinated and standardized approaches to classification, inventory, and assessment.
C.3 Encourage coordinated plant conservation planning and management.
C.4 Seek protection for nationally and regionally significant native plant habitat.
C.5 Promote aggressive management practices to prevent, control, and eradicate non-indigenous species that threaten native plant populations.
C.6 Develop and implement guidelines and management techniques for collecting, propagating, and utilizing native plants in ecosystem restoration.
C.7 Provide for *ex situ* conservation of the highest risk species.
C.8 Provide training opportunities for plant conservationists.

Strategy D (RESEARCH) Goals are designed to encourage the scientific community to conduct research and technology development in support of native plant conservation.
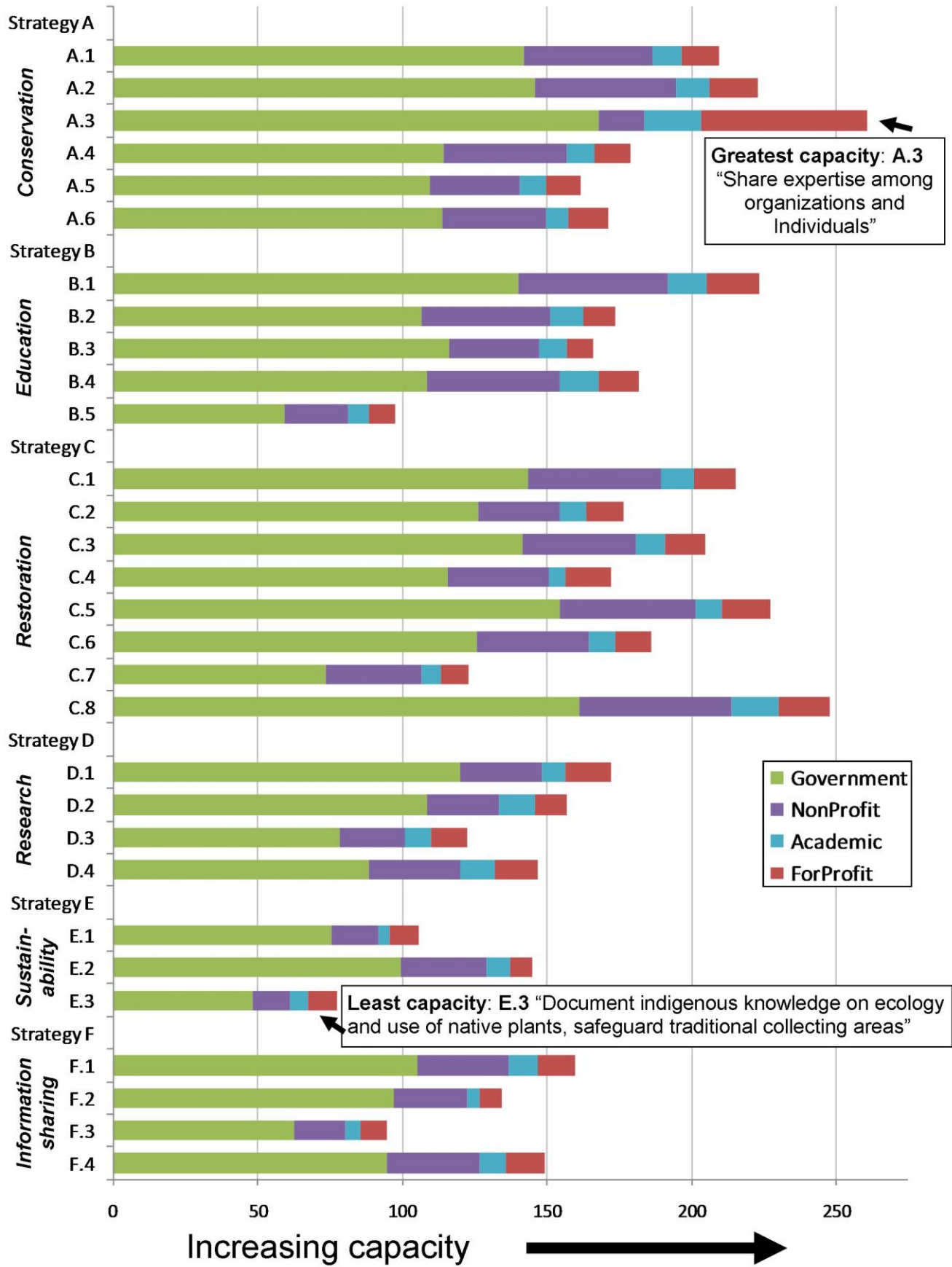D.1 Using adaptive management principles, develop, and implement coordinated monitoring protocols and programs.
D.2 Identify and prioritize basic and applied research needs.
D.3 Encourage research institutions to staff botanists and plant ecologists and maintain adequate herbaria, oriented toward regional native floras.
D4. Encourage the scientific community to participate in plant conservation and associated education.

Strategy E (SUSTAINABILITY) Goals are designed to encourage practices that support appropriate and sustainable uses of beneficial plants.
E.1 Identify and monitor the public demand for and impact on botanical resources.
E.2 Promote sustainable and conscientious use of native plants.
E.3 Document the indigenous people's knowledge about the ecology and uses of native plants and work with indigenous people to safeguard traditional collecting areas for native plants.

Strategy F (INFORMATION SHARING) Goals are designed to promote the development and use of coordinated databases and information-sharing to support native plant conservation.
F.1 Identify and prioritize data needs for native plant conservation.
F.2 Ensure compatibility and economy of existing plant conservation databases.
F.3 Promote coordinated development and operation of future plant conservation information systems.
F.4 Promote broad use and open exchange (as appropriate) of plant conservation information.

Greatest capacity: A.3 "Share expertise among organizations and Individuals"

Least capacity: E.3 "Document indigenous knowledge on ecology and use of native plants, safeguard traditional collecting areas"

Legend:
- Government
- NonProfit
- Academic
- ForProfit

Strategy A — Conservation: A.1, A.2, A.3, A.4, A.5, A.6
Strategy B — Education: B.1, B.2, B.3, B.4, B.5
Strategy C — Restoration: C.1, C.2, C.3, C.4, C.5, C.6, C.7, C.8
Strategy D — Research: D.1, D.2, D.3, D.4
Strategy E — Sustainability: E.1, E.2, E.3
Strategy F — Information sharing: F.1, F.2, F.3, F.4

Increasing capacity →

3c. Sector-specific focus on goals

The following five graphs demonstrate how related the work of respondents in each sector is to National Framework goals (determined by the average value of responses for each sector to each goal, excluding all respondents selecting 4 – 'goal not at all related to my work'). These graphs can be interpreted to identify the sector that, based on respondent answers, is most- and least -focused on each target.

For **Strategy A** (including six goals related to conservation), the work of respondents from all sectors is most related to goal A.3 (sharing expertise – see Figure 6). However, the work of each sector is differently related to each goal. While Figure 5 shows that the government sector provides the greatest overall capacity for all goals, Figure 6 shows that the work of respondents varies by sector. For example, the work of the Non Profit sector is on the whole more related to goal A.4 (facilitating coordination and communication) than the three other sectors, while work of the For Profit sector is more related to goal A.6 (consistent policies for plant conservation) than the three other sectors.

Figure 6: Relative focus of each sector on the six goals associated with Strategy A (CONSERVATION). The average value for all sectors is shown as a grey line for each goal.
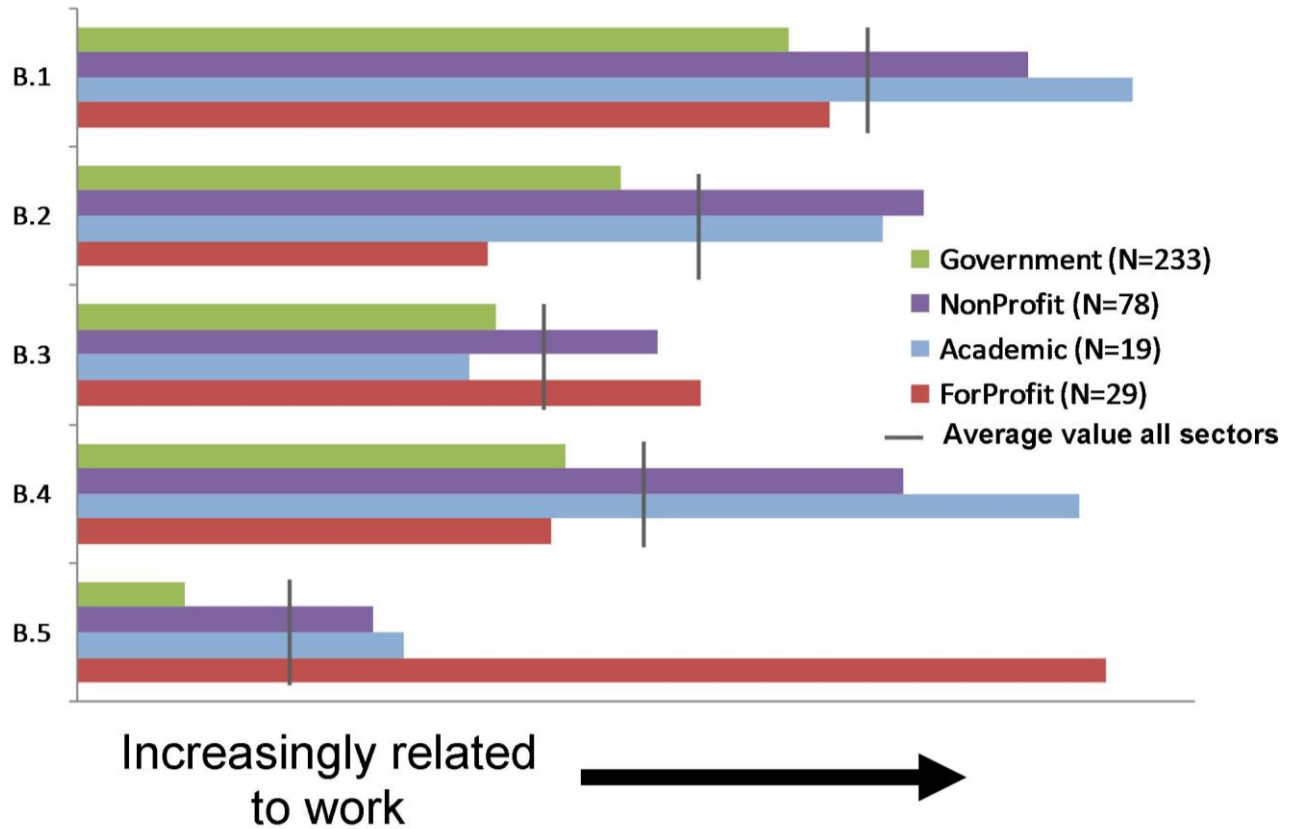

Increasingly related to work →
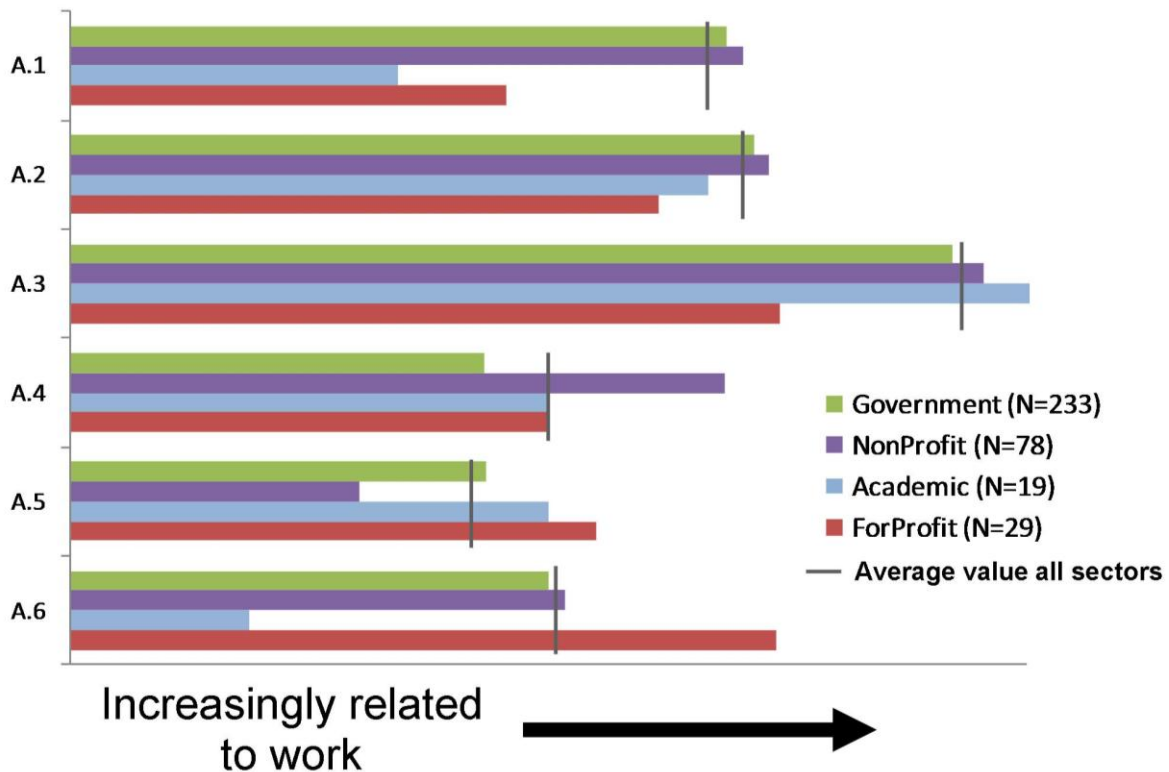
Strategy A goals are designed to bring people and organizations together to share resources and talents to effectively conserve the nation's native plants.

Strategy A Goals:
A.1 Establish common goals and priorities.
A.2 Promote effective and innovative partnerships that encompass diverse perspectives.
A.3 Share expertise among organizations and individuals.
A.4 Develop networking tools to facilitate communication and coordination.
A.5 Utilize innovative approaches and nontraditional sources to increase funding.
A.6 Promote consistent policies for plant conservation.

For **Strategy B** (including five goals related to education), the work of respondents from all sectors is most related to goal B.1 (sharing information with public, policy makers, land managers – see Figure 7). However, differences between sectors was great, particularly on B.5 (creative use of the media), where the overall work of respondents from the government sector is much less related than the work of the For Profit sector. The work of respondents from academic and Non Profit sectors was also more related to B.4 (plant appreciation and enjoyment activities) than the work of respondents from government or For Profit sectors.

Figure 7: Relative focus of each sector on the five goals associated with Strategy B (EDUCATION). The average value for all sectors is shown as a grey line for each goal.

The work of respondents from all sectors on the eight goals related to **Strategy C** (restoration) is most related to goal C.5 (aggressive management of invasive species – see Figure 8). The work of respondents from the Non Profit sector is more related to goal C.7 (ex situ conservation) than the three other sectors, while work of the For Profit sector is more related to goal C.8 (plant conservation training) than the three other sectors.

Figure 8: Relative focus of each sector on the eight goals associated with Strategy C (RESTORATION). The average value for all sectors is shown as a grey line for each goal.
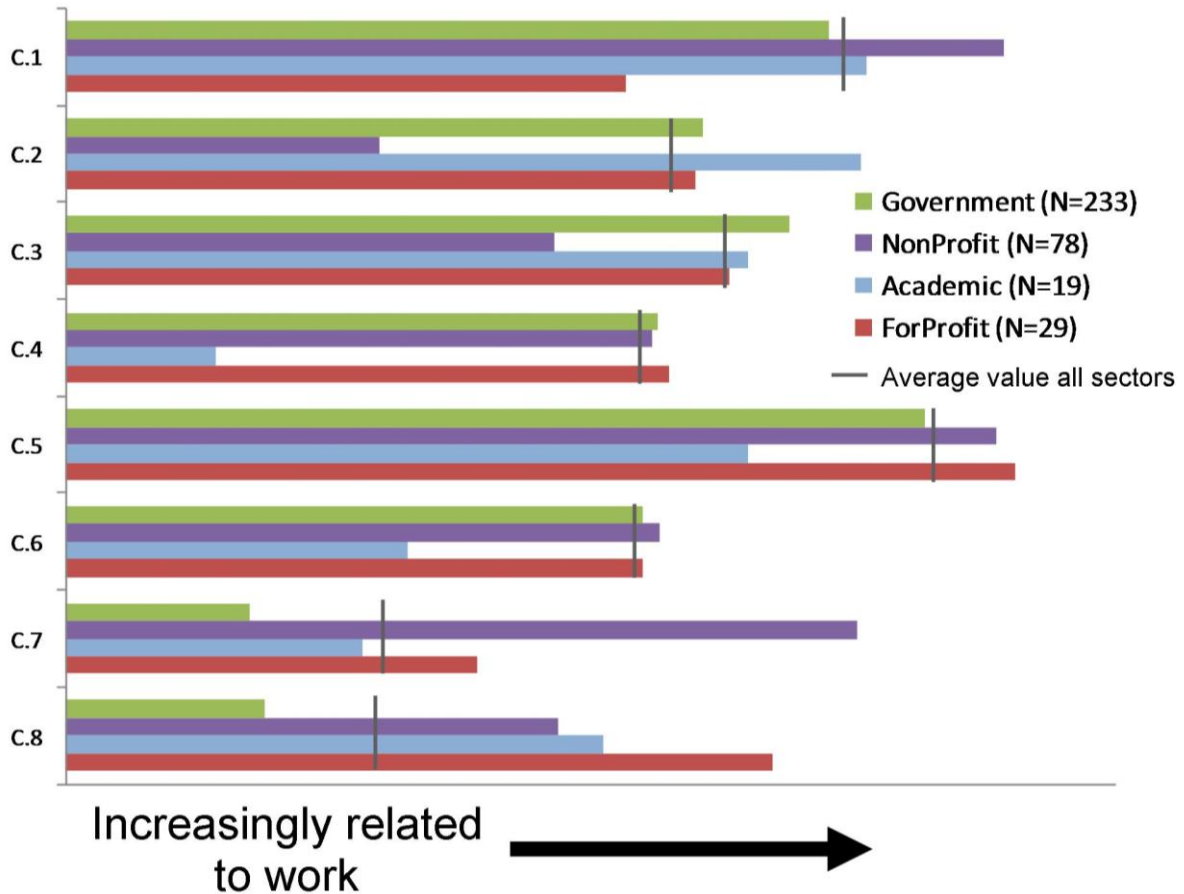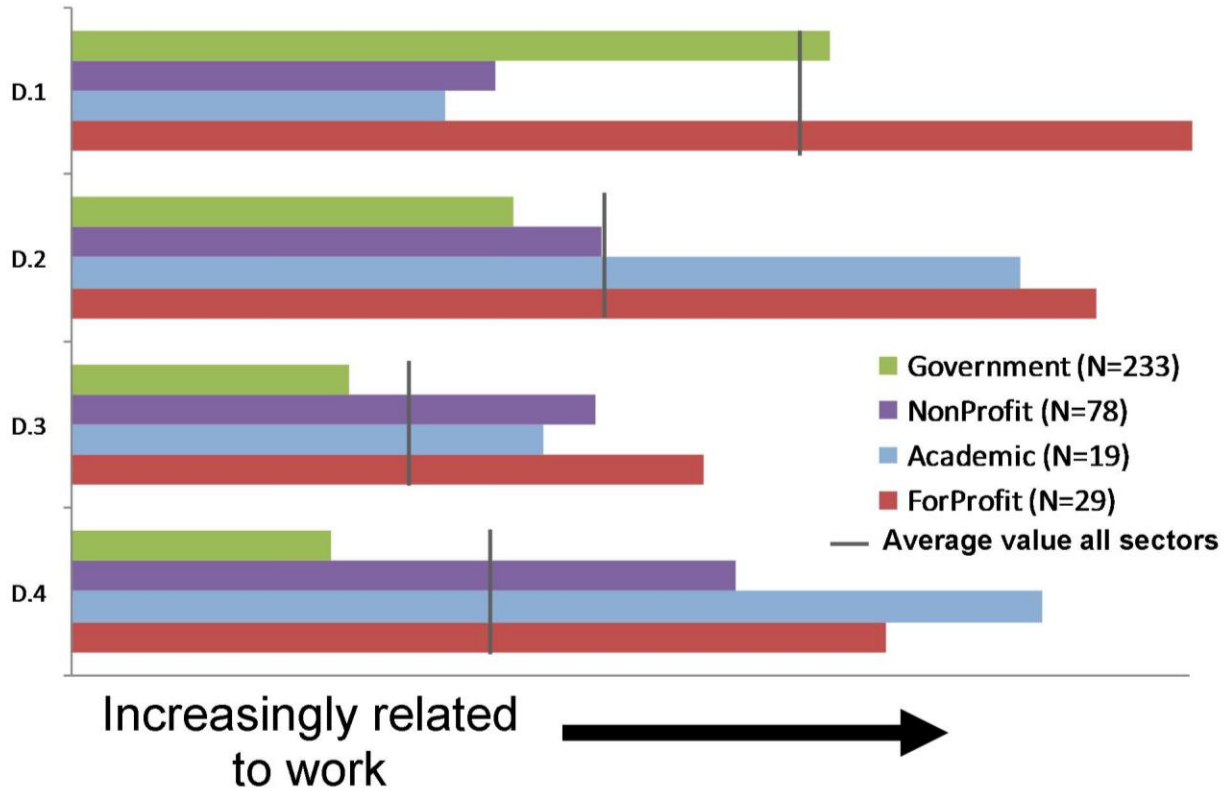

Strategy C goals are designed to ensure conservation and restoration of native plants and natural plant communities through ecosystem-based management.

Strategy C Goals:
C.1 Identify and act on extremely urgent plant conservation needs.
C.2 Promote coordinated and standardized approaches to classification, inventory, and assessment.
C.3 Encourage coordinated plant conservation planning and management.
C.4 Seek protection for nationally and regionally significant native plant habitat.
C.5 Promote aggressive management practices to prevent, control, and eradicate non-indigenous species that threaten native plant populations.
C.6 Develop and implement guidelines and management techniques for collecting, propagating, and utilizing native plants in ecosystem restoration.
C.7 Provide for *ex situ* conservation of the highest risk species.
C.8 Provide training opportunities for plant conservationists.

Of the four goals related to **Strategy D** (Research), the work of respondents from all sectors is most related to goal D.1 (monitoring programs and protocols – see Figure 9). The work of academic and For Profit sector respondents was most related to D.2 (identify and prioritize basic & applied research), and the academic, Non Profit and For Profit sectors is most related to goal D.4 (encourage participation of academic community in plant conservation).

Figure 9: Relative focus of each sector on the four goals associated with Strategy D (RESEARCH). The average value for all sectors is shown as a grey line for each goal.
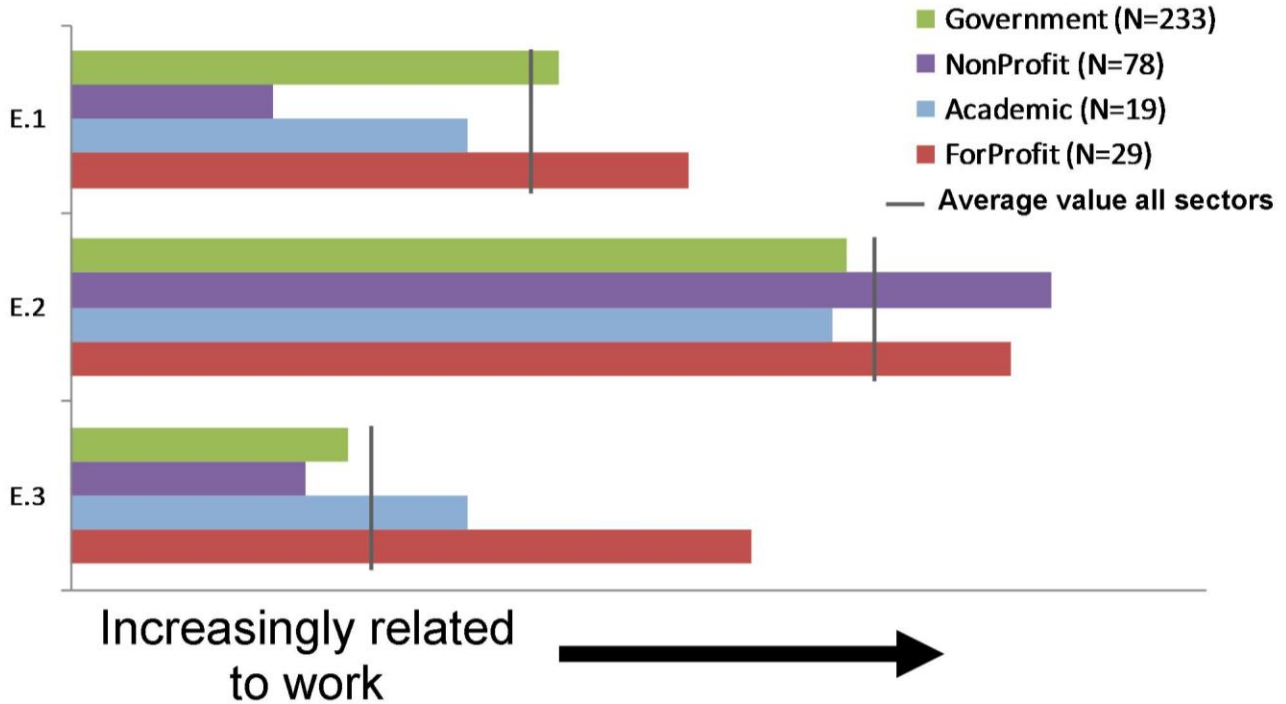

Strategy D goals are designed to encourage the scientific community to conduct research and technology development in support of native plant conservation.

Strategy D Goals:
D.1 Using adaptive management principles, develop, and implement coordinated monitoring protocols and programs.
D.2 Identify and prioritize basic and applied research needs.
D.3 Encourage research institutions to staff botanists and plant ecologists and maintain adequate herbaria, oriented toward regional native floras.
D4. Encourage the scientific community to participate in plant conservation and associated education.

With only three goals, the work of respondents from all sectors toward **Strategy E** (Sustainability) is most related to goal E.2 (sustainable use of native plants – see Figure 10). Goal E.3 (indigenous knowledge) represents the goal with the least capacity (Figure 5), and Figure 10 reveals that the work of respondents from the For Profit sector is more related to this target than any other sector.

Figure 10: Relative focus of each sector on the six goals associated with Strategy F (SUSTAINABILITY). The average value for all sectors is shown as a grey line for each goal.

Strategy E goals are designed to encourage practices that support appropriate and sustainable uses of beneficial plants.
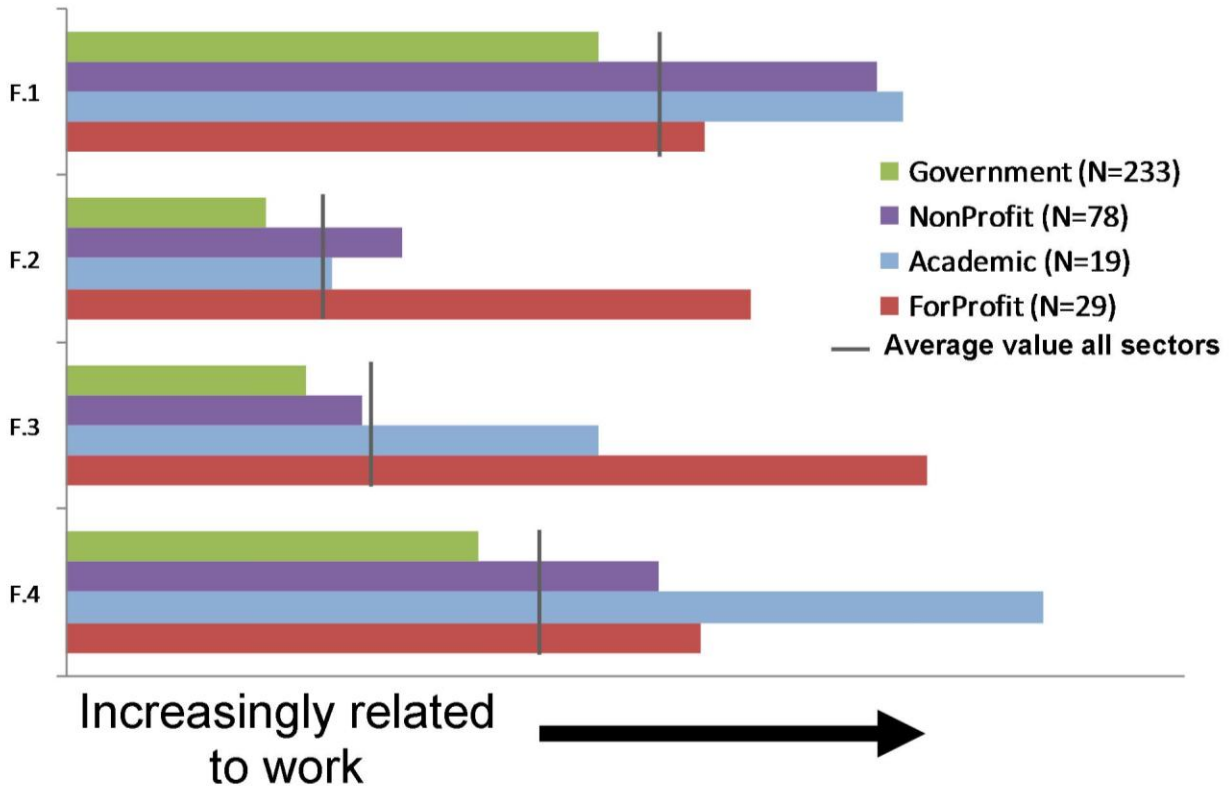
Strategy E Goals:
E.1 Identify and monitor the public demand for and impact on botanical resources.
E.2 Promote sustainable and conscientious use of native plants.
E.3 Document the indigenous people's knowledge about the ecology and uses of native plants and work with indigenous people to safeguard traditional collecting areas for native plants.

Of the four goals related to **Strategy F** (Information Systems), the work of respondents from all sectors is most related to goal F.1 (identify and prioritize data needs – see Figure 11). Respondents from academia are most focused on Goal F.4 (information sharing and use), while the For Profit sector is most focused on F.3 (developing plant conservation information systems).

Figure 11: Relative focus of each sector on the six goals associated with Strategy F (INFORMATION SHARING). The average value for all sectors is shown as a grey line for each goal.


Strategy F goals are designed to promote the development and use of coordinated databases and information-sharing to support native plant conservation.

Strategy F Goals:
F.1 Identify and prioritize data needs for native plant conservation.
F.2 Ensure compatibility and economy of existing plant conservation databases.
F.3 Promote coordinated development and operation of future plant conservation information systems.
F.4 Promote broad use and open exchange (as appropriate) of plant conservation information.

3d. Use of the National Framework

Respondents were asked whether they refer to or use the National Framework in conservation planning or communication work now, or whether they may in the future. While only 7% of all respondents currently use the National Framework, 63% reported that they don't currently use the National Framework but may in the future (green bars in Figure 12). In the space provided for comments on this section, many respondents indicated surprise that the Framework had existed for so long, and they were enthusiastic about the potential to use it in the future.

Figure 12: Agreement with current National Framework strategies
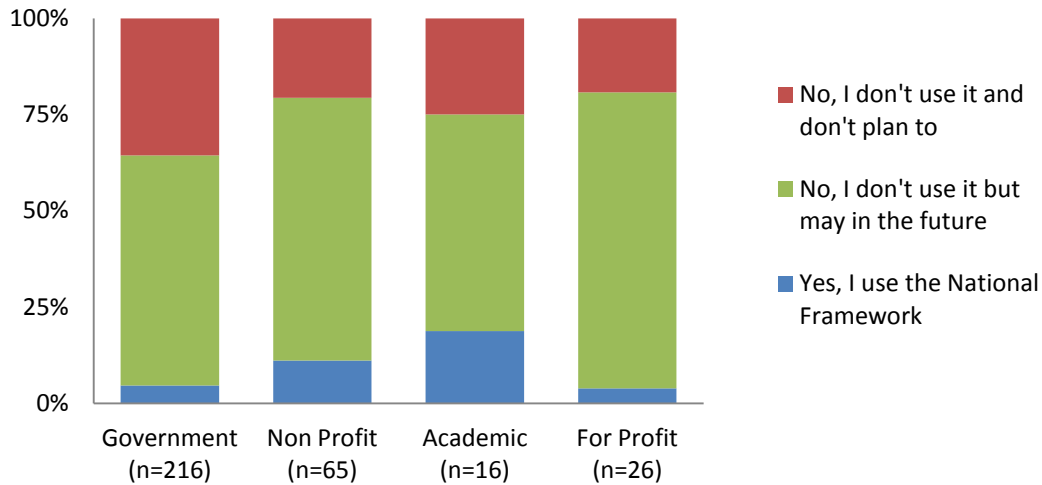
Respondents were asked to provide input on whether the current Framework goals need to be changed, and were asked to choose between 1 (works well, don't change) to 4 (doesn't work well, change) for each Strategy (A-F). Results are presented in Figure 13 (summarized by strategy) and Figure 14 (summarized by strategy and sector). In general, respondents selected 1 or 2 for each of the Strategies, indicating their overall agreement with the current Framework. The Strategy that received the least support was Strategy F (Information Systems). And as shown by Figure 14, Academic and Government sector respondents were generally less happy with each Strategy than Non Profit and For Profit respondents.

Figure 13: Summary of agreement with current Framework Strategies or suggestions for change.
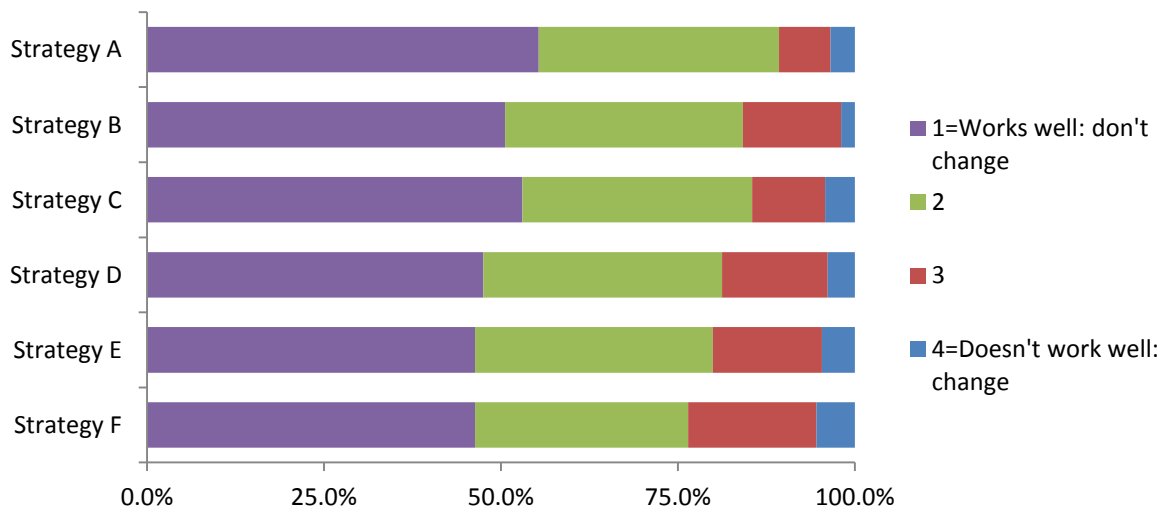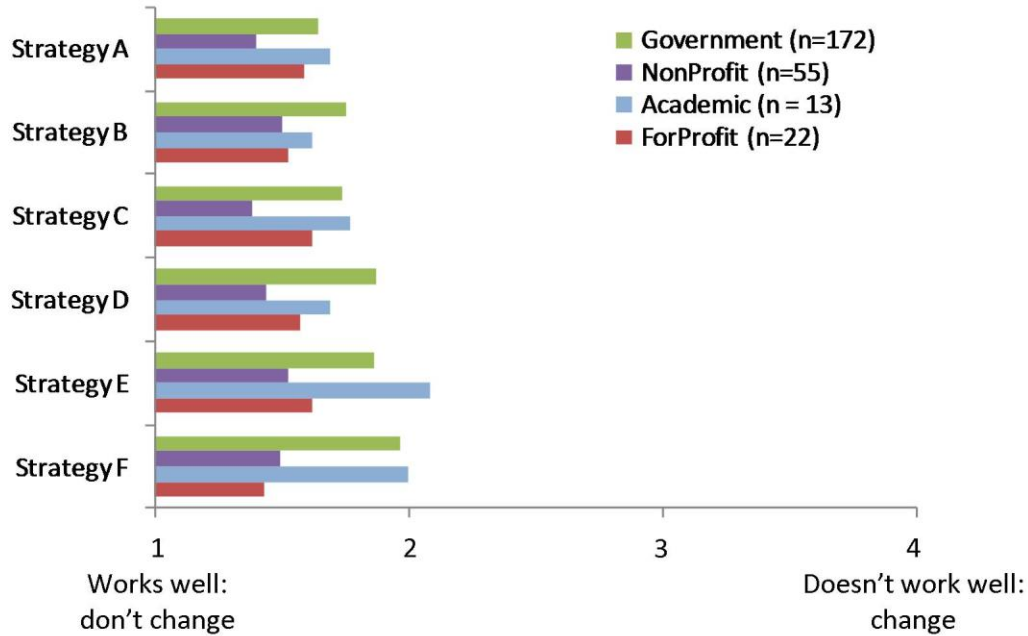
Figure 14: Agreement with current National Framework strategies.

The survey provided space for respondents to make suggestions to change the current goals of the Framework (summarized in section 4, page 18), and also asked them if there were new topics or areas of work that were missing from the Framework that needed to be incorporated. Figure 15 shows the results of the question: Are there any new aspects of plant conservation that you believe should be incorporated into future Framework updates? Many respondents (69%) didn't know if updates were necessary, while 26% said updates were necessary, and 5% said no updates were necessary.

**Figure 15**: Need for updates to the National Framework, shown by sector.
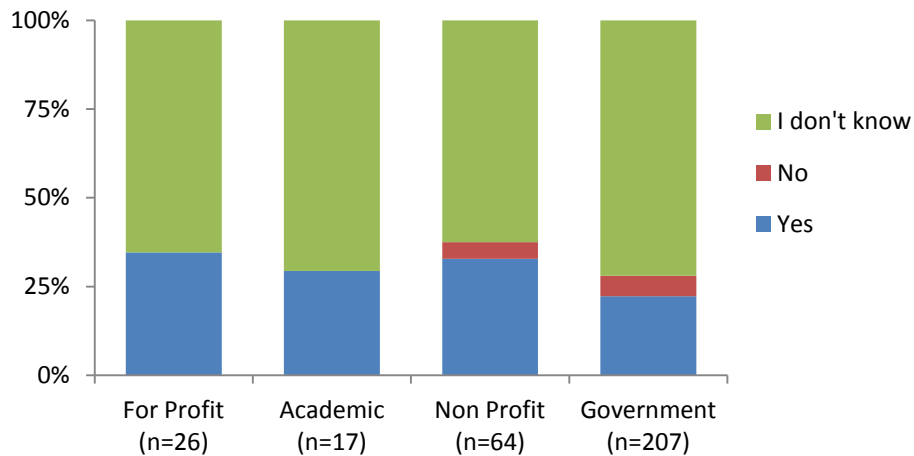
Respondents were invited to submit suggestions regarding specific aspects of plant conservation that need to be incorporated into any future updates of the National Framework (summarized in section 4, page 18).

3e. Related strategies (Global Strategy for Plant Conservation)

The Global Strategy for Plant Conservation (GSPC) was created and adopted by all parties to the Convention on Biological Diversity (CBD) in 2002. While the United States hasn't adopted the CBD, the National Framework supports the work program of the GSPC, which is comprised of 16 global targets to be met by 2020 in order to halt the loss of global plant diversity. As part of the survey we assessed the awareness and use of the GSPC among respondents (Figure 16).

The majority of respondents (78%) were not aware of the GSPC. Of the remaining responses, 14% use the GSPC (with greatest awareness in the Non Profit sector), and 7% were aware of the GSPC but did not find it useful.

Figure 16: Awareness and use of the Global Strategy for Plant Conservation.
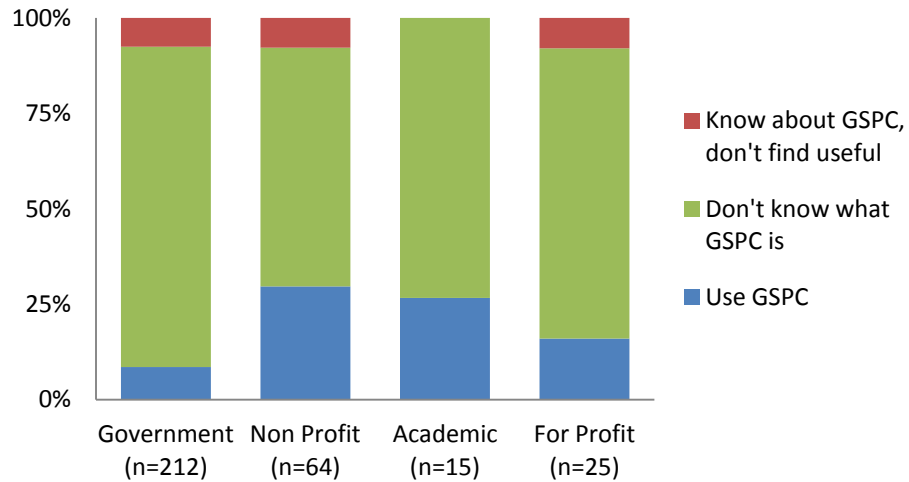
4. Recommendations to update the National Framework

While most respondents were generally satisfied with National Framework Strategies and Goals, many suggested changing or updating the Rationale and Implementation sections to include (in order of number of times mentioned):

- Climate change adaptation and mitigation
- Assisted migration
- Stronger emphasis on *ex situ* conservation (especially seed banking)
- The threat habitat fragmentation poses to plants in changing climates and the need for corridors
- Expanding threats posed by new invasive plants, insect pests and pathogens
- Increasing biofuel and other renewable energy production that impacts native plant communities.
- More explicit description of the economic value of ecosystem services provided by native plant communities
- A need for plant conservation in urban as well as rural and wilderness settings
- Better use of the internet and social media and networking
- Better integration with other conservation groups (e.g., wildlife conservation) and stakeholders (e.g., hunters)
- More reference to specific databases and information management systems (including GIS and georeferenced data)
- Better incorporation of crop wild relative conservation
- Stronger representation and collaboration with academia
- Impacts of pollution (nitrogen deposition, ozone, etc.) on plant species and habitat
- Need for planning coordinated responses to natural and other disasters

These recommendations were used to draft suggested edits to the National Framework, primarily in the Rationale section. Implementation examples have been expanded and the nearly 400 examples of implementation provided by respondents incorporated into a stand-alone document. Slight changes were made to the text of many Goals, but no goals were deleted or added. These suggested edits are all available at www.bgci.org/usa/PCAProgress, and will be put for consideration by PCA members.

5. Plant Conservation Alliance Awareness and Resources

5a. PCA membership

Nearly 30% of all respondents reported that their employer is a PCA member. Slightly more said their employer is not a PCA member (but in the case of many government and non-profit respondents, but a manual check of responses by BGCI US showed that their employer is actually a member). Finally, more than 1/3 of all respondents didn't know if their employer was a member, while some 7% of respondents did not know what PCA is (Figure 17). This suggests that there is an opportunity not only to increase membership of PCA, but to build awareness of PCA even among current members.

Figure 17: PCA membership of employers (as reported by respondents).
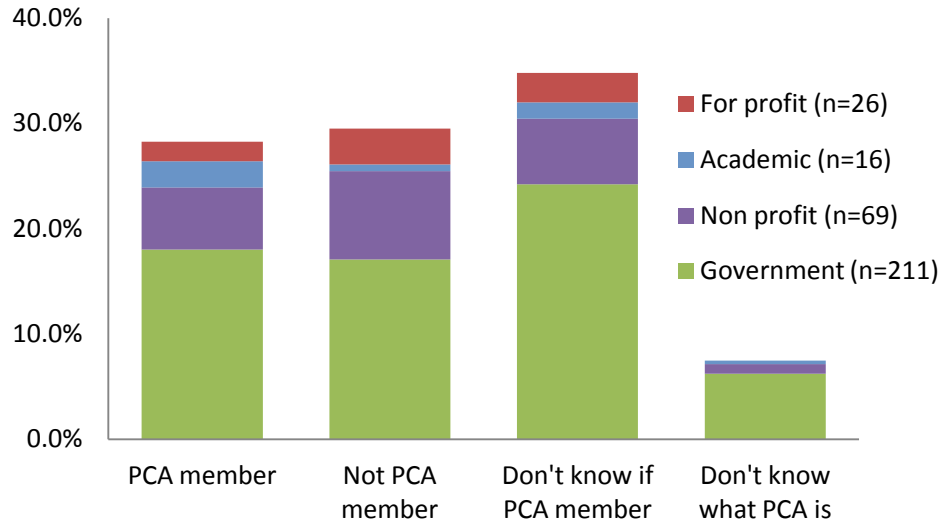
5b. PCA resources

The Plant Conservation Alliance maintains multiple working groups that have created online resources (for example the Alien Plant Working Group's Weeds Gone Wild factsheets, seed collection guidelines for Seeds of Success members) and other products for use by the U.S. native plant conservation community. The survey asked respondents questions to help determine current use and utility of these resources. Results (Figure 18) show that very few respondents consider themselves members of any of the working groups, with the exception of SOS, with 52 respondents reporting they were a member. The Alien Plant and SOS online resources were most-used by respondents. In general, awareness of working groups was quite low among respondents, with 73% of respondents unaware of the Medicinal Plant Working Group, 67/% unaware of the Restoration Working Group, 57% unaware of the Alien Plant Working Group, and 45% unaware of Seeds of Success.

Figure 18: Use of resources and awareness of four PCA working groups (Medicinal, Alien Plant, Restoration, and Seeds of Success (SOS)) by respondents (n=318), shown by sector.
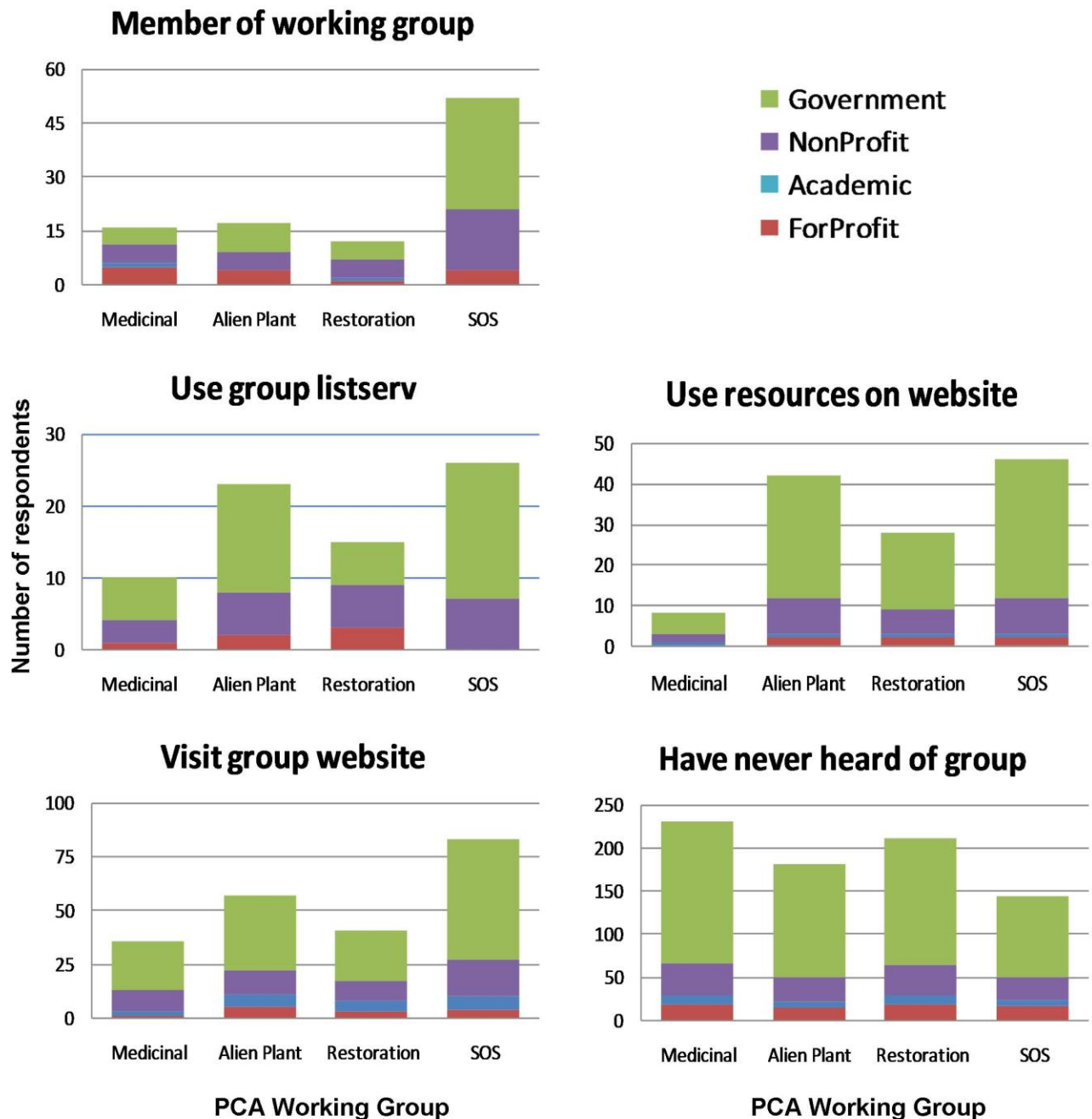
Respondents were also asked to provide information about their use of PCA's resources, including its website, and listservs, as shown in Figure 19. In general, few respondents from any sector reported using PCA resources very often (dark blue), with many respondents using resources often (red) or rarely (green). Of note, many respondents appeared to be unaware of these resources, but interested in using them in the future (purple). This was particularly apparent when respondents were asked about attending PCA meetings via conference call, where 173 respondents said they would like to take advantage of this opportunity.

F**igure 19**: Respondents use of PCA resources by sector.
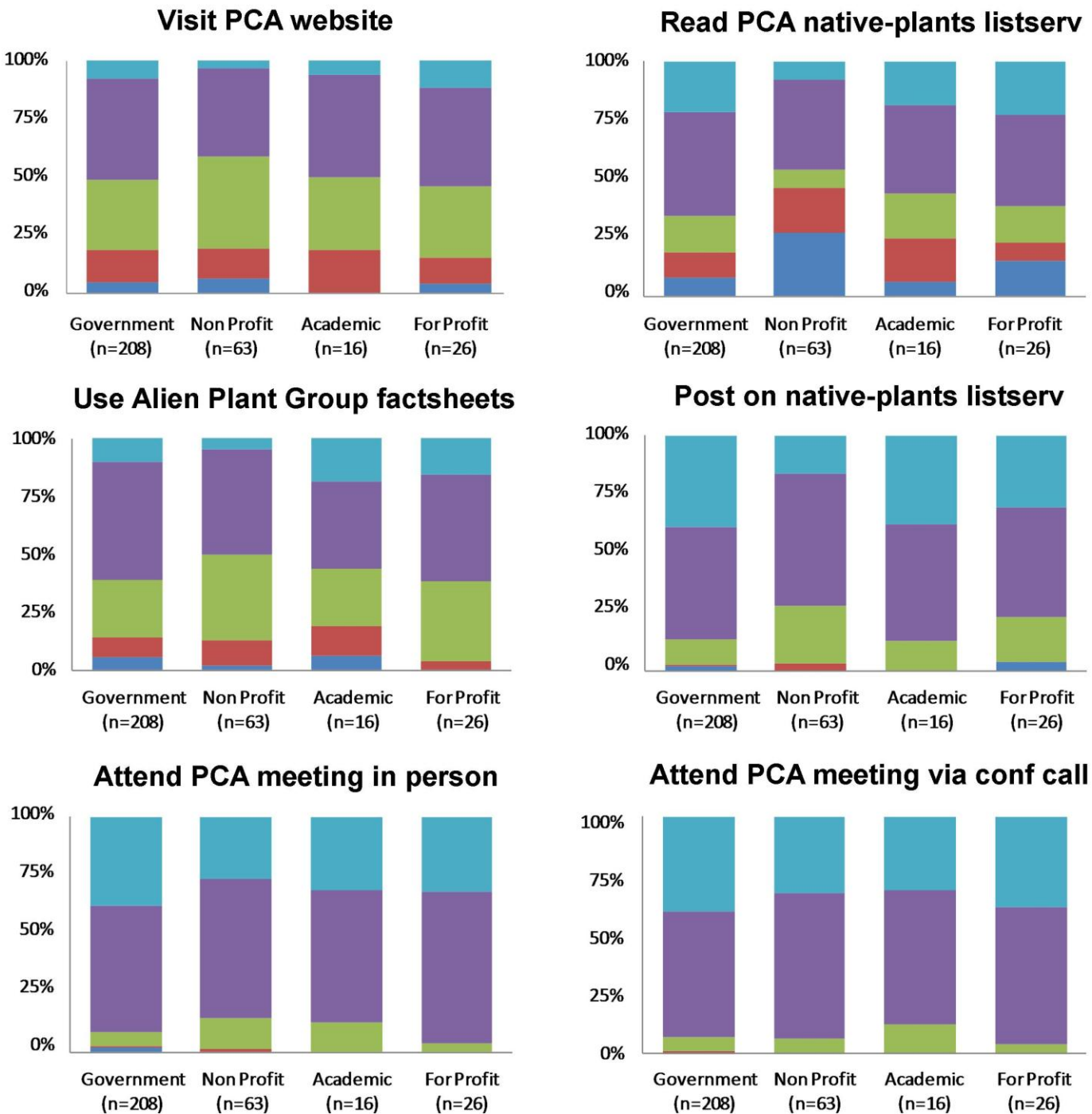
5c. Plant conservation initiative funding

The PCA works with the National Fish and Wildlife Foundation (NFWF) to provide annual grants as part of its Native Plant Conservation Initiative (NPCI). Respondents were asked about their awareness and success in applying for these grants (Figure 20). The majority of respondents was not aware of this grant, but may apply in the future (n = 140).

Figure 20: Awareness and use of the NFWF NPCI grant program.
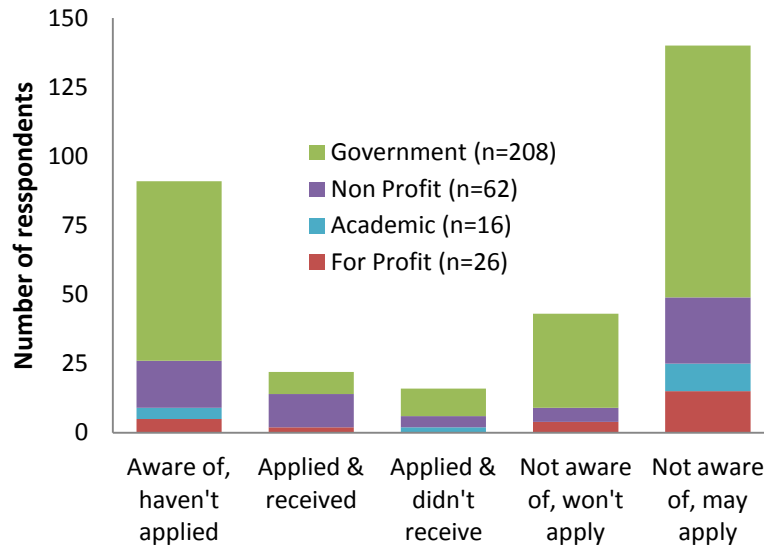
5d. Next steps

The Plant Conservation Alliance, the National Framework, and associated resources play a unique and important role in plant conservation in the United States. No other organization is able to fill this multifaceted role, and the willingness of respondents to take this survey, combined with their positive and constructive feedback highlights the need and support for the Plant Conservation Alliance. However, because a high proportion of respondents weren't aware of the PCA membership of their employer and had never heard about the National Framework or many associated resources, there appears to now be a great opportunity to increase support of plant conservation efforts through increased communication and outreach about and using already-existing resources. Perhaps the easiest first step would be to provide call-in access to PCA meetings for the 173 respondents that indicated an interest in attending PCA meetings via conference call. Working to make recommended updates to the National Framework is another relatively straightforward task. More challenging needs highlighted by survey results include establishing better links to academia, as well as finding ways to increase work toward goals that lagged behind the rest, particularly on: communication with the public, documenting indigenous knowledge and safeguarding collection sites, and coordinated development and use of information systems (e.g., B.5, E.3, and F.3, respectively).