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Evaluation of the National Fish and Wildlife Foundation Chesapeake Bay Small Watershed Grants Program



Final Report, Aug 2007



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EXECUTIVE SUMMARY

The National Fish and Wildlife Foundation (NFWF) manages two grant programs, in partnership with the Chesapeake Bay Program, that are focused on protecting and restoring the Chesapeake Bay and its tributaries. One of these programs, the Chesapeake Bay Small Watershed Grants Program (SWGP) is the focus of this evaluation.

The evaluation revealed that the SWGP implements a very appropriate approach and has been continually improving since its inception in 1998. With the successful implementation of the evaluation's five recommendations, the effectiveness of the SWGP will improve significantly and provide sustained contributions to improving the health of the Chesapeake Bay.

Background

The SWGP, which first was funded by the Environmental Protection Agency (EPA) in 1998, provides grants to organizations and local governments working on a local level to protect and improve watersheds in the Chesapeake Bay basin, while building citizen-based resource stewardship. The purpose of the program is to support protection and restoration actions that contribute to restoring healthy waters, habitat and living resources of the Chesapeake Bay ecosystem.

Since 1998 EPA has been joined by other funding agencies, including: the National Oceanic and Atmospheric Administration (NOAA), US Forest Service, the Natural Resources Conservation Service (NRCS), US Fish and Wildlife Service, Office of Surface Mining, and other private sponsors.

In the past seven years, the Small Watershed Grants Program has provided \$16.9 million to support 507 projects in all six of the Bay states and the District of Columbia. These grants have been used by recipients to leverage an additional \$50.7 million from other funding sources, resulting in over \$67 million in support of local community watershed restoration efforts since 1999.

Overview of the Evaluation

The purpose of this evaluation has been to provide NFWF and its partners with information on the success of the SWGP, information that is crucial to an adaptive management paradigm and program improvement. The evaluation approach focused on the effectiveness of the grant-making process, the fidelity of the grants to the SWGP mission, the overall conservation impacts of the grants, and the potential for those investments to be sustained. The evaluation reviewed a total of 201 grants awarded to 125 grantees, all funded between 2000 and 2004 and completed by May 2006. These grants represent approximately \$9 million in SWGP funds.

Overview of Findings

The SWGP funded three main categories of grants: restoration and conservation, capacity building, and watershed planning. The SWGP has used the frameworks and activities developed within the conservation community over the past 25 years for engaging the public, capacity building, facilitating planning, and restoring habitats and species. Several of its grantees are leading the conservation community in the quality and innovativeness of their capacity building programs and the measurement of effectiveness.

Notably, in 2000 the Chesapeake Bay Program partners signed the Chesapeake 2000 Agreement (<u>http://www.chesapeakebay.net/agreement.htm</u>), which detailed over 90 commitments for restoring the Bay by 2010. As a result, since 2001, the SWGP has placed greater emphasis on helping to achieve specific commitments of the Agreement. Thus, there has been an increasing annual emphasis on grants that involve a combination of restoration and capacity building.

Role of SWGP for Project Success. Most SWGP grants are part of larger projects that are being undertaken by grantees, but grantees regard the SWGP as a key source of funding for these projects. Only 7% of grantees indicated that their project would have been entirely possible without SWGP funding. Grantees report that alternative funding is not readily available for the specific project elements funded by SWGP.

Grant Size. The SWGP provided approximately \$9 million in grant funding during the period covered by this evaluation. The average value of a SWGP grant was \$46,913 and increased over the four-year period. Grants initially were capped at \$50,000, and many were much less. However, in 2001 NFWF added multi-year "legacy grants" capped at \$100,000 each for "truly innovative projects that would restore vital fish and wildlife habitats, develop locally supported watershed management plans, or promote environmentally sensitive development".

The value of grants varied across the three types of projects. Restoration and conservation grants received on average higher levels of funding, representing only 27% of the number of grants, but receiving 35% of the total grant funds. Conversely, capacity building grants represented 50% of the number of grants, but only 43% of the total funds.

First time grantees also received smaller grant sizes when compared with those receiving second or subsequent grants. The average grant to a first-time recipient was about \$20,000 less than to a grantee receiving their second, third or fourth grant. This trend reflects growing confidence with the grantees and improved alignment of the grantees' activities with the evolving SWGP priorities.

Overall, the SWGP grant sizes are small compared with much larger efforts and expenditures by state and federal agencies overseeing the recovery of the Bay, which is entirely in keeping with the small community focus of the SWGP. **Types of Grantees.** The SWGP is reaching its intended audience of community-based organizations working at the local scale. Over half (56%) of all grants were awarded to grantees working within a single community or county, with an additional 30% working in more than one county, but within a single state.

The breadth of the SWGP's coverage within smaller, community-based organizations is clear – 65% of grantees have fewer than 5 employees and 25% are purely volunteer organizations. The lead members are long term residents of the Bay area and their strength is in project management and restoration and conservation. But, about a third of the grantees do not have staff with expertise in the activities funded by the SWGP grant, thus many grantees must seek external technical expertise to fulfill the terms of their grants.

The SWGP's regular applicant workshops have helped spread the SWGP reach throughout the Chesapeake Bay watershed and has encouraged smaller community organizations to apply for and receive support.

Program and Grant Administration. NFWF is a proactive grant maker whose program managers and staff support grantees with advice and information during the proposal and implementation phases. NFWF also provides annual workshops to help potential grantees understand the priorities and processes of the SWGP.

Survey respondents were very positive about the knowledge of NFWF managers and staff and the help they provide in developing proposals and implementing projects. NFWF program staff were rated highest for their knowledge of restoration and conservation (75% rated "very knowledgeable"), but also rated favorably for capacity building (71%) and planning (67%). NFWF administrative staff also were rated highly for the utility and promptness of their customer service in administering grants.

The grant workshops were generally favorably reviewed and valued; however, direct one-on-one interaction with NFWF staff was more highly valued in developing and implementing successful projects.

Grantees judged SWGP grant making processes compared to those of other funders from whom they receive support. SWGP ranked better than other federal and state funders; however, as might be expected, NFWF grant procedures were not considered as user-friendly as non-government funders that are not obliged to implement federal grant procedures. SWGP is supported by contributions from federal agencies and thus carries multiple federal grant requirements. Grantees report that some of these administrative and financial reporting requirements can be burdensome for small grantees.

Capacity Building

The SWGP is distinct from other donor programs within the Chesapeake Bay in having focused on capacity building, i.e. increasing the knowledge,

awareness, motivation and competence of both individuals and organizations to undertake watershed restoration and conservation activities. Within the Bay generally, about 4% of the expenditures (\$156 million out of \$3.7 billion) has been invested in capacity building. For the period covered by this evaluation, the SWGP directed 43% of its funds (\$3.9 million) and 50% of its 201 grants to capacity building activities as a primary goal.

Under SWGP, capacity building targeted both individuals and organizations and focused on increasing knowledge, skills and awareness. Capacity building activities included hands-on experiential learning by members of communities (including schoolchildren), training, development of educational materials and organizational development.

In most cases, capacity building activities sought to enhance direct restoration and conservation projects. Grantees expressed the view that engaging citizens directly in restoration, coupled with some effort to increase knowledge and awareness, ultimately leads to sustained behavior changes that will help restore the health of the Bay. While the direct experiential approach to capacity building does seem to result in some degree of behavior change, it also seems likely that by integrating restoration and capacity building objectives, one or both objectives may be compromised.

The capacity building supported by SWGP grants was generally welldesigned and implemented, and certainly within the upper range of capacitybuilding activities currently occurring within the conservation community. These activities led to gains in the level of awareness and knowledge of participating individuals and organizations, about 42% of whom subsequently undertook direct restoration and conservation activities either on their own, with the grantee, or through another organization. Some of these investments likely will be sustained, especially those that target organizational capacity. However, those projects that focus on raising awareness and increasing knowledge of individuals are less likely to have a sustained impact.

Planning

Planning grants were a relatively small portion of the SWGP portfolio, and were associated with planning an activity related to capacity building or restoration and conservation. Of the 201 grants included in the evaluation, 34 involved planning activities, with a total contribution from the SWGP of \$1.6 million. The average grant for planning was approximately \$49,000.

Planning grants typically focused on project planning to guide the grantee or community in its later activities, encouraging or supporting changes by local government or targeting specialized issues such as assisting a land trust to preserve priority watershed function. Planning activities were technically sound, but grantees scored them less well on sustainability and the inclusion of all appropriate stakeholders in the planning process.

Restoration and conservation

To reduce nutrient and sediment pollution and restore vital habitats, the SWGP supports activities such as: stream fencing, stream bank restoration, wetland restoration, riparian buffer plantings and restoration, stormwater management practices (e.g., rain gardens and green roofs), and conservation practices on agricultural lands.

SWGP invested approximately \$3.2 million in 73 projects focused primarily on restoration and conservation. The average grant size was \$48,200. In addition, another 36 capacity building and planning projects included restoration and conservation as a secondary component, for a total investment in restoration and conservation of approximately \$5.0 million over the evaluation period. The most frequent activities undertaken were planting vegetation as buffers (32% of restoration and conservation grants), stabilization of stream banks and shorelines (21%), restoring wetland habitat (22%), and restoring living resources, e.g. oysters, submerged aquatic vegetation, etc. (17%).

As noted earlier, in 2001 the SWGP increased its emphasis on restoration and conservation outcomes as a result of the Chesapeake 2000 Agreement. Restoration and conservation activities comprised about two-thirds of the SWGP grants over the 2000 to 2003 period, with a significant increase beginning in 2001.

Overall SWGP restoration and conservation projects are technically welldesigned and are estimated to be functioning at about 63% of their maximum potential. The gap between design and function is attributable to failure to plan for and monitor long term project maintenance and sustainability.

Applicants to SWGP were encouraged to use Best Management Practices (BMPs) or meet some other standard in implementing restoration and conservation projects. To ensure BMPs were followed, support for technical assistance was provided in the SWGP grants, and SWGP program staff, managers, and program partners also provided assistance and advice.

Projects technical designs reflect this focus and are strong. However, site visits also revealed compromises to standards in implementation, e.g. buffers narrower than BMP. When questioned, grantees often had valid reasons for varying from the standard, however, it is unclear the degree to which such variation might impact environmental outcomes resulting from the projects.

Similarly, grantees reported that they were maintaining their projects after the life of the grant; however, at 56% of the projects visited we noted the presence of invasive species, suggesting a lower level of effective maintenance that claimed. (In some of these sites, invasives actually may function to stabilize the stream bank, but they also are an indicator that sites are not being maintained.)

Finally, while two-thirds of grantees reported some level of continued monitoring to gauge the effectiveness of their restoration or conservation

projects after the life of the grant, very few grantees actually were able to provide water quality or biological data about their projects.

Overall about 60% of the SWGP restoration and conservation investment portfolio looks likely to be sustained, and so provide returns over a long period of time. And as these plantings and the effects of other physical restorations mature and become self-sustaining, their level of function will improve.

Overview of Recommendations

Based upon the evaluation's findings, we offer five recommendations to improve performance of the SWGP (see page 60). Together these recommendations outline a strategy for enhancing the community conservation model of the SWGP, thereby increasing returns to these investments.

- 1. Expanding Community Conservation Approach to Capacity Building. SWGP should expand its current community conservation approach to encompass even greater collaboration and consensus within local watersheds and to mobilize more fully the capacity of citizens and their organizations to sustain, scale up and replicate SWGP supported investments. To create capacity building efforts to support an enhanced community strategy, there will need to be a greater SWGP focus on the following:
 - a. Social marketing to encourage individual and organizational behavior change;
 - b. Building strong and persistent local community groups who can model and diffuse innovative practices;
 - c. Pressing for local changes in ordinances, regulations and guidelines where needed;
 - d. Expanding and consolidating a network of local and regional groups to collaborate, share technical expertise and exchange "lessons learned"; and,
 - e. Developing role models, mentors, and coordinators of specific activities for target sectors.

2. Planning. Fund specific planning grants to ensure that all stakeholders are brought into the planning process and that plans set clear goals and priorities as well as focusing on long-term outcomes rather than just activities.

3. Types of Grants. Restructure the grant types to provide moderate support for collaborative planning grants, and greater support for the implementation of technically sound community conservation and direct restoration and conservation strategies.

4. Continuation of Improved Grant Making. NFWF should update its information management systems, and increase the role it plays in facilitating information exchange among grantees. NFWF already is in the process of developing a new grants administration database and management system. This system should include the capacity for fully electronic reporting, improved outcome tracking, and enhanced data analysis. In addition, NFWF should realign its reporting requirements to focus more specifically on outcomes rather than project activities to reduce the reporting burden and collect more meaningful data.

5. Monitoring. The SWGP should adopt a program-wide monitoring approach that includes pre- and post-project monitoring to better gauge the water quality and habitat improvements associated with grant-funded projects.

The SWGP is "ahead of the curve" and to be commended for seeking out an external evaluation and working within an adaptive management paradigm. Indeed, the SWGP has been improving and modifying its objectives and performance since its inception, and, based upon preliminary reports, NFWF already has instituted changes that follow some of the main recommendations from this evaluation.

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Grantees were very patient with us, many had to endure a site visit, web survey and then follow up interviews. We thank all grantees for their inputs and insights, as well as their patience.

Responsibility for the report, of course, rests with the evaluation team. Andy Rowe is the lead author of this report.

INTRODUCTION

Recovery of the Chesapeake Bay is one of the largest and most complex environmental problems the US has to face. The watershed involves 6 states and the District of Columbia. Problems include over-fishing, dredging, out-ofcontrol urban and suburban development negatively affecting storm water runoff, agricultural run-off and pollution, and introduction of invasive species. The Chesapeake Bay Foundation's (CBF) recent annual report on the health of the Bay indicates that despite over 20 years of efforts by local, state, and Federal agencies and a host of NGOs, the State of the Bay has not improved appreciably (Chesapeake Bay Foundation, State of the Bay Report, 2006; <u>http://www.cbf.org/site/PageServer?pagename=exp_sub_resources_publication s_sotb06</u>).

The Chesapeake Bay 2000 Agreement, signed jointly by the Chesapeake Bay Commission, US Federal Government, the states of Virginia, Pennsylvania and Maryland and the District of Columbia is a 10 year program: (1) to protect and restore the living resources of the Bay, vital Bay habitats, and water quality; (2) to develop, promote and achieve sound land use practices which protect and restore watershed resources and water quality; and (3) to engage the citizens of the Bay by promoting a broad conservation ethic throughout the fabric of community life (http://www.chesapeakebay.net/agreement.htm).

Restoration and conservation of the Chesapeake Bay watershed is in the hands of multiple states, counties, municipalities and a variety of agencies within the Federal government. There are also numerous local, regional and national non-profit organizations working to restore the ecological integrity of the Bay and to engage its citizens.

Within this complex context, the National Fish and Wildlife Foundation (NFWF) is responsible for two important Chesapeake Bay watershed grant programs. One of these programs, the Small Watersheds Grant Program (SWGP), is the focus of this evaluation. Funding for improving the health of the Chesapeake Bay has exceeded \$3.7 billion, of which only \$156 million has been devoted to capacity building. Since 1999, the SWGP has likely contributed less than \$20 million to programs cleaning up the Bay, of which nearly 50% of its funds have gone to capacity building.

Overview of the assignment and its challenges

The aim of this evaluation effort has been to provide NFWF and its partners with information on the success of this grant program, information that is crucial to an adaptive management paradigm and program improvement. The evaluation will also contribute to a determination of whether the objectives of the Chesapeake Bay 2000 Agreement are being addressed through the SWGP and the program's impact on the long-term health of the Chesapeake Bay.

The evaluation focused on three thematic foci that were derived from the original 8 questions in the RFP.

1. How to improve grant administration and project performance?

- 2. What types of projects have yielded the greatest conservation benefits? How have grant recipients measured conservation gains and how might this be improved?
- 3. What have been the environmental impacts of projects, and are the initiatives sustainable and transferable?

The subjects of this SWGP evaluation were 201 grants completed and closed by May 2006. The funded projects have been broadly classified (with some overlap) into three categories: (1) watershed planning (planning); (2) habitat and living resource restoration and conservation (restoration and conservation); and (3) community outreach and capacity building (capacity building). There was originally a fourth category - demonstrations of sustainable or "low impact" development techniques and methods. These projects were included within the restoration and conservation category because there were few of them and most involved restoration as well as being demonstrations of Best Management Practices.

One of the major challenges of this evaluation has been to identify the logical links from investment in planning, capacity building and restoration and conservation activities within small watersheds to the improved health of the Bay. The SWGP was initially developed as a program to engage the citizens of the Chesapeake Bay watershed and build greater stewardship of the Bay and its tributaries through the encouragement and development of innovative, locally-based programs. Indeed, this program is a unique test of whether, how and how much targeting of community awareness, capacity building and civic engagement can significantly enhance conservation in the context of the Chesapeake Bay.

A recent GAO report (<u>www.gao.gov/cgi-bin/getrpt?GAO-06-96</u>) indicated that expenditures for the Chesapeake Bay have included: \$1.7 billion for water quality protection and restoration activities (e.g. upgrades to wastewater treatment plants and technical assistance for the implementation of agricultural best management practices), \$1.1 billion for sound land use activities (e.g. land acquisition and support for smart growth initiatives), \$491 million for vital habitat protection and restoration activities (e.g. wetland restoration and SAV studies), \$233 million for living resource protection and restoration activities (e.g. oyster studies and creating fish passages) and \$156 million for stewardship and community engagement activities (e.g. educational programs, publications, and informational forums).

It is notable that programs involving communities and capacity building have received the least amount of funding compared to the nearly \$4 billion total devoted to environmental and biological issues. This suggests that donors believe one of at least 3 alternatives, i.e. 1) that such activities are infinitely cheaper in implementing successfully; 2) that donors do not believe that capacity building and community engagement will have a positive impact on the health of the Chesapeake Bay; and 3) that there is less confidence in the effects of activities involving citizens and communities.

The scientific and management community believes that program activities such as capacity building and restoring habitat will ultimately result in an improvement in the Bay's health, but often cannot make a direct link between an activity, its output, and improvements in the health of the Bay. Indeed, most conservation activities, especially those involving capacity-building, have not demonstrated an actual long-term conservation (biological) impact, using scientific methodology. Thus, the relevance and effectiveness of activities is exceedingly difficult to demonstrate in the near term, especially when the activities are small relative to the enormity of the problem and ambiguity in our knowledge base.

Given the emphasis of the SWGP on community and civic engagement, therefore, one of our goals has been to articulate the logical chain of outputs that link capacity building and planning to restoration and conservation and from there to improvement in the health of the Chesapeake Bay. We strongly support the SWGP's focus on community conservation.

Introduction to SWGP and NFWF

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, 501(c)(3) tax-exempt organization, established by Congress in 1984 and dedicated to the conservation of fish, wildlife, and plants, and the habitat on which they depend. NFWF's goals are to promote healthy populations of fish, wildlife, and plants by generating new commerce for conservation. The Foundation meets these goals by creating partnerships between the public and private sectors and strategically invests in conservation and sustainable use of natural resources.

The Foundation identifies conservation needs, reviews proposed projects, fosters cooperative partnerships, and commits a combination of federal and non-federal funds to on-the-ground conservation projects. The Foundation commits funds in the form of matching grants, ensuring that the Foundation's funds are leveraged.

The Foundation creates partnerships among federal, state, and local governments, corporations, private foundations, individuals, and non-profit organizations. Creating partnerships assists in the identification of conservation issues and promotes cooperation in the delivery of solutions through a matching grant process.

Matching grants are partially supported by Congressionally appropriated dollars. The Foundation strives to maximize dollars invested in conservation and currently reports that it averages more than a 2:1 return on funds entrusted to it. Thus, according to NFWF reports, for every dollar that Congress provides, nearly \$3 in on-the-ground conservation takes place. Since NFWF's founding in 1984, it reports that it has leveraged - with its partners - more than \$300 million in federal funds for a reported total of more than \$1 billion in funding for conservation.

The Small Watershed Grants Program (SWGP) was established in 1999 with a Congressional appropriation of \$750,000 to the EPA. During the first year, the Alliance for the Chesapeake Bay had oversight of the program. In 1999, NFWF successfully bid for the 5-year contract to run the program, a contract which has since been renewed.

The objective of the SWGP from inception has been to promote communitybased efforts to raise awareness and to protect and restore the diverse natural resources of the Chesapeake Bay and its watershed. The program has been designed to provide local groups, both NGOs and local governments, with the capacity to influence their target audience such that protection of the Chesapeake Bay watershed and its living resources were improved. The objective has been to enhance the understanding of local communities concerning: 1) the importance of the health of the Bay; and 2) the relationship among the health of the Bay, the health of associated watersheds and public economic health. One of the goals has been to encourage behavior changes that would reduce negative activities and increase the frequencies of behaviors and activities to promote the Bay's health.

In 2000, Congress passed the Chesapeake Bay Restoration Act, which led to a much more results-focused program. Also, after the Chesapeake Bay 2000 Agreement, objectives were focused more on the commitments within that agreement which included some very specific indicators, e.g. size of restored areas, increase in fish stocks, etc. Thus, there were significant changes in the grant program, beginning in 2001.

Since its inception, the original funding agency for the SWGP, EPA (Environmental Protection Agency), has been joined by the US Forest Service, NOAA (National Oceanic and Atmospheric Administration, Department of Commerce), US Fish and Wildlife Service, Office of Surface Mining (Department of Interior) and NRCS (Natural Resources Conservation Service, Department of Agriculture), all of which are active within the CB Watershed.

Through 2005, 439 grants have been awarded, totaling \$14.3 million in federal funds. Approximately \$9 million in grants are included in this evaluation, or 63% of funds disbursed to date under the SWGP. With a matching requirement from some of the agencies, a reported additional \$43.1 million in contributions has been leveraged. The supported projects have covered the entire watershed (6 states and District Of Columbia) and have had a diversity of inputs as well as impacts.

Evolution and focus of SWGP program compared to other Chesapeake Bay grant programs

From the outset, the SWGP has focused on community-based activities and capacity building since the Chesapeake Bay watershed is so densely populated. Thus, grants have been for small watersheds and the small community groups, local governments and NGOs that could have an impact on these watersheds. By 2003, nearly half the grants made were to organizations within relatively small communities. The goal has been to protect and improve the watersheds while building resource stewardship among the citizenry. Thus, the SWGP has been a community conservation-based grant program.

Grants were initially capped at \$50,000, and many were much less. However, there has been a gradual increase in grant size (and decrease in grant numbers) and subsequently, NFWF added multi-year legacy grants (currently capped at \$100,000) for "truly innovative projects that would restore vital fish and wildlife habitats, develop locally supported watershed management plans or promote environmentally sensitive development" (from the SWGP description <u>– http://www.nfwf.org/programs/chesapeake/index.cfm</u>). The NFWF grant sizes are small compared with much larger efforts and expenditures by

state and government agencies overseeing the recovery of the Bay, which is entirely in keeping with the small community focus of the SWGP.

Over the course of the grant program, more emphasis has been placed on defining metrics and encouraging a restoration component within each grant, especially since the Chesapeake Bay 2000 agreement (<u>http://www.chesapeakebay.net/agreement.htm</u>) Thus, there has been an increasing annual emphasis on grants that involve restoration and not just capacity building.

Today, an educational program which only distributes written materials is less likely to be funded than a hands-on direct experience of restoration, e.g. planting trees or removing invasive species, together with written materials (e.g. a brochure). Planning grants have always been less than 20 % of the entire portfolio. For this evaluation, about 48% focused on restoration and conservation and 33% on capacity-building.

In recent years the SWGP has also tended to eliminate grants for activities that are very costly and that other agencies can better support, e.g. restoring SAV (submerged aquatic vegetation) and oyster beds.

The SWGP is distinguishable by the efforts it puts into encouraging new proposals and providing potential grantees with assistance in developing proposals. The SWGP's regular workshop concerning the program has helped spread the SWGP reach throughout the Chesapeake Bay watershed and has encouraged smaller community organizations to apply for and receive support. The breadth of the SWGP's coverage within smaller organizations is clear – 65% of the grantees organizations have fewer than 5 employees and 25% are purely volunteer organizations. The majority of grantees (>60%) were working locally or at the most within a county. Additionally, 70% of grantees had only a single grant from NFWF.

Overview of approach

The evaluation's approach has focused on the grant-making process, the grants' fidelity to the SWGP mission, the overall conservation impacts of the grants and the potential for those investments to be sustained. Our approach was to build on information from project files and best existing knowledge from relevant science and community / organizational domains to articulate a logical framework for each of the SWGP program activities and for the program as a whole.

The evaluation team used a multi-pronged approach, which examined both the grant process and the conservation impact of the grants from several different perspectives. We examined program data, including electronic and paper files from the projects. Using CRITTERS (NFWF's online database used for day-to-day grants administration), we were able to analyze a variety of characteristics of the grants between the period from 2000-2004, e.g. the annual changes in grant size, geographic spread, and type of activity.

We reviewed the SWGP Requests for Proposals (RFPs) and other materials that were distributed to applicants and grantees. We interviewed key stakeholders of the program, both from NFWF staff and from the SWGP partners, i.e. NOAA, FS, EPA, and CBP. We convened an expert panel of

academics and scientists who had been involved for many years in issues relating to the health of the Bay. They assisted us in developing the logic model or logical framework for the program activities. We also worked with the expert panel and with NFWF staff to determine what the desired outcomes were from the program and activities supported by the SWGP. NFWF staff helped us to define clearly the separation of project category types and activities.

We conducted site visits¹ to approximately one-half of the restoration and conservation projects (n=45 with 3 additional sites as pre tests) in order to "ground truth" the results of their activities and to determine whether the results were being monitored and sustained by the organizations. This also permitted us an opportunity to interview key individuals concerning their interactions with NFWF staff and their views of the grant making process.

A web-based survey was administered to all grantees that we could reach, achieving a 65% response rate which appears reasonably representative of the entire sample. The survey included questions about the grantee organization, NFWF's grant making process, NFWF's reporting requirements, the conservation activities undertaken, partnerships with other organizations, the impacts of the grant and whether the activities have been sustained. It also focused on separating NFWF's input from that of other donors and the degree to which the NFWF input was essential to the project.

Finally, we conducted telephone interviews with a sample of grantees that had capacity-building as their main objective to determine the degree to which the targets of the capacity-building had continued with restoration and conservation activities within the Bay (See page 81). We queried interviewees about what they believed was the key to success in motivating and retaining volunteers in activities that would contribute to improving the health of the Bay; whether they believed capacity-building was a good investment compared to direct activities; and what suggestions they might have for improving efforts to engage individuals or organizations in undertaking activities that will contribute to improving the health of Chesapeake Bay.

The evaluation team surveyed current literature and queried multiple experts on two major issues related to the review of the SWGP: 1) scientific evidence that capacity building results in successful behavior changes that have as an outcome a sustained improvement in the environment; and 2) information demonstrating that some approaches are more cost effective than others. Information from the literature and from experts correlated closely; there are almost no evidence that capacity building can result in significant behavior change that will benefit the environment unless livelihoods are directly derived from resource exploitation, and there have been minimal evaluations of the cost effectiveness of different approaches.

With multiple sources of information, we were able to triangulate evaluative judgments about effects from grantee project managers, the expert panel and the evaluation team. For example, the evaluation team rated the outcomes from site visits, based on their direct observations (ground-truthing), and these were compared with the grantees' own ranking of their outcomes.

¹ Note: Methodology for all activities is available in the Appendix.

Figure 1 provides an overview of the main phases of the evaluation.





Survey of Grantees

A survey of grantees was conducted during the second phase of evaluation work. The survey was designed as the main source of information about SWGP grants and grant making including:

- 1. Describing characteristics of grantee organizations
- Grantee views on the grant making process including comparison to other grant making processes and suggestions for improving grant making
- 3. Information about the capacity of grantee organizations and their use of technical assistance
- 4. Information to describe the activities supported by the grants and to assess their effects.

The survey was administered to all 125 grantees receiving the 201 SWGP grants awarded during the period covered by the evaluation. Because of differences in the number of grants received by grantees four versions of the questionnaire were administered. The appendix (APPENDIX 4: GRANTEE SURVEY page 82) provides details of the grantee survey and a representative questionnaire.

The sixty-five percent of grantees that responded to the survey collectively held 68% of all the grants included in the evaluation. Grantee responses provided direct information on a third of these SWGP grants.

The grantee survey is reasonably representative of grants awarded by the SWGP during the evaluation period. This is discussed in more detail in APPENDIX 4: GRANTEE SURVEY page **Error! Bookmark not defined.**, however to illustrate the match between the survey and population:

- Estimated total value of grants awarded by the SWGP based on survey data was \$8.73 million versus the total from program data of \$9.01 million awarded
- The annual distribution of grant amounts and number of awarded grants per grantee compares fairly closely between the survey and administrative data
- Grantees receiving only one SWGP grant are somewhat overrepresented in the survey data (by about 6%).

Site Visits

The evaluation conducted site visits to over half of the identified restoration and conservation grants. Sites were selected with a simple random sample. A total of 45 sites were visited in addition to 3 others that were part of the pre testing of the site visit protocols. The purpose of the site visits was to assess the quality of the restoration and conservation investment and the current level of function, estimate the area treated, gain information from grantees such as maintenance practices and other factors that affect the quality of the investment. While at the sites we took latitude and longitude readings enabling us to describe the geographic dispersion of the sites (Figure 2). Pink pins are 2004 projects, aqua 2003, green 2002, blue 2001 and yellow 2000.

Details of the site visit methods are appended starting on page 74).



Figure 2: Location of Site Visits

Development and application of Logic models

Once the 3 major program category types (restoration and conservation; planning; and capacity building) were confirmed with the NFWF staff and through a review of CRITTERS, the NFWF administrative database, the evaluation team met with the expert panel to develop the logic models² for each category. Thus, we were able to define those necessary conditions within each category to reach a successful outcome concerning the health of the Chesapeake Bay. After reviewing and refining these models with the NFWF staff, these models were then incorporated into the questions used in the web survey and the site visits. In total five logic models were developed:

- 1. An overall top level logic model showing how the SWGP approach to community conservation contributes to the health of the Chesapeake Bay (Figure 10).
- 2. Outcomes associated with sustainable capacity building (Figure 12)
- 3. Outcomes associated with planning sustainable community conservation (Figure 14)
- 4. Outcomes associated with sustainable restoration and conservation (Figure 15)
- 5. Effects of restoration and conservation outcomes on the health of the Bay (Error! Reference source not found.).

These logic models set a higher standard than was asked of grantees for their SWGP grants because the emphasis of the logic models are the intended necessary outcomes, and thus they provide a consistent standard for judging the likely accomplishments of SWGP grants in terms of making sustainable contributions to the health of the Chesapeake Bay.

Challenges, Key Concepts and Measures

Measuring Effects on the Chesapeake Bay

Within the Bay watershed, excessive nutrient and sediment run-off is one of the major problems needing remediation. Without significant reductions in nutrients and sediment, water quality will remain compromised and the hope for a restoration of living resources will be difficult, if not impossible (<u>http://www.chesapeakebay.net/</u>) The relationships among restoration and conservation activities and the quality of the Bay ecosystems are illustrated in Figure 3.

Wetlands, riparian buffers, and rain gardens all absorb or deflect nutrients and sediments while stream fencing prevents further habitat degradation. Years of scientific research have produced models that are being used within the Bay watershed to determine the reductions in nutrients as a result of specific restoration or conservation activities

(<u>http://www.nal.usda.gov/wqic/Bibliographies/dynamic.html</u>). Models have also been developed that specify acceptable daily or annual loads of nitrogen,

² Strictly speaking, these are outcome charts, a more detailed articulation of the outcomes that would be found in a logic model.

phosphorus, sediments, and toxic materials. These models are still under active development. The complexity of the ecological functioning of varied landscapes and watersheds makes it difficult to estimate accurately the reductions in loadings of nutrients and toxic chemicals from different restoration and conservation activities within the SWGP.

For example, estimating the nutrient reduction from a riparian buffer with any degree of accuracy requires many assumptions, both about the watershed, the land surrounding it and the buffer itself. Stream water flow and composition differ depending upon conditions upstream. The soils abutting each stream, wetland and river are also very different, depending upon past geological conditions and land use. Current land uses differ (and these are documented within the models for estimating nutrient reductions), which also affects the ability of a restored wetland, a rain garden, or a riparian buffer to filter or deflect nutrients. Measuring and accounting for these differences to model the effects of a particular riparian restoration might be more costly than the restoration itself. Moreover, the currently available models might yield unacceptably inaccurate estimates of nutrient reduction efficiencies³.



³ This is the strong view of the Expert Panel and others consulting during the evaluation including those associated with the Chesapeake Bay model itself.

Within the Chesapeake Bay itself, ecological conditions are far from what existed even 50 years ago. Populations of all fish and shellfish have been at historically low levels, areas of the Bay are periodically "dead" (oxygen deprived), and there are invasive species throughout the watershed and estuary whose impact we little understand. Information on status and trends within the Bay can be found at websites for the Chesapeake Bay program (<u>http://www.chesapeakebay.net/status</u>) and the Chesapeake Bay Foundation's State of the Bay

(<u>http://www.cbf.org/site/PageServer?pagename=exp_sub_resources_publications_sotb06_websites</u>).

Since there are so many variables affecting ecological function within the Bay watershed, it is close to impossible to measure a true impact of the relatively small restoration activities supported by the SWGP.

In addition, the restoration and conservation activities differ significantly across SWGP grants. Each riparian buffer is different, but even if each were the same length, they would differ in the types of vegetation planted (and their filtering qualities), the buffer width, the density of vegetation, and the growth pattern of the vegetation (which will depend upon what is planted and the intrinsic conditions mentioned above). For the model currently used by the Chesapeake Bay Program (CBP), it is assumed that most factors are identical and that buffers provide their full absorption and filtering benefits at the time of planting. Yet, full functioning of buffers (and rain gardens and wetlands) would not be expected for many years. Further, most restoration activities require maintenance (e.g. replacement of dying trees and continuous removal of invasives), a characteristic that varies across the SWGP grants. Finally, the amount of nutrients removed by riparian buffers depends on how much nutrient loading they receive from their watersheds. Measuring or modeling nutrient loadings to riparian buffers is another challenge in estimating their effectiveness in reducing the loading.

Given the difficulties in estimating likely impacts of restoration activities within small watersheds, in the absence of direct monitoring of water quality (which we recommend), the SWGP's approach, i.e. measuring the size of areas "restored" or protected, remains central for measuring benefits. Information on the areas restored and the characteristics of the restoration will be valuable for modeling the large-scale cumulative impacts of restoration when improved models become available.

SWGP Administrative Data

Towards the conclusion of this evaluation, NFWF embarked on the development of a new database for project and grant management. This change is likely to improve significantly the resources available for grants and program management.

The evaluation team was limited by having to use CRITTERS, the system that is being replaced. For example to select a sample for the site visits to restoration and conservation projects, we needed to list such projects with some descriptive characteristics that could be used to stratify the sample, and then later to compare the sample to the entire population of restoration and conservation projects. CRITTERS did not have the information for this. The evaluation team was fortunate that the SWGP manager was very familiar with individual grants and agreed to review all projects included in the evaluation and classify each according to the primary and secondary category of activities undertaken as well as to classify the geographic scale of the activities supported by each SWGP grant.

Likewise, for the survey of grantees, CRITTERS did not provide the type of information enabling assessment of how representative the completed sample was of the entire SWGP grant population. The new system should easily address these types of problems.

The SWGP also lacked logic models. Fortunately continuity of management and internal transparency in the vision for the program has ensured that managers have operated from a common basis that they are able to articulate when asked. However there are benefits from articulating the logic of the program, particularly if the recommendations of this evaluation are adopted.

Classifying Activities Undertaken by Projects

Determining the activities undertaken by grantees with support from the SWGP was not straightforward. Three alternative protocols for data collection were adopted to learn initially about the SWGP portfolio and to assist with sampling designs for future phases of the investigation. First, the SWGP Program Manager categorized each project according to its primary and secondary activity (capacity building, planning or restoration and conservation). The evaluation team also categorized each grant, based on the CRITTERS brief summary. Their categorizations largely agreed with the Program Manager's in validating this classification. Second, the evaluation team later categorized the primary project activities during the site visits to projects classified as restoration and conservation. Third, in the survey, grantees also classified their project according to the primary and secondary types of activities. Thus there are basically three different sources of information for these very central measures to describe the project grants.

Table 1 summarizes the assessments concerning the detailed activities undertaken through restoration and conservation grants. The description of the restoration and conservation activities used by the SWGP Program Manager differs from those used in the site visits and grantee survey, accounting for several of the empty cells in Table 1. Additionally, survey respondents could provide multiple activities while the SWGP Program Manager and evaluation team only gave a single primary action.

There is a very close alignment across the three sources for most of the types of activities. The exception is wetland habitat restoration where the difference between the site visit and other sources is noticeable. This is partly because of the differences in activities used by the different sources, and likely also reflects unintended under sampling of wetlands projects in the site visits. With this one exception, the classification from the site visits thus appears to be reasonably representative and suitable for use as the base for extrapolation to the entire population of SWGP projects.

	Grantee Survey	Evaluation Team Site Visit	SWGP Manager	SWGP Manager
	All activities	Primary activities	Primary and secondary activities	Primary activities
Plant vegetation (e.g. riparian buffers, wetland plantings)	0.24	29%	32%	24%
Stabilize stream bank or shoreline	0.19	22%	21%	18%
Reduce nutrient/sediment inputs into the Bay or tributaries	0.2	13%		
Restore other living resources (e.g. oysters, SAV)	0.16	13%	17%	20%
Restore wetland habitat	0.16	7%	22%	24%
Restore natural stream channel	0.08	2%		
Reduce other non-point sources of water pollution	0.19	2%		
Remove invasives (by hand or mechanical means)	0.19	2%		
Improve wildlife habitat	0.21			
Engage the local community in planning or implementation	0.3			
Improve the visual appearance (aesthetics) of the site	0.24			
Other Total NOTE: "All activities" (first data column	2.16 n) does not to	9% 99% otal 100%	8% 100%	12% 100%

Table 1: Activities of Restoration and Conservation Projects

Grants, Grantees and Projects

In most grant programs there is a fully understandable disconnect between the grantee and funder about the nature and extent of what is being undertaken. To the funder, a grant is for a discrete set of outputs or activities; to the grantee, a grant is usually a monetary contribution supporting portions of a larger project. The portions that are eligible for funding from a grant program are often not logical or even discrete chunks of the larger project, but are what the funder will support at a particular time under a specific set of circumstances.

This presents challenges for results-based accountability where funders and grantees are expected to account for what they have achieved with the contributions. Some grant funded portions of a larger project might not have direct results without other project elements, often funded by different funders. This leads directly to double or triple counting of identifiable results,

guestimates, or even fudged reporting. In other cases, grantees receive funding to support ongoing programs that do not necessarily have a welldefined long-term objective.

Table 2 shows about a third of the SWGP grantees received multiple NFWF grants for the same project. These projects often received funding from sources additional to the SWGP.

Grant & Project Combinations	Number	Percent
Single grant to single project	140	69.7%
Two grants same project	38	18.9%
Three grants same project	9	4.5%
Four grants same project	4	2.0%
Five grants same project	10	5.0%
Total	201	100.0%

Table 2: Comparison of Grants and Projects

Most grantees (80%) used the NFWF grants to fund part of a larger project, and for the majority of respondents to the survey (73%), the issues or problems that led to the project are not yet fully resolved.

In this evaluation we attempted to gain information from grantees about the larger projects to which the SWGP contributed. In general grantees have difficulty distinguishing reliably between the results attributable to a particular grant contribution and results resulting from other funding sources or unfunded activities

Expenditures vs. Investments

The goal of any funding program such as the SWGP is to have their investments make a contribution that is sustainable over time without continued support, and to pay dividends in terms of increasing the returns to the investment through improved activities and replication by others. By this achievement, the funder converts expenditures into true investments that pay increasing returns over the long term.

In this evaluation, we have sought evidence that the SWGP expenditures are sustained and paying dividends. The direct restoration and conservation activities supported by the SWGP therefore need to be monitored and maintained until they are self sustaining and we can forecast their long-term survival and adequate functioning. For example, as riparian buffer plantings mature they are less prone to being mowed or otherwise destroyed by human activities and natural events. Figure 4 illustrates the main stages in the conversion of expenditures to productive dividend paying investments:

The first stage is to design and implement the action with sustainability as a priority so that it survives beyond T_1 . For restoration and conservation activities this is when the action becomes self sustaining and functions at a high level extending the time period over which returns are gained from T1 to T2(orange dashed line). For community conservation, this is when the desired change in the behavior of individuals has occurred, when local governments have passed

and are enforcing ordinances beneficial to the environment or when a "greener" residential development plan is completed. This enables opportunities for increasing the scale of returns (red dashed line) through natural improvements in function or through complementary investments (green dashed line). Finally, the success of the investment demonstrates its benefits and encourages replication nearby or elsewhere, paying further dividends attributable to the original expenditure. This theme is picked up in the summaries of the capacity building and restoration and conservation sections that follow.

In this evaluation we sought evidence that the black line has been converted to orange, or has good prospects of doing so through its design and



Figure 4: Converting Expenditures Into Investments

implementation.

We address each of the main components of the SWGP evaluation in the following four sections:

- 1. Grant making
- 2. Capacity building
- 3. Planning
- 4. Restoration and conservation

GRANT MAKING

This section provides a broad overview of the SWGP including grantees and grants. It also reports on the views of grantees about the SWGP, program managers and staff as well as program procedures. Most of the information comes from the survey of grantees except for the description of projects that derives largely from an administrative analysis file assembled from CRITTERS and other sources.

Characteristics of grantees

The survey of grantees gained information about the grantee organization and their capacity, specifically in the activities supported by the SWGP.

Most NFWF grantees are relatively small organizations reliant on volunteers; 65% have fewer than 5 employees and 26% have no employees at all. Fortysix of the grantees received 5 or fewer grants from any source during the grant period. Grantees were asked to describe their organization in terms of:

- Estimated number of employees
- Estimated number of volunteers
- Estimated number of grants (including NFWF) for Chesapeake Bay activities since 2000

The number of grants was significantly and positively associated with the number of employees and number of volunteers to at least the 0.05 level⁴. We thus classed grantees with 1 to 5 total grants as smaller (46% of grantees). Grantees with 6 to 10 total grants we classed as medium (26%) and grantees with more than 10 grants were classified as larger (29%). This provides a rough indicator of the size of the grantee organization for use throughout the report when describing the grantee population.

In the survey, we asked about the experience and residency of three key members of the grantee organization who participated in the SWGP project. Most key members participating in the grant were long term residents of the Chesapeake Bay area; 76% have lived in the area for more than 10 years and 91% still live in the Chesapeake Bay area. This suggests that they can continue to be involved in watershed issues, even if they are no longer with the grantee organization. It also suggests that the Chesapeake Bay area has the capacity to undertake community based conservation programs such as the SWGP.

The relationship between the expertise of grantees and the primary activity funded by the SWGP is presented in Figure 5. For projects with capacity building as their primary action, 30% of grantees did not have expertise in either capacity building or community involvement. For grantees undertaking planning projects, 17% did not have expertise in planning or environmental policy amongst the top members of the organization involved in the project.

⁴ Spearman correlation: number of grants and number of employees 0.385 (p < 0.002) and number of grants and number of volunteers 0.299 (p < 0.017).

Figure 5: Match of Expertise of Grantee Organizations to Primary Activity Funded by SWGP



Overall almost 20% of grantees did not have expertise in the primary activities of the grant. There was little difference by size of organization or the geographic extent of their operations, with the exception of capacity building projects on a state or wider basis where the expertise was at a lower level than elsewhere. Outside technical assistance helped address some of these gaps for planning and restoration and conservation actions, but not capacity building.

The vast majority (94%) of technical assistance to grantees derives from individuals or organizations within the Chesapeake Bay watershed. State and Federal agencies or commercial sources often assist the smaller organizations in planning or implementation of restoration and conservation. Most grantees (nearly 90%) rated the technical assistance they received as "extremely useful" or "very useful."

Description of SWGP Grants Included in the Evaluation

SWGP funded 201 grants between 2000 and 2004 which were completed prior to May 2006, making them eligible for inclusion in the evaluation. This sub section describes these grants using program administrative data enhanced with evaluation data.

The grants are roughly divided across the four full years included in the evaluation. The year 2004 is not representative since many of the grants funded in that year were not completed (closed out administratively) by May 2006. Table 3 provides the annual distribution, with the year 2004 included in the total on the bottom row but not presented separately. The considerable increase in grant size after 2000 is also seen in Table 3.

Year	Number	Percent of Grants (2000 -2003)	Percent of Grant Funds (2000 – 2003)	Average Value of Grants
2000	56	29%	18%	\$28,924
2001	51	26%	34%	\$59,552
2002	49	25%	23%	\$42,274
2003	37	19%	19%	\$46,051
2000 – 2003	193	100%	100%	\$43,690
2000 - 2004	201			\$46,913

Table 3: Annual Distribution of Grants Included In the Evaluation

The value of SWGP grants varied across the four full grant years included in the evaluation. The total value of grants disbursed during the evaluation period was approximately \$9 million. Approximately a third of the funds went to grants funded in 2001, the year when the SWGP introduced important changes in the program to support the Chesapeake Bay 2000 Agreement.

Three categories of grants were funded under the SWGP: capacity building, planning, and restoration and conservation. These categories are not mutually exclusive, since individual grants typically combine two of these categories. In these cases one of the categories might be primary and the other secondary, or more rarely, they might be both roughly equal (both primary). As reported in Table 4, half of the SWGP grants were judged primarily capacity building, 27% restoration and conservation and 17% planning. Of the total, 6% could not be categorized within the three main types of grant. As mentioned previously, a small number of projects designed to demonstrate Best Management Practices (BMPs) were also funded and have been included with the restoration and conservation projects.

Category	Average Value of Grant	Total Value of Grants		Number of Grants	% of Grant Funds	% of Grants
Capacity building	\$39,133	\$	3,913,326	100	43%	50%
Planning	\$45,876	\$	1,559,798	34	17%	17%
Restoration and conservation	\$57,216	\$	3,146,865	55	35%	27%
Other	\$32,407	\$	388,884	12	4%	6%
Total	\$44,820	\$	9,008,873	201	100%	100%

Table 4: Value of SWGP Grants by Primary Type of Activity

The value of grants varied across the three program categories, as shown in Table 4. Restoration and conservation grants received a higher level of funding. While only 27% of the number of grants awarded, restoration and conservation grants received 35% of the total grant funds. Closer examination of the grants in the *other* category showed that they closely resembled restoration and conservation.

We were able to estimate the average value of grants that *exclusively* addressed either capacity building or restoration and conservation⁵. (We are not

⁵ 9 projects exclusively addressed capacity building and 6 exclusively addressed restoration and conservation (9 and 11% of each category respectively)

able to estimate comparable costs for planning activities since there were too few grants exclusively in that category.), which serves as an indicator of the *"pure"* costs of these two categories of activities:

- Exclusive restoration and conservation grants average \$48,231
- Exclusive capacity building grants average \$24,766

This is consistent with the lower level of funding for the typical capacity-building grant compared with restoration and conservation grants, already seen in Table 4.

First time grantees receive smaller levels of funding than those receiving their second or subsequent grants. Figure 6 illustrates the increase in the average value of a grant with each subsequent grant. Those receiving 5 or more grants during the evaluation period included the recipients of the large legacy grants.

The grants awarded to grantees receiving only one grant are about \$20,000 less than grantees receiving 2 to 4 grants. This likely reflects growing confidence in the grantee and improved alignment of the grantee's activities with evolving SWGP priorities.



Figure 6: Average Grant Size by Sequence Number of Grant

Two thirds of grantees received only one grant (86 of 127 grantees in Table 5 column two). The first grant received by grantees with two grants (second row of Table 5) was larger than the second grant, and noticeably larger than the grants received by grantees only awarded one grant. By contrast, grantees awarded three or four grants (rows three and four in Table 5) received relatively small first grants and very large second grants, while those receiving four or more grants (rows four and five in Table 5) had a fairly steady stream of grant funding from the SWGP after their first grant.

		Average Value of Grant						
Number of Grants	Number of Grantees	First Grant	Second Grant	Third Grant	Fourth Grant	Fifth and Sixth Grant Combined		
One grant only	86	\$28,274						
Two grants	24	\$63,282	\$45,859					
Three grants	7	\$26,029	\$71,677	\$39,671				
Four grants	5	\$21,060	\$105,969	\$60,380	\$59,140			
Five or six grants	5	\$45,302	\$71,192	\$67,367	\$59,120	\$91,439		
Total	127	\$35,152	\$60,687	\$53,908	\$59,130	\$91,439		

Table 5: Grant Size and Sequence

Table 6 shows the potential advantages to grantees of receiving more than one grant from the SWGP. On average, grantees received about \$71,000 from the SWGP, however the average amount received increases, naturally with the number of grants, with substantial jumps after the first and third grants.

Table 6: Value of Grants Per Grantee

Number of SWGP Grants Received by Grantee	Number of Grantees	Average Value of Grants Received
One grant only	86	\$28,274
Two grants	24	\$109,141
Three grants	7	\$137,377
Four grants	5	\$246,549
Five grants	4	\$351,282
Six grants	1	\$358,405
Total	127	\$70,936

Grantees operate across different landscapes. The SWGP Program Manager's classification of grants according to the scale of the landscape covered by each grant suggested that 56% of all grants were awarded to grantees working within a single community or county, with an additional 30% to grantees working in more than one county. Thus, an estimated 86% of grants were probably within a single state and operated at a local and/or regional level and within a small watershed, as befits SWGP as a community conservation program (Table 7).

Table 7: Geographic S	Scale of Grantee	Operations
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Category	Number	Percent	
Community	85	44%	
County	23	12%	
More then one County	59	30%	
State	3	2%	
More than one state	24	12%	
Unknown	7		
Total	201	100%	

About half of the grantees operating at the community and county level received one grant only, compared to a third for grantees operating over more than one county or one or more states⁶.

The SWGP focused primarily and roughly equally on capacity building and restoration and conservation, with a smaller proportion of grants going towards planning activities. Most grants addressed a combination of activities, often combining two or more such as planning and restoration and conservation. Restoration and conservation grants were, on average, one third larger than capacity building grants.

Comparison of SWGP Grants by Primary Type of Action

Using data from the survey of grantees enhanced with administrative data from CRITTERS, we were able to compare the SWGP grants in support of the three main classes of activities: capacity building, planning and restoration and conservation. Where the grantee did not provide these data we used the classification provided by the SWGP manager. About 22% of grantees identified two or three priority activities for their grant (Table 7). These are grouped together because of the small numbers in each combination.

The primary grant activities of 63 grantees who completed the survey are presented in Table 8 Capacity building and restoration and conservation had the same number of projects. Few projects undertook planning as the primary action, but planning was a primary action of some of the projects classed as "more than one" and planning activities were included in projects whose primary focus was capacity building or restoration and conservation.

Table 0. I finiary Activities of Orants						
Primary Action	Number	Percent				
Capacity building	23	36.5				
Planning	3	4.8				
Restoration and conservation	23	36.5				
More than one	14	22.2				
Total	63	100.0				

Table 8: Primary Activities of Grants

The evaluation team focused little on planning grants because of the small number of grants with planning as their primary activity.

Grantee Experience

The number of grants and projects that a grantee is undertaking is a rough indicator of their experience. The size of grantee organizations is a very good predictor of their grant experience since 2000. All of the smaller grantee organizations had received fewer than 6 grants over this period, all of the medium sized grantees had six to ten grants and all of the larger grantees had over 11 grants, some with 50+grants (see Table 9).

⁶ The picture is complicated somewhat by the legacy grants (discussed earlier as multi-year grants with awards equaling \$100,000), some of which went to state or multi state operating grantees who partnered with local organizations.

Size of Organization		Number of grants since 2000 for work in Chesapeake Bay							
Organization	1 - 5	6 - 10	11 - 15	16 - 20	21 - 50	> 50			
Smaller	100.0						100.0		
Medium		100.0					100.0		
Larger			33.3	5.6	16.7	44.4	100.0		
All	46.0	25.4	9.5	1.6	4.8	12.7	100.0		

Table 9: Grantee Experience With Other Grants

As discussed above size of grantee organizations is not associated with the type of activities undertaken with SWGP funding, so it is not surprising that the experience of grantees as measured by the number of grants for work in the Chesapeake Bay since 2000 is also not associated with the type of activities undertaken (see Table 10).

Table 10: Grant Experience by Primary Activity Undertaken

Size of	Number of grants since 2000 for work in Chesapeake Bay					Total	
Organization	1 - 5	6 - 10	11 - 15	16 - 20	21 - 50	> 50	
Capacity							
building	46.7	30.0	6.7		3.3	13.3	100.0
Planning	44.4	33.3	11.1			11.1	100.0
Restoration &							
conservation	47.1	17.6	5.9	5.9	5.9	17.6	100.0
Other	25.0	25.0	25.0		25.0		100.0
All	45.0	26.7	8.3	1.7	5.0	13.3	100.0

Grantee staff working on the SWGP projects have a great deal of experience. Most, as seen in Figure 7, have in excess of 5 years experience and the majority have more than 10 years experience.



The coding in Figure 7 is: P1-S = person 1 in a small organization, P2-M = person 2 in a medium organization, and so on. Very few staff have less than five years experience, regardless of size of organization (two left cluster of bars). Thus while smaller organizations are managing fewer grants their staff are very experienced; for example about 65%, 40% and 55% of the three staff in smaller organizations have more than ten years experience (light green, light blue and dark blue bars in right hand cluster).

Costs of Preparing a SWGP Proposal

Grantees provided estimates of the number of hours spent on the proposal by staff, volunteers and others associated with the organization. Proposals required considerable effort (Table 11), i.e. approximately one and a half weeks to prepare and submit the average proposal, while proposals to undertake more than one primary action required about a full week. Planning grants took the greatest amount of time, but there were only two such grants reported in the survey. The bulk of the time, an average of 30 hours, was contributed by staff of the organization. The remaining time was from volunteers (15) and others (8).

Table 11:	Hours to	Prepare the	SWGP	Proposals
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Primary Activities	Mean (hrs)	Standard Deviation	Number
Capacity building	49	32	22
Planning	95	64	2
Restoration and conservation	59	34	22
More than one	37	27	12
All grants	52	34	58
Grants > \$98,000	47	20.5	5

It required about the same amount of time for grantees to prepare a proposal for grants valued at \$99,000 and higher as for the rest of the grants. The mean was 47 hours and the standard deviation 20.5. (The number of these large grants is small so desegregation is not possible).

The data underlying Table 11 can be used to approximate the return on the time grantees invest in a proposal. A nominal value of \$50/hour was assigned to the time spent on the proposal and the resulting product compared to the value of the grant received. The results are presented in Table 12 and should be read as "for every dollar of time spent preparing a proposal for a capacity building project, \$19.30 of funding was received BY SUCCESSFUL GRANTEES". Higher ratios indicate that more grant funding was received per dollar of time spend on the proposal. The calculation does not include the value of the time spent by applicants who did not receive funding, nor does it take account of direct costs incurred in preparing the proposal, disbursements to other organizations from the grants, discounting of the values over time, or any of the other considerations necessary to calculate a true rate of return to investment.

Primary Activities	Mean	Standard Deviation	Number
Capacity building	19.3	20.0	22
Planning	8.8	7.4	2
Restoration and conservation	19.8	33.1	22
More than one	44.8	59.4	11
All grants	24.1	36.1	57

Table 12: Estimated Return to Investment in Proposal

Smaller and medium sized organizations spent somewhat more time preparing their proposals and the return they received less compared to larger organizations (Table 13).

		o Submit posal	Estimated Return from Proposal		
Size of Organization	Mean	Std Dev	Mean	Std Dev	
Smaller	53.6	34.8	20.6	32.1	
Medium	56.8	35.7	17.5	20.2	
Larger	43.9	30.9	35.1	49.9	
All	51.6	33.8	24.1	36.1	

Table 13: Proposal Effort by Size of Organization

The information presented above is descriptive and provided to assist the SWGP and NFWF understand relative differences in burden across types of grantees.

NFWF Contributions to Grant Making

Good grant making processes can help ensure that the goals of the project and grant program are aligned, that projects are well designed and make best use of available resources. NFWF is a proactive grant maker whose program managers and staff support grantees with advice and information during the proposal and implementation phases. It also provides a workshop to help grantees understand the priorities and processes of the SWGP. Recently, NFWF has been working to reduce the administrative burden of applying for and administering grants. This section uses information from the grantee survey to assess these contributions to grant making.

Respondents were very positive about the knowledge of NFWF managers and staff and the help they provided. Grantees were 75% and 77% in agreement that the contributions of NFWF program and administrative staff respectively were beneficial.

Grantees' rating of the competency of NFWF program staff were highest for restoration and conservation. There was:

 75% agreement that NFWF staff were very knowledgeable about restoration, compared to 71% for capacity building and 67% for planning. Grantees also agreed strongly that the guidance and advice from NFWF staff was prompt and valuable. There was:

- 74% agreement that NFWF advice was very useful, and
- 77% agreement that responses from NFWF were prompt

NFWF administrative staff was also highly rated by grantees in terms of their knowledge of the problems with the Chesapeake Bay and the utility and promptness of their responses. There was:

- 76% agreement that NFWF administrative staff were very knowledgeable about the problems with the Chesapeake Bay
- 81% and 75% agreement respectively that NFWF administrative staff were very knowledgeable about grant procedures and requirements and their advice on other matters was very useful; and
- 76% agreement that responses from NFWF administrative staff were prompt.

These ratings of the contribution of NFWF managers and staff are consistent across the three size categories of grantee organizations.

Half of the grantees attended a NFWF SWGP workshop. Smaller organizations were far less likely to attend (37% attended) compared to larger organizations (72% attended). Since the size of organization is associated with the geographic extent of grantee operations, it is not surprising that grantees operating at the community and single county levels are also least likely to attend (58% and 27% attended respectively).

Attendees gave the workshops moderately positive ratings:

- 69% agreed that the workshop helped them fully align their proposal to NFWF priorities
- 63% agreed that the workshop was essential to their gaining funding
- 64% agreed that the workshop saved them a lot of time in preparing the proposal
- 82% agreed that information provided at the workshop was fully consistent with the proposal requirements.

We are unable, with the information available, to assess whether attending the workshop increased the likelihood of success in applying for a grant, or if smaller organizations faced greater barriers in attending workshops. NFWF is undertaking modifications to their approach to the workshop.

Survey respondents were asked about the usefulness of different aspects of the grant process. Since the grant making process has changed over the years, summary data are not necessary comparable. Open-ended questions concerning how to improve the grant making resulted in many suggestions, including reducing the number of required reports, reducing the numbers of financial accounting forms and the request for a pre-proposal process from which organizations would be asked to write full proposals. Many respondents felt that the NFWF grant management process was relatively easy to administer.
It may be that small volunteer organizations find the process more difficult than the larger NGOs or local government agencies that apply for NFWF funding. For example, one respondent said that as a volunteer organization, it is difficult to compete with government and NGO professionals, and they need additional assistance with the process. This is consistent with the advantage of larger organizations gaining better returns from their proposal investments (see Table 13).

There was appreciation for the newer emphasis on outputs and outcomes since it helps to clarify objectives. One respondent asked for more feedback on successful and non-successful proposals, presumably as a way to increase their chance of success in future. Another felt that the new requirements increased the burden.

The proposal, administrative and reporting requirements are the same for all SWGP grants, regardless of size or extent. We have already shown how the burden of proposal preparation diminishes as grant size increases; this suggests that larger and/ or longer NFWF grants would reduce the overall burden to the grantee.

The comments by grantees on how the burden could be reduced or how the utility of the grant requirements could be improved reflect some of these issues:

- Reduce requirement for letters of support
- Budget format, reporting too complicated
- Electronic submissions
- Too much reporting for small grants
- Better alignment of grant disbursements to need for expenditures
- None of the reporting requirements are useful to us
- More support in meeting grant reporting requirements before reports are submitted
- Shorten time to when successful proposals can begin work
- More flexibility so grant managers can manage adaptively

Almost all grantees responding to the survey are able to complete forms on line and submit and receive electronic documents, suggesting that moving to electronic proposals and reports would not be difficult for grantees, and could return benefits in document handling and management.

Several respondents stated that the SWGP processes were fine and not burdensome compared to other grants. Both messages are consistent with the comparison provided by grantees to a (self selected) similar grant they received which suggests that the NFWF grant making processes are viewed similarly to those of other grant makers from whom the grantees have received funding. The areas compared included:

• Burden of the grant

- Burden of financial reporting
- Grant reporting requirements
- Utility of advice
- Alignment of receipts to disbursements
- Flexibility of requirements

Comparison to different types of funder suggests that NFWF is regarded somewhat more positively across these measures in comparison to state and federal funders, but not quite as positively as non government funders such as private foundations and Bay funding organizations.



Figure 8: Comparison of NFWF to Other Funders

This comparison is very instructive. The SWGP is supported by contributions from federal agencies and thus carries multiple federal grant requirements. While the SWGP is able to lessen the negative impact of these federal grant requirements when compared to federal and state grant makers, they do not compare favorably to the non governmental donors who are probably much more flexible and may have minimal (or lighter) financial reporting requirements. This is consistent with the recommendations of grantees about how to improve the grant reporting process. However, many respondents commented that they had no problems with the NFWF grant processes.

Table 14: Was the Project Possible Without NFWF Funding?

NEWE FUNDING:		
Yes, entirely or most	4	7.1%
Yes, some	18	32.1%
No	34	60.7%
Total	56	100.0%

Only 7 % of grantees indicated that their project would have been entirely possible without NFWF funding (Table 19). Thus, NFWF's contributions have been critical to the achievements of the grantees.

Understanding the key role of SWGP funding requires an understanding of the grantee's larger project of which the NFWF funded element is only a part. Grantees were asked to assess the likelihood of funding for a similar project in the future. Over half said there was some possibility of funding (See Figure 9) and the 20% who said there was no possibility were matched by a roughly equal proportion who felt that there was a good possibility of funding or were

certain that funding is available. Government sources were regarded as the most likely, followed by community sources.



Figure 9: Likelihood of Future Funding for a Similar Project

Coded responses to an open ended question that asked grantees to describe the larger project of which the NFWF grant was part provide additional insights. The question was "Briefly describe the project to which the NFWF grant contributed mentioning location, the main types of activities, any other organizations you are partnering with and approximate start and end dates where appropriate." Nine of the grantees (13%) did not complete the question, and some who responded did not address all of the points.

- Forty-one percent of grantees indicated that the larger project to which NFWF funding contributed partnered with one or more other organizations. This was nearly all respondents who responded to this element of the question.
- Half of the grantees' responses included information about funding. Two-thirds of these indicated that the project was ongoing and had additional sources of funds, and 15% said that the project had additional funding but did not indicate whether it was ongoing or not. Of the grantees responding to this element, 18% said the funding from NFWF enabled start of a new project.

The SWGP provided funding to grantees in support of projects that are larger and more complex than what was supported by the NFWF grant. While many of these projects will likely continue to attract funding, grantees view the contribution of the SWGP funding as very important or essential.

Summary

Most grantees are from smaller organizations and only ever receive a single grant from the SWGP. They get considerable help from the SWGP staff and are grateful for that because they need more help in developing and implementing their proposals than do larger organizations.

It is probable that there is a significant statistical correlation among:

- Size of organization
- Size of grant
- Number of grants received
- Efficiency at getting and managing grants
- Geographic reach of grants
- Complexity of project (more than one primary activity) and
- Expertise of staff and volunteers

Big organizations tend to get more money, do more things, work within a larger geographic area and are more cost-efficient in their activities. If NFWF wishes to expand the SWGP as a community-based grant program, they must find ways to increase the number and duration of projects organized by the smaller organizations. Smaller organizations are more affected by the pace and timing of federal funding; delays in funding have meant cancellation of restoration activities because the smaller organizations do not have a financial cushion. Smaller organizations also often operate on the "edge", i.e. their employees may suffer "burn out". At least one local watershed organization supported by the SWGP is non-functional today because of individual "burn out".

Additionally, the limited expertise of some NFWF grantees suggests that NFWF should be more focused and proactive in providing technical assistance to smaller organizations and strategically aligning partnerships among large and small grantees. This is taken up again in * section.

Most NFWF grants are part of larger projects that are being undertaken by grantees, but the grantees regard the NFWF SWGP as key source of funding for these projects within the Bay watershed. Alternative funding is not readily available for the specific project elements. Generally the grantees are very positive about the knowledge and assistance provided by NFWF staff, however they do tend to feel that NFWF's grant requirements (frequency of reports and forms) are a bit burdensome and they regard the NFWF grant experience less positively than those of other non-governmental donors funding similar kinds of activities within the Bay.

The results from the survey suggest discontinuing or eliminating some grant requirements if the results are not regularly used by NFWF or absolutely required for NFWF reporting. The vast majority of grantees are able to deal with fully electronic proposals and reporting processes, thus NFWF should strongly consider going entirely electronic to reduce paperwork. The final reporting requirements should consider focusing more on evidence that outcomes are being achieved and less on reporting what activities were undertaken.

CAPACITY BUILDING

One of the signatures of the SWGP was the effort to build community capacity to undertake restoration and conservation in the Chesapeake Bay. This was to involve increasing the knowledge, awareness, motivation and competence of both individuals and organizations. To achieve this vision, the SWGP supported an array of capacity building activities including:

- efforts to enhance the capacity of Chesapeake Bay based organizations largely through improving the awareness, knowledge and skills of their staff, volunteers and others,
- development of the grantees' organizational capacity;
- enhancement of the capacity and behavior of other organizations such as local governments, also through increasing their knowledge and awareness; and
- providing encouragement to local citizens to modify behaviors harmful to the Bay and to expand behaviors that would improve the Bay's health.

This latter category included reducing sources of threat to the health of the Bay from priority sectors such as farmers and developers. While some capacity building activities were focused on schoolchildren, the broader objective was to engage the public and get them more involved with activities in their watersheds that would benefit the overall health of the Bay.

Three quarters of the SWGP grants provided capacity building activities either directly as the main goal of the grant or in association with restoration and conservation goals. The importance of capacity building in the SWGP grant program is evident throughout the entire period covered by this evaluation.

Ultimately, the purpose of capacity building is a sustained change in the behavior of those who currently or potentially affect the health of the Bay, positively or negatively. During this evaluation, grantees expressed the view that engaging local citizens in direct restoration and conservation activities, accompanied by efforts to increase their awareness and knowledge of how their behaviors can affect the Bay, leads to subsequent sustained positive changes. This is an important premise that we will examine since it underlies the efforts of a large number of grantees.

We also consider whether the capacity building undertaken by SWGP grantees is likely to be sustainable and whether it aligns with contemporary practices.

With the expert panel, the evaluation team developed a logic model to describe how capacity building can work with the other two programmatic elements, i.e. restoration and conservation and planning, to contribute to the health of the Chesapeake Bay (Figure 10). The model also articulated the outcomes thought to be key to the development of community capacity to sustain contributions to the health of the Bay (Figure 12).

The view of the expert panel and the evaluation team is that capacity building potentially contributes directly to the health of the Bay where it leads *directly* to changes in behavior such as in the lawn maintenance practices of homeowners and the design of residential developments to retain buffers and reduce

impervious surfaces. This behavior change seemed to be an important priority for SWGP grantees.



Figure 10: How the SWGP Contributes to the Health of the Chesapeake Bay

According to the expert panel, capacity building also contributes *indirectly* by enhancing the effectiveness and sustainability of planning and/or direct restoration and conservation efforts. As we describe below, SWGP grantees used capacity building to enhance the effectiveness of direct restoration and conservation activities and much less on either sustaining those investments or replicating them locally or elsewhere.

This section addresses two of the evaluation themes which emerged from reviewing the projects' results with respect to their capacity building efforts - the environmental effects of SWGP projects and sustainability. Capacity building was a topic addressed in all of the information gathering efforts and was the focus of considerable discussion with NFWF program staff and managers and with the NFWF Board. The primary sources of information for this section were the survey of grantees and capacity building interviews.

Capacity Building Projects

In this section we describe the targets and activities of the capacity building projects supported by the SWGP.

Capacity Building Targets

Capacity building targeted individuals, organizations or all or parts of communities. A typical strategy is to start with the problem that needs to be addressed (e.g. reducing use of nutrient generating materials), consider who is involved and where the problem occurs (e.g. household use of fertilizers in

locations that release to waterways) and develop an approach to effect change in the behavior of the targeted group. We did not identify a systematic approach used by SWGP grantees.

Three quarters of capacity building activities targeted both organizations and individuals while about 20% targeted individuals alone. This did not change significantly over the evaluation period and did not differ across projects where capacity building was the primary or secondary action.

Local citizens were the main target group (70%) when individuals were addressed, and local government was the focus of almost all of the capacity building projects targeting organizations. About 10% of the effort also focused on individual local elected officials and others in positions of authority. In addition to local government, organizations included business and sector (e.g. agriculture) organizations, and state and federal governments. Few of the capacity building projects mentioned focusing on other local organizations. Individuals were usually addressed as part of larger groups, for example 43% of the projects provided capacity building to 21 - 50 individuals (groups over 100 were generally based in schools). As would be expected, capacity building targeting organizations usually focused on smaller numbers; 84% of the projects addressed fewer than 10 other organizations (Table 15).

Individuals		Organizations	
Number	Percent	Number	Percent
1 – 5	0%	1 – 5	36%
6 – 10	5%	6 - 10	48%
11 – 20	5%	11 – 20	13%
21 – 50	43%	21 – 50	3%
51 – 100	13%		
Over 100 (mainly schools)	35%		

Table 15: Numbers of Individuals and Organizations Involved in CapacityBuilding

The interviews of a sample of capacity-building grantees suggested that there should be more strategically targeted capacity building. An emerging theme from these interviews was the importance of finding local community leaders and mentors who can recruit, motivate and train others or whose activities might have a greater impact on the health of the Bay. This is consistent with a diffusion of innovation approach which has a theoretical and practice basis⁷.

There were several examples of SWGP grantees who focused their efforts on capacity building with local organizations that had the potential to have a big impact on the local watershed; this was a very successful strategy where applied. Additionally, another successful approach involved finding one or more leaders in a local community and supporting them in the diffusion of knowledge and practices throughout the community. In at least one case, this involved the development of a local community organization focused on environmental issues.

⁷ Everett M. Rogers: Diffusion of Innovations, Fourth Edition, 1996. Malcolm Gladwell (2000) in The Tipping Point, Back Bay Books, provides a popular update of Rogers.

The argument for a strategic focus suggests targeting community individuals or organizations with the power to have a major impact on the Bay vs. ordinary citizens who can only have a significant effect on the health of the Bay through cumulative activities. For example, changing the attitudes and behavior of one member of the local legislature to enact a regulation that every household must have a rain garden would have a significantly greater impact on the Bay than a series of workshops encouraging homeowners to build rain gardens. Likewise convincing the owner of the largest parcel of land along a river that s/he needed a 50 ft wide riparian buffer might have more immediate and significant impact than working with many students within a school to build a buffer and provide training in water quality monitoring. Thus, targeting those who can make a difference, even if it takes longer and involves fewer people, is a strategy which is important, but whose impact on the effectiveness of the SWGP we cannot assess in this evaluation.

Capacity Building Activities

The general approach to capacity building programs targeting individuals, including that followed in the SWGP, is to heighten their awareness and knowledge of restoration and conservation in the context of the Chesapeake Bay watershed. It also focuses on behavioral changes, including engaging volunteers in demonstration sites or some form of applied learning activities, using a hands-on approach.

To characterize capacity building activities we use project coding done for the evaluation by the Program Manager of the SWGP. This is a different data source, but it closely matches the survey data.

Type of Capacity Building	Number	% of Capacity Building Projects	% of All Projects
Capacity - Community Outreach	34	24%	17%
Capacity - Community Involvement	31	22%	15%
Capacity - Organizational Development	20	14%	10%
Capacity – Training	14	10%	7%
Capacity - K-12 Education	13	9%	6%
Capacity - Problem Source Education and TA	11	8%	5%
Capacity - Community Environmental Education	11	8%	5%
Capacity - Initiative Development	5	4%	2%
Capacity - Technical Assistance	3	2%	1%
Total	142	100%	71%

Table 16: Types of Capacity Building (primary and secondary purpose of projects)

Table 16 details the types of capacity building undertaken with SWGP funding where capacity building was the primary or secondary purpose of the project (as categorized by the SWGP Program Manager). Community outreach and community involvement are efforts to engage local citizens in the restoration and conservation efforts of the grantee and involve activities to heighten their awareness and knowledge about the environmental programs of the Bay and how their activities can affect the Bay, both positively and negatively. A classic example of this approach is the annual Potomac River Clean-up during which several organizations and local communities encourage citizens and their families to join together to remove trash from the Potomac and its tributaries. Annually these groups remove tons of waste.

Organizational development projects sought to improve the capacity of mainly local organizations to undertake local direct restoration and conservation activities. K-12 education often included demonstration sites that schools intended to maintain in the long term. These sites were often incorporated into the science curriculum of the school such that students in successive years continued to work at the same sites. Often these projects involve monitoring of water quality. Initiative development and technical assistance (TA) usually focused on preparation of a direct restoration and conservation action, as did much of the problem source education and TA.

There were two main avenues from the capacity building projects to potential direct restoration and conservation: first through development of a local direct restoration and conservation action either by the grantee or a partner organization (TA, initiative development, problem source, organizational development) (@ 26% of the capacity building projects); and second through engagement of local citizens directly in activities of the grantee or a partner organization by persuading them (@ 65% of capacity building projects).

Thus capacity building supported by the SWGP was largely to enhance the direct restoration and conservation projects, either current or emerging, of grantees and their partners.

From the grantee survey, workshops and lectures or meetings were important tools in capacity building, as were demonstration sites, the latter especially for organizations. Demonstration sites were most often used in projects where capacity building was secondary to restoration and conservation activities. The choice of the site and size of the area usually depended on the project's access (see Restoration and Conservation section).

Combining restoration and conservation and capacity building goals have likely led to compromising one or both. For example, available sites that work well for restoration and conservation purposes might not be easily accessible sites for demonstration purposes. Likewise, selecting a site for capacity building might compromise restoration and conservation needs, e.g. placement of a restoration site for a school-based project where it is easily accessible to the target audience may have significantly less impact on Bay health than if placed elsewhere. As an example, one stream restoration project near a school was completely isolated from other bodies of water and was likely non-functional. Most importantly, the problems that SWGP projects have experienced in maintaining restoration and conservation investments directly and seriously compromise their continued use for demonstration.

One example of a project that combined capacity building with restoration and has the potential for diffusion was the restoration of a tidal shoreline with the planting of SAVs and an oyster reef. The restored area (seen in Photo 1) is a demonstration project used for educational purposes and was judged to be highly functional during a site visit.

Photo 1: Project with potential for diffusion



Table 17: Time Spent in Direct Experience during Capacity Building

Percentage of time spent on direct experience	Percentage of projects
1 - 25%	15%
26 – 50%	25%
51 – 75%	15%
76 – 100%	40%

Most participants in capacity building projects spend a considerable amount of time engaged in direct experiential learning (Table 17). For 40% of the projects, hands-on experiences occupied nearly the entire time they were engaged with the project (>75%). For example, community involvement projects often engage local citizens in working at a restoration or conservation site where they clean the area of trash and invasive species and plant native vegetation. Accompanying efforts to heighten awareness and build knowledge are directly associated with the activities, but once the day is completed, the involvement of the citizens may end.

There was variation in the general purposes of the capacity building (Figure 11).

Figure 11: Purposes of Capacity Building



The typical project encouraged individuals either alone or as part of organizations to participate in activities, but not necessarily to undertake activities on their own or to continue with such activities. We assume this explains why skill development was less frequently part of capacity building projects.

Capacity Building Accomplishments

The logic models suggest that the long-term contribution of capacity building to the health of the Bay is largely through <u>subsequent</u> engagement by citizens in direct restoration and conservation activities (Figure 9), but there is also some direct contribution of capacity building to the Bay during the direct restoration and conservation activities. In this sub section we consider the direct gains from capacity building that will make subsequent direct activities more likely, as well as the subsequent activities themselves. Additionally we assess the unit costs of these subsequent activities and finally capacity building activities under the SWGP from a broader community perspective.

Direct Accomplishments of Capacity Building

Grantees were asked to assess the capacity of individuals at the conclusion of the capacity building activities. There were stronger improvements for awareness and knowledge, compared to skill building, which is consistent with the focus of the capacity building activities described above (Table 18). The standard deviations for all of the measures indicate considerable variation in the judgments of grantees.

Table 18: Level of Gain from Capacity Building

Gain from capacity building	Mean	Std. Deviation
They all currently have the knowledge needed to recognize problems with the Chesapeake Bay	6.92	2.39
They all currently have the skills needed to address problems with the Chesapeake Bay	6.16	2.22
They all currently are very aware of how local activities and conditions affect the Chesapeake Bay	7.54	2.09
As a result of this project they now connect their activities to the health of the Chesapeake Bay	7.26	2.57
As a result of this project their future activities will be less harmful to the Chesapeake Bay watershed	7.29	2.92

These gains are positive and potentially very useful if the individuals are subsequently directly involved in restoration and conservation activities.

Subsequent Engagement in Direct Activities

For 70% of the capacity-building projects, grantees report at least some of the participants (both individuals and organizations) subsequently engaged in direct restoration and conservation activities. To estimate the proportion of participants who subsequently engaged in direct activities, we compared the grantee estimates of the number participating in capacity building activities to the number they say subsequently engaged in direct restoration and conservation activities (Table 19). The data from the sample and estimate for the program are both provided in this table.

The data in Table 19 are rough estimates based on information from the grantee survey that used a range (e.g. 6 to 10 organizations) to obtain information about the number of individuals or organizations who participated in the project's capacity building. (In making this calculation we removed school based projects because respondents appeared to provide the numbers in the classes, not the numbers engaging in subsequent activities). The results can be taken as a rough indication that about 40% of individuals and organizations engaged in some form of direct restoration and conservation activities subsequent to their participation in capacity building.

Individuals	Organiz	ations	Individ	luals
	Calculated From Sample	Estimate for Program	Calculated From Sample	Estimate for Program
Estimated number who engaged in capacity building	235	712	2015	6106
Estimated number who subsequently engaged in direct restoration and conservation activities	87	263	864	2618
Percentage engaging in subsequent activities	NA	37	NA.	43

Table 19: Estimated Numbers Engaging in Direct Activities Subsequent to Capacity Building

During the period of the evaluation an estimated 2618 individuals engaged in subsequent direct restoration and conservation activities attributable to the capacity building supported by the SWGP. (The Chesapeake Bay watershed covers an estimated 64,000 square miles populated by 13 million people⁸).

This estimated number of individuals engaging in subsequent direct restoration and conservation activities attributable to the SWGP can be combined with the estimated *pure* $cost^9$ of capacity building to provide an estimate of the *unit* cost of capacity building.

Table 20: Calculating the Unit Costs of Capacity Building

Number of capacity building projects	127
Estimated pure cost of average capacity building project	\$24,750
Estimated SWGP investment in capacity building	\$3,143,250
Estimated number of individuals engaged in subsequent	2618
direct restoration and conservation activities	
Unit cost of capacity building	\$1,200

Table 20 suggests that the average unit cost for capacity building of each person subsequently engaging in some form of direct restoration and conservation is \$1,200. About a quarter of the subsequent direct activities involved further capacity building, planning, etc. (see Table 21).

⁸ <u>http://www.baylink.org/fieldtrips/primer.html</u>

⁹ See page 17 above.

Types of Activities	Frequency (%)	Average number of individuals
Direct activities with grantee	36%	45
Direct activities with other organizations	9%	33
Direct activities on own	14%	16
Further capacity building, planning, etc	23%	46
Other	5%	40
Not known	14%	42

Table 21: Types of Direct Activities Subsequent to Capacity Building

Telephone interviews with a sample of grantees from capacity building projects were consistent with the information reported above. Many of the telephone respondents indicated that the subsequent activity that people engaged in was, for a period, to maintain or monitor project investments such as planting buffers. The subsequent activities undertaken are all useful, for example:

- Continuing activities by local government to require better planned (less harmful) development projects
- A few volunteers who worked locally now want to work more broadly and help in other neighborhoods. Some people want to work with a new neighborhood group after working with their own.
- Maintained riparian buffers built during the project, undertook erosion control
- Additional rain gardens and green roofs were built in the area and there was some link to the project
- Beneficial improvements to their own properties
- Additional easements established

The evaluation team attempted to identify examples of capacity building interventions elsewhere which resulted in sustained positive changes in the environmental behavior of individuals or organizations. Although there are examples of environmental education changing attitudes and knowledge, there is little evidence showing success of efforts to change behavior and to sustain the change.

A practical review undertaken by David Galvin from the King County Department of Natural Resources and Parks, Seattle, Washington¹⁰ confirms our observation that there is little evidence that direct capacity building targeting knowledge and awareness with individuals or organizations is a successful strategy for changing behavior.

A more productive strategy appears to be targeting local government for capacity building, an approach taken by some SWGP grantees. For example, one SWGP grantee worked very hard with the local planning committee so they understood better what was required for stream restoration and this has resulted in the local government officials becoming more sympathetic, sensitive and responsive to proposals for restoration and conservation projects. They even understand that it may be necessary to cut down trees to stabilize or restore a stream bank! Galvin suggests that improved local ordinances and

¹⁰ <u>http://www.epa.gov/owow/nps/2005proceedings.html</u>

rules may provide sustained positive contributions that do have noticeable effects on the local watershed.

Another approach is to focus on those individuals whose activities may have a greater impact on the health of the Bay, e.g. development planners or farmers. SWGP has supported capacity building for both groups, to good success. For example, a workshop with planning professionals has resulted in riparian areas being preserved during suburban development.

Thus while SWGP grantees clearly have made gains from their sincere and well intentioned efforts, we cannot confirm that the current approach to capacity building is likely to lead to a level of sustainable change that will positively and noticeably affect the health of local watersheds.

Community Level Outcomes

The potential contribution of SWGP capacity building projects from the perspective of mobilizing community resources to make <u>sustainable</u> improvements in the health of their local watershed and of changing behaviors to be more pro-conservation is implicit in a community conservation model

The logic model (Figure 12) provides an indication of what, according to the expert panel and evaluation team, must be achieved to result in sustainable community based activities to address local environmental problems. Since this model has not been applied previously, there are no performance standards establishing the necessary level of achievement for each outcome or how the outcomes should relate to each other.

SWGP grants for capacity building did not *mostly* or *fully* address key barriers, create networks of connected organizations, build capacity with key individuals, or lead to direct activities to improve the health of the Bay which are the key outcomes articulated in the logic model.

Figure 12: Logic Model for Capacity Building



In the survey, grantees were asked to assess their project's performance in the main outcomes identified in Figure 12. Figure 13 demonstrates that most grantees did not believe that their projects achieved much success on the outcomes in the lower levels of the community conservation logic model portrayed in Figure 12 above. Achieving a sustainable shift in the environmental behavior of community members is likely to require a re-thinking of strategies.

Figure 13: Achievement of Community Engagement Outcomes



Assessment of Capacity Building

The capacity building undertakings supported by the SWGP led to gains in the level of awareness and knowledge of participating individuals and organizations, about 42% of whom subsequently undertook further direct restoration and conservation activities either on their own, with the grantee or others. Some of these investments will likely be sustained, e.g. successes with local governments to elevate consideration of the effects of local developments on the watershed in approvals and regulations. Investments that are reliant on individuals to sustain are likely more vulnerable to extinction.

SWGP investments were significant and estimated to be about \$3.1 million over the evaluation period. Capacity building focusing on knowledge and awareness alone is a limited approach to *community* conservation particularly when projects are geographically dispersed and not strategically implemented. Additionally, the evaluation team was struck by two issues that may seriously limit the cost effectiveness of capacity building by both large and small organizations. Informal discussions with grantees at site visits and during telephone interviews suggest that grantees do not maintain adequate databases of their volunteers or their skill levels nor do they deliberately seek to provide volunteers with escalating task complexity to increase their skill set and challenge them. Community environmental leaders must arise from current volunteers, but a cost effective capacity building program that changes the scale of community activity and begins to replicate its success in other communities can only arise from very careful handling of the activities of individual volunteers and sustained personalized interactions with them. This is also true of small local volunteer organizations; one grantee indicated that the local organization was essentially defunct because of "burn-out", which suggests that the organization had insufficient human and material resources on which to rely.

The draft logic model provides some direction for how the approach to community conservation might be usefully enhanced to sustain and grow the investments by increasing the effectiveness and scale of local activities and through replication of successful activities locally and elsewhere. We term this enhanced strategy "collaborative community conservation". Practices elsewhere suggest that social marketing can be a powerful tool for changing individual behaviors, and that targeting local government for changes in ordinances and regulations will also be a beneficial approach to addressing important local issues such as the design and location of new development (Galvin 2005).

Summary

The expenditures on capacity building funded by the SWGP are largely directed towards enhancing the existing or emerging direct restoration and conservation activities of grantees and their partners. While the grantees are also attempting to bring about sustained changes in the behavior of individuals and organizations, the general approaches adopted by grantees are not having the desired effect. While a large percentage of individuals and organizations involved in capacity building projects subsequently engaged in direct restoration and conservation activities, most of these are with the same grantee or partner organization and involve the same activities. Thus, most of the targets of capacity building are unlikely to achieve a greater skill set and become leaders and replicators themselves.

The estimated unit cost per individual of capacity building is about \$1,200. While we do not have comparable data from other programs, this could be a cost effective approach if the results were sustained changes in behavior of individuals or organizations together with an increased scale and replication of activities. However we were unable to confirm that this was occurring.

The logic model developed by the expert panel and the evaluation team indicates an approach to improving the focus of SWGP's community conservation effort and to the desirable outcomes that will have a more sustained impact on the health of the Bay.

We propose that NFWF expand its current community conservation approach to include greater collaboration and consensus within local watersheds and to mobilize more fully the capacity of citizens and their organizations. This will require prior engagement of local interests that can contribute to or adversely affect restoration and conservation initiatives. The goals of such an enhanced community approach are to increase sustainability and promote the replication and diffusion of models developed from NFWF grants more broadly within the regional area. Additionally, focusing more on consensus and collaboration will likely open up more strategic options for addressing local problems.

Capacity building should continue as a central element in the SWGP approach and should address identified local environmental priorities as part of a local strategy. Locally-focused capacity building can:

- Expand and consolidate local organization capacity (as well as networks among interrelated groups]
- Use social marketing to change the behavior of targeted individuals or groups towards the environment

- Address the need to change local government ordinances and regulations concerning environmental issues and
 Develop role models, mentors, coordinators of specific activities for targets sectors (e.g. agriculture)

PLANNING

Planning grants were a relatively small portion of the SWGP portfolio and so have received less attention from this evaluation. Moreover, planning grants were usually associated with planning either capacity building or restoration and conservation activities meaning that the benefits of planning grants usually accrue in the application, not planning. Consequently, this section on planning grants is much shorter than the other two program themes. This does not suggest that the evaluation team regard planning activities as unimportant. Indeed we recommend enhancing the role of planning grants.

As identified in the overall logic model developed by the evaluation team and expert panel for the SWGP (Figure 10) planning does not contribute directly to the health of the Chesapeake Bay. Nonetheless planning provides important inputs to capacity building and restoration and conservation.

Planning activities supported by the SWGP were directed towards use in broader projects being undertaken by the grantee, use by local or state government or as specialized contributions such as assisting a land trust to preserve watershed function.

Planning was the primary function of 34 of SWGP grants with a total value of \$1.6 million or 17% of total SWGP funding over the evaluation period. The average SWGP grant for planning was \$48,876. None of the SWGP grants involved solely planning activities without another activity such as capacity building or restoration and conservation.

Direct Accomplishments of Planning

The expert panel and evaluation team developed a draft logic model for planning.





The draft logic model presented in

Figure 14 summarizes the opinions of the Expert Panel and Evaluation Team of what planning activities need to accomplish to contribute constructively to community or small watershed conservation. This logic model was not used by the SWGP or grantees and is used in the evaluation, as with the other logic models, to assess the overall performance of planning activities.

The level of achievement of all of the planning outcomes identified in the logic model is relatively low (data from grantee survey), ranging from 35% to 58% of the maximum possible score:

- The overall score of all of the planning outcomes combined was 46% of the maximum possible score,
- Similar scores were achieved for groups of outcomes such as the feasibility of the plan (blue circled outcomes in

Figure 14), the quality of the plan (green circled outcomes) or the higher level outcomes at the top of the figure. All scored 45 or 46% of the maximum possible score.

The scores were highest on those individual outcomes engaging more technical considerations such as:

- Plan engages necessary technical advice (58% of maximum score) and
- Plan aligns Bay and local rationales (54% of maximum score)
- Plan is technically sound (53% of maximum score).

By contrast, the scores were lowest on sustainability and inclusion of alternative options in the plan, with both scoring 36% of the maximum possible score.

Grantees reported that 52% of the planning work is being used fully or mostly, 28% is somewhat used, 8% is not being used and for 12% it is still too early to tell. We do not have comparable information to judge whether this is reasonable level of performance.

Plans did not always ensure that all stakeholders were included from the earliest stages through to implementation. For example, one grantee was excellent in including stakeholders in planning but then failed to discuss the specifics of implementation with a group who was immediately affected by the restoration.

For one grantee, success in being funded by NFWF depended on their developing a watershed plan, i.e. they were rejected for funding several times until they hired a watershed planner and contracted with a technical group to develop a plan. NFWF then funded the highest priority restoration activity in their plan. Their success has led to the contractor being hired to "replicate" the plan for another local community. This is exactly the type of goal (replication and diffusion) to which the SWGP aspires.

Summary

The planning activities supported by the SWGP are generally narrowly focused on technical restoration or conservation challenges, usually on a local or wider scale and undertaken by all sizes of grantee organizations.

The planning activities scored best on technical considerations and very weakly on sustainability and consideration of options or alternatives. Plan use is moderate, mostly for local activities by the grantee in a broader project or by local or state government.

RESTORATION AND CONSERVATION

The ultimate goal of the SWGP is to improve the conditions in the Chesapeake Bay and it does so mainly through restoration and conservation activities. This section evaluates the direct restoration and conservation contributions of the SWGP. Data from the survey of grantees is supplemented with information from site visits to approximately 50% of all of the SWGP projects that included restoration and conservation activities.

Nearly half (44%) of the SWGP grants targeted direct restoration and conservation activities either as the primary (35% of grants) or secondary purpose of the grant (9%). The proportion of SWGP grants going to restoration and conservation increased after 2000, from about 18% to an average of 45%.

The leading approach to improving the quality of the waters of the Chesapeake Bay can be achieved through a reduction in the level of nutrients and sediments in the Bay, leading to improved water clarity, increased levels of oxygen in the waters, and reductions in the amount of chlorophyll produced¹¹.

To reduce the level of nutrients and sediments the SWGP, similar to other investors in the Bay, supports activities such as: stream fencing and stream bank restoration to reduce the discharge of nutrients and sediments into the Bay; wetland restoration to absorb nutrients and settle sediments; riparian buffer plantings to absorb nutrients before they reach the waters of the Chesapeake Bay and its tributaries and to stabilize stream banks to reduce erosion; and localized water quality activities (e.g. green roofs, rain gardens) to reduce storm water runoff and transfer of bacteria, toxins and other pollutants to the Bay. Some of these activities contribute to improving habitat as well as water quality, for example riparian buffers and wetlands restoration.

Applicants to the SWGP were encouraged to use <u>Best Management Practices</u> (BMPs), applying these and other techniques known to contribute to reducing nutrients and sediments. BMPs are procedures intended to ensure the gradual improvement of the water quality and living resources of the Chesapeake Bay and include state and federal requirements for all of the different technical restoration and conservation activities that would affect the Bay, e.g. techniques for stream bank restoration, riparian buffers, oyster restoration, SAV planting, control of storm water runoff, and so on. BMPs are constantly changing as scientists and technicians learn more about the best methods for achieving their long-term goals in the Bay. Most efforts focus on improving BMPs in the agricultural sector to reduce nutrient and sediment levels in the Bay. Thus, BMPs are a practice or combination of practices that provide the most effective and practicable means of controlling point and non point pollutants at levels compatible with environmental quality goals.

To ensure that BMPs were followed support for technical assistance was provided in SWGP grants; SWGP program staff and managers also provided assistance and advice.

¹¹ Habit focused approaches are receiving attention but have not yet a significant part of approaches in the Bay.

The BMPs are known to reduce the level of nutrients and sediments in the Bay (termed *reduced loading*). However while science is confident that even small efforts reduce loading, it is not currently possible to estimate with validity and reliability the amount by which small activities such as those supported by the SWGP can reduce nutrient and sediment loads.¹² We discussed this in more detail in (auto ref). The implication for this evaluation is that we are unable to assess the benefits of SWGP investments in terms of the desired effects – i.e. reduced loading. We are able to estimate the grantees' use of BMPs, and to estimate the dimensions and functionality of direct restoration investments by the program.

This section first describes the restoration and conservation projects in terms of the inputs and activities, then assesses the fidelity of these activities to BMPs and their sustainability, and finally estimates the extent and quality of SWGP supported investments.

Restoration and Conservation Projects

Restoration and conservation activities comprised about two thirds of the SWGP grants over the 2000 to 2003 period¹³ with a significant increase in the importance of restoration and conservation as a primary grant function starting in 2001.

The total value of grants that included restoration and conservation activities is estimated to be \$5.0 million over the evaluation period, with a total of 109 grants (36 secondary, 73 primary)¹⁴. The average cost of those restoration and conservation projects that did not include any capacity building or planning activities was \$48,200, about double the cost of projects with only capacity building activities (see discussion starting page 17).

The estimated SWGP contribution to restoration and conservation is 55% of total grant contributions of \$9 million during the evaluation, reflecting the larger size of grants for restoration and conservation.

Targets and Activities

Most grantees report that the decision concerning the location of their activities was largely one of affordability (42%) or access to sites $(21\%)^{15}$. As already mentioned, this did compromise the level of functionality of the sites or their impact. In one case, because a grantee could not gain access to sites that were owned by a federal agency that did not have a watershed plan; the grantee then had to work at sites whose impact on the watershed was minimal.

Table 22 summarizes the assessments concerning the detailed activities undertaken through R&C grants. Our review of the different data sources for

¹² The Expert Panel and the SWGP Advisory Committee both concur with this statement.

¹³ 2004 is excluded from this analysis because of the small number of completed projects eligible for inclusion in the evaluation.

¹⁴ The total estimated number of grants of 109 is short of the 132 that would represent 67% of the total number of grants during the evaluation period. The difference is due to missing values for some of the variables used for weighting.

¹⁵ This discussion is based on data from the survey of grantees unless indicated otherwise.

this leading to selection of the site visit data as the best representation appears in the Section *Classifying Activities Undertaken by Projects*.

	Primary activities
Plant vegetation (e.g. riparian buffers, wetland plantings)	29%
Stabilize stream bank or shoreline	22%
Reduce nutrient/sediment inputs into the Bay or tributaries	13%
Restore other living resources (e.g. oysters, SAV)	13%
Restore wetland habitat	7%
Restore natural stream channel	2%
Reduce other non-point sources of water pollution	2%
Remove invasives (by hand or mechanical means)	2%
Other	9%
Total	100%

Table 22: Activities of Restoration and Conservation Projects

Planting vegetative buffers was the most frequent primary activity of almost a third of restoration and conservation projects.

Grantees participating in the survey stated that they followed Best Management Practices (BMPs) in designing and locating their activities, with substantial input from technical assistance providers (TA) and from SWGP staff. For example, for those projects that included planting vegetative materials, 94% said they used native or locally adapted plant materials. Only 7% of grantees undertaking restoration and conservation activities said they did not follow a BMP. However in all cases where grantees said they did not follow a BMP, the activities did not actually require a BMP (e.g. easement or removal of debris) or the grant activities were associated with planning and preparation for future direct restoration and conservation activities.

Our site visits suggest that grantees are somewhat optimistic about their level of compliance with BMPs. For example, 54% of buffer plantings were less than 30 feet in width, and 15% were less than 10 feet in width. There are valid reasons for grantees to develop buffers narrower than recommended. For example, some landowners were unwilling to provide a wider buffer for economic reasons. The grantee felt that doing "something is better than nothing". At another site, the buffer circled a lake within a park, but most of the park area was grass (see Photo 2) which was probably already retaining nutrients adequately.

Photo 2: Illustration of Questionable Site for Buffer



BMPs do not provide good guidance on how to deal with such situations. Grantees may have felt that by doing their best to follow the direction of the BMP while adapting it to their constraints, they were actually following the BMP. However, this suggests that some SWGP activities will not achieve the optimal level of effect ascribed to the BMP.

There is also a difference in the assessments of the level of maintenance by grantees and by us during site visits. Most grantees indicated that they or some other community organization were maintaining the restoration and conservation investments undertaken with SWGP funding. Only 24% reported that they were not adequately maintaining their investments, primarily because they did not have the resources to do so. By contrast, during the site visits we noted the presence of invasive species at 56% of projects, suggesting a lower level of effective maintenance than claimed (see Photo 3).

Photo 3: Invasive vine covering tree planting protection



In some of these sites, invasives may function to stabilize the streambank, but they are also an indicator that the sites are not being maintained.

This is consistent with the low level of monitoring reported by grantees of the effects of the restoration and conservation activity. Fewer than 4% of grantees stated that they were able to report monitoring results for water clarity and temperature, sediments, and nutrients; these require specialized equipment. Fewer than 9% of grantees are able to report on more easily observed indicators such as diversity or abundance of wildlife and number and density of invasives. Thus, little, if any monitoring is undertaken by grantees.

For two thirds of the projects, grantees report that monitoring is equally their responsibility or that of another local organization. For the remainder of projects, there is either no monitoring (7%) or monitoring is completely the responsibility of others, e.g. individuals or partner organizations such as local government, utilities, small watershed groups and state parks.

Between 19 and 21% of grantees reported in the survey that they monitored water quality before, during or after the project.

The judgments of grantees and the evaluation team regarding the key outcomes from restoration and conservation projects are highly correlated, suggesting that the disconnects in grantee information on monitoring and use of BMPs reflect different standards of judgments.

Restoration and Conservation Accomplishments

We consider both the results that can be attributed to the SWGP funded projects and their sustainability, using data from both the grantee survey and site visits.

The leading indicators of the accomplishments of restoration and conservation activities are the size and level of ecological function. While it is technically possible to estimate the change in loading of sediments and nutrients, these methods are neither valid nor reliable when applied to relatively small sites. However we do provide a few examples of loading estimates in this section on the assumption that readers will heed the caveats in considering the estimates.

The size and estimated level of function of areas treated are key measures of the accomplishments of restoration and conservation activities. The administrative data of the SWGP and the reports of grantees have data on the size of treated areas, but neither proved to be useful since the administrative data are incomplete and relied on grantee reports, which vary in their validity and what was actually reported.

We were able to confirm reporting for about 20% of the projects included in the site visits and pre tests (Table 23). There may be three major reasons for the low level of valid reports: first NFWF did not provide require reporting of areas treated as a condition for grant closure; second many grantees are not very good at reporting results and third, for many projects with restoration and conservation activities, the priority of the grantee was building capacity of individuals or organizations.

Assessment	Number	Percent
No reported area	13	27.1%
Observed less	10	20.8%
Same or approximate	9	18.8%
Not Applicable	7	14.6%
Don't know	5	10.4%
Observed exceeds	3	6.3%
Different measure	1	2.1%
Total	48	100.0%

Table 23: Site Visit Assessment of GranteeReports of Area Treated

The following comments by the site visitor illustrate the uneven reporting of the extent of treatments by grantees:

- Tidal wetland replanted with *Spartina* spp. Observed estimate is a confirmation of reported minus eroded areas.
- Reported only that 500 trees were planted (no dimensions). CRITTERS says 200 acres restored. The buffer site that I observed included maybe 100 trees in 8000 square feet of restoration.

- Reported 200 linear feet of shoreline stabilized, but of that 140 ft was planted with buffers. Few of the trees remained on the site causing the low functionality score.
- Restoration on 3 farms; I observed a few select sites. Grantee likely installed fence along 1.5 miles of stream, both sides and counted this as buffer. I did observe some plantings of a width 10 feet wide on average.
- Site observations indicated 18,000 square feet treated, report states that "the site occupies 8,000 square feet." Not sure why such a disparity, perhaps a typo.
- Report measures success more in terms of volunteer participation. One discrete planting is what I have quantified but total reported footage likely includes individual trees added along a trail and stream. Report indicates 1000 linear feet, 3000 square feet observed.
- Reported buffer restoration acreage includes a reported 113 sites with an additional 28 acres of wetland habitat restored. I observed 3 buffers and one wetland at the sites visited which were part of an 17.5 acre site with 11.5 miles of riparian habitat.
- Confirmed reported restoration size (600 ft 3-D oyster reef and creation of over 1000 ft of shoreline); Tidal wetland may qualify as buffer as *Spartina alterniflora* (species planted) is one of best filtering plants.
- I observed 1 acre wetland and the report claimed 1,100 linear feet of stream. The wetland led to the stream naturally restoring itself. One 50 foot section was mechanically restored.
- Report claimed 1750 feet of buffer, 350 feet were observed
- Report claimed 51000 feet (14.9 acres including 9.9 acres of wetland), after walking most of the site I observed 250000 sq ft (5.74 acres)

Estimating the total area treated by projects with SWGP support using information from the site visits was challenging, principally because the site were randomly selected and some projects either had very extensive or multiple sites. During the site visits we estimated the length and width of activities such as vegetative plantings, wetland restoration and oyster reefs. For activities that we were unable to observe directly we sought photographic or other evidence from the grantee that would enable us to judge performance and extent of the treatment.

We are able to generate estimates of the size of treatments supported by the SWGP from observations during the site visits, and to judge the veracity of claims by grantees about unvisited sites. We do this only for projects that planted riparian buffers or stream fencing projects because those are the only two categories of activities where we have sufficient projects where the number of site visits conducted provides some confidence that the input data are not overly skewed by the characteristics of a single project, and where the confidentiality of individual respondents is reasonably assured¹⁶.

¹⁶ Data on the dimensions and costs of the project for 7 site visits to riparian planting projects and 7 sreambank restoration projects. Sites for visits were selected in a 50% random sample of restoration and conservation projects. The 7 riparian sites are a third of all riparian sites and the

Of the 48 grant projects¹⁷ visited 41 had only one site and 7 had multiple sites (Table 24). Among these 5 claimed to have treated 10 or more acres, of these the site visitor walked one site in its entirety and part of the remaining 4 sites.

Assessment	Number	Percent
Grant projects with one site	41	27.1%
Grant projects with more than one site	7	20.8%
Of which grant projects with extensive sites = full or partial observation or one or more sites above	5	18.8%

Achievements with Riparian Buffers and Stream Fencing

The site visits provided measurements of the dimensions of the areas treated for nine of 13 riparian buffer sites. Measurements were not possible at the remaining four sites because:

- Buffers were incidental to the main action or buffer was the closest applicable classification
- Activities were not actual buffers, but provided buffer function over a more extensive area (e.g. one project planted a 10 acre field with trees)
- Planting was in numerous urban parks
- Sites were primarily capacity building or demonstration (e.g. project with 19 small sites with plantings of 5 15 trees in each)

Table 25 estimates the area treated in three categories: area of sites where we measured the dimensions of the sites during the visits (Confirmed), area reported by grantees for sites we were unable to visit, but where observations of other sites that were part of the same project confirmed the estimate of the area treated provided by the grantee (Likely), and finally area reported by grantees from sites we were unable to visit and where grantee reports of the areas treated at sites in the same project significantly exceeded the treated area we observed at those sites (Possible).

We are confident that the sites we visited installed about 108 acres of buffer, 103 acres of which was in a single project. We are also comfortable that a further 19 acres are likely and that it is possible that an additional 12 acres might have been planted. Because of the overwhelming effect of the very large single project, and because there we no other such very large sites undertaken by projects not included in the site visits, we exclude that project from the extrapolation from the site visits to the population of SWGP riparian projects. The calculation is 137 acres less the large project 103 acres leaving 34 acres in

⁷ streambank projects are 54% of all streambank projects. Additional riparian sites were visited during the site visits but all data is not available for these.

¹⁷ A grant project is a grant funded by the SWGP and included in the site visits, sites are discrete areas treated as part of the activities supported by the project. The term "project" refers to the larger undertakings of grantees.

the remaining riparian projects in the site visits. We visited half of the restoration and conservation sites, so double the 34 acres to get an estimate for the SWGP: 68 acres plus the 103 acre project, or 171 acres.

Assessment	Number of Grant Projects	Number of Sites	Acres Treated
Confirmed	6	8	107.8
Likely	1	4	18.7
Possible	3	5	11.3
Total	10	17	137.7

Table 25: Estimated Area Treated by Riparian Buffer Planting

An estimated 4.7 miles of stream fencing was installed at the sites visited (see Table 26) using the same estimation procedures described for riparian buffers. This would extrapolate to roughly 9 miles of stream fencing for the SWGP over the evaluation period.

Table 26: Estimated Area Treated by Steam Fencing

Assessment	Number of Grant Projects	Number of Sites	Miles Treated
Confirmed	9	11	1.4
Likely	1	1	3.2
Possible	1	1	0.1
Total	9	13	4.7

The estimated plantings compared to the value of the SWGP contribution provide a comparison of the relative costs of different types of activities. However these costs are the total grant costs and some include expenses attributable to other activities such as capacity building. This differs from the earlier estimate of the *pure* value of projects with only restoration and conservation activities of \$48,200 which is a good proxy of the estimated average direct costs of all restoration and conservation activities undertaken with SWGP funding.

Table 27: Costs per Foot of Buffer and Streambank Restoration		
Action	Average SWGP Funding	Average Cost / sq. foot
Plant vegetation (eg buffers)	\$70,867	\$8.45
Streambank restoration and stabilization	\$42,493	\$29.27

We do not have information from other sources that is directly comparable to the activities funded by the SWGP. However costs have been estimated for a variety of sites and different types of activity. Bearing in mind that we are comparing apples and mangoes, the following illustrations are extracted from a search of costs of buffer and streambank restoration and stabilization:

 From the Private Landowners Network with FWS funding (<u>http://www.privatelandownernetwork.org/yellowpages/resource.asp?id=</u> <u>10436</u>) Costs for stream bank restoration are approximately \$40 per foot.

- From EPA NPS guidance (<u>http://www.epa.gov/nps/MMGI/Chapter6/ch6-4.html</u>)
 - a. Buffer costs If vegetation is assumed to be planted across a 50-foot width along the shoreline or streambank, the cost per linear foot of shore or streambank, in 1990 dollars, can be calculated as \$0.05 \$0.08/foot NRC 1991: If vegetation is assumed to be planted across a 50-foot width along the shoreline or streambank, the costs per linear foot of shore or streambank, in 1990 dollars, can be calculated as \$0.25/foot. Illinois 1991
 - b. More extensive restoration and buffer Costs reported for restoration of riparian areas in Utah between 1985 and 1988 included extensive site work: bank grading, installation of riprap and sediment traps in deep gullies, planting of juniper trees and willows, and fencing to protect the sites from intrusion by livestock. Assuming a 100-foot width along the shore or streambank for this work, the reported costs, in 1990 dollars, of \$2,527 per acre can be calculated as \$5.94 per foot.
 - c. Even more extensive marsh creation and bank grading Costs were reported in 1988 for vegetative erosion control projects involving creation of tidal fringe marsh, using nursery-reared Spartina alterniflora and S. patens along the shorelines of the Chesapeake Bay in Maryland (Maryland Eastern Shore Resource Conservation and Development Area). Two projects involving marsh creation along a total of 4,650 linear feet of shoreline averaged \$20.48 per foot. Costs of 12 projects involving marsh creation combined with grading and seeding of the shoreline bank ranging in height from 5 to 12 feet averaged \$54.82 per foot along a total of 8,465 feet. These costs can be calculated in 1990 dollars as:
 - Marsh creation no bank grading \$21.44 per foot
 - Marsh creation bank grading \$57.40 per foot

There is wide variation in reported costs, primarily due to variation in the work done at the site. It is likely that only direct costs are reported from elsewhere whereas the SWGP costs include project management and administration, and sometimes other costs.

It is important for the SWGP to be able to assess the costs of the different activities of funded projects to ensure that they are reasonable value, and cost effectiveness should be a factor when considering replication. It should not be necessary to go to the creative lengths that this evaluation has gone to estimate costs of relatively easily quantified restoration and conservation activities.

Sustainability

We also assessed the level of function of restoration and conservation activities during the site visits (Table 33) which provides insight into the sustainability of

the SWGP activities and also indicates which types of activities perform best over time. (Details of the approach can be found in the appended Site Visit material starting on page 74). Standard deviations provide an indication of the degree of variation in our assessment of function. The wetland habitats function well and the low standard deviation indicates that this applies to most wetland projects. The nutrient reduction efforts are also functioning well but there is considerable variability across projects. We have few observations for "natural stream channels" and "removal of invasives", thus do not provide function data for these.

	Mean ¹	Standard Deviation	Ν
Restore wetland habitat	7.3	0.6	3
Reduce nutrients (eg rain gardens)	6.8	3.6	5
Plant vegetation (eg buffers)	6.5	1.6	13
Streambank restoration and stabilization	6.2	2.5	10
Restore other living resources (oysters, SAV)	5.0	2.2	6
Other	6.8	0.5	4
Total (all site visits with this observation)	6.3	2.1	43
Source: Site visits (approximately 50% of all restoration and conservation projects) ¹ Mean from a 0 to 10 scale where 0 is "Not Functioning at all" and 10 is "Full Function"			

Table 28: Level of Function of SWGF	P Activities at Sites Visited
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Overall we judge SWGP restoration and conservation projects to be functioning at about 63% of their maximum potential (mean score of 6.3 on a 0 to 10 scale). Unfortunately, we do not have comparable data from elsewhere, nor can we relate our assessment of function to the effects such as nutrient loading. The purpose of the function judgments is to assess if there are systematic problems reaching and sustaining high levels of ecological function from these projects. As mentioned above, SWGP restoration and conservation projects report using BMPs with a high level of fidelity, an observation we confirm below with judgments from both the grantees and the evaluation team. Thus, much of the problem with function occurs after the action is completed – for example after the buffer is planted, suggesting problems with sustaining the investments.

We also assessed the presence of invasive species at the sites we visited. Invasives can be considered an indicator of maintenance since a wellmaintained site is less likely to have invasive species present. Invasives were observed at 56% of the sites, especially including projects reporting formal efforts in place to control invasives. Half of the latter were judged to have invasive species that were out of control. Thus while the presence of invasives should not always be considered deleterious, their widespread presence, and in particular at sites with formal efforts in place to control invasives, is an indicator that the maintenance efforts are not functioning well.

Outcomes from Restoration and Conservation Activities

The evaluation team and Expert Panel developed a draft logic model articulating the outcomes that need to be achieved for successful restoration and conservation.

Figure 15: Logic Model for Restoration and Conservation



Grantees were asked in the survey to rate the level of achievement on most of the outcomes presented Figure 15 above. The evaluation team also rated achievement of these outcomes from site visits, using the same structure. We have aggregated the outcomes within the three outcome groups:

- o Design of the action (orange)
- o Engagement of key stakeholders (blue), and
- o Sustainability (green).

The resulting data from the grantee and evaluation team assessments Table 29) are presented as a percentage of the maximum score for each outcome group and provide an indication of relative success in achieving the necessary outcomes in designing restoration and conservation activities, engaging key stakeholders in design and implementation and in sustaining the investments.

Table 29: Grantee and Evaluation Team Rating of Achievement of	:
Outcomes	

Crown of Outcomoo	% of maximum score		
Group of Outcomes	Grantees	Evaluation team	
Design of the Action	88%	80%	
Engagement of key stakeholders	59%	51%	
Sustainability	59%	58%	

The ratings of grantees and the evaluation team are very similar, suggesting that the outcome ratings are likely valid. The evaluation team is more independent but operating with less information about the project, while grantees have a great deal of information about the project but are subject to biases.

The logic model in Figure 15 indicates that sustainable restoration and conservation is a social as well as a technical undertaking. Involving key stakeholders who can contribute to or impair success affects both design and sustainability. The SWGP restoration and conservation activities are well designed technically, but fall short on sustainability, similar to the observation about SWGP planning activities.

In one case, one grantee was partnering with different organizations to develop rain gardens as demonstrations. One partner was sustaining the investment and the second not. The two photos below (see Photo 4) show the difference in the result. The first photo shows deer netting destroyed and the rain garden covered by invasives. The second photo shows a fully functional vibrant – looking rain garden. The same grantee designed and constructed each rain garden.

Photo 4: Effect of maintenance





Grantees and the evaluation team both felt that the design of the activities funded by the SWGP was good, but that the level of achievement in engaging key stakeholders and sustaining the investments was far lower.

Figure 16 shows that there has been steady improvement in the outcomes during the period covered by the evaluation. The SWGP has annually introduced refinements in the guidance provided to potential grantees, increased the level of funding and provided additional technical assistance to grantees. In addition, grant makers have increasingly emphasized results and the use of logic models in design, reflecting greater attention to measurable outcomes by all partners, which likely contributes to the steady improvement in achievement.
Figure 16: Achievement of Outcomes by year



There is a significant statistical association between the year that the grant was awarded and design and sustainability outcomes, but not engagement outcomes¹⁸. There is no statistically significant association between the value of the grant award and any of the outcome groups suggesting that good performance on outcomes is not associated with increases in funding.

Contributions to the Health of the Chesapeake Bay

Estimating the change in nutrient loading from individual small restoration and conservation activities, or from groups of similar activities, such as riparian buffer plantings, is neither reliable nor valid, as we have indicated previously. However, we have done calculations at three different sites to illustrate the degree of variation that can occur with these site calculations. In the Site Visit Methods appendix (page 74) we present details of these calculations.

Table 30 presents the results of three restoration and conservation projects in terms of the pounds of nutrients removed annually, a critically important effect as indicated in Figure 3. Following our general investment approach, we assume that, with monitoring and maintenance, these activities will continue to function for 20 years thereby potentially providing significant returns to the investment over time. However these returns are significantly reduced if the investment is not sustained, and this has dramatic implications for the cost effectiveness of the specific investment (final row).

¹⁸ Pearson Correlations (Year and Design n=49 r=.374 p=<0.008; Year and Sustainability n=49, r=.403 p=<0.005 Year and Engagement n=49, r=.263 p=<0.067: Year and Design, Sustainability significant to 0.01 level, Year and Engagement is not statistically significant).

Table 30: Illustration of Variation in Calculating Loading Reductions	

	Project 1: Stream fencing	Project 2: Restore wetland	Project 3: Restore stream
Nutrients & Phosphorus removed annually (lbs)	3663	51	47
Total removed - sustained (lbs in 20 years)	73260	1020	940
Total removed not sustained (lbs in 3 years)	10989	153	141
Project cost	\$75,000	\$30,000	\$50,000
Cost/lb sustained	\$1.02	\$29.41	\$53.19
Cost/lb not sustained	\$6.83	\$196.08	\$354.61

The calculation of the change in loading illustrates the impact of not sustaining the investment. We repeat the caveat from the Section *Measuring Effects on the Chesapeake Bay*, that calculation of changes in loading for specific sites is an inappropriate use of the data.

However, to obtain reasonable measures of the contribution of SWGP restoration and conservation investments to a reduction in nutrients within the Bay, standardized project monitoring is necessary. But most SWGP projects did not undertake monitoring, and most do not currently have the capacity to do so.

Addressing this problem will require a triangulation of methods described below.

Direct Before and After Measures - Water Quality Monitoring

At sites not contaminated by changes from exogenous sources direct measurement of such as of nutrients and sediments will provide a good indicator of the change resulting from the action. However sites which are fully insulated from changes upstream, elsewhere in the tidal draw, or in the surrounding land areas are rare. Thus as already mentioned, direct before and after measurement of water quality is a useful indicator but it will almost always be contaminated by other effects so that it is not valid to attribute the observed effects to the restoration and conservation action.

Measuring Productivity of Activities

We recommend that a good measure of the success of activities is the estimated level of function of the final restorations, including:

- The size of area treated (e.g. square feet of buffer),
- The quality of the treatment (level of maturity of the plantings, appropriateness of the material used, level of maintenance of the site), and
- The location of the site (was the planting at the edge of fields, is it at an appropriate site with respect to the water table, not just topography)

indicating that the activities will be productive and are reasonably priority sites.

The site visits included in this evaluation provide an initial demonstration that function information is not overly challenging to obtain. The expert panel argued forcefully that these types of measures are essential. The SWGP has already been obtaining limited information on size of treated areas, but our analysis suggests that site visits are essential to measure the potential impact of the SWGP program on the health of the Bay.

For example, a stream restoration which was visited had almost no buffer and likely was almost non-functional because of the choice of site. The left hand photo below shows that although the stream restoration might have been initially designed well, the vegetation that had been planted as a buffer had nearly all been destroyed by those mowing the grass and at the end of the restored stream was an area of mud, used as a playground.

Photo 5: Effect of site selection





Calculating Change in Loading Using the Bay Model Tables

Our view is that these calculations are not useful on their own. However it is possible that, over time and repeated use and with comparison to the other more valid and reliable measures described immediately above, ways to use of the model at smaller sub-watershed sites could emerge.

Summary

Grantees and the SWGP have focused on the technical design of restoration and conservation activities supported by the SWGP. This is an understandable focus coming from a vision that restoration and conservation is largely a technical and biological matter. The evaluation team and expert panel recommend a broader focus encompassing human elements in restoration and conservation. Indeed the high scores on the technical design of SWGP supported restoration and conservation activities shows that the technical issues are being successfully addressed by SWGP grantees except for site location which often is more a reflection of convenience for the associated capacity building efforts than the highest priority site. The uneven monitoring and maintenance and the choice of low priority sites have impaired the sustainability of SWGP investments such that the overall level of function is noticeably in decline at many sites or has never been very high.

The uneven monitoring and maintenance of restoration sites is affected by the prevailing grant making culture which encourages and rewards immediate results, defining those results as the annual production of, for example, acres or miles of restoration and conservation actions. There are minimal rewards (or grants) for ensuring that the sites are sustained over time through monitoring and maintenance.

Overall about 60% of the SWGP restoration and conservation investment portfolio looks likely to be sustained and so provide returns over a long period of time. And as these plantings and the effects of other physical restorations mature and become self sustaining, their level of function will improve.

However, most of the SWGP expenditures are not being converted into investments (Figure 4):

- Monitoring and maintenance are not being undertaken with sufficient diligence to ensure that the investments will survive and continue to function over time, or that the impact of the activities will increase,
- Aside from demonstration projects, it was not an intent or expectation of the SWGP that successful projects would be replicated locally or elsewhere and indeed, there has been little replication.

Consequently, while the SWGP and grantees have been successful in the design of their restoration and conservation activities, the real challenge of achieving higher levels of sustainability and replication is not being realized.

SUMMARY AND RECOMMENDATION

Given the unique and traditional emphasis of the SWGP on community and civic engagement, one of our goals has been to articulate the logical chain of outputs that link capacity building and planning to restoration and conservation and from there to improvement in the health of the Chesapeake Bay. These logic models support NFWF's decision to focus on enhancing community capacity and should prove useful to the SWGP going forward.

We offer five recommendations to improve performance of the SWGP. Together these recommendations outline a strategy for enhancing the community conservation model of the SWGP, thereby increasing returns to these investments.

NFWF and its partners should be mindful of the time delay between implementation of activities and full function and impact resulting from capacity building, planning and restoration and conservation activities. For most conservation efforts, the **minimum** time period required to achieve results on the ground (outcomes) is usually five years, based on a survey of National Geographic Society grantees who were actively pursuing conservation goals (Kleiman, in preparation). Thus, NFWF should resist pressure to fund projects with rapid but less significant impacts on the improving the health of the Bay.

The first and broadest recommendation is for NFWF to enhance the community conservation model itself placing greater emphasis on the community side of the model and building on the strong performance of the SWGP and grantees in designing and implementing projects of good technical quality. We provide approaches to aligning capacity building in support of this effort. The second recommendation suggests how planning can also be incorporated into this model.

The latter three recommendations focus on the SWGP grant making process, in particular modifications to the grant structure, addressing problems with monitoring of grants and activities and improvements in the grant making process. Underlying all recommendations is the assumption that the SWGP will continue to ensure that grantees align their local / community needs and projects with regional priorities focused on improving the health of the Bay.

Recommendation 1: Expanding Community Conservation and Approach to Capacity Building

We propose that NFWF expand its current community conservation approach to encompass greater collaboration and consensus within local watersheds and to mobilize more fully the capacity of citizens and their organizations to sustain, scale up and replicate SWGP supported investments

The goals of such an enhanced community approach are to improve sustainability and the likelihood that there will be a replication and diffusion of models developed from NFWF grants. Additionally, focusing more on consensus and collaboration will likely open up more strategic options for addressing local problems. An enhanced SWGP which is consensus-based, collaborative and focused primarily locally can gain more active engagement of a wider spectrum of the community if it embraces not only those who can contribute, but those who can impair the success of the effort. Thus, we propose that those with contesting claims on resources be brought into the planning process early on. The approach will hopefully result in more comprehensive and strategic planning for activities in the local watershed and may encourage additional funders. Integrating monitoring and maintenance of the investments into the action plans will sustain those investments and provide the opportunity for adaptive management.

Since the community has the most direct relationship with, and access to, the watersheds, working with them and their governing bodies is the best method for developing the responsibility for sustaining, expanding and replicating conservation efforts. Individual grantee organizations have limited capacity to monitor and remediate within local communities and certainly funders like NFWF cannot take on long-term maintenance responsibilities in multiple locales over large area.

Thus, ultimately, consensus-based collaborative community conservation is the most credible approach to creating community responsibility for converting expenditures into investments. The community can:

- Monitor and maintain past investments until self sustaining
- Identify sites to replicate investments where there will be demonstrated local benefits (expand and diffuse)
- Undertake additional complementary investments and
- Encourage locally appropriate innovation

One of the first steps is to articulate logic models for this enhanced approach, of which the draft logic models developed as part of this evaluation are a good starting point. The outcomes articulated in these program level logic models should be the leading indicators of the performance of the SWGP and grant reporting should be aligned with these outcomes.

A locality-based program will bring a strengthened recognition that conservation and restoration are both social and technical acts and that progress in improving the health of the Bay cannot be achieved without a new approach to capacity building. As mentioned above, overall expenditures in the Bay (by all donors) for capacity building, i.e. working with the citizenry, have been much less than restoration and conservation investments and so far insufficient to create the level of behavior change required to have a dramatic impact on Bay health. Thus, to create capacity-building efforts to support the new enhanced community strategy, there will need to be greater focus on

- 1. social marketing to encourage individual and organizational behavior change, and
- 2. building strong and persistent local community groups who can model and diffuse innovative practices
- 3. pressing for local changes in ordinances, regulations and guidelines, where needed,
- 4. expanding and consolidating a network of local and regional groups to collaborate, share technical expertise and exchange "Lessons Learned", and

5. developing role models, mentors, and coordinators of specific activities for target sectors (e.g. agriculture)

Social marketing is a powerful tool. Using social marketing one can prioritize and segment a population, identify specific levers for changing behavior of the population, develop messages to address these levers, apply the messages repeatedly to the target population and monitor the environmental results. With knowledge of the impact of the messages, social marketing can alter future messages, thus using an adaptive management approach.

A complimentary activity is to focus capacity building within a local community on improving local ordinances and regulations. Such an approach requires establishing local environmental collaboration that will persist over time, defining local priorities, identifying those best addressed by local government, and developing and implementing a strategy for change within the local watershed. Achieving change in the behavior of selected high priority individuals such as agricultural producers will also provide significant benefits to the Bay. Targeting such individuals requires successful mentoring and diffusion of awareness, knowledge, motivation and innovative approaches such as can be found in agricultural extension programs. Thus, a final capacity building need is to develop the equivalent of career "ladders" for volunteers and local citizens to create cohorts of individuals at different skill levels and to encourage ongoing training programs to diffuse technical skills.

Recommendation 2: Planning

We recommend that planning should be eligible for NFWF funding as the enhanced collaborative community conservation approach explicitly and intrinsically requires local planning. The logic models developed with the expert and NFWF panels provide an overview of a planning approach and its relationship to capacity-building and restoration and conservation within the watersheds. Planning by communities must focus on developing a local strategy for small watersheds and establishing priorities based on monitoring and other evidence while being mindful of and integrating their plans with larger regional interests. Plans also need to define clearly measurable outcomes and how long-term sustainability will be achieved. Finally, planning must involve all who can both positively and negatively affect the health of the Bay.

Recommendation 3: Types of Grants

We recommend that the SWGP provide moderate support for a planning function, but greater support for the implementation of technically sound community conservation and direct restoration and conservation strategies. Therefore, we suggest two types of grants¹⁹:

1. **Collaborative planning** grants of less than \$30,000 in which the key indicators for funding will include evidence of potential for consensusbased collaboration in planning, a planning strategy based on recent and relevant social and physical data, and clearly described and achievable outcomes

¹⁹ The suggested grant values and durations are indicative of scale and should not be interpreted as an actual recommended value or duration.

2. Implementation grants of less than \$100,000 annually (with an appropriate maximum over a 5 year period) to fund restoration and conservation activities or knowledge-based social activities that will lead to restoration and conservation effects. Key indicators will include a verified achievable consensus-based collaborative plan with clearly-defined outcomes, the demonstrated capacity to sustain the investments, inclusion of a clear adaptive management approach, and demonstrated interest from sufficient additional funders to ensure plan implementation. There are additional grant needs that are more appropriate to a network of small local organizations or larger regional organizations. For example, there needs to be support for implementing innovative capacity building efforts e.g. technical assistance in consensus-based collaborative strategic planning and in building collaborations. Additionally, there needs to be funding available to provide long-term grants to larger organizations that will have responsibility for monitoring physical and social conditions in the various watersheds, using standardized techniques.

Facilitation of cross-watershed learning through regular workshops will help diffuse new knowledge quickly and assist in problem-solving, when issues arise within local watersheds. The workshops should resemble collaborative working groups more than conferences and can be regional or cross cutting by types of activities. Perhaps a website or newsletters for grantees can also provide a mechanism to share ideas and new learnings or to solve common problems. Finally, a small percent of NFWF SWGP funds can be used to support innovative ideas with Bay-wide application. These would require an explicit and credible diffusion plan.

Recommendation 4: Continuation of Improved Grant Making

There is an urgent need for an adequate information system so that SWGP managers and staff can be more effective and improve grant making and performance through an adaptive management process. NFWF has already begun making changes to improve the efficiency and effectiveness of grant requirements, e.g. in moving towards an electronic grant process. This will reduce the burden of initial proposal submission and especially final reporting and will significantly improve the utility of the reports,. Final reporting should be electronic and systematically report on the level of success on achieving outcomes rather than describing activities. Grants with direct restoration and conservation activities should be required to include with their final report before and after photographs (electronic files) and the latitude and longitude of each site location.

New grants will also have to be aligned with the revised SWGP community conservation approach, an effort that has already begun. Both NFWF and its grantees will need increased technical capacity in consensus-building and community collaboration and thus NFWF will need to seek out providers of this expertise including organization development to provide technical assistance to grantees. NFWF might also consider hiring a staff member with special expertise in these skills.

We recommend that NFWF encourages greater communication across its grantees, e.g. via periodic workshops with the goal of developing a

collaborative reflective learning practice. This can provide a venue for regular sharing of experiences and even collaborative problem-solving across the Bay watershed. Additional communication options should also be considered, e.g. a newsletter or List serve to provide an opportunity for grantees to be touch regularly. Instituting ongoing monitoring and evaluation processes will provide inputs for implementation at the local level. NFWF could be more focused and proactive in providing technical assistance to smaller organizations and strategically aligning partnerships among large and small grantees.

We recommend that NFWF continue to encourage internal monitoring by grantees and to explore the optimal methods to monitor the physical effects of the grant results by recording direct physical measures (dimensions of restoration and conservation effort, landscape characteristics, quality of the restoration and conservation results, BMPs used, upstream threats and conditions). Grantees may assess loading using model estimates (grantees can do calculation) and direct pre- and post-monitoring under a NFWF contract. This enhanced loading monitoring from three sources (direct pre post, dimensions and function, and loading estimates using the model) will improve the quality of the estimates and can be a useful contribution to efforts to enhance the Chesapeake Bay model itself.

Recommendation 5: Monitoring

We believe it might be most cost effective to monitor water and habitat quality as well as investments in local watersheds using a Bay-wide or regional contracts. The organization (s) receiving such a contract would work collaboratively with the local communities and report back to NFWF and the communities regularly. Standardized monitoring of physical conditions at grantee sites would enable a pre- & post- loading estimate at sites and identify upstream conditions and threats, classify landscapes, and provide advice on sites for current and future local investments. Thus, it would contribute to local watershed planning, the identification and prioritization of additional sites and types of investments. Simultaneously, one could also use these contracts to build local monitoring capacity through instruction and mentoring such that over time, the local community could continue to manage the monitoring program under the oversight of a larger organization. The monitoring teams could recommend management activities to sustain the investments and the community collaboration could mobilize the required local resources. There should also be stronger linkages with organizations such as the USGS that already have water and habitat quality monitoring efforts ongoing in the Bay watershed.

Separately a mechanism for monitoring the results from social marketing and the pre- and post- project behavior of individuals and organizations targeted by projects needs to be developed. Currently, there is limited effort to determine the social and physical impact on the Bay of the already existing capacity building efforts. Organizations rarely track their volunteers' future activities after an initial capacity building interaction. Collaborations between organizations, the activities of emergent leaders, and changed behaviors in communities all need tracking.

Appendix 1: Expert Panel

Agenda: First Meeting

EVALUATION OF THE NATIONAL FISH AND WILDLIFE FOUNDATION CHESAPEAKS BAY SMALL GRANTS PROGRAM EXPERT PANEL Thursday April 20th

Room

9:00 AM Buffet breakfast

- 9:15 10:00 Introductions, goals for the day, review agenda
- 10:00 10:15 Overview of the logic modeling approach and how the evaluation will use the logic models
- 10:15 11:30 Draft outcomes How can restoration investments affect the health of the Bay?
- 11:00 11:15 Break
- 11:15 12:45 Draft outcomes How can a community / community organization that has full and appropriate capacity affect the health of the Bay?
- 12:45 1:45 Lunch
- 1:45 2:15 Stock taking connecting restoration and capacity
- 2:15 3:15 Draft outcomes How does planning (Community Watershed plans, Conservation plans and Resource plans) affect the health of the Bay?
- 3:15 3:30 Break
- 3:30 4:30 Stock taking

EVALUATION OF THE NATIONAL FISH AND WILDLIFE FOUNDATION CHESAPEAKS BAY SMALL GRANTS PROGRAM EXPERT PANEL 2

Tuesday September 12th 2006 Amazonia Science Gallery

- 9:00 AM Buffet breakfast
- 9:15 10:00 Update on study and findings to date, agenda for the day
- 10:00 10:30 Logic Models
 - Update on linking restoration and conservation outcomes to substantive Bay outcomes (see attached)
 - Update on interpreting the likely links from capacity building and planning outcomes to restoration and conservation outcomes.
- 10:30 12:30 Interpreting project performance on outcomes in the logic models:
 - Methods used to gain different views of project performance and data from site visits and perhaps some survey data
 - Questions:
 - 1. Are there thresholds or differential weighting to outcomes as you move up the restoration and conservation, planning and capacity building logic chains?
 - Can we enhance the links between the capacity building and planning logic chains to future direct restoration and conservation activities? Note: one of two case studies for Phase III addresses the question "How do capacity building and planning projects lead to direct restoration and conservation activities including threat reduction?"
 - Desired outcome: panel advice on interpreting the data that will be obtained

12:30 - 1:15 Lunch

1:15 – 3:00 Interpreting the Site Visits

- Overview of site visits
- Question: How can logic model data and physical inspection data be used to address the evaluation questions concerning nutrient reduction?
- Desired outcomes:
 - 1. Panel advice on the feasibility of requirements for site specific investments (regardless of size) to report on contributions to nutrient reduction.
 - 2. Panel advice on how site specific investments by donors can be (a) monitored and (b) evaluated.

An output from this evaluation will be advice to NFWF on how better to monitor and evaluate the substantive effects of their restoration and conservation investments in the Chesapeake Bay. This will inform how they approach other programs as well.

The monitoring question is: How can they get sufficiently valid and reliable judgments of the difference that site specific investments make to nutrient loads in the Bay?

The evaluation question is: How can they judge if these investments are in the upper end of what is possible, and how can they combine the results across sites and across programs?

- 3:00 4:00 Review and summary of advice
- 3:45/4:00 Departures

Appendix 2: Site visits

A major part of this evaluation was to conduct site visits to a sample of restoration and conservation projects to determine whether the described achievements in the NFWF reports could be confirmed by direct observation. Additionally, we wished to determine how the investments had been sustained. Each grantee received a letter from the NFWF CEO Jeff Trandahl informing them of the coming request for a visit. Grantees were then contacted by email and telephone, requesting the meeting in a standardized format.

The site visit included a face-to-face interview with a grantee project officer to delineate impacts and best management practices further. These interviews followed a tight protocol (see 2.1 below) that permitted respondents to add issues and information but provided clear guidance to the interviewer. Each site was photographed at several positions and a Check List of Observable Characteristics (2.2 below) was completed. Not all sections of the Checklist could be completed at each site due to the variation in the types of restoration projects.

Ultimately, we visited 47 projects with some restoration or conservation content, including 2 pre-test sites. The projects were a random sample of all projects identified as having a restoration and conservation component. The sample was 55% of eligible projects and 22% of all projects. We had to replace one project as a grantee could not be reached. Also, several projects had multiple restoration sites and we visited as many as were feasible, given time constraints. A research assistance, Eric Trum, did the majority of site visits, with Devra Kleiman completing about 13%.

	Site Visits	Remaining R & C projects
Average value of grant	\$61,189	\$52,143
Funding source:	59%	58%
Had EPA funding	14%	14%
Had NFS funding	5%	0%
Had FWS funding	22%	28%
Had NOAA funding	\$61,189	\$52,143

Appendix Table 1: Characteristics of Site Visit Sample

The sample did not differ from the entire population of projects, being approximately the same grant size. Visited and non-visited projects were distributed similarly across the donors. Thus, there was no difference between visited and not-visited restoration and conservation projects (Appendix Table 1).

For 3 selected sites, calculations were made of the likely nutrient reductions from the site, using the CBP existing models for the Bay.

Finally, for each site we took what would be considered Best Practices and judged each project/site according to whether the project had achieved the goal using 4 levels of achievement (Fully Achieved, Mostly Achieved, Somewhat Achieved, and Not Achieved) and a "Don't Know" and "Not Applicable" category. These were also summarized in an Excel database. These project characteristics were comparable to questions in the survey which was sent to all grantees. Thus, we were able to compare the grantees perception of how they had performed in Restoration and Conservation projects with our own perceptions, based on the one-on-one interviews and the site visits.

Planning the Activities

We used appropriate guidance to design the activities

Our activities were fully appropriate for the site(s)

Our plan clearly specified the methods to be undertaken

Engaging the Community

All individuals or organization who could contribute to a successful project were involved in the planning

All individuals or organization who could impair success of the project were involved in the planning

Members of the community were actively involved in planning the project

Members of the community were actively involved in the restoration and conservation activities

Sustaining the Investments

We developed a feasible plan to sustain the investments of the project

Organizations involved in sustaining the investment had a strong connection to the site

Organizations committed to the activities necessary to sustaining the investments

Monitoring activities were designed to match the investments

Overall Effects

The community was effectively involved in planning the project

Restoration and conservation activities were well designed Restoration and conservation investments could be sustained

Restoration and conservation activities had direct links to improving the Chesapeake Bay ecosystem

Interview Protocol

Introductory comments:

- ✓ NFWF contracted GHK to conduct evaluation
- ✓ I don't work for NFWF
- ✓ Our evaluation aims to improve SWGP
- ✓ Randomly chose 45 similar restoration/conservation projects
- ✓ Trying to link grant outputs and outcomes to overall Bay health
- ✓ Interviews are confidential
- ✓ I have read your proposal and grant reports and have a general idea of the objectives of your project, and now want to gain a fuller understanding. I understand that the main things they did are ... (ask if you have it and if not note the additions you should have a list to refer to and this list is part of the interview documentation)

Site visit questions:

- 1. Where did the idea for this project come from?
 - a. Trigger such as some key event or problem
 - b. Opportunity (such as funding came along for things that we had been wanting to do)
 - c. Other

Comment to note the origin of the idea and a short description of the genesis.

- 2. How did you decide what to propose for the project?
 - a. What elements to include? i.e. Restoration and Conservation/Capacity Building/Education/Planning
 - b. Location and site (might be different or the same)
 - c. What to plant
 - d. The size of the project area
- 3. Where did you get your technical advice for the design of the project?
 - a. We had the capacity we needed with staff and/or volunteers
 - b. We consulted BMP or similar (what) guidelines
 - c. We received technical assistance (from who)
 - d. Other (describe)
- 4. Did your original estimates of the project scope prove realistic?
 - a. Yes or about right
 - b. No, we underestimated

c. No, we overestimated Comments on any difference in estimates

5. Who was/is responsible for project implementation?

- Key staff assigned to the project were there any, where are they now? Still involved in Bay?
- b. Volunteers/community members are they still involved? How and is this more or less than their involvement prior to the project?
- 6. Is the project site functioning as you intended?
 - a. Yes what is it achieving and how is that contributing to the Bay?
 - b. No why not and what is it contributing to the Bay?
 - c. Partly what is working satisfactorily and what is not and how contributing to the Bay?
- 7. Were there any unforeseen events that may have affected the project? In a positive or negative way? Or may hinder/help in it the future? i.e. drought? Confounding Effects?
- 8. Is the project site maintained?
 - a. Yes describe who is responsible and how well it is maintained
 - b. No was maintenance planned, if so what has happened
 - c. Partly describe who is responsible and how well it is maintained
- 9. Is there any monitoring of the effects of the site?
 - a. Yes water (describe type, frequency and results see if you can get copies)
 - b. Yes aquatic life(describe type, frequency and results see if you can get copies)
 - c. Yes other (e.g. wildlife) (describe type, frequency and results see if you can get copies)
 - d. No (what do you think that your investments contributed to the Bay)
 - e. Planned but not done (describe)
- 10. Have there been re-plantings or additional work done at the site?
- 11. What effect do you think this project has had on community awareness and involvement?
 - a. What section of community, if any, was targeted? E.g. children, landowners? Why? Did this target work well? Was it successful?
 - b. What efforts were made to maintain community involvement?
 - c. What is the current level of community involvement?
 - d. Has the community increased its activities and have people changed their behavior to contribute to the health of the Bay? Describe
- 12. Tell me about your partnerships with other organizations in this project: Have they also received NFWF grants? Was the partnership (s) helpful to your

project? Did you assist them with any projects? Have there been "offspring/spin-off" projects? Has the relationship been sustained?

- 13. Would you have done anything differently? What?
- 14. Were there lessons learned? What?
- 15. Would you suggest anything to organizations considering replicating this project elsewhere in the future?
- 16. Do you think that this project can act as a model?
- 17. Is there anything else you would like to say about the project?

Checklist of Potential Observable Quality *Measures*

Project #: Date: Location: Lat/Long Direction of Stream Flow:
1) Plants alive and healthy 1 2 3 4 5 6 7 8 9 10 deadlush
2) Buffer width (on average)ft
3) Percentage of ground cover 0 10 20 30 40 50 60 70 80 90 100
4) Percentage of canopy cover 0 10 20 30 40 50 60 70 80 90 100
5) Estimated height of tallest trees?
6) Shrub layer 0 10 20 30 40 50 60 70 80 90 100
5) Stream bank stable 1 2 3 4 5 6 7 8 9 10 steep/ eroding gentle slope/vegetation
6) Soil condition 1 2 3 4 5 6 7 8 9 10 (compact – thick humus) explain:
7) Survival of trees a) number that died – species? b) number replaced - species
8) Species planted: are there invasives still along the bank? In the buffer?
9) Species present
 10) Water condition a) clarity b) temperature c) leaf litter d) signs of fish or inverts or other wildlife? 11) Stream Size length/ size of restoration? (length, width?)
12) Buffer aspect
13) Slope

Photos: ends and the middle/ or once every 100 meters or so.

Site Visit Project Summary

Project Title

Organization

Location of site(s)

Place name (community/county & state) Lat/long

Start, End Date

month and year

Funding

NFWF (EPA)	NOAA	NFS	Agriculture	Total SWGP

Date visited

Goals of the Project (list in order of priority)

Direct Restoration and Conservation Achievements

- 1. Outputs (including photo) (e.g. miles planted and buffer width)
- 2. Sustainability & functionality

"X" years after grant completion, water quality is.....; % invasives is.....; canopy cover is.....; ground cover is.....; replacement of trees has been....; vegetation is

....; stream bank is.....; shrub layer is.....;

Other Achievements

1. (e.g. capacity building)

Follow on Activities

(e.g. TA to other organizations, knock-on projects, links to other projects, volunteers now maintaining,...) – must have an entry – if none, say none

Appendix 3: Capacity Building Interview Guide

The purpose of the interviews was to determine what characteristics of capacity building would result in continued and expanded restoration and conservation activities on the part of individuals and organizations and thus contribute to improving the health of the Bay. A random sample of projects whose major objective was capacity building was selected. Grantees were interviewed during a telephone call that lasted between 10-30 minutes, using a common format (see Appendix 1). All interviews were conducted by Devra Kleiman.

Interview Guide

Introduction

We were very interested in the information you provided in your response to the evaluation survey about how your capacity building efforts in (project) led to direct restoration and conservation activities by those participating after the project was completed. This is a very important and challenging issue that we would like to understand better.

We only have a few questions, additional information – this will take up to ten minutes to complete.

Can you tell us more about the type of activities that people engaged in after their participation in your NFWF funded project?

- 1. What were the R & C activities that they engaged in?
- 2. Did the participants initiate the activities or did they join in an ongoing or new effort?
 - a. Was this an effort that was part of the same NFWF funded project?
 - b. Was this an effort your organization was involved in how?
- 3. What do you think was key to the success in motivating people (organizations) to continue with restoration/ conservation efforts after your project was completed?
- 4. How did you recruit or select people to be part of your NFWF project?
- 5. Are you or others doing more of this do you think more should be done is it a good investment compared to direct activities?
- 6. What advice, if any, did you receive on how to design or implement this capacity building in your NFWF project?
- 7. Do you have suggestions for improving efforts to engage individuals or organizations in undertaking activities that will contribute to improving the health of Chesapeake Bay?
- 8. Are there any individuals that you think would help us to understand this better get names and contact info
- 9. Open ended chance to comment

Appendix 4: Grantee Survey

A census of all grantees was a central information gathering vehicle designed to gain information to respond to the evaluation questions (see ref) as well as for advice on improving the grant making process including cost effectiveness. The site visits of a robust sample of all grants with potential direct restoration and conservation effects removed the necessity to gain information from grantees about these direct effects in the survey.

Challenges

Grants and Projects

Most grants occur in settings where grantees are pursuing a project for which they seek funding from one or more sources as well as mobilizing pro bono inputs and direct contributions from the organization. Grant making organizations such as NFWF tend to view the activities funded by their grant as discreet, while grantees have difficulties separating out the elements of their project that were supported by each discreet grant that together fund the project. While the grantee may have assembled a logical portion of the project to propose a set of activities for funding, these often blend with other activities during implementation. There is also often overlap with some elements included in funding from more than one source, usually, in our experience, because of the necessary ambiguity between design and implementation, and sometimes because of the need to cover core organizational costs which are often not eligible for grant funding, but essential to grant maker who relies on the grantee to deliver their programs on the ground.

SWGP staff and the evaluation team grouped grants received by grantees by project. Grants interpreted as addressing the same project were grouped together.

Number	Grants	Grants in Discrete Projects
1	86	140
2	48	38
3	21	9
4	20	4
5	20	10
6	6	0
Total	201	201

Table 31: Relationship Between Grants and Projects in SWGP

As illustrated by Table 31, 86 grantees received only one grant, 140 grants went to a single grantee project. This included the 86 grants to grantees who only received one grant as well as an additional 54 grants to grantees with

more than one grant for the same project. For example, 9 of the 24 grantees who received two grants had two identifiably different projects, one for each grant; while the remaining 15 grantees received two grants for a single project each. At the other end of the spectrum, a grantee that received 6 grants had 4 identifiable projects, and the four grantees receiving 5 grants had 11 identifiable projects for their 20 grants. The distribution of grants and projects is further detailed in the section below, titled Development of the Questionnaires.

This creates two issues for a survey: (a) the reliability of responses from grantees to questions that ask for them to separate the effects of the grant from those of the project, and (b) the utility of grant focused information where the eventual results occur at the project level.

In addition to the problems associated with the project – grant relationship, grantees with multiple grants potentially face an onerous burden if asked to complete a questionnaire for each grant. For example, 4 grantees would have to complete 5 questionnaires each, and one grantee six questionnaires (see Table 32). Clearly this would be an onerous burden, and while one could argue that multiple grantees receive the greatest benefits from the program, they are also the workhorses of the SWGP delivering a large proportion of the program. Our interest in use of the evaluation is not furthered by overly burdening these grantees.

Table 32: Number of Grants per Grantee				
Number of grants held by grantee	Number of grants	Number of grantees	Percent	
1	86	86	42.8	
2	48	24	23.9	
3	21	7	10.4	
4	20	5	10.0	
5	20	4	10.0	
6	6	1	3.0	
Total	201	127	100.0	

Table 32: Number of Grants per Grantee

To address these concerns the survey questionnaire was designed to gain <u>grant based</u> information from grantees to address questions about the NFWF grant making process and <u>project based</u> information about goals and effects of the activities. This strategy, adopted to improve the reliability of responses and utility of information, creates problems in appropriately sharing credit for the achievements of project across the various sources of support contributing to the project. Conceptually we assume that credit is shared proportionate to the share in inputs. Thus if NFWF contributed \$40,000 to a \$60,000 project, NFWF can fairly be assigned direct credit for two thirds of the benefits, and having supported the remaining third of benefits achieved. This is a simple solution that matches the level of precision of the information grantees are able to provide about the benefits of their activities.

Identifying Respondents

Respondents were identified from the NFWF grant records and updated by the project administrators for the program. It was not possible to obtain contact information for all grantees, particularly for the older grants to small local

grantees. Despite considerable efforts from the grant administrators working contact information could not be obtained for 14% of the grantees.

Development of the Questionnaires

A single questionnaire was developed by the evaluation team in close consultation with NFWF program and evaluation staff. The core questionnaire was adapted to suit the different grant-project groupings. A total of four versions of the questionnaire were produced and grant - project clusters were assigned as follows:

- 1. Version 1 only one grant, 86 grants and 86 grantees including:
 - a. 86 grantees who had only one NFWF grant
- 2. Version 2 grants and projects not aligned, 47 grants and 16 grantees including:
 - a. 9 grantees who had two NFWF grants for different projects
 - b. 4 grantees who had three NFWF grants all for different projects
 - c. 3 grantees who the four NFWF grants all for different projects
 - d. 1 grantee who had five NFWF grants all for different projects
- 3. Version 3 grants and projects aligned, 53 grants and 21 grantees including:
 - a. 15 grantees who had two NFWF grants for the same project
 - b. 3 grantees who had three NFWF grants for the same project
 - c. 1 grantee with four grants, two each for two projects
 - d. 2 grantees with five grants for the same project
- 4. Version 4 remaining grants, 15 grants and 3 grantees including:
 - a. 1 grantee with four grants, two for one project and two for two additional projects
 - b. 1 grantee with five grants, two for one project and three for three additional projects
 - c. 1 grantee with six grants, two for one project and four for four additional projects.

Survey Administration

The survey was administered on the web using <u>www.surveymonkey.com</u>. The survey procedures were:

- 1. The survey was introduced and respondents were encouraged to respond in a letter from NFWF Executive Director
- 2. A link to the survey was provided in an email from GHK International that explained how the information would be used and how confidentiality protected (sent 9/24/06)
- 3. A reminder to all who had not responded was provided by email on 9/30/06
- 4. A second reminder to those who had not responded was provided by email and a separate version of the email encouraged those who had

started but not completed the survey to return to the web sire and complete their survey (10/5/06)

5. A third reminder was send on 10/16/06 following the same procedures as the second reminder

The survey was conducted over 28 days, starting with the first email from GHK international Sept 22 2006 and concluding with the final email reminder on October 16 2006.

Survey Response

A total of 125 grantees received the 201 grants included in the evaluation. Contact information could not be found or did not work for 17 or 13.6% of these leaving a population of 108 grantees for the survey. 71 or 66% of the grantees responded. Responses from 5 of the grantees were removed from the data file because their questionnaires were insufficiently complete leaving 66 grantees or 61% in the survey data used for the evaluation.

Is the Survey Data Representative of Grantees?

Because of the limitations of the CRITTERS data we are only able to judge response bias by three variables, value of the grant, year the grant was awarded and grantee class (grant project combinations).

Distribution by the grantee class is key because the survey was stratified on this criteria. The table below provides the total value of grants stratified by grantee class. To enable comparison the survey data is weighted to obtain population estimates, using the same weight for each response.

Overall the value of survey projects extrapolated to the entire grant population is very close to the actual value of SWGP grants included in the evaluation. This is in the final row of Table 33 with a difference of -2%.

Table 33 also compares the distribution of grants and projects. The survey is very close on the two largest combinations (by value), one grants (-2%) and more than one grant for a single project (-5%). However more than one grant and more than one project is under represented, with the difference showing up in the large number of grants and projects category. Thus our response rate was low for the most complex grantees (large number of grants and projects) and high for the second most complex group (more than one grant and more than one project).

The differences (final column) between the population data from CRITTERS and the survey results are very modest overall and for two of the grantee classes. The second and largest classes have much larger and offsetting differences

	CRITTERS	Survey	Difference (\$)	Difference (%)
One grant	\$2,431,578	\$2,488,515	-\$56,936	-2%
More than one grant, more than	\$2,476,251	\$1,730,188	\$746,063	
one project				30%
More than one grant, one project	\$3,089,500	\$3,237,674	-\$148,174	-5%
Large number of grants and	\$1,011,544	\$1,279,500	-\$267,956	
projects				-26%
Total	\$9,008,873	\$8,735,876	\$272,997	-2%

Table 33: Comparison by Grant - Project Value

Comparison by the year that the grant was awarded indicates very small differences between the survey and CRITTERS data. The table below provides the percentage distribution by year (2004 is very low because of the small number of projects completed by May 2006).

Across the years the survey population compares very closely to the grant population. There is modest variation: the first two years of the evaluation period, 2000 and 2001, are slightly under represented in the survey population, while the more recent years are slightly over represented.

Table 34: Survey Comparison - Grant Year

	CRITTERS	Survey	Difference (\$)
2000	27.86%	25.81%	2.05%
2001	25.37%	20.97%	4.41%
2002	24.38%	27.42%	-3.04%
2003	18.41%	20.97%	-2.56%
2004	3.98%	4.84%	-0.86%

Based on the limited comparison that is possible the survey is reasonably representative of the grant population. The only identifiable departure is with the most complex grant-project combinations and these do not figure largely in the analysis. The effects of this bias undoubtedly show up in other analytic elements but this is unavoidable given the utility of the administrative data that the evaluation team had at hand.

Sample Grantee Questionnaire (Attached pdf file)