

Responsive Management



A Programmatic Evaluation of the North American Wetlands Conservation Act (NAWCA) in the United States and Canada

Final Report

Conducted for the United States Fish and Wildlife Service

September 2002

Conducted by Responsive Management

**The views contained in this report do not necessarily reflect the views
of the U.S. Fish and Wildlife Service.**

(540) 432-1888 • 130 Franklin Street Harrisonburg, VA 22801 • FAX (540) 432-1892
www.responsivemanagement.com

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Responsive Management National Office

Mark Damian Duda, Executive Director
Carol Zurawski, Research Associate
Peter E. De Michele, Ph.D., Director of Research
Steven J. Bissell, Ph.D., Qualitative Research Director
Ping Wang, Ph.D., Quantitative Research Associate
James B. Herrick, Ph.D., Research Associate
William Testerman, Director of Survey Center
Martin Jones, Report Writer
Alison Lanier, Business Manager

130 Franklin Street
Harrisonburg, VA 22801
Phone: 540/432-1888 Fax: 540/432-1892
e-mail: mdduda@rica.net
www.responsivemanagement.com

Acknowledgements

Responsive Management would like to thank the hundreds of people who provided support, guidance, and information for this evaluation. In particular, we would like to thank the Division of Bird Habitat Conservation of the United States Fish and Wildlife Service, the North American Wetlands Conservation Council, and the NABCI Canada Council. We would also like to thank all of the participants from the United States and Canada who participated in personal interviews, focus groups, the quantitative survey, and who provided tours for the project site visits and case studies.

Executive Summary

The North American Wetlands Conservation Act (NAWCA) of 1989 provides matching grants to public or private individuals or organizations to conduct wetlands conservation projects in the United States, Canada, and Mexico. NAWCA projects represent a diversity of partnerships, goals and achievements, and account for the conservation of 8 million acres of wetlands and wetland-associated habitat throughout North America.

This is the final report for a programmatic evaluation of the North American Wetlands Conservation Act in the U.S. and Canada. The purpose of this evaluation was twofold: 1) to identify benefits and challenges of the Act and its implementation, and 2) to provide recommendations for improvement to the U.S. Fish and Wildlife Service, the North American Wetlands Conservation Council (NAWCC), the North American Bird Conservation Initiative (NABCI) Canada Council, and numerous other stakeholders to help NAWCA build upon its success and become an even greater positive force in wetlands conservation.

This programmatic evaluation shows that NAWCA is viewed as a successful conservation program by a majority of stakeholders. In addition, NAWCA has delivered numerous, quantifiable results to the American and Canadian public, including:

➤ **The number of acres affected.**

Since 1991, approximately 8 million acres in the United States, Canada and Mexico have been protected, enhanced, restored and managed.

➤ **The tremendous leveraging of federal funds by partner funds.**

Since 1991, NAWCA has facilitated the investment of nearly \$411 million in federal funds, matched with nearly \$1.14 billion (U.S. dollars) in partner funds in the United States, Canada and Mexico.

➤ **The number of partners involved in NAWCA and the partnerships created by NAWCA.**

Since 1991, the number of new partners has steadily increased, with a total of 1,550. In 1991, there were 89 new partners, while in 2001, there were 294 new partners. Partnerships have also steadily increased since 1991, with a total of 4,757 partnerships that have developed over the past ten years.

➤ **The economic benefits that have accrued.**

NAWCA has had a positive economic impact on the national economies of the United States and Canada. Economic analyses for this evaluation calculates that the \$411 million in federal funds invested from the Standard Grants Program (FY 1991-2001) and the Small Grants Program (FY 1996-2001) has translated into nearly \$3.5 billion in additional economic activity in the U.S. and Canada.

Although NAWCA has many benefits, the program faces several challenges. This programmatic evaluation has identified the following challenges of NAWCA:

➤ **The Division of Bird Habitat Conservation database of projects and expenditures is problematic in its setup and ability to track NAWCA projects.**

The current Division of Bird Habitat Conservation database of NAWCA projects cannot accurately track project accomplishments because all of the data that are recorded are “pre” grant information, rather than “post” grant information. It is important that the DBHC capture both types of data for more accurate tracking of NAWCA projects and to document the true impact that NAWCA is having on the landscape.

➤ **NAWCA does not have a systematic or comprehensive monitoring and evaluation program.**

Monitoring would allow projects to be evaluated post-completion to determine the accomplishments of completed projects. Quantified documentation of benefits can also assist in the project selection process by determining the types of projects that are most cost-effective and most beneficial to waterfowl, other wetland-dependent species, and other fish and wildlife.

➤ **There is a general lack of factual knowledge regarding program implementation. In addition, there is little information available on NAWCA overall, and what information is available is not centralized.**

Although over the past ten years NAWCA has become an important factor in wetlands conservation, very few members of the general public are aware of NAWCA. Even within the stakeholder community, there is a lack of factual knowledge regarding program implementation, especially between the United States and Canada.

➤ **Although improvements have been made to the grant application process, the process is still complex.**

Although the grant applications must be sufficiently detailed so that adequate information about project proposals can be gathered, there is some concern among some stakeholders that that process is overly burdensome and complex.

Based on the benefits and challenges of NAWCA, the following improvements could be made so that NAWCA may build on its success and become an even greater positive force in wetlands conservation.

- **Improve the DBHC data of NAWCA projects by including pre-project data and post-project data.**
- **Standardize pre-project data with post-project data in the DBHC database.**
- **Consolidate information on NAWCA in one place to increase stakeholder knowledge levels.**
- **Increase information dissemination to improve both stakeholder and public awareness of NAWCA.**
- **Strengthen communications between the United States and Canada.**
- **Develop a standard format for final reports to be submitted by grantees. Grantees should also be required to submit final reports in a timely manner.**
- **Increase the number of grant-writing workshops held for potential grantees.**
- **To the extent possible, the U.S. Fish and Wildlife Service should maintain consistency with the grant application process.**
- **Consider exploring cost-effective methods to develop a systematic and universal monitoring and evaluation program.**
- **Allow NAWCA to continue with funding maintained at 2001 levels or increased levels. Additional funding would result in even more positive habitat and wildlife conservation impacts.**

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Introduction

The North American Wetlands Conservation Act (NAWCA) was enacted in 1989 and provides matching grants to private or public organizations or individuals to carry out wetlands conservation projects in the United States, Canada, and Mexico. A major focus of the Act is to encourage partnerships for the conservation of North American wetland ecosystems to benefit waterfowl, other migratory birds, fish and wildlife. The Act has funded 928 projects throughout the United States, Canada and Mexico. These projects represent a diversity of partnerships, goals and achievements in the overall protection of wetland and wetland-associated habitat for waterfowl, migratory birds and other fish and wildlife. Participating partners range from nonprofit organizations to state/federal governments to private landowners.

This report is the final report for a programmatic evaluation of the North American Wetlands Conservation Act in the U.S. and Canada. This report summarizes the major findings and implications of this programmatic evaluation. Although the focus of this evaluation was the U.S. and Canada, there are instances where information regarding Mexico is included to provide a more comprehensive view. The purpose of this evaluation was twofold: 1) to identify benefits and challenges of the Act and its implementation, and 2) to provide recommendations for improvement to the U.S. Fish and Wildlife Service, the North American Wetlands Conservation Council (NAWCC), the North American Bird Conservation Initiative (NABCI) Canada Council, and numerous other stakeholders to help NAWCA build upon its success and become an even greater positive force in wetlands conservation.

There were eight phases to this project: 1) a compilation of existing literature, 2) an analysis of the NAWWO (now DBHC) Grant Database System, 3) a series of ten focus groups and thirty-seven personal interviews with stakeholders to identify perceptions of successes, challenges and future directions for NAWCA, 4) a nationwide survey administered to stakeholders in the United States and Canada, 5) five case studies selected to represent the types of NAWCA projects that have been funded, 6) an economic analysis of the benefits that have accrued from NAWCA in the United States and Canada, 7) a report synthesizing the findings of 7 working documents, and 8) this final report summarizing the benefits and challenges of the overall evaluation with an emphasis on recommendations for program improvement.

This project was conducted on behalf of the U.S. Fish and Wildlife Service for the North American Wetlands Conservation Council (NAWCC).

Responsive Management would like to thank the hundreds of people who provided support, guidance, and information for this evaluation. In particular, we would like to thank the Division of Bird Habitat Conservation of the U.S. Fish and Wildlife Service, the NAWCC, and the NABCI Canada Council. We would also like to thank all of the participants from the United States and Canada who participated in personal interviews, focus groups, the quantitative survey, and who provided tours for the project site visits and case studies.

Program Results

- **Overall, NAWCA is viewed as an extremely successful conservation program in both the United States and Canada by those involved in the program.**

NAWCA is viewed by an overwhelming majority of stakeholders in the United States and Canada as a very successful wetlands conservation program over the past ten years. Enacted in 1989, the first set of projects was funded in 1991. Between 1991 and 2001, NAWCA has funded 928 projects to protect, restore, enhance and manage an array of wetland and other important habitats for waterfowl, migratory birds, and other fish and wildlife.

Ninety-seven percent of U.S. stakeholders felt that NAWCA has been very or somewhat successful in achieving its purposes over the past ten years in the United States. Ninety-four percent of Canadian stakeholders felt that NAWCA has been very or somewhat successful in achieving its purposes over the past ten years in Canada. NAWCA is viewed as a success for a number of reasons, including the partnerships that have developed, the acres that have been protected on the landscape, the cost-effectiveness of the program, the impact it has had on the economy, and the benefits it has produced for wildlife, especially waterfowl.

“It [NAWCA] has exceeded my expectations; it has been very successful. This is obvious from the continuing number of applications, the number of people coming to NAWCA for money, the partnerships and the increasing money that Congress puts in.”

“It has been very successful. I never would have thought that there would be nearly the support for the Act and the Plan [North American Waterfowl Conservation Plan (NAWMP)]. Millions of dollars of new money has allowed a variety of partners to do a lot of good work on the landscape that wouldn't have otherwise been possible.”

“In terms of habitat, the number of acres protected over time, the fact that we are getting measurable responses in terms of waterfowl populations, measurable economic and socio-economic benefits from projects, the fact that we've got stable partnerships within the Joint Ventures - they have formed strong teams that will continue - also the leverage, the amount of other funds that were attracted.”

Figure 1
Overall opinion concerning the level of success that NAWCA has had in achieving its purposes over the past 10 years in the U.S.

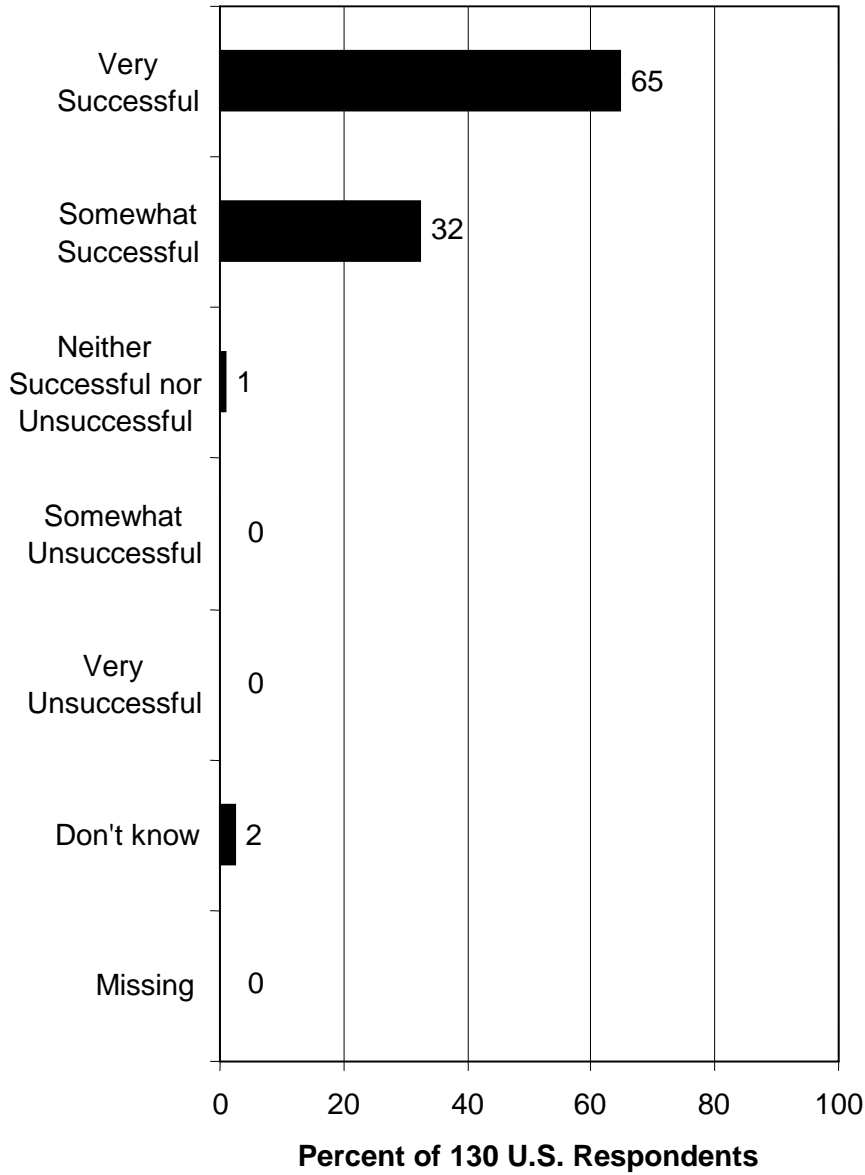
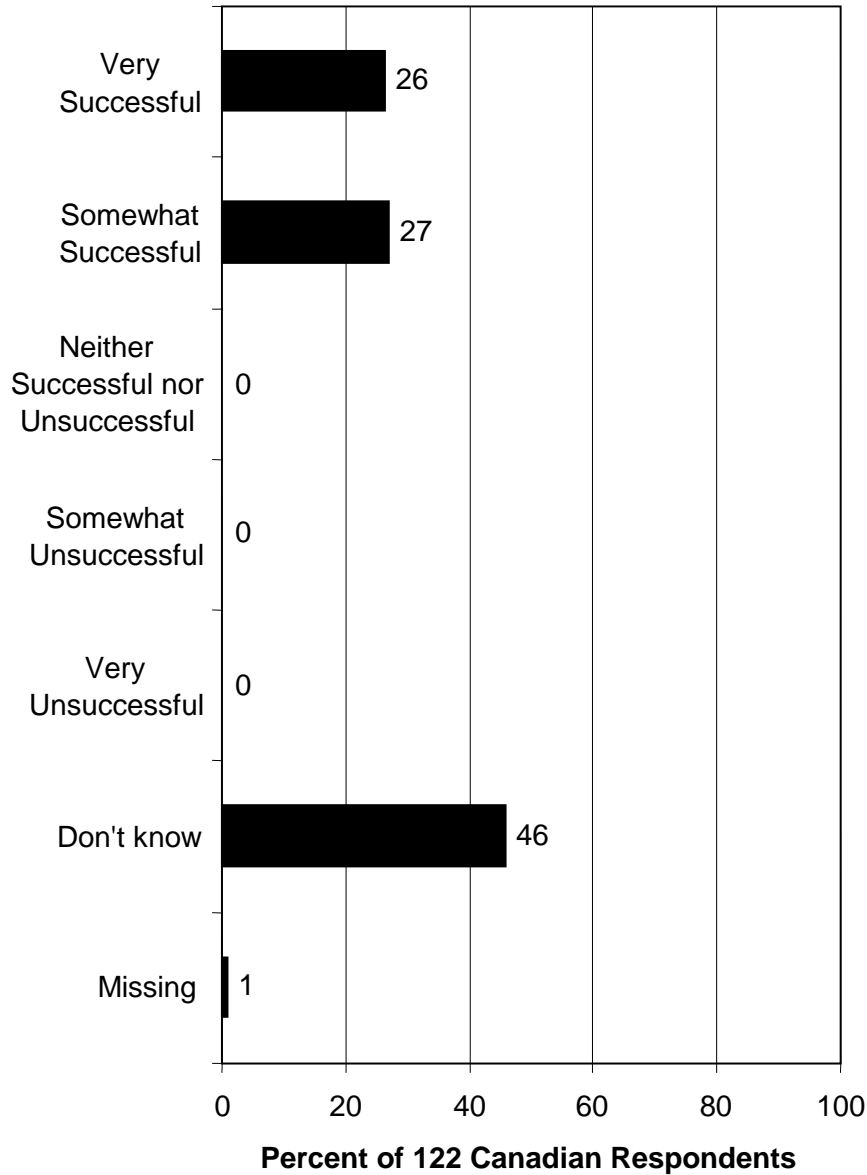


Figure 2
Overall opinion concerning the level of success that NAWCA has had in achieving its purposes over the past 10 years in the U.S.



- **Habitat conservation is a major accomplishment of NAWCA, with approximately 8 million acres of wetland habitat affected since 1991.**

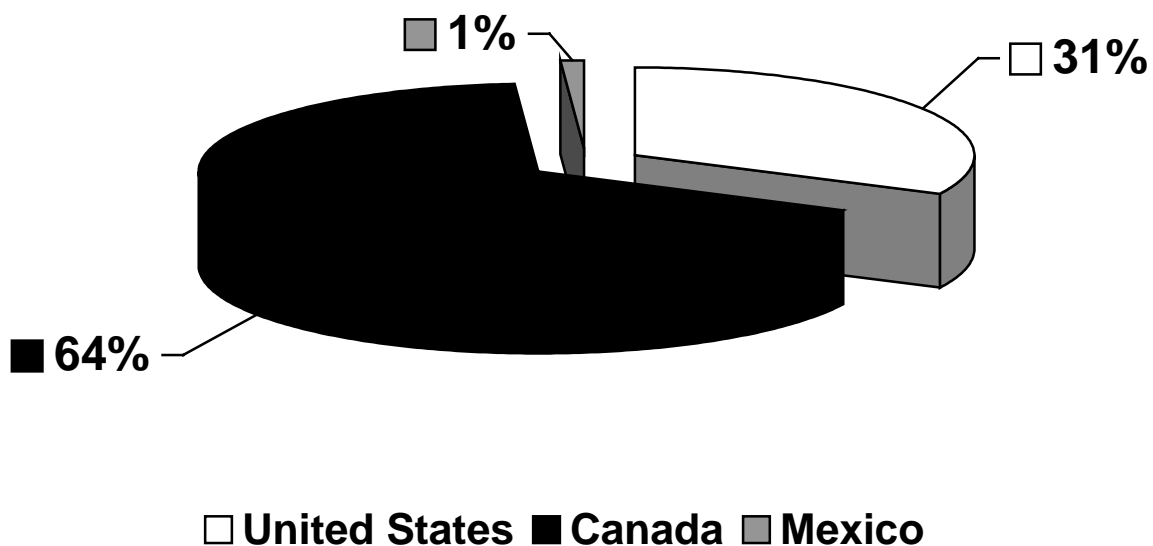
Habitat conservation is a major accomplishment of NAWCA, especially regarding the number of wetland acres and wetland-associated habitat acres that have been protected, enhanced, restored and managed.

“The greatest strength is the product, which are the projects out on the landscape. The goal of the Act was to put a significant amount of habitat on the ground, and it has done that.”

“The number one strength is that it has provided funds for on-the-ground habitat conservation, it targets wetlands and associated uplands, and it provides a great mechanism for the NAWMP, the JVs [Joint Ventures], and partners.”

Since 1991, approximately 8 million acres have been affected under NAWCA. Approximately 2.5 million acres (31%) in the United States, 5.1 million (64%) in Canada, and 427 thousand (1%) in Mexico have been affected.

Figure 3
NAWCA Acres

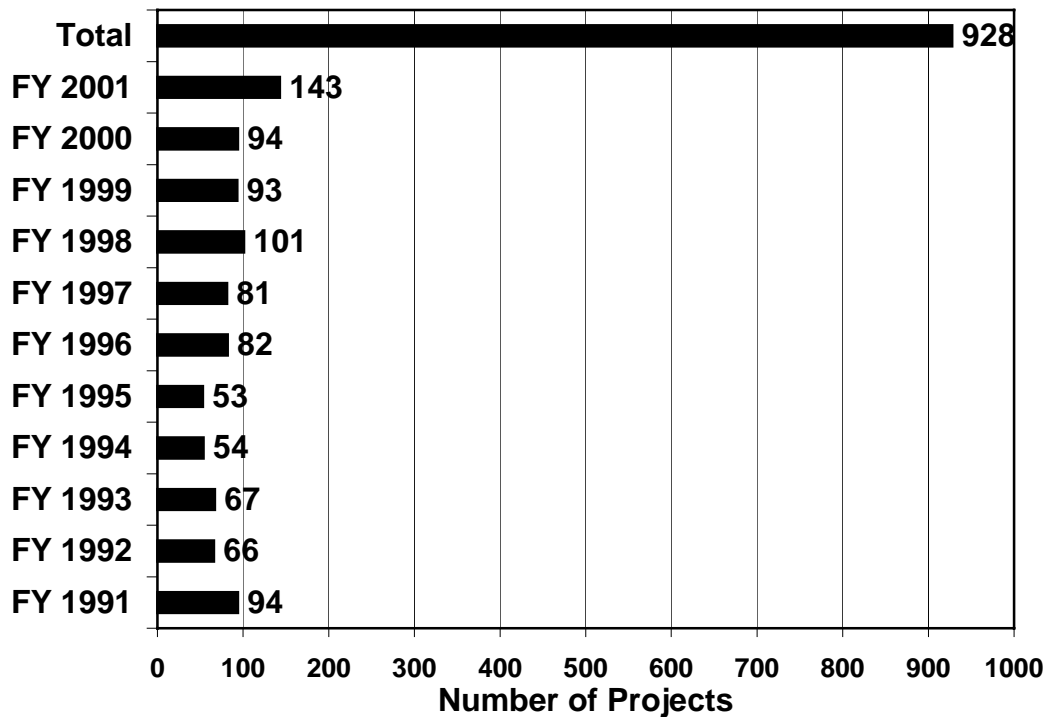


Over the past ten years, approximately 1.7 million acres have been protected through easements, fee titles and leases. Approximately 1.9 million acres have been enhanced, and approximately 805 thousand acres have been restored. In addition, 3.5 million acres have been managed. These acres have been protected through the completion of 928 projects over the years in the United States, Canada and Mexico.

Table 1: Total Acres Affected by NAWCA Since 1991

Enhancement Acres	Easement (Protection) Acres	Fee (Protection) Acres	Lease (Protection) Acres	Restoration Acres	Management Acres
1,957,051	576,479	938,713	189,067	805,802	3,524,466

**Figure 4
Count of All NAWCA Approved Projects for U.S.,
Canada and Mexico before 7/27/2001**



The actual amount of habitat that has been protected by NAWCA is likely larger than what has been quantitatively documented. Often, partners will accomplish *more* than what they proposed to do, including spending their own time and money on their projects after they have been completed as originally planned. For example, in the Ace Basin National Wildlife Refuge Enhancement Project Year 1, the proposed acreage to be affected was 565 acres, while the actual acreage affected was 2,065 acres. In the Lower Mississippi Valley Ecosystem Project I, the proposed acreage to be affected was 28,780 acres, while the actual acreage affected was 37,754 acres.

“...what was interesting was the additional amount of time and money they [landowners] are spending to continue to add more components to the projects, like planting more trees, or excavating other shallow water cells on the property.”

- **NAWCA has had a tremendous leveraging effect on partner dollars invested in wetlands conservation.**

Since 1991, NAWCA has facilitated the investment of nearly \$411 million in federal funds, matched with nearly \$1.14 billion (U.S. dollars) in partner funds in the United States, Canada and Mexico. The standard grants program (FY 1991-2001) has resulted in \$406.2 million in federal funds leveraging \$1.1 billion (U.S. dollars) in partner funds. The small grants program (FY 1996-2001) has resulted in \$4.8 million federal funds leveraging \$37.6 million (U.S. dollars) partner funds.

Table 2: Leveraging of Federal Funds

Standard Grants Program FY 1991-2001		Small Grants Program FY 1996-2001
NAWCA investments (Federal funds)		NAWCA investments (Federal funds)
United States	\$240.1 million	\$4.8 million (United States)
Canada	\$153.4 million	
Mexico	\$12.7 million	
Partner funds		Partner funds
United States	\$842.2 million	\$37.6 million (United States)
Canada	\$237 million	
Mexico	\$17 million	
\$406.2 million Federal funds from the standard grants program leveraged \$1.1 billion partner funds		\$4.8 million Federal funds from the small grants program leveraged \$37.6 million partner funds
Total = \$411 million Federal funds leveraged \$1.14 billion partner funds		
Source: USFWS 2001		

Because of the commitment of the partners to providing match funds, NAWCA is viewed as a very cost-effective program. At a minimum, partners must provide a non-federal match to federal grant money at a ratio of 1:1, but the ratio is often much higher. Since partners receive a higher score on their grant application if the match ratio is higher than the minimum requirement, match ratios are often 2:1 or higher. For example, in the Lower Columbia River Ecoregion Restoration Project, Phase III, the project proposal indicated that the ratio of non-federal match to grant money was 2.1:1.

“It is cost-effective; I don’t know of another program that is as cost-effective as this one.”

“Without the funding I don’t think we would be where we are with the Plan [North American Waterfowl Management Plan].”

“The financial strength can’t be overlooked. It is a good return on investment for taxpayers.”

- **Partnership development is also a major accomplishment of NAWCA, with the number of partners and partnerships steadily increasing since 1991.**

Without the number, diversity, and commitment of partners¹ working together under NAWCA, the Act and program would likely not have seen the level of success that it has thus far. Since 1991, 1,550 different partners have been involved in NAWCA projects, and the numbers have increased since 1991. In 1991, there were 89 new partners, while in 2001, there were 294 new partners. In addition to the new partners that have become involved in NAWCA projects, the number of total partnerships has also increased. Partnerships have grown from 297 in 1991 to 880 in 2001.

Partners range from federal and state agencies, to non-governmental organizations, to private landowners. Partnerships have arisen between groups with different philosophies, such as conservation organizations and private businesses or corporations. Private landowners have proven to be a vital component of NAWCA partnerships, especially in regions where the land is predominantly in private ownership, such as the Lower Mississippi Valley.

Ninety-five percent of U.S. stakeholders felt that NAWCA has been very or somewhat successful in encouraging partnerships among public agencies in the U.S., and 92% of Canadian stakeholders felt that NAWCA has been very or somewhat successful in encouraging partnerships among public agencies and other interests in Canada.

“[NAWCA] has cultivated partnerships to put conservation on the ground, which is one of the most outstanding achievements because it has been able to leverage state and federal agencies, NGOs [non government organizations], and private landowners to put the program on the ground, with results in the form of acquiring habitat or improving habitat on the ground. Think globally, act locally. Here’s a federal act that is being implemented throughout North America regardless of borders and getting the concept of partnerships and conservation on the ground in Mexico and Canada which is a big plus.”

“In the United States and Canada, it [NAWCA] has done tremendous work over a huge portion of the continent. Its fingerprint is wide.”

¹ Partners: the total number of different organizations that have participated in NAWCA projects. Partnership: the total number of multi-organization groups working together on a NAWCA project. For instance, project “x” might have 10 partners, and project “y” might have 2 partners. This would mean, assuming no partners in the two groups are the same, that there are 12 partners and 2 partnerships. This would mean, assuming both partners in the small group (project “y”) are also partners in the large group (project “x”) that there are 12 partners, 10 unique partners, and 2 partnerships.

In addition to working together on a single NAWCA project, partnerships often continue beyond the time of project completion. Partners have learned to work together on a common interest, which often translates into working together on future conservation projects.

“[What partners have learned] is that you can get a [seemingly] impossible thing done; you can work together even if you have different mandates. A lot of the partners are very diverse, but they have found that they can work around that.”

“The ability of diverse groups to cooperate has brought corporations in, landowners, agencies, NGOs, individuals and foundations to the table; they have learned more about one another. This has made things easier in terms of cooperation in the future, and it has helped strengthen the NAWMP Joint Ventures.”

“Partnerships and relationships don’t go away after the grant.”

Although NAWCA has brought together a wide range of partner types, there are several organizations that consistently rank at the top for the likelihood of receiving a NAWCA grant. The top five partners (note that these are *partners*, not necessarily *grantees*) and the number of times they have contributed to approved projects since 1991 are Ducks Unlimited (514), Ducks Unlimited Canada (227), the U.S. Fish and Wildlife Service (192), the Nature Conservancy (152), and the Canadian Wildlife Service (149).

Figure 5
Number of New Partners in Approved Projects for
All Countries
1991-2001
(Excluding Repeat Partners)

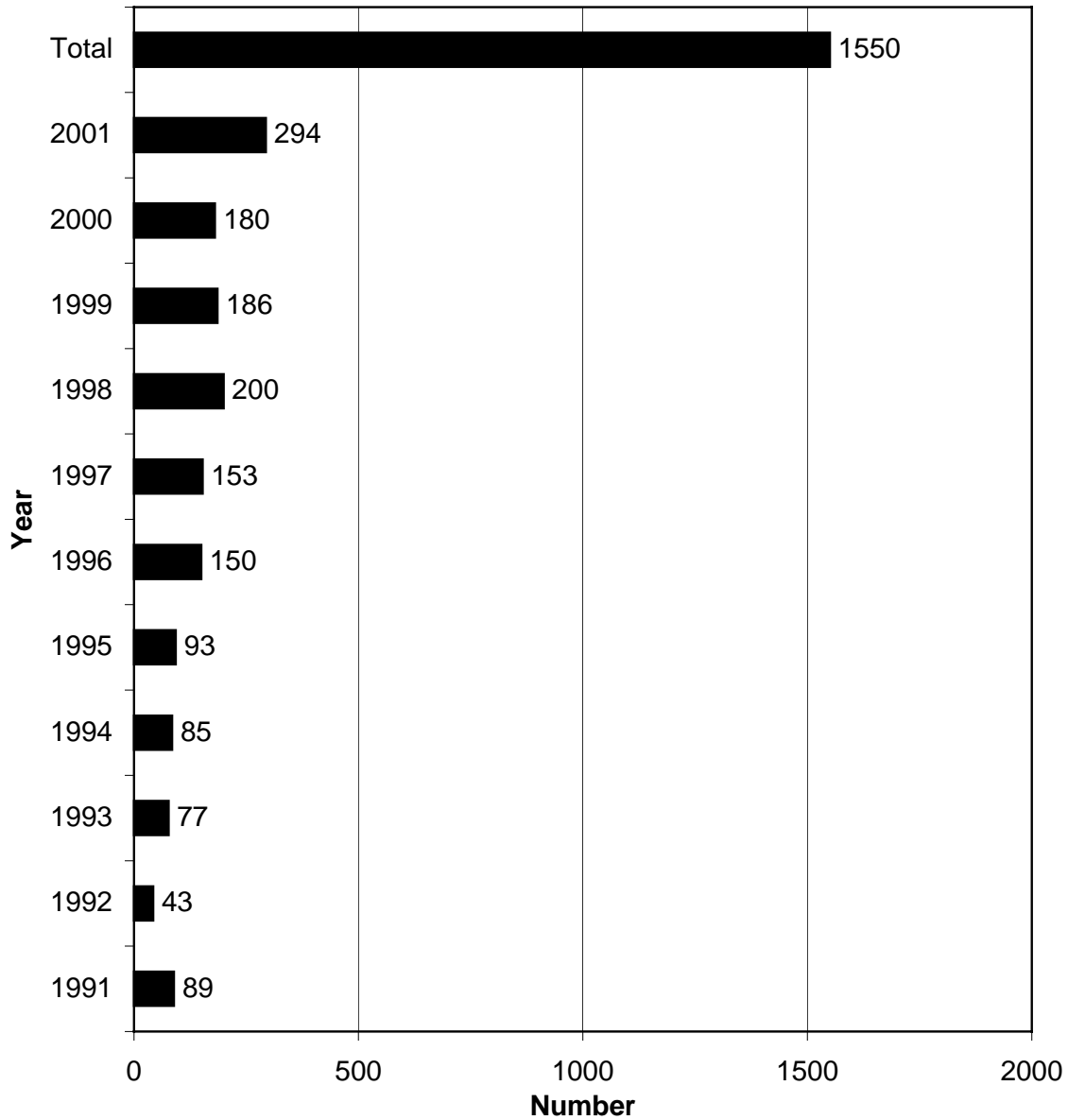


Figure 6
Number of New Partners in Approved Projects for
All Countries
1991-2001
(Including Repeat Partners)

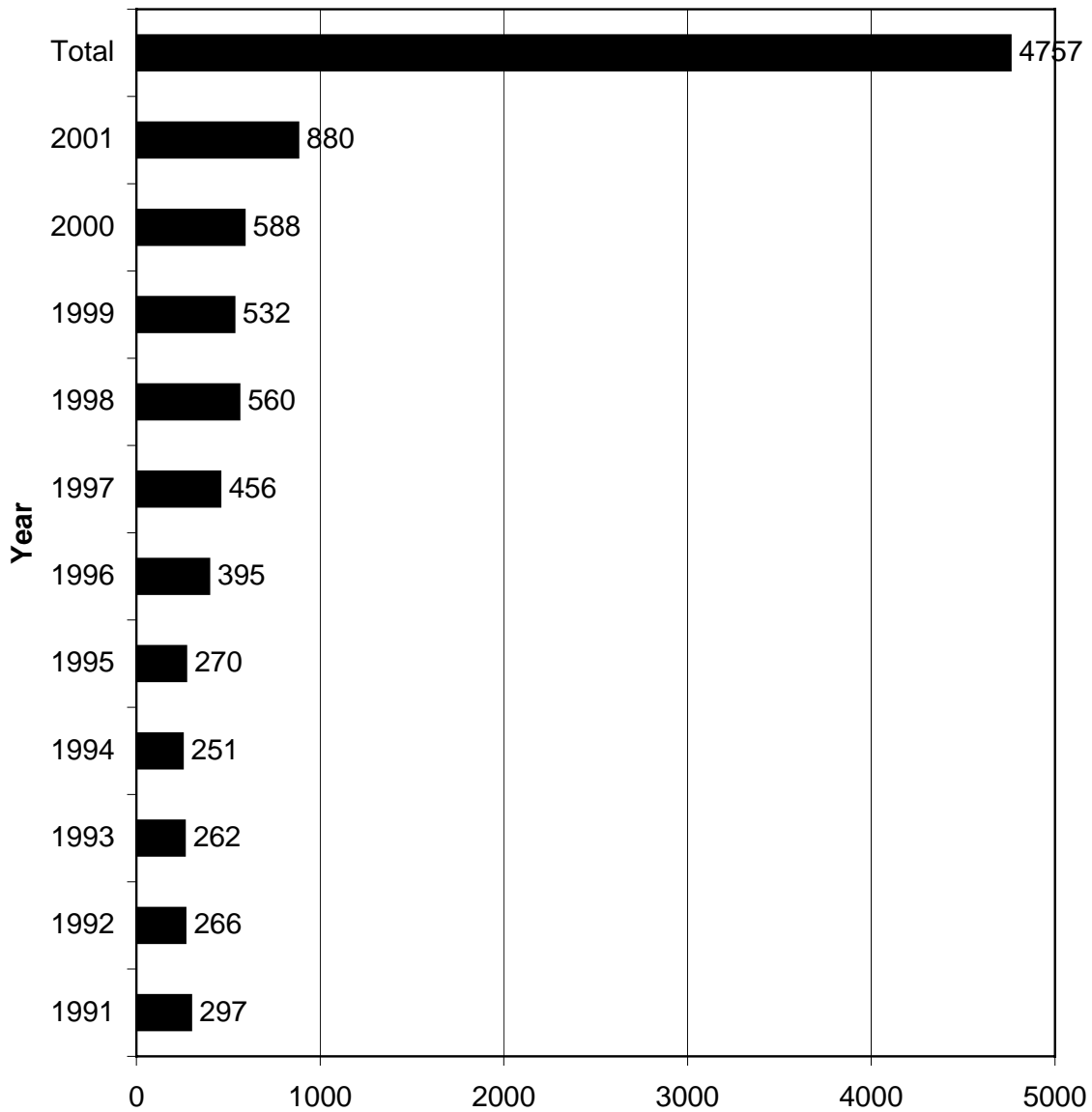


Figure 7
How would you rate NAWCA in encouraging partnerships among public agencies and other interests in the U.S.?

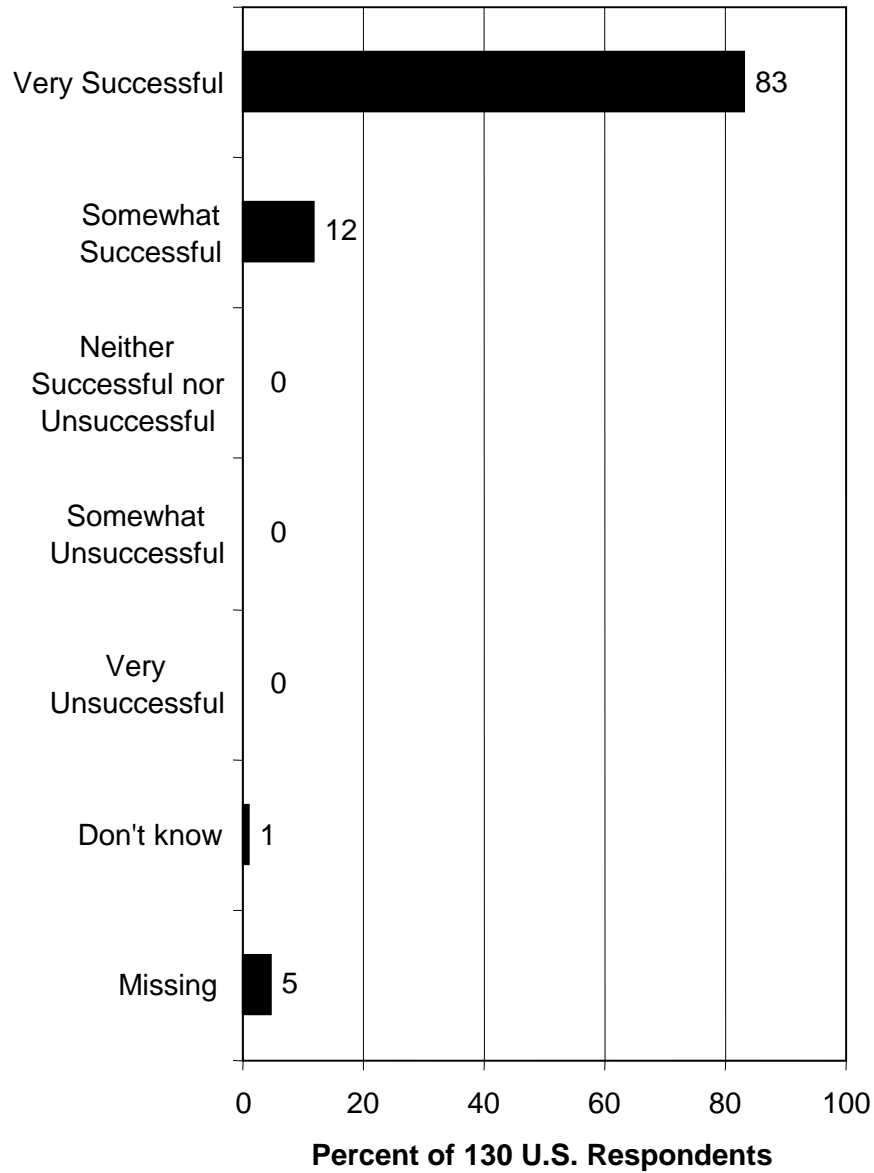
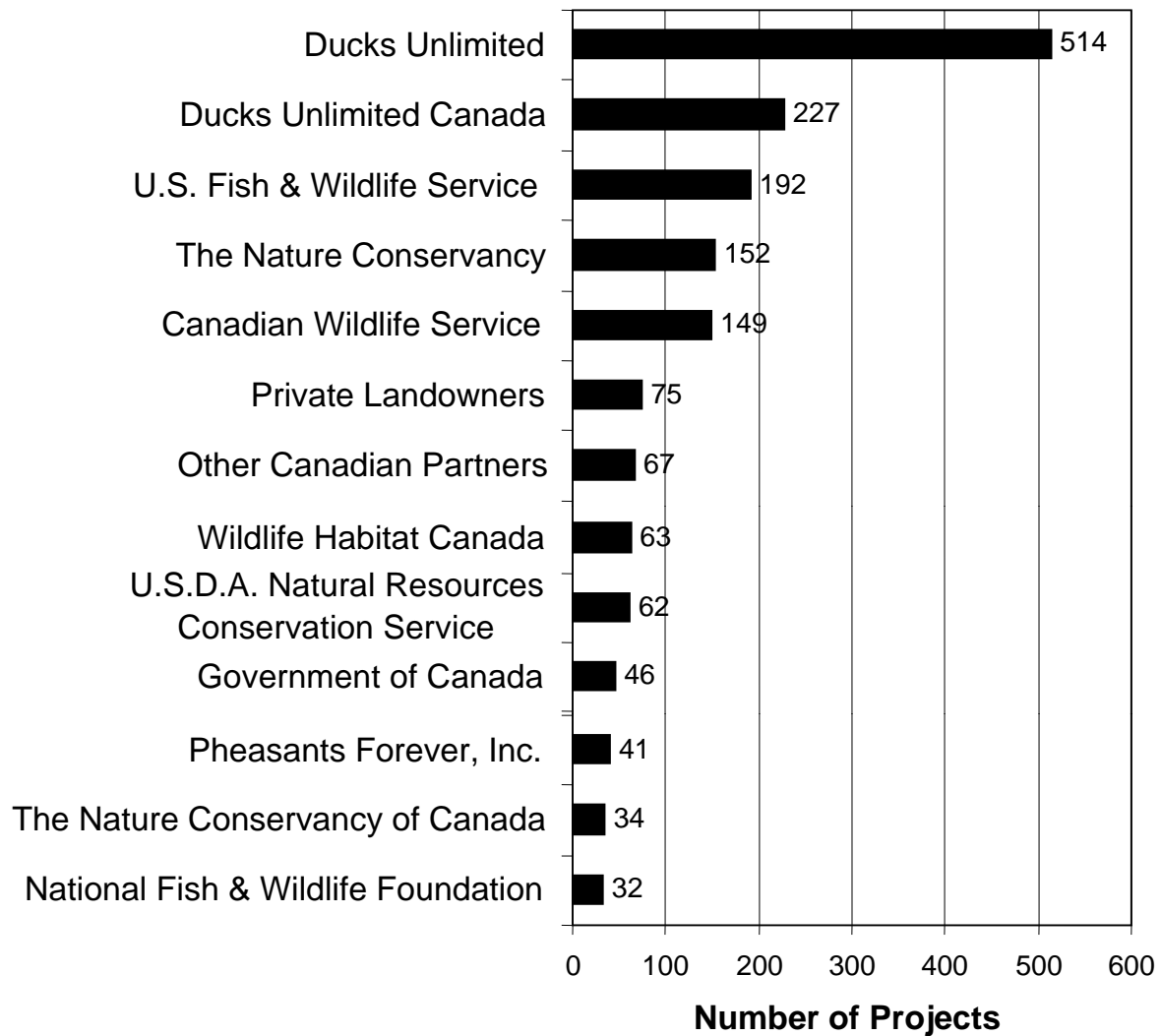


Figure 8
How would you rate NAWCA in encouraging partnerships among public agencies and other interests in Canada?



Figure 9
Top 15 Partners for All Countries before
7/27/2001 by Number of Appearances in
Approved Projects



- **In addition to the habitat, species, and partnership benefits, NAWCA has also had significant economic impacts in the United States and Canada.**

NAWCA has had a positive impact on the national economies of both the United States and Canada. Each year, significant NAWCA funds are matched with partner funds invested in conservation practices. Approximately \$1.1 billion in the United States and about \$332 million (in U.S. dollars) in Canada have been expended. Economic analyses for this evaluation calculates that the \$411 million in U.S. federal funds invested from the standard grants program (FY 1991-2001) and the small grants program (FY 1996-2001) have resulted in nearly \$3.5 billion (U.S. dollars) in additional economic activity in the U.S. and Canada.

These expenditures have directly spurred the creation, on average, of 3,738 new jobs annually in the United States and 637 new jobs annually in Canada between 1991 and 2001. Those jobs turned into distributed worker earnings of approximately \$838 million in the United States and approximately \$320 million (U.S. dollars) in Canada.

Table 3: Immediate Economic Impacts of NAWCA Expenditures on National Economies

	USA (\$US)		Canada (\$CAN)	
	2001 Only	1991 to 2001 in total	2001 Only	1991 to 2001 in total
Addition to Gross Domestic Product (GDP)	n/a	n/a	\$58,450,960	\$385,188,854
Output²	\$724,068,492	\$3,158,194,912	n/a	n/a
Earnings	\$192,099,804	\$837,888,446	\$48,499,315	\$319,608,019
Jobs (average per year)	8,571	3,738	966	637
State Tax Revenue	\$18,862,723	\$82,274,200	\$4,091,567	\$26,963,220
Federal Income Tax / Canadian GST	\$23,694,772	\$103,350,317	\$23,503,496	\$154,886,845

NAWCA expenditures result in many more economic benefits beyond those provided by the program's direct expenditures. Increased waterfowl populations translate into improved hunting opportunities and greater chances to view and observe waterfowl. Estimates from the economic analyses conducted for this study indicate that approximately 9,320 new non-

² "Output" is also known as the total multiplier effect and is the sum of the many rounds of spending within the economy started by the original expenditure of NAWCA funds. This measure tends to be higher than the Gross Domestic Product (GDP) estimate provided for Canada. Certain economic expenditures and activities are not measured by GDP measures, both in U.S. and Canada GDP calculations. The GDP estimate is reported for Canada, as data needed to derive traditional output multipliers were not available.

consumptive recreation jobs have been created in the United States, and 180 new jobs have been created in Canada. Approximately 1,503 new hunting-related jobs have been created in the United States, and approximately 115 new jobs have been created in Canada.

Table 4: The Economic Impacts of New Recreational Opportunities from NAWCA Activities

UNITED STATES	Hunting-Related Economic Impacts	Non-Consumptive Recreation-Related Economic Impacts
Expenditures	\$50,378,895	\$306,296,649
Output	\$147,982,800	\$906,394,651
Earnings	\$36,616,494	\$240,472,050
Jobs	1,503	9,320
State Sales Tax	\$2,330,729	\$18,405,361
State Income Tax	\$776,910	\$5,207,145
Federal Income Tax	\$4,457,982	\$29,661,303
CANADA	Hunting	Non-Consumptive Recreation
Expenditures	\$6,642,975	\$10,482,966
Jobs	115	180
Taxes (Federal & Provincial)	\$3,095,701	\$4,878,611
Salaries & Wages	\$3,321,488	\$5,241,483

Program Challenges

Although NAWCA has numerous accomplishments, the program faces several challenges.

- **The DBHC database of projects and expenditures is problematic in its setup and ability to track NAWCA projects.**

The current DBHC data of NAWCA projects do not accurately track project accomplishments because all of the data that are recorded are “pre” grant information, rather than “post” grant information. The case studies demonstrated that actual project accomplishments often differ from what was originally proposed. For example, in the Ace Basin National Wildlife Refuge Enhancement and Acquisition project, 565 acres were proposed to be affected, but the final report indicated that a total of 2,065 acres were actually affected. In fact, for all of the projects that were analyzed in the case studies, there were differences between what was proposed and what was accomplished. Even though many of the differences, especially regarding acres affected, were not a result of the grantees’ falling short of their proposals, it was not uncommon for activities to change as the projects progressed. In fact, grantees often acquire, restore, enhance or manage *more* acres than are proposed. It is important that the DBHC capture these differences for more accurate tracking of NAWCA projects and to document the true impact that NAWCA is having on the landscape.

In addition, numerous elements of errant data (misspelled data, fiscal year “1899” listed), improperly organized data elements (duplicate variable names, which may or may not hold the same data across several databases), and poorly established data structures (unnecessary division of data across multiple databases) appear in the relational database. Designers should consult Hogan’s *A Practical Guide to Database Design* (1990), Prentice Hall, or a similar text. Although these issues seem overwhelming, the resolution to them is simple. If data are normalized (see Hogan, 1990) and monitored, these issues can be resolved.

- **NAWCA does not have a systematic or comprehensive monitoring and evaluation program.**

Although the NAWCA program currently contains elements of monitoring and evaluation through the efforts of the Joint Ventures and some grantees, many stakeholders felt that NAWCA should explore methods to develop a more systematic and uniform program to evaluate the accomplishments of completed projects. Although the argument can be made that if high-quality habitat is acquired, species benefits will automatically accrue, monitoring can help a program like NAWCA be even more successful in the future. Quantified documentation of benefits can also assist in the project selection process by determining the types of projects that are most cost-effective and most beneficial to waterfowl, other wetland-dependent species, and other fish and wildlife.

Monitoring would allow projects to be evaluated post-completion to determine the resulting benefits and to assess whether the project was in fact a good investment of federal money. Sixty-eight percent of U.S. respondents felt that much more or somewhat more NAWCA resources should be allocated to post-project evaluations in the United States, and 50% of Canadian respondents felt that more NAWCA resources should be allocated for this purpose in Canada. In addition, 67% of U.S. respondents felt that much more or somewhat more NAWCA resources should be allocated to measuring the biological impacts of projects on a landscape scale in the United States. In Canada, 68% felt that more NAWCA resources should be allocated for this purpose.

“The evaluation components-aside from this sort of programmatic evaluation, NAWCA has almost conscientiously avoided looking at, funding or supporting that kind of evaluation on an ongoing basis.”

“There is an absence of an evaluation function in NAWCA, by NAWCA, to know what the money is producing and what it is doing. All of us beat our chests to say that our efforts have increased waterfowl populations, but a cynical person could say that it’s because of the weather. The only way you can evaluate that is by developing a good solid evaluation mechanism. I know that it’s hard, and it’s expensive, and whenever you get into multi-year conservation it’s a bear to figure out, but it is a weakness.”

“There has been too little emphasis on good biological information backing of projects; there’s too little quality assurance built into the Act. I don’t think there is a corporation out there that doesn’t spend 5-10% of its budget on quality assurance; NAWCA is reflective of the federal government that that kind of quality assurance is not done.”

Figure 10

Do you think that much more, somewhat more, about the same, somewhat less, or much less NAWCA resources should be allocated to evaluating projects after completion in the U.S.?

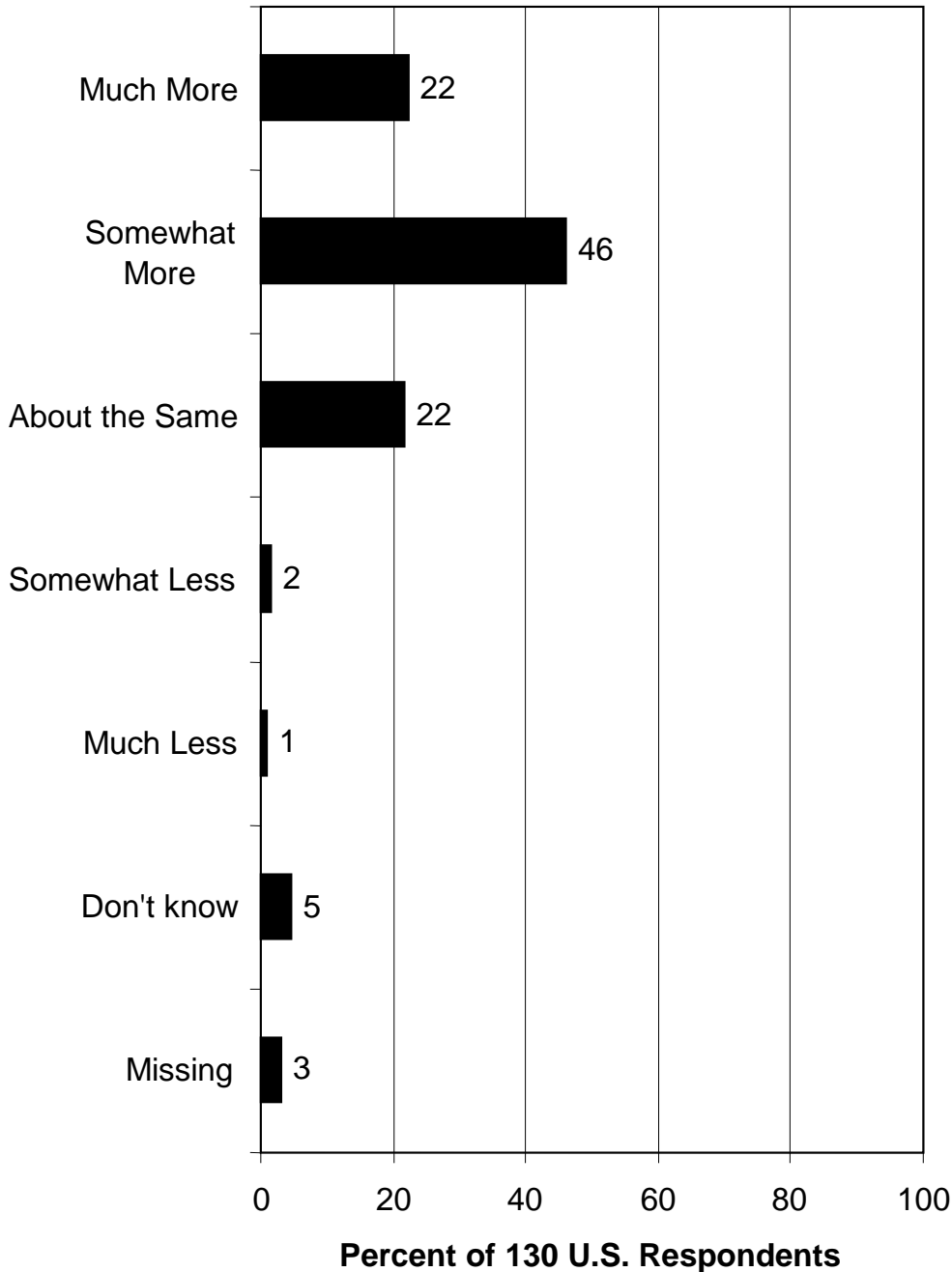


Figure 11
Do you think that much more, somewhat more, about the same, somewhat less, or much less NAWCA resources should be allocated to evaluating projects after completion in Canada?

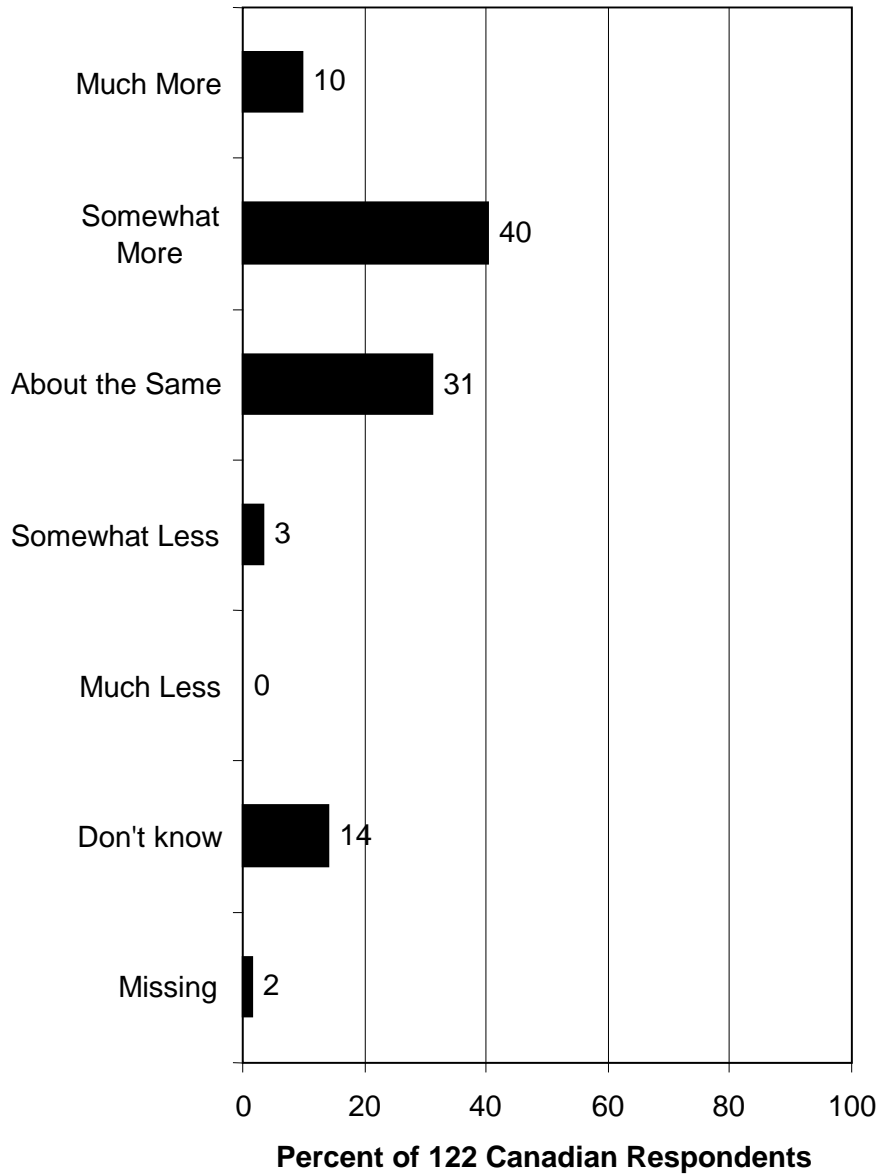


Figure 12

Do you think that much more, somewhat more, about the same, somewhat less, or much less NAWCA resources should be allocated to measuring the biological impacts of projects on a landscape scale in the U.S.?

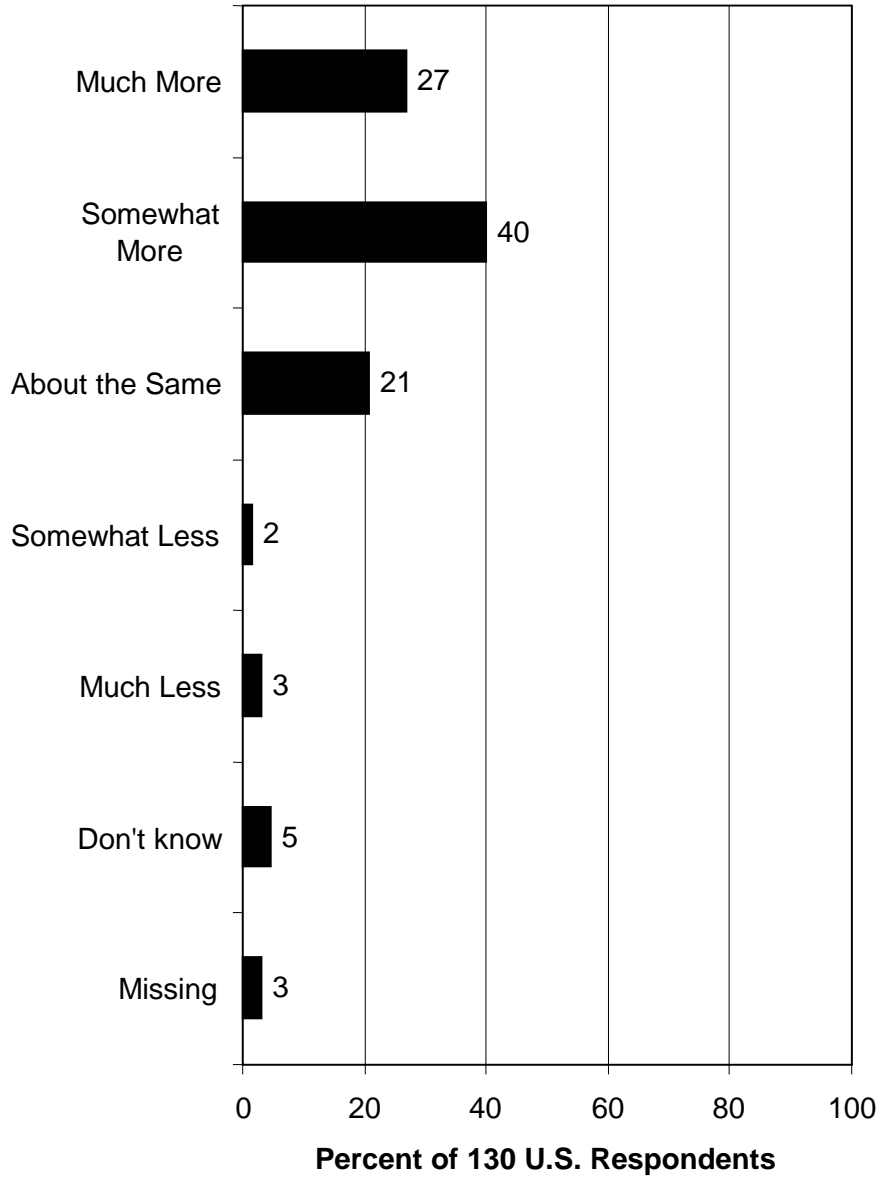
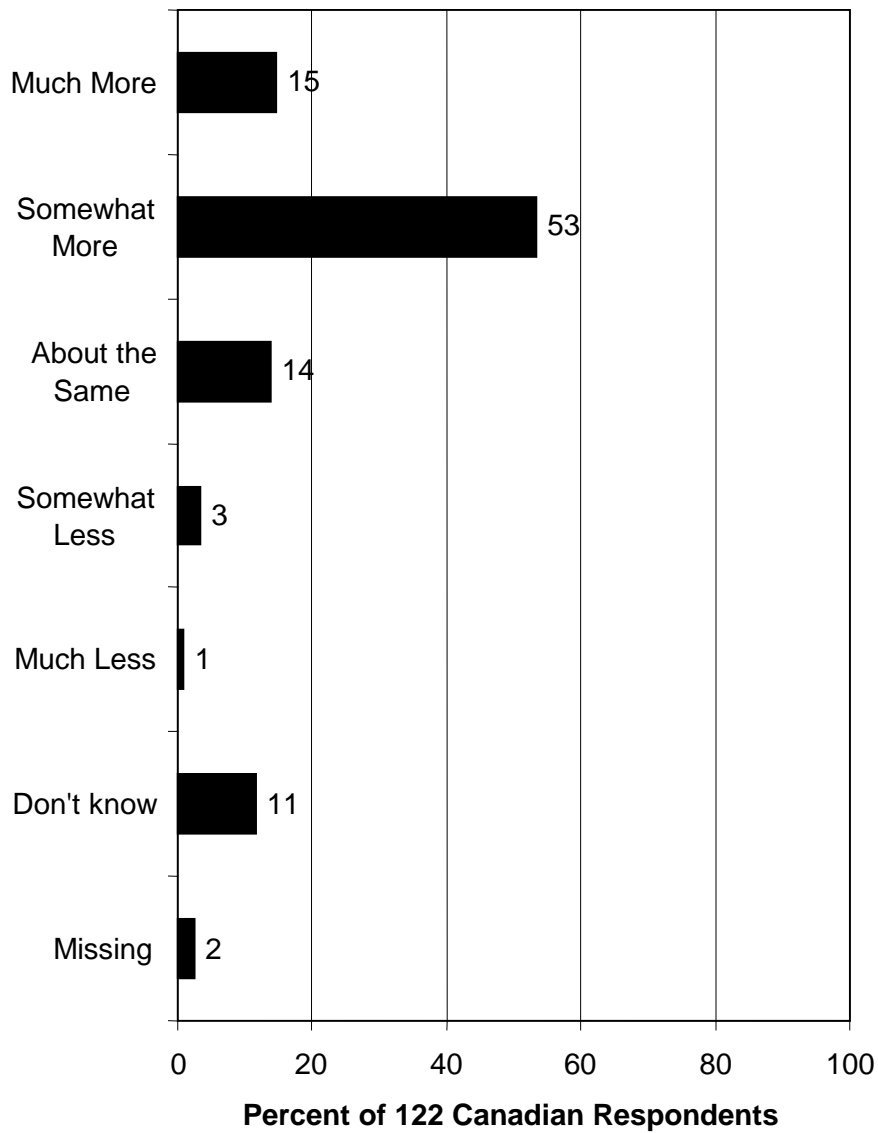


Figure 13

Do you think that much more, somewhat more, about the same, somewhat less, or much less NAWCA resources should be allocated to measuring the biological impacts of projects in Canada?



- **There is a general lack of factual knowledge regarding program implementation. In addition, there is little information available on NAWCA overall, and information is not centralized.**

Although over the past ten years NAWCA has become an important factor in wetlands conservation, very few members of the general public are aware that NAWCA even exists. Outside of the key stakeholders and program leaders, few people realize how the program works and that it has made such a large impact on habitat conservation across the nation. Eighty-four percent of U.S. respondents to the survey felt that, overall, the U.S. public is not at all aware of NAWCA in the United States. Only 14% of U.S. respondents felt that the U.S. public is somewhat aware of NAWCA, and 0% felt that the public is very aware of NAWCA. In Canada, 57% of Canadian respondents felt that the public is not at all aware of NAWCA, 35% felt that the public is somewhat aware, and once again, 0% felt that the Canadian public is very aware of NAWCA. Surveys of the general public also bear this out. For example, in a study conducted on the North American Waterfowl Management Plan (NAWMP), 86% of U.S. residents within the U.S. Joint Ventures had never heard of NAWMP (Responsive Management, 1996).

Even within the stakeholder community, there is a lack of factual knowledge regarding program implementation, especially between the United States and Canada. This is evident from the results of the quantitative survey, which had a lower response rate than usual for a professional survey of this nature. The survey targeted NAWCA stakeholders, but there was a large percentage of “don’t knows” marked as an answer choice on the questionnaire, especially when U.S. respondents were answering questions about Canada, and vice-versa. For example, when Canadian respondents were asked to rate NAWCA in achieving an appropriate distribution of wetland ecosystems for migratory birds in the U.S., a fundamental question about NAWCA, 63% responded that they “don’t know.” The same was true of U.S. respondents for the question about Canada, with 50% responding “don’t know.” Also, many stakeholders responded that they were not familiar enough with the program to complete the survey.

“NAWCA is the crown jewels of conservation programs out there. The story hasn’t been told to folks on the outside effectively enough.”

“It [NAWCA] is beginning to broaden people and increase their perspective. But the average layperson probably has no idea what NAWCA is. We haven’t really gone to the

newspapers or broad spectrums. In many ways this is a strength, because we deal with key stakeholders. The message is getting out to the important stakeholders.”

This programmatic evaluation also shows that even within the program, there is a lack of familiarity with some issues. This is likely due in part to the fact that information about NAWCA is largely scattered and not in a centralized location.

Figure 14

In your opinion, how aware is the U.S. public at large about NAWCA or what it does in the U.S.?

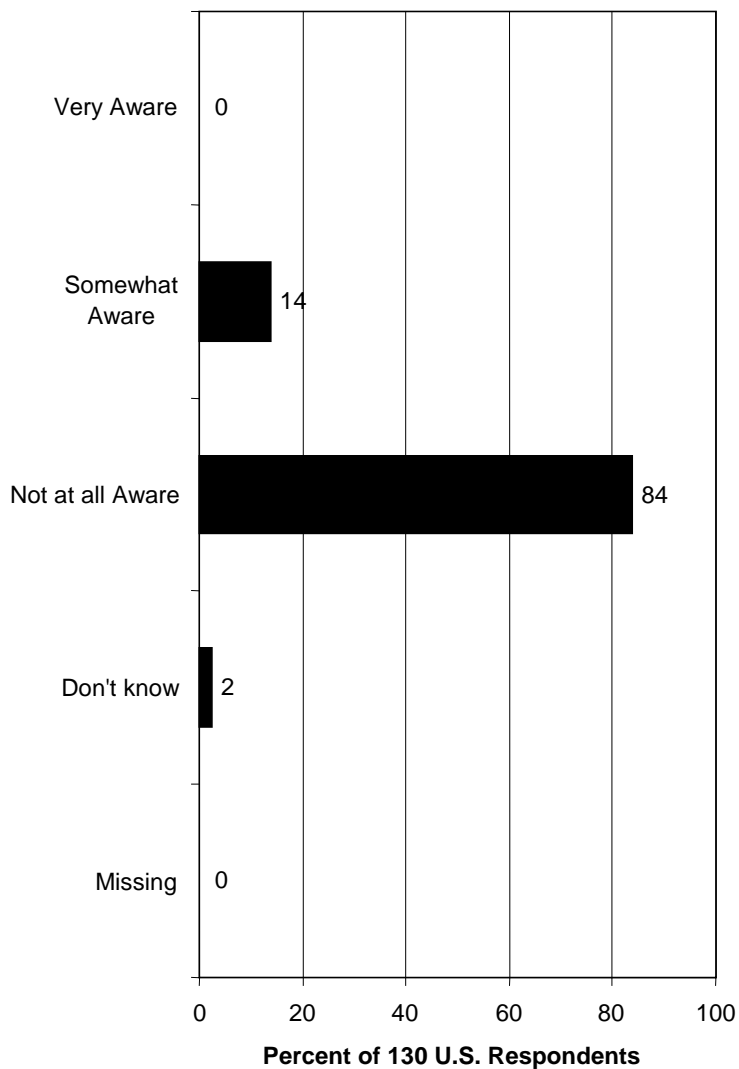


Figure 15

In your opinion, how aware is the Canadian public at large about NAWCA or what it does in Canada?

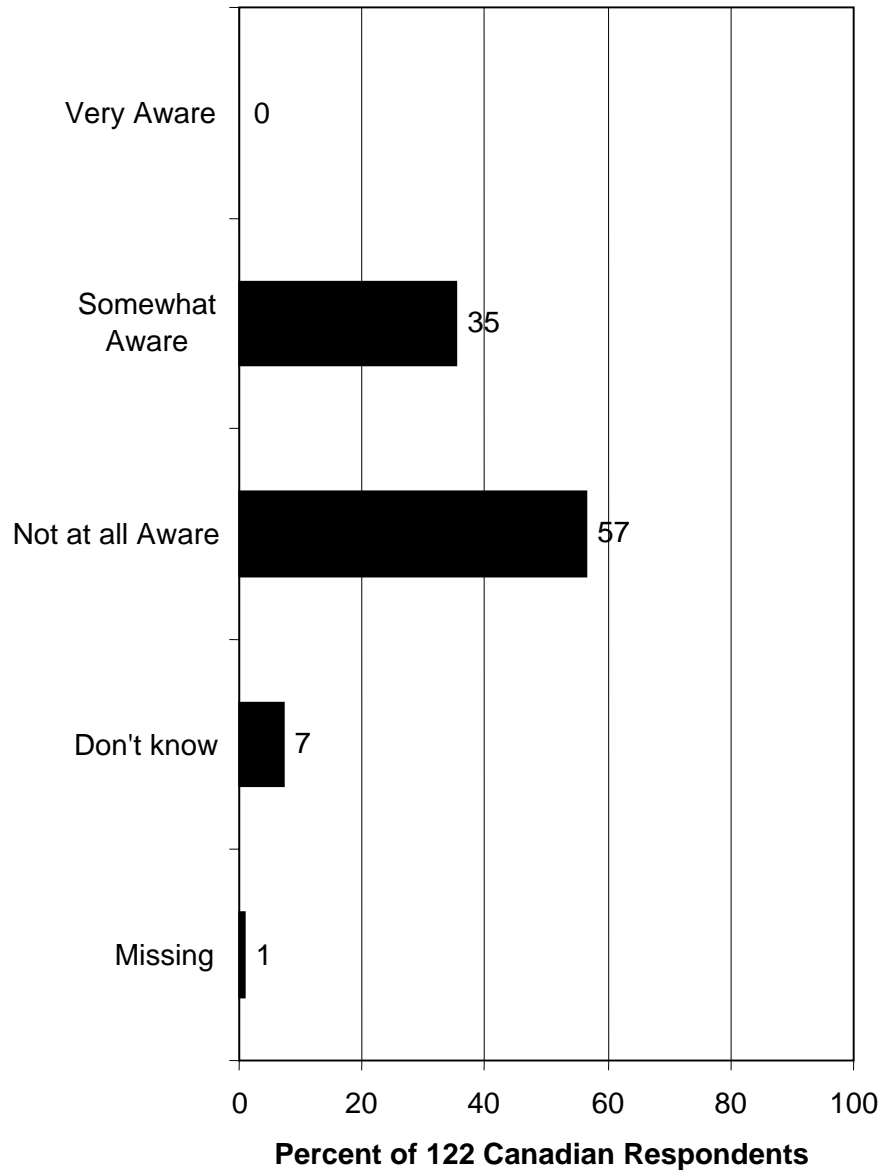


Figure 16

How would you rate NAWCA in achieving an appropriate distribution of wetland ecosystems for migratory birds in the U.S.?

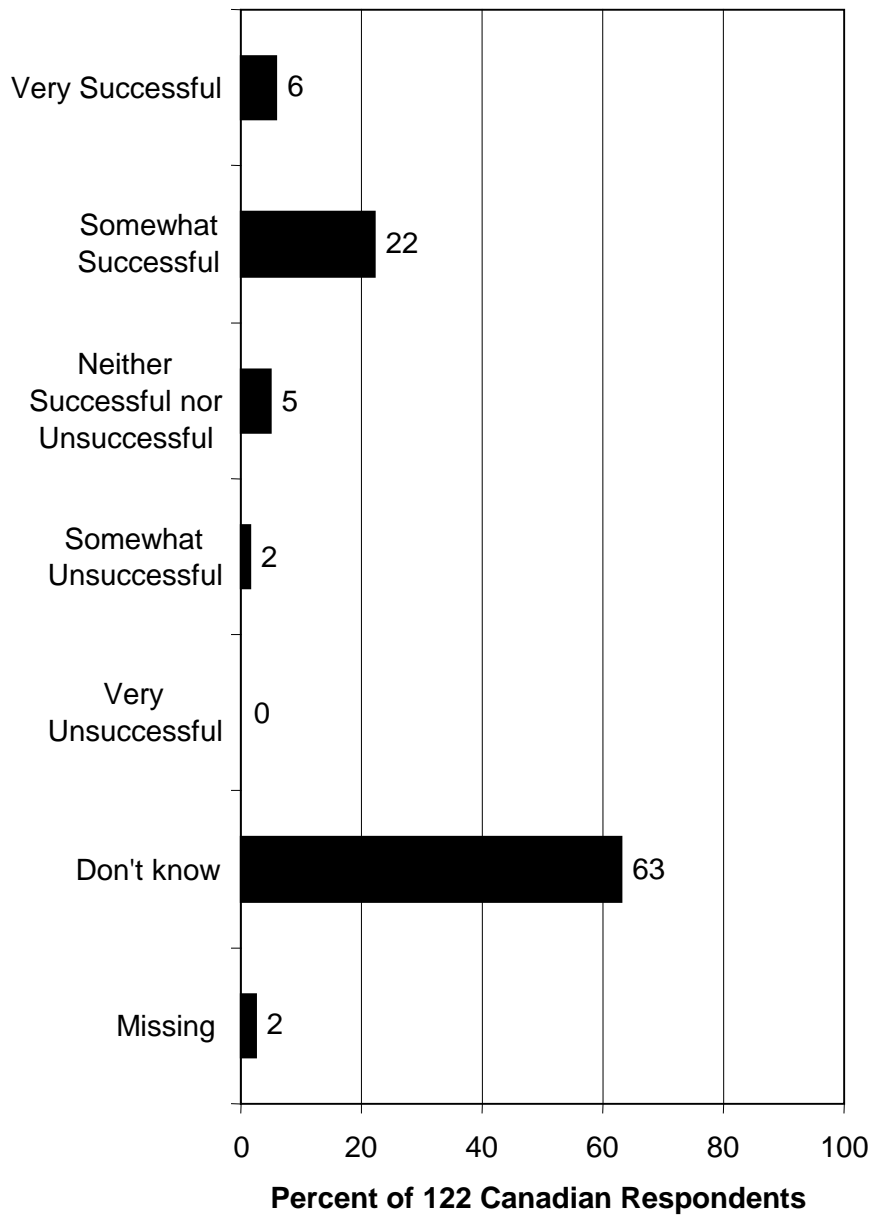
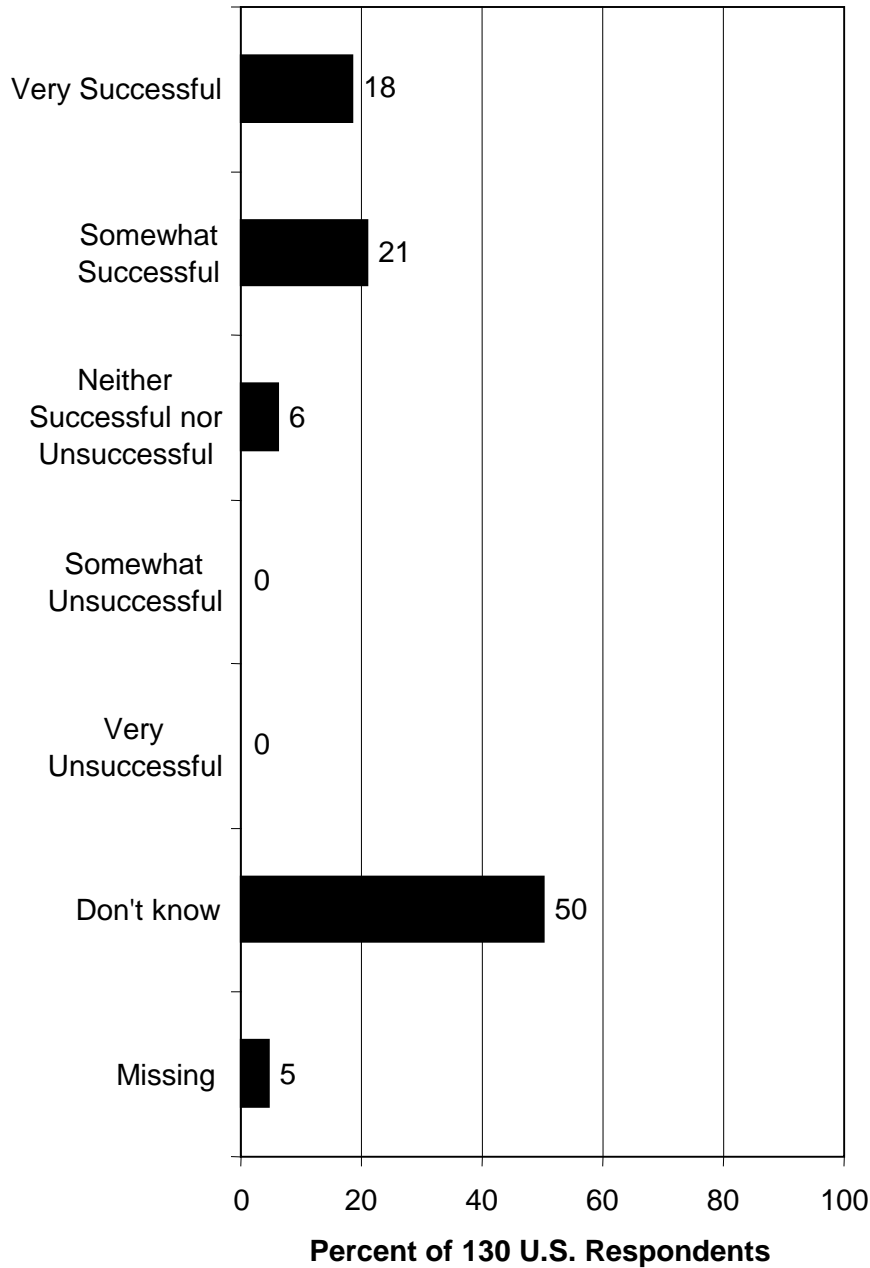


Figure 17

How would you rate NAWCA in achieving an appropriate distribution of wetland ecosystems for migratory birds in Canada?



- **Although improvements have been made to the grant application process, the process is still complex. Many grantees also felt that the process changes too often.**

Forty-five percent of U.S. stakeholders felt that the standard U.S. grant application process has greatly or somewhat improved over the past ten years. However, although the grant application must be detailed enough so that adequate information about project proposals can be gathered, there is some concern among some stakeholders that the process is overly burdensome and complex. This concern was expressed several times among project leaders interviewed for the case studies. Among stakeholders, 41% of U.S. respondents felt that the standard grant application process is too complex.

The process appears especially daunting to new partners, especially if they do not have experience with writing NAWCA grants. Some concern was also evident from project leaders regarding the consistency of the application process. Many individuals felt that once a level of comfort was achieved with the grant-writing process, changes would be made in the application process that would require different strategies for completing the application. Some grantees also felt that reporting requirements were often unclear.

In addition, some grantees admitted that they did not submit reports to the U.S. Fish and Wildlife Service in a timely manner. With seemingly no repercussion for not submitting reports, some grantees felt that they were unsure as to what is actually required from them.

“The process is, no questions,... it shouldn’t be taken on lightly, it’s a time-consuming process to make sure you’re complying with all the standards. The Joint Venture coordinator: well, we wouldn’t have done any of this work if it weren’t for him.”

“But the application form itself, it seems like it changes every year. Every year we have to figure out how it changed, and start all over again. The way in which grant writing works is that you have to know the program inside and out, and if someone changes one thing, it changes the overall strategy. So it’s just difficult when it changes every year.”

“I think it has been good but it can be slow, from the time you get approved to getting the grant agreement to getting the money dispersed. There are bottlenecks in approvals of appraisals or lands tied to conservation easements. You can hire your own approval team, but there are some bottlenecks. Usually the regional offices handle that, but they have so much to do. We’ve had appraisal reviews last from three months to over a year. When you are trying to move quickly to buy a piece of land, you sometimes need to move fast, and it has caused us to lose some pieces of land.”

Figure 18
How much do you feel the standard application process has improved or worsened over the past 10 years in the U.S.?

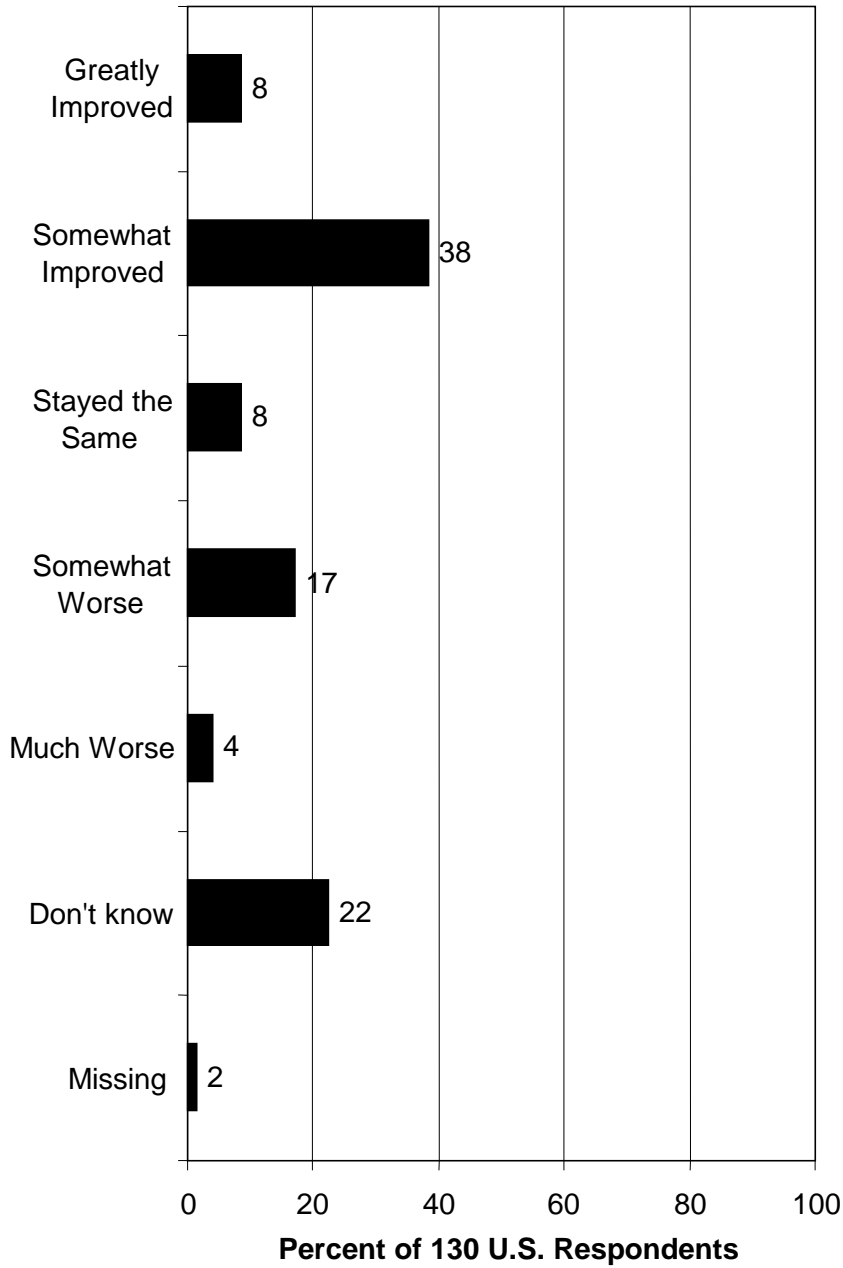
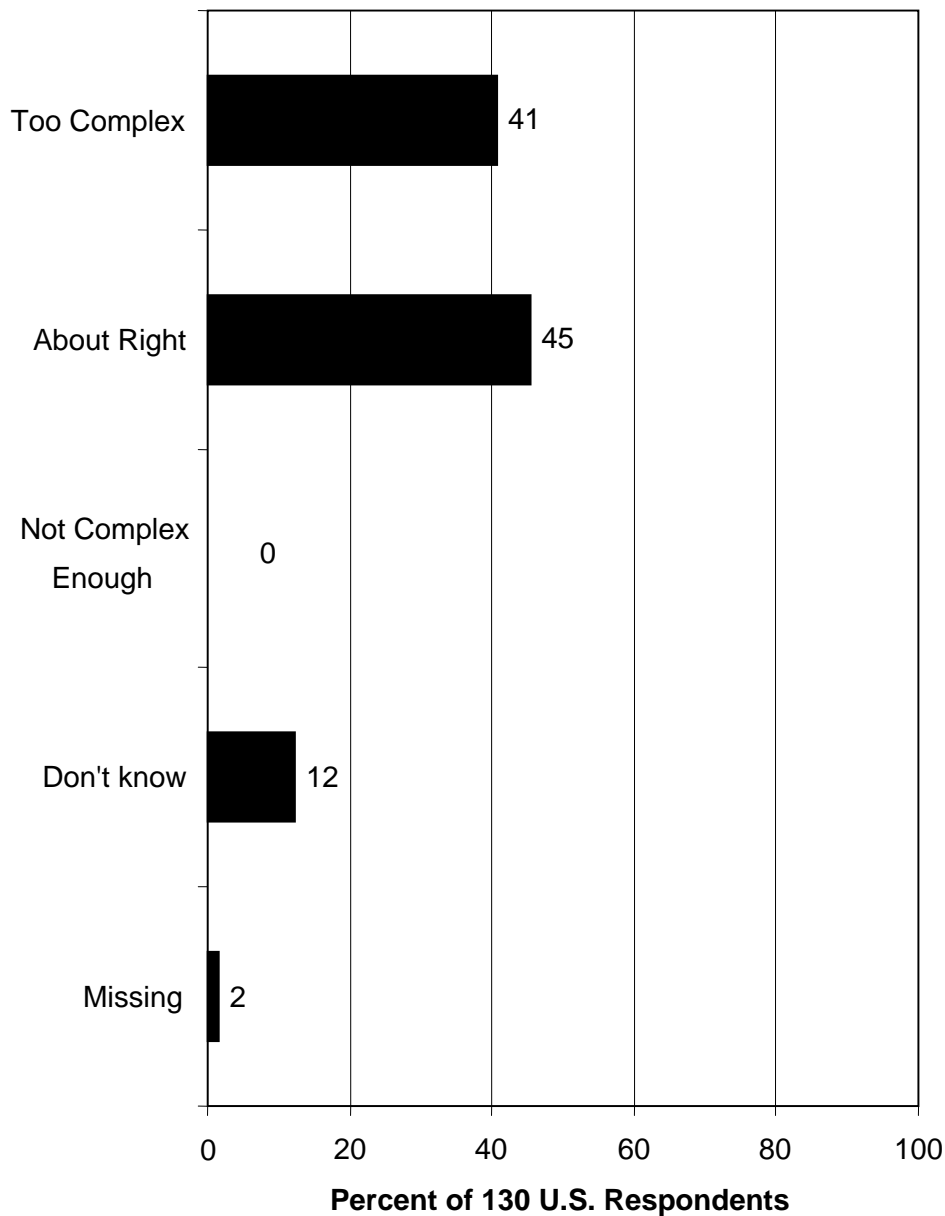


Figure 19

In light of the amount of money being requested (grant cap of \$1 million per proposal), how would you rate the level of complexity of the standard grant application process in the U.S.?



Program Improvements

- **Improve the DBHC database of NAWCA projects by including pre-project data and post-project data.**

The Division of Bird Habitat Conservation should develop a database for NAWCA projects that contains pre- and post-project information. The database currently contains only information that is proposed for all projects in a given year. However, to make accurate assessments regarding whether specific projects fulfilled their goals, post-project data should also be included and standardized with the pre-project data.

Maintaining accurate records of NAWCA projects is necessary not only for bookkeeping, but also to alleviate concern from stakeholders and the public. Although this programmatic evaluation did not uncover any negative press surrounding NAWCA or NAWCA projects, the *appearance* of impropriety could be potentially damaging to the program, as indicated by a focus group participant below.

“[Threats for NAWCA include] scandal or appearance of scandal, such as if NAWCA were portrayed as a golden-fleece award in terms of public relations. By scandal, I am referring to accountability to ensure that results are documented; that projects and money are documented.”

- **Standardize pre-project data with post-project data in the DBHC database.**

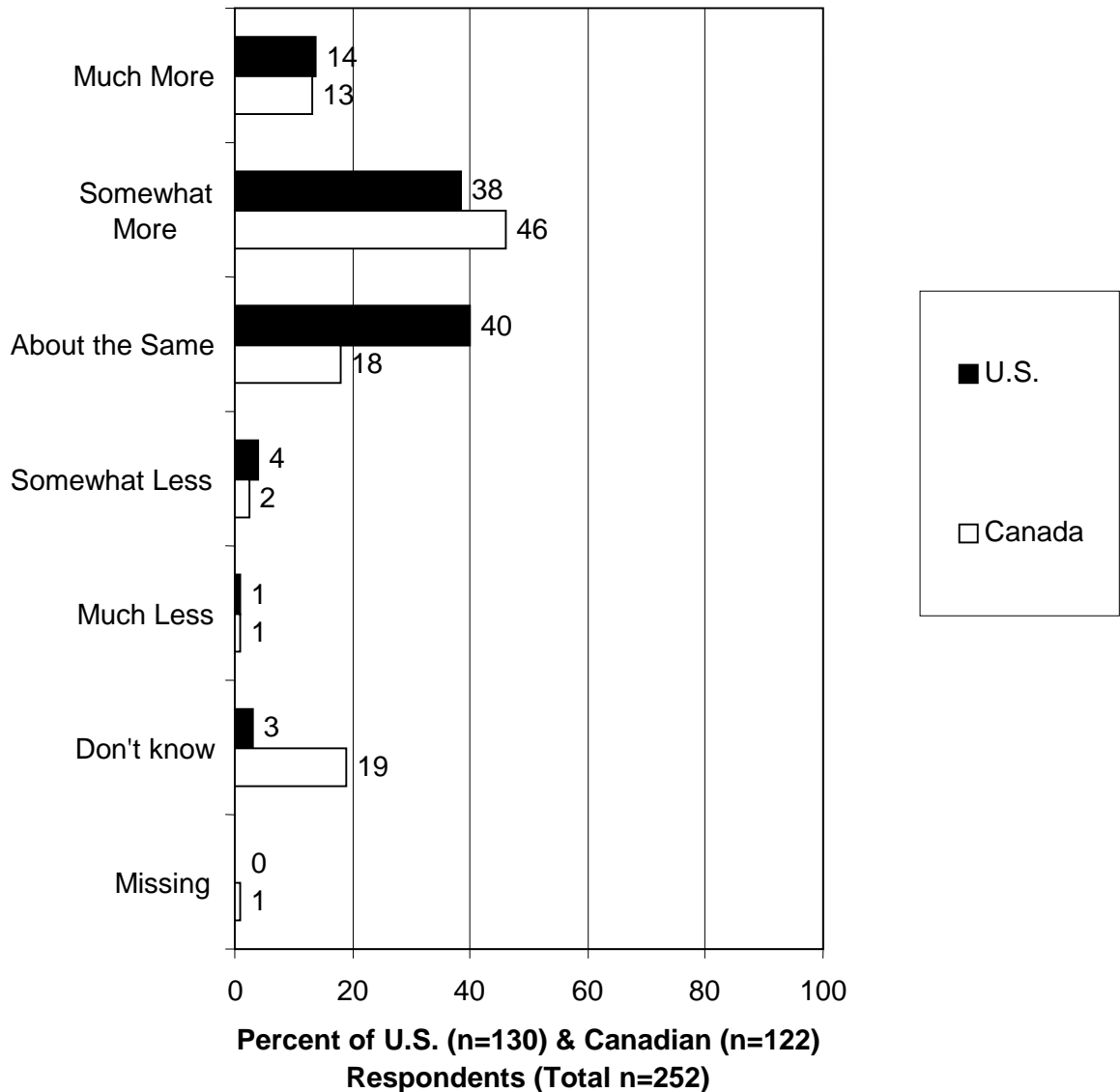
The DBHC should develop a set of criteria that can be used to accurately measure pre-project and post-project information. Data entry should be standardized, and the burden of data entry can be shifted to grantees. A standard form should be developed, containing necessary information from proposals and final reports, that grantees could easily submit by the Internet. Categories for data entry should be streamlined, and numerical when possible. This strategy of enlisting the help of grantees would reduce the time and resources that DBHC must spend on entering information into the database.

- **Consolidate information on NAWCA in one place to increase stakeholder knowledge levels.**

Information about NAWCA should be centralized, such as on the DBHC Website. Currently, information about the program is scattered, making it difficult for stakeholders and the public to gather information about the program, including the intricacies of how it works, and the accomplishments that have been achieved. In addition to posting the information in one place on the Internet, program leaders should consider developing a book or major report for stakeholders that would contain the information. Stakeholders in both the United States and Canada were supportive of developing an educational program to improve awareness of the NAWCA program among potential stakeholders. In the United States, 52% of respondents felt that much more or somewhat more NAWCA resources should be used for this purpose, and 47% of Canadian respondents felt that much more or somewhat more resources should be allocated. Even if program leaders choose not to develop an entire program to improve awareness, consolidation of information about the program would likely improve levels of awareness.

Figure 20

Do you think that much more, somewhat more, about the same, somewhat less, or much less NAWCA resources should be allocated to developing an educational program to improve awareness of the NAWCA program to potential stakeholders?



- **Increase information dissemination to improve both stakeholder and public awareness of NAWCA.**

NAWCA should identify a target market of its stakeholders and distribute copies of “Birdscapes,” or simple fact sheets about the program. “Birdscapes” could be posted on the U.S. Fish and Wildlife Service Website, on newsstands, and in places like National Wildlife Refuges or National Parks. This is an excellent publication, and with appropriate distribution, can increase stakeholder and public awareness of NAWCA.

Partners should also be encouraged to improve awareness of the program locally. This can be accomplished by posting signs on NAWCA lands, conducting tours of the project sites for local school groups, or by submitting articles to local newspapers. As previously mentioned, there not only seems to be a general lack of awareness internally about NAWCA, but also between Canada and the United States regarding how the program is implemented in each country. The U.S. Fish and Wildlife Service should include more information in its Website about the implementation process in each country.

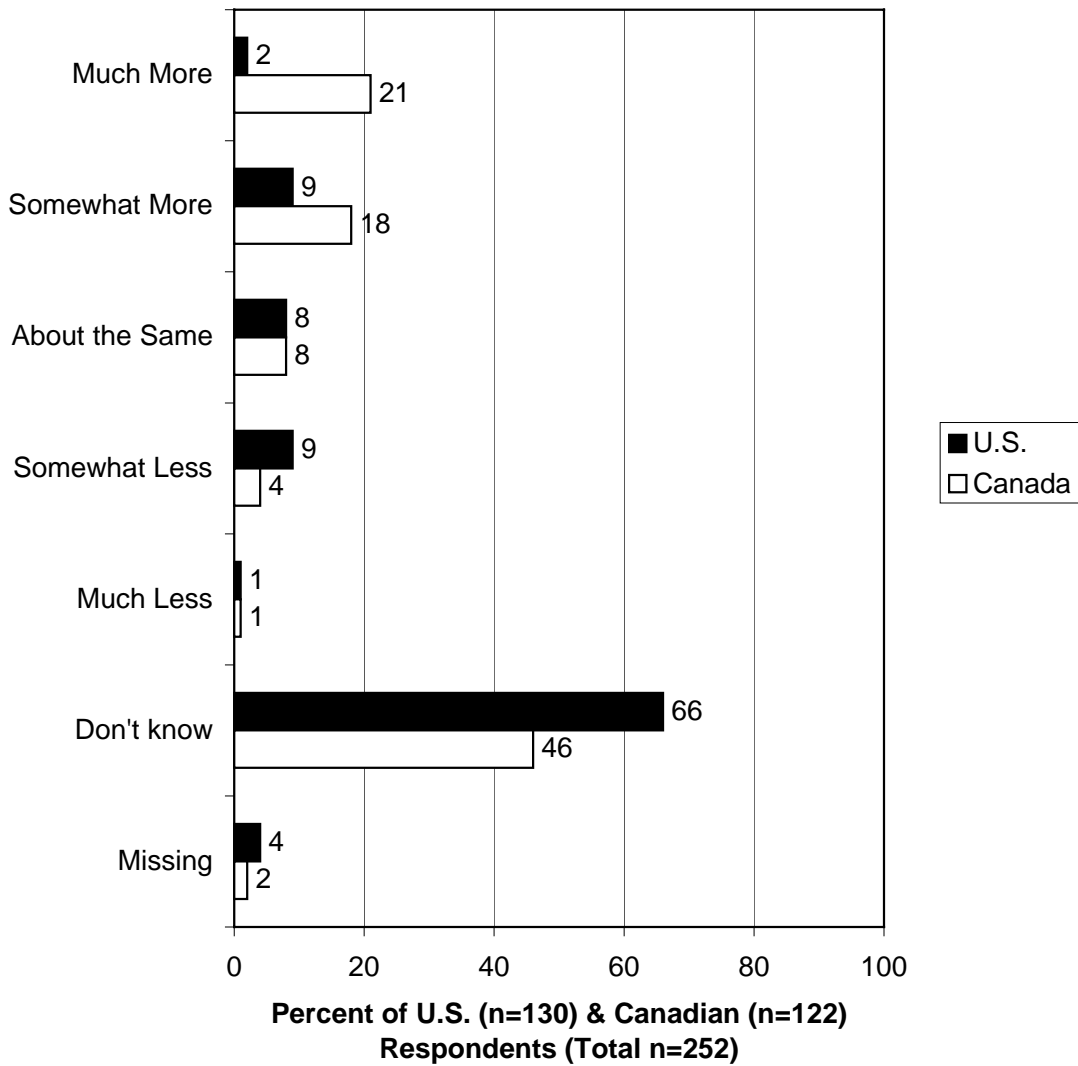
- **Strengthen communications between the United States and Canada.**

NAWCA leaders should consider strengthening communications between program implementers in the United States and Canada. Qualitative research showed that the relationships and level of communication between stakeholders from the United States and Canada could be improved to increase the knowledge levels regarding program implementation between the two countries. For example, when asked to rate the effectiveness of the U.S. “project” approach compared to the Canadian “program” approach, 66% of U.S. respondents answered “don’t know,” and 46% of Canadian respondents answered “don’t know.”

First and foremost, both countries should identify issues of concern that they have with each other and make the other country aware of those issues. Communications could be improved by conducting more cross-border site visits so that each country can observe how NAWCA funds are utilized. Although site visits require an investment of time and money, this would encourage information exchange between project or program officers, and ideas could be shared regarding how to better design and implement projects. Increased overall interaction

between stakeholders in both countries should also be considered so that individuals can become better acquainted.

Figure 21
In Canada, proposals to the NABCI Canada Council are submitted in the form of programs. In the U.S., proposals are submitted to the NAWCC in the form of projects. Tell me if you feel the Canadian "program" approach is more or less effective than the U.S. "project" approach.



- **Develop a standard format for final reports to be submitted by grantees. Grantees should also be required to submit final reports in a timely manner.**

Currently, grantees are required to submit status reports and final reports, but there are no standard requirements for those reports. The content of reports submitted by grantees varies from very general accomplishments to detailed analyses of projects. These differences often cause difficulties in making comparisons between what was proposed and what was actually accomplished.

Final reports should contain very specific and clear categories that reflect the questions that must be answered in the grant proposal itself. To make it easier on the grantee, reports could be submitted through the Internet in a format that would make it relatively easy to enter data. The U.S. Fish and Wildlife Service should also consider requiring all of the necessary supporting documents, such as land appraisals, to be submitted by grantees. The U.S. Fish and Wildlife Service can shift the burden of entering project data from itself onto the grantee, thereby alleviating some of the administrative duties placed upon the U.S. Fish and Wildlife Service. Grantees could submit their final reports electronically, in a format that could be easily imported into the new post-project database.

It is important for the Division of Bird Habitat Conservation to require grantees to submit reports in a timely manner, so that project accomplishments can be accurately tracked after they are complete. Several project leaders interviewed for the case studies admitted to not submitting reports in a timely manner with seemingly no repercussions. In one case study, a project leader stated that the USFWS had been concerned about implementation because reports had not been received. The USFWS should consider setting mandatory dates that final reports should be submitted, with penalties incurred if the reports are late (unless another arrangement is made between DBHC and grantees).

“We need to go back and evaluate past projects. To get at that, unless grantees specify in the final report, you have to go by the proposal in terms of doing any kind of tally. We need to compare the final report against the proposal. We need to do follow-up site visits. In the final report, partners are supposed to put numbers down in terms of acres. We are trying to standardize what information is required in the reports. Some are given as one page reports, while others are binders. We need to take the time to read them all, and follow up on things that are not in accord.”

- **Increase the number of grant-writing workshops held for potential grantees.**

Several individuals interviewed for the case studies commented that the grant application process is time-consuming and burdensome. Many of the smaller organizations do not have the necessary resources to devote to writing a proposal and may be discouraged from applying. The USFWS should consider developing a manual to explain the application process, including specific names of whom to contact, how to plan a project, and how to develop a proposal. The entire process can be intimidating to new partners, especially if they have not previously written a NAWCA grant.

“It [the application process] is very complex, the regulations are complicated and it requires highly trained specialists that are in short supply.”

- **To the extent possible, the USFWS should maintain consistency with the grant application process.**

Some concern was expressed by stakeholders that the application process changes frequently, including requirements for writing status reports and final reports, as well as the proposal itself. Maintaining consistency will not only make it easier for grant writers to be familiar and knowledgeable about the process, but will also make it easier administratively.

- **Consider exploring cost-effective methods to develop a systematic and universal monitoring and evaluation program.**

Although not specifically required by the Act, NAWCA is authorized to utilize a percentage of the allocated funds for evaluation efforts. The *Congressional Record* indicates that up to 4% of each year’s fiscal funds may be used for administration, including evaluation.

“Up to 4% of each fiscal year’s funds may be used for administrative purposes. To the extent that these funds are not needed for these purposes, the Secretary of the Interior should make them available to conduct, in conjunction with the States and other entities, evaluations of the efficacy of the wetlands conservation projects carried out under this legislation with respect to their effect on the production and survival of migratory birds and other fish and wildlife.”

The NAWCA program currently contains elements of a monitoring and evaluation program through the efforts of the Joint Ventures and grantees. In addition, extra points are awarded to project proposals that contain a monitoring and evaluation component. However, these efforts occur sporadically across the U.S. and Canada, and a universal evaluation program is not in place. A monitoring and evaluation program could be designed so that cost is kept to a minimum, and so that the responsibility of carrying out the monitoring is shifted to the partners. There are many ways that the evaluation program could be designed, but one option would be to have a program with two major goals: 1) to evaluate specific projects to determine if they are meeting proposed accomplishments and 2) to evaluate projects in terms of their overall biological benefits. The program could be designed with the intent of ultimately providing broad, large-scale accomplishments of NAWCA projects on the landscape in addition to the traditional measurements of acres and waterfowl populations.

As previously mentioned, some monitoring is already being done in the United States and Canada, but it could be better coordinated through the programs and Joint Ventures so that the data are collected in a more consistent manner. A simple monitoring technique used by Wildlife Habitat Canada and the Wetland Habitat Fund in Canada could be emulated. Landowners are provided with annual monitoring cards upon which they check off species that they observe on their projects. This is done on a volunteer basis, and the program is already producing valuable biological information. In the United States, Ducks Unlimited in the Lower Mississippi Valley performs aerial surveys of NAWCA projects as a method to check on compliance with project agreements. NAWCA could also make use of volunteers to conduct monitoring studies and collect data as is done for the Breeding Bird Survey. The use of volunteers is a method that could keep costs to a minimum.

Finally, on an annual basis, a small percentage of randomly selected completed projects (5-10%) could be monitored as a “check” to determine if they are being managed correctly and to ensure that the grantee completed the project as proposed. These random audits could also be used to determine the overall impacts that the projects are having on species populations by having the auditor(s) also conduct species surveys at the time of inspection.

- **Allow NAWCA to continue with funding maintained at 2001 levels or increased or increased levels. Additional funding would result in even more positive habitat and wildlife conservation impacts.**

The results of this evaluation demonstrate that NAWCA has done tremendous work for wetlands habitat protection. To continue being successful, NAWCA must not lose the funds that allow the program to deliver many benefits to waterfowl, migratory birds, and other fish and wildlife. With the developing goals and objectives of the other bird conservation initiatives, it is especially important to maintain funding allocations so that NAWCA can continue its leadership role in wetlands conservation.

The Act authorizes up to \$50 million in congressional appropriations through Fiscal Year 2003. An overwhelming majority of stakeholders in both the United States and Canada felt that NAWCA should continue and be reauthorized. Ninety-five percent of stakeholders in the United States strongly agreed that NAWCA should be reauthorized, and 89% of stakeholders in Canada strongly agreed that NAWCA should be reauthorized.

In addition, NAWCA has delivered numerous, quantifiable benefits to the American and Canadian public, including:

➤ **The number of acres affected.**

Since 1991, approximately 8 million acres in the United States, Canada and Mexico have been protected, enhanced, restored and managed.

➤ **The number of partners involved in NAWCA and the partnerships created by NAWCA.**

Since 1991, the number of new partners has steadily increased, with a total of 1,550. In 1991, there were 89 new partners, while in 2001, there were 294 new partners. Partnerships have also steadily increased since 1991, with a total of 4,757 partnerships that have developed over the past ten years.

➤ **The tremendous leveraging of federal funds by partner funds.**

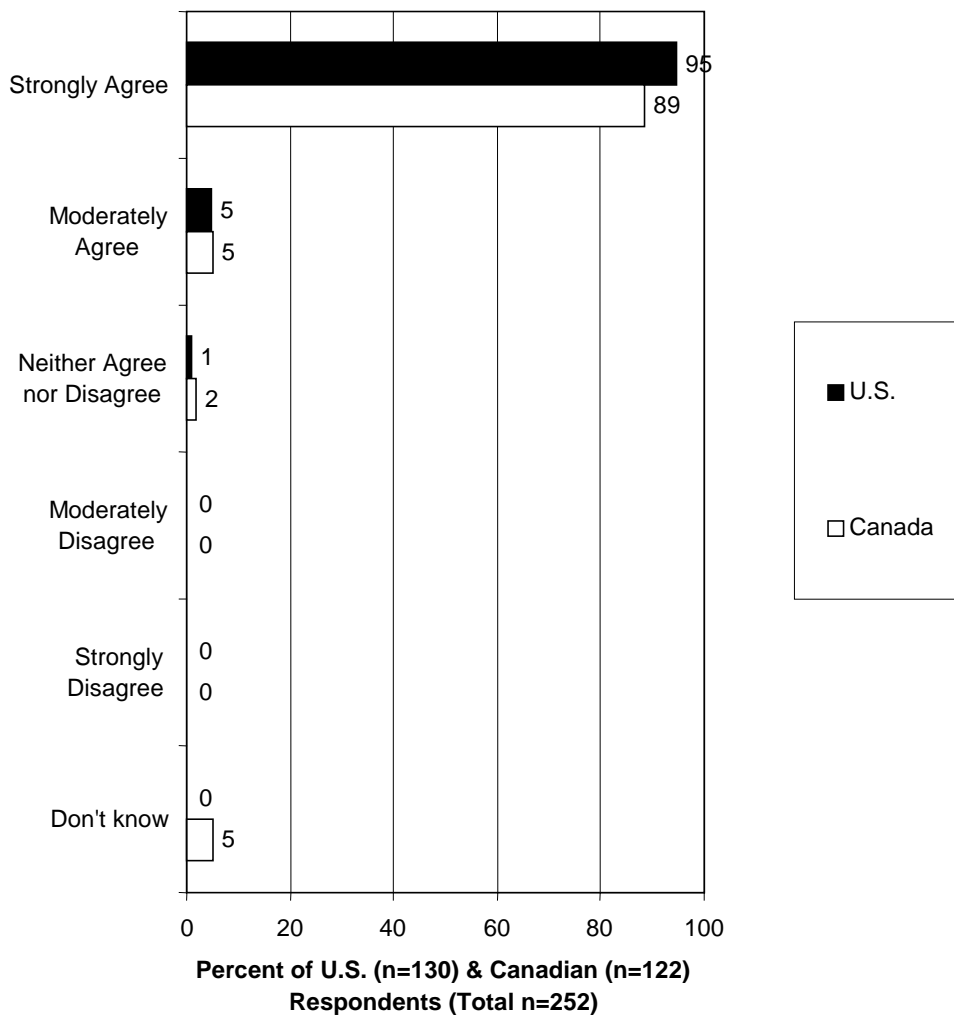
Since 1991, NAWCA has facilitated the investment of nearly \$411 million in federal funds, matched with nearly \$1.14 billion (U.S. dollars) in partner funds in the United States, Canada and Mexico.

➤ **The economic benefits that have accrued.**

NAWCA has had a positive economic impact on the national economies of the United States and Canada. Economic analyses for this evaluation calculates that the \$411 million in federal funds invested from the Standard Grants Program (FY 1991-2001) and the

Small Grants Program (FY 1996-2001) has translated into nearly \$3.5 billion in additional economic activity in the U.S. and Canada.

Figure 22
I would like to know your general opinion of the worthiness of the continuation of NAWCA, which is up for reauthorization in 2003. Do you agree or disagree that NAWCA should be reauthorized?



APPENDIX: METHODOLOGY

Appendix: Methodology

REVIEW OF LITERATURE METHODS

This report included traditional approaches to reviewing the available literature (Krathwahl, 1993). Three researchers worked both independently and in concert to perform targeted searches on ten specific data sources, and to perform exhaustive searches on twenty-three databases. Targeted data sources included publications from various sources such as: USFWS, NAWCC, and NABCI Canada Council, Websites, *International Wildlife Law*, *Wildlife Society Bulletin*, and *Journal of Wildlife Management*. Databases examinations included: Cambridge-Scientific Abstracts, Science Citation Index, General Science Index, The Congressional Record, UVA library catalogue, Biological Abstracts, Science Direct, and Lexis-Nexis.

Database searches used non-date-constrained Boolean searches on variations of the name of the Act, the name of related Acts, abbreviations and/or acronyms for the Act and related Acts, and topical subject areas that reasonably could have included the Act. Most materials were obtained through libraries at Virginia Polytechnic Institute and the University of Virginia. Other materials were gathered through a variety of other sources including downloadable materials from the U.S. Fish and Wildlife Service (<http://northamerican.fws.gov>, now <http://birdhabitat.fws.gov>) Website.

All data were examined for immediate utility for the review of literature and for indirect utility for use in obtaining other resource materials. These data were then categorized into units of meaning using the method of constant comparison (Glaser & Strauss, 1971). The units of meaning guided the creation of the report. Units of meaning were derived from the data and obtained through a number of iterations of reviews and rewrites through triangulation methods using confirmations and guidance from numerous individuals involved directly and/or peripherally in the implementation of the Act within the United States and Canada.

QUALITATIVE ANALYSES METHODS

All qualitative analyses for the focus groups, personal interviews, and case studies followed traditional methods for qualitative research (Krathwahl, 1993). The conclusions were

also assembled in this same manner (qualitative summary of all data, including the quantitative data). Units of meaning were derived through Grounded Theory as described by Glaser and Strauss (1971).

The method for qualitative analysis is an iterative process where data are categorized using the method of constant comparison. For example, the focus group moderator took notes and made observations during the focus groups. Later, themes within those notes were reexamined, challenged, amended, and/or confirmed using transcribed audiotapes. Finally, discussion among members of the research team allowed another level of interpretation where the assembled data were again reexamined, challenged, amended, and/or confirmed. Among the strengths of qualitative research methods are the identification of “emergent” issues. Emergent issues are often redirections and/or reinterpretations about a phenomenon that are created through individual interactions and through the iterative interpretative process.

Focus Groups and Personal Interviews Methods

A total of ten focus groups and thirty-seven personal interviews were conducted by Responsive Management during May 2001–September 2001 for this evaluation. Individuals to be interviewed were first contacted by email and then with follow-up telephone calls. Focus group participants were recruited by email and telephone calls. All interviews (except for two) and focus groups (except for two) were conducted over the telephone, and the conversations were recorded by Sprint Conferencing Services. Participants were notified that they were being recorded but that their responses would be confidential. They were informed that their comments might be used in the final report but that their name would not be associated with those comments. Evaluation questions, as listed in the approved work plan, were used as a guideline for the interviews and focus groups. The following general questions were used for evaluation purposes:

Evaluation Questions for Focus Groups and Personal Interviews:

- What are the major strengths and weaknesses of NAWCA?
- How successful has NAWCA been in the past ten years?
- What have NAWCA and partners learned from each other?

- What are potential threats and opportunities to NAWCA over the next five years?
- What are the positive and negative outcomes of the program and how substantial have those outcomes been on partners and the environment?
- What are the unintentional positive or negative outcomes of the program and how substantial have those outcomes been on partners and the environment?
- What evidence is there to show that the Act has been successful?
- How thoroughly and effectively has the program been implemented and how could it be improved (especially in terms of grant administration and relationships)?
- Are policies and procedures adequate and fair (especially in terms of grant administration)?
- Are the program's goals being adequately addressed?
- How, if at all, should the goals and objectives of the program be revised, modified or expanded?
- Should more work be done in other areas that are currently not being done (riparian, urban, etc.)?
- Is NAWCA changing the way people think about wetlands and wetland conservation?
- If partners had not been involved in NAWCA, would they still be engaged in wetlands conservation?
- Has NAWCA been a major influence on policy, and if so, how?
- Are the needs of all stakeholders being adequately addressed?
- Is NAWCA achieving an appropriate balance among benefits to waterfowl, other wetland-associated migratory birds and other wildlife dependent upon wetland ecosystems?
- Will the project selection criteria stand up to closer scrutiny? Are the criteria affecting the type or number of proposals being submitted?
- What levels of accountability exist and are they adequate?
- How is/how should impacts be measured?
- Should NAWCA be continued and/or emulated?
- Will the contributions of NAWCA be sustained?
- Relative to cost, how valuable are the results of the NAWCA program?
- What do the overabundance issues mean to NAWCA?
- Where should NAWCA be going in terms of the other bird conservation initiatives and NABCI?
- Is the shift to an all bird conservation initiative logical? Is it well conceived? Is it well received?

The following personal interviews were conducted:

- NAWCC Members (current and former)
- NABCI Canada Council Members
- Selected U.S. Fish and Wildlife Service employees
- Selected Canadian Wildlife Service employees
- Individuals from nonprofit organizations.

The following focus groups were conducted:

- North American Wetlands Conservation Council Staff
- Division of Bird Habitat Conservation Staff I (U.S. Fish and Wildlife Service)
- Division of Bird Habitat Conservation Staff II (U.S. Fish and Wildlife Service)
- Present Grantees
- Joint Venture Coordinators
- Members of the Society for Wetland Scientists
- U.S. Fish and Wildlife Service employees
- Canadian Implementers
- Unsuccessful Grantees
- Tangential Stakeholders

Focus groups are an important method to begin studies such as this one because they allow for extensive probing, follow-up questions, group discussion, and observation of emotional reaction to various topics – aspects that cannot be measured in a traditional telephone or mail survey. Focus group research is considered “qualitative” research. Qualitative research sacrifices reliability for increased validity. This means that although focus group findings cannot be replicated statistically as can sample surveys (high reliability), they often give researchers a more valid understanding of issues at the heart of a study (high validity). Focus groups produce results with extremely high content validity, or the total range of opinions (Babbie, 1989), but are not random sample surveys.

The analysis of these focus groups and interviews was an iterative process. The moderator/interviewer took notes and observations at the time of the focus group or interview. Next, the audiotapes were reviewed and detailed notes were taken, including quotes that would be used for the final report. After all of the audiotapes were reviewed, they were analyzed for content and the personal interview/focus group report was written. The interviews and focus groups were analyzed together to identify major themes and were then combined into a single report, taking care to differentiate attitudes and opinions where appropriate.

Case Studies Methods

The purpose of the case studies was to gain first-hand knowledge about the types of projects that have been implemented on the landscape. The project sites were chosen to ensure a diverse representation of projects that have been initiated with NAWCA funds over the years.

To achieve this, projects were selected from different geographic regions, different Joint Ventures, and different years of completion. Two site visits took place in Canada and three took place in the United States. The site visits were conducted between May 2001 and October 2001. The site visits involved a tour of each project location, meetings with representatives from the organizations that were closely involved with the projects, and interviews both during and after the site visit. The site visits were conducted at the following times and locations:

- **Alberta Habitat Program. Alberta, CA. (May 21 - 24, 2001).**
- **Washougal Gateway Property and the Lower Columbia River Ecoregion Restoration Project, Phase III. Washington, U.S. (July 30 - August 2, 2001).**
- **Ontario Wetland Habitat Fund Program. Ontario, CA. (September 10 - 11, 2001).**
- **Ace Basin National Wildlife Refuge Enhancement Project, Year 1 and Year 2. South Carolina, U.S. (October 9 - 10, 2001).**
- **Lower Mississippi Valley Ecosystem Project I. Arkansas, U.S. (October 11 - 12, 2001).**

Each case study presents a brief history of the development of the project over time and examines specifically how the partnerships were developed, as well as the overall accomplishments. Comparisons have been made between the project proposals and the final reports to determine proposed activities and actual accomplishments. Numerous personal interviews were conducted during and after the site visits. Interviews after the site visits were conducted at various times over the telephone and were recorded to ensure the accurate representation of statements made. All of the individuals contacted were informed that they were being recorded, and all were willing to go on the record. However, to protect the identity of the individuals who were interviewed, no names have been used in this report. The interviews provided first-hand input, opinions and attitudes towards NAWCA, as well as how the overall process has worked for each of the grantees. All program officers were contacted and interviewed, and several landowners were interviewed where appropriate, to provide a variety of perspectives on each project.

Conclusions Methods

As noted above, the same qualitative methods described in the previous sections were used to assemble all data from all elements of the study (including the quantitative data) to form the study conclusions. The rationale for the method of assembly in this section, as in all other sections, was to develop units of meaning. Those units of meaning, derived from the data, from many stages of confirmations and refutations, and from many external source confirmations and refutations (triangulation), led to this final product.

Quantitative Analyses Methods

The quantitative analyses consisted of phases 2, 4, and 6, analyses of the NAWWO Grant Database System, quantitative survey, and economic analysis, respectively.

DBHC Grant Database System Methods

Data from the 36 databases (11 of which were reference databases) were downloaded from the U.S. Fish and Wildlife's server (<http://nawwo.fws.gov>). The entire contents of each database (see Phase 2) were downloaded, including all variables contained within each database (761 total variables, 280 uniquely-named variables).

The data were imported into the Statistical Package for the Social Sciences (SPSS) for analyses. A number of data transformations were used to merge and rearrange data for optimal analyses within that system. SPSS uses a primarily physical database arrangement rather than a relational database arrangement as used by the U.S. Fish and Wildlife Service and so seemed ideal to examine data in a new manner. One proposed benefit to this method is greater ease of complicated interactional analyses (such as projects subdivided into JV, approval status, and year). These same analyses could also have been performed in a relational database but would have required elaborate Structured Query Language (SQL) scripting involving the creation of definition keys (see Hogan, 1990). Another proposed benefit to the use of this method was the comparison of results from the two different methods of analyses as a data check. Data checking, monitoring, and reorganizing is a vital part of database maintenance.

The methods used for data manipulation involved the re-creation of the data into a physical database using vector and looping methods described in detail in programming manuals for the SPSS software (see *SPSS Reference Guide*, 1990).

Information in all tables and graphs reflect the data that existed within the database as of July 20, 2001.

Four dependent variables were examined for these analyses:

- Projects
- Partners
- Acres
- Money

Where appropriate, one or more of the following independent variables were used, alone or in combination, to further explore the variables from each database:

- Project Status (e.g., Approved/Withdrawn)
- Joint Venture
- State/Province
- Country
- Year
- Type of Partner (e.g., Conservation)
- Type of Grant (e.g., Standard)
- Coastal/Non-Coastal Status

Values, in most cases, were reported as counts, sums, or totals. Numbers of partners and numbers of projects were calculated, respectively, by summing the numbers of partners in a project and by summing the number of projects.

Monetary and acreage values were generated, respectively, through summing the appropriate financial and acreage values in the databases. Estimated NAWCA grant funds were generated by summing the total project costs and subtracting the total partner contributions. All data are pre-project data (i.e., from the proposals).

Accuracy Checks Methods

All SPSS data were verified for accuracy in two stages, first through the examination of five hard copies of project proposals that were compared to results of preliminary SPSS analyses, and then through a telephone conference with the Division of Bird Habitat Conservation grant

database analyst. Data checks were made in the telephone conferences by the Responsive Management and Division of Bird Habitat Conservation analysts by alternately making random selections of projects, reading the name of the randomly selected project, and quizzing their counterpart on the data in key variables.

Several project entries were randomly selected. This process was repeated until both analysts were satisfied with the accuracy of the data. All randomly selected data from the SPSS analyses matched the parallel analyses on the Division of Bird Habitat Conservation Grant Database (2001). Once the data were established to be accurate through these means, additional analyses began.

Despite these verification processes, there were un-resolvable conflicting results between the two systems. The source(s) of the error(s) is/are still unknown. It should not be overlooked that earnest efforts by both analysts to resolve the matter should be considered, along with the notes within the database analyses section, and are causes for concern. In the absence of a resolution to this issue, all data presented in the database analyses should be considered estimates.

Nationwide Survey Report Methods

The nationwide survey was mailed to individuals who were directly or peripherally involved in NAWCA. The database used for the survey was the 2000 North American Waterfowl Management Plan Contact List and additional Canadian partner names compiled by Responsive Management. Additional Canadian partner names were obtained by contacting Joint Venture Coordinators and Provincial Steering Committee members. The survey questionnaire was developed cooperatively by the professionals at the U.S. Fish and Wildlife Service's Division of Bird Habitat Conservation and Responsive Management. The internal U.S. Fish and Wildlife Service's control number for this project is FWS Form 3-2203 (12/01) and the OMB numbers are #1018-0104, Expiration 9-30-02; #1018-0100, Expiration 5-01-02.

Seven hundred and four potential respondents were sent surveys. Individuals were provided the choice of completing the survey by mail or by telephone, but all individuals chose to complete the survey by mail. Telephone follow-up reminders at 2 and 4 weeks after mailing were used to encourage survey completion. During those follow-up reminders, a great number of respondents indicated that they were completing the survey in conjunction with others at their

office. They were asked to indicate on the survey itself the number of people for whom they had completed the survey. Although approximately 40 telephone follow-up contacts indicated that their responses were representative of the attitudes, opinions, and behaviors of themselves and others, only 3 actually indicated that on the survey. There were 257 respondents out of 704 questionnaires for a response rate of 36%. A thirty-six percent response rate is low compared to other professional studies, especially considering that this survey used methods proven to boost rates and considering that the survey was one of professionals on issues from their profession (Fox, Crask, & Kim, 1988).

The response rate, however, is entirely consistent with the overall quantitative and qualitative findings of this study that indicate that many professionals involved in NAWCA, or in NAWCA related fields, know little about NAWCA. Therefore, among NAWCA professionals, there may not have been the level of motivation to respond that one would customarily expect among individuals knowledgeable in a particular field, when surveyed about issues within that field.

A central data management and analysis site at Responsive Management headquarters allowed for rigorous quality control over data management and analysis. Professional data entry personnel staffed the facilities. Responsive Management staff has extensive experience conducting survey research with computer-assistance on the subjects of natural resources and outdoor recreation for state fish and wildlife agencies and natural resource organizations. In addition, Responsive Management personnel were trained according to standards established by the Council of American Survey Research Organizations. Professional staff monitored data entry and data management personnel to evaluate employee performance.

Professional staff members conducted project briefings with each data entry and data management staff member prior to his or her beginning work on this project. Personnel were briefed and instructed on study goals and objectives, type of study, handling of completed survey instruments, organization of survey questions and responses, coding of open-ended responses, and transforming data from the completed survey instruments to computer files. Professional staff edited each survey to check for clarity, understanding, completeness, and form.

The software used for data entry and storage was Questionnaire Programming Language (QPL) version 4.1. QPL is a comprehensive system for computer-assisted data entry and

database management. The survey data were entered into the computer as the staff read each completed survey instrument.

Economic Analysis Methods

The purpose of this element of the study was to quantify, to the extent possible, the economic contributions of NAWCA at the national level for both the United States and Canada. This quantitative evaluation was performed by Mr. Rob Southwick, President of Southwick & Associates, an economics consulting firm specializing in the economics of the fish and wildlife resource. Data imputation, a method used for estimating values through interpolation, extrapolations, and/or use of data models from similar historical research, was necessary due to the paucity of data. The impacts were presented in two parts. First were the estimated impacts from NAWCA expenditures, separated into impacts accruing to Canada and the U.S. Second, the economic impacts resulting from increased hunting and viewing opportunities resulting from NAWCA investments were estimated.

Literature

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