An Assessment of Capacity and Resource Needs of North Carolina Watershed Programs

May 2013

Funded by
Wallace Genetic Foundation
Water Resources Research Institute of the University of North Carolina
UNC Institute for the Environment

Published by
UNC Institute for the Environment


**Study Team**

Ryan Cronk, Michele Drostin and Kathleen Gray  
*Institute for the Environment, University of North Carolina at Chapel Hill (UNC-CH)*

Christy Perrin and Patrick Beggs  
*Watershed Education for Communities and Officials (WECO), North Carolina State University Cooperative Extension*

Nicole Wilkinson  
*Water Resources Research Institute (WRRI) of the University of North Carolina*

Paul Clark  
*Division of Water Quality, North Carolina Department of Environment and Natural Resources (NC DENR)*

Michael Schlegel  
*Triangle J Council of Governments*

**Acknowledgements**

- Tom Hill, North Carolina Division of Soil and Water Conservation, NCDA & CS  
- Cam McNutt, Division of Water Quality, NCDENR  
- Michael Voiland, Water Resources Research Institute (WRRI)  
- Teresa Edwards and Paul Mihas, The Howard W. Odum Institute for Social Science, UNC-Chapel Hill  
- Tennessee Water Resources Research Center  
- For review of this report: David Salvesen, PhD, Institute for the Environment at UNC-CH  
- For review and pilot testing of the survey: Nancy Daly, NC Ecosystem Enhancement Program; Barbara Doll and Gloria Putnam, NC Sea Grant; Jim Hawhee, Albemarle-Pamlico National Estuary Partnership; Stephanie Schweickert, NC Conservation Network; and Wendy Smith, Town of Chapel Hill Stormwater Management Division.  
- All survey respondents

---

**UNC Institute for the Environment**  
UNC Chapel Hill  
Campus Box 1105  
Chapel Hill, NC 27599-1105  
www.ie.unc.edu  
Phone: 919.966.9922

University of North Carolina at Chapel Hill IRB# 12-0538
# Table of Contents

Executive Summary .................................................................................................................. 1
Section I: Introduction ............................................................................................................. 2
Section II: Methodology .......................................................................................................... 3
Section III. Findings ............................................................................................................... 7  
  Geographic Spread of Respondents ....................................................................................... 7  
  General Watershed Program Characteristics ....................................................................... 9  
  Organizational Activities ....................................................................................................... 10  
  Skill Sets of Paid Staff .......................................................................................................... 12  
  Skill Sets of Program Volunteers .......................................................................................... 13  
  Addressing Impaired Waters .................................................................................................. 14  
  Audiences ................................................................................................................................. 15  
  Training and Programming Needs ....................................................................................... 16  
  Most Commonly Used Outreach Formats and Most Effective Outreach Tools .................... 17  
  Organizational Development Expertise ................................................................................ 18  
  Networking ............................................................................................................................... 19  
Section IV: Discussion ........................................................................................................... 20  
  Documenting Existing Watershed Programs in North Carolina ........................................ 20  
  Resource and Geographical Gaps in Watershed Training and Assistance .......................... 20  
  Addressing Programmatic Needs and Networking Opportunities ....................................... 22  
  Limitations and Lessons Learned ......................................................................................... 25  
Section V. Conclusions and Recommendations .................................................................... 26  
  Conclusions ............................................................................................................................. 26  
  Recommendations ............................................................................................................... 26  
Appendices ............................................................................................................................... 28  
  Appendix A: Survey Respondents Listed by Program Classification .................................... 28  
  Appendix B: Survey Respondents listed by River Basin ....................................................... 30  
  Appendix C: Resources Identified by Survey Respondents ................................................ 33  
  Appendix D: Watershed Needs Assessment Survey .............................................................. 39  
Bibliography .............................................................................................................................. 48
Figures and Tables

Figure 1 Data management flow chart ........................................................................................................ 4
Figure 2 Geographic spread of respondents .................................................................................................. 7
Figure 3 Activities conducted by watershed programs ................................................................................... 10
Figure 4 Reasons why impaired waters are not being addressed, multiple choice responses ...................... 14
Figure 5 Other reasons why impaired waters are not being addressed, free responses ............................... 15
Figure 6 Most important audiences for watershed programs to reach ......................................................... 16
Figure 7 Most commonly used outreach formats .......................................................................................... 17
Figure 8 Number of respondents that identified having significant expertise in organizational development skills in their program .................................................................................................................. 18
Figure 9 Preferred methods of receiving new information ............................................................................. 19
Figure 10 Tools or resources respondents would find useful to their program .............................................. 19
Figure 11 Geographical distribution of watershed skills in NC .................................................................. 21

Table 1 Number of respondents per classification .......................................................................................... 5
Table 2 Number of watershed programs supporting each NC river basin ....................................................... 8
Table 3 Sources of funding for watershed programs in the past three years ............................................... 9
Table 4 Five most commonly selected activities identified by program classification ................................. 11
Table 5 Skill sets paid staff currently possess ................................................................................................. 12
Table 6 Skill sets paid staff need to be more equipped to perform their roles .............................................. 13
Table 7 Most commonly selected skill sets for volunteers .......................................................................... 13
Table 8 Skill sets by program classification ................................................................................................... 24
# Glossary of Acronyms and Terms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>APNEP</td>
<td>Albemarle-Pamlico National Estuary Partnership</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>Building the strength and resilience of organizations; capacity building includes organizational assessment, increasing effectiveness and sustainability and developing strategies to address organizational needs.</td>
</tr>
<tr>
<td>CoG</td>
<td>Council of Governments</td>
</tr>
<tr>
<td>DWQ</td>
<td>Division of Water Quality in NCDENR</td>
</tr>
<tr>
<td>Educational Programs</td>
<td>Include products and services associated with formal learning, such as curriculum development or professional development; ensures distribution of factual information.</td>
</tr>
<tr>
<td>IE</td>
<td>Institute for the Environment</td>
</tr>
<tr>
<td>NCDENR</td>
<td>North Carolina Department of Environment and Natural Resources</td>
</tr>
<tr>
<td>NCSU</td>
<td>North Carolina State University</td>
</tr>
<tr>
<td>NCDA&amp;CS</td>
<td>North Carolina Department of Agriculture and Consumer Services</td>
</tr>
<tr>
<td>NRCS</td>
<td>Natural Resources Conservation Service of the US Department of agriculture (USDA)</td>
</tr>
<tr>
<td>Outreach Activities</td>
<td>Services that involve contact with the public and serve to inform, excite interest and arouse curiosity. A systematic attempt to provide services beyond conventional means.</td>
</tr>
<tr>
<td>Social Marketing</td>
<td>A planned process for influencing behavioral change using traditional marketing principles for the purpose of societal benefit instead of commercial profit.</td>
</tr>
<tr>
<td>SWCD</td>
<td>Soil and Water Conservation District</td>
</tr>
<tr>
<td>UNC-CH</td>
<td>University of North Carolina at Chapel Hill</td>
</tr>
<tr>
<td>USEPA</td>
<td>US Environmental Protection Agency</td>
</tr>
<tr>
<td>WECO</td>
<td>Watershed Education for Communities and Officials</td>
</tr>
<tr>
<td>WRRI</td>
<td>Water Resources Research Institute</td>
</tr>
</tbody>
</table>
Executive Summary

Across the United States, watershed protection efforts are often small-scale; they are frequently constrained by limited funding and organizational capacity, attenuation of volunteers and a lack of scientific information to guide decisions about restoration, management or policy options. In North Carolina, although many watershed protection resources exist, there are geographical gaps in coverage and disconnects in knowledge-sharing across the state. For these reasons, the UNC Institute for the Environment, Watershed Education for Communities and Officials, the Water Resources Research Institute, the Division of Water Quality (DWQ) in the North Carolina Department of Environment and Natural Resources (NCDENR) and Triangle J Council of Governments formed a partnership in order to 1) identify existing watershed programs and resources (i.e., staff, volunteers, funding and skills), 2) assess and document any gaps in resources and geographical coverage, and 3) better understand programmatic needs and networking opportunities.

Using internet searches and professional contacts, the partners compiled a database of more than 550 programs and individuals focused on watershed protection in North Carolina. Prior to this assessment, no comprehensive, statewide database of watershed programs existed. Programs with paid staff were selected from the database to receive a survey, and 161 people responded. (Input from watershed volunteers was collected in a second phase of this assessment.)

Overall, the data indicate a strong base of professionally trained individuals and watershed programs in North Carolina, although respondents identified a need for continued skill-building and professional development for themselves and volunteers in their organizations. This study also identified several immediate opportunities for strategic partnerships that could help respondents better use their existing skills and fill gaps where needed.

A coordinated network that could facilitate partnerships, networking, and cross-training was highly desired by participants. While an online component of such a network would be effective for sharing information and connecting with others, face-to-face opportunities to learn were the preferred method of information delivery.

This assessment highlights the need to more effectively engage a variety of stakeholders and connect them to one another. It also shows broad interest in enhancing watershed outreach and education and increasing available funds for protecting local watersheds. Based on these results, the study team recommends the following actions:

1. Develop a searchable website of watershed programs and resources across the state.
2. Promote partnerships and cross-training among watershed professionals to address skill deficits.
3. Engage a variety of stakeholders in developing a statewide watershed stewardship network.
4. Actively involve local government staff and elected officials in management strategies.
5. Promote in-person networking through local, regional and statewide workshops and conferences.
6. Increase education about water quality impacts, stormwater and watershed protection.

These activities could serve as a foundation for a statewide watershed stewardship network, thereby building new resources for watershed protection.
Section I: Introduction

North Carolina’s water resources are under increasing pressure, with population growing by 18.5% between 2000 and 2010. This growth makes it difficult to protect drinking water supplies while also supporting healthy ecosystems and water-based recreation. In addition, the state has identified more than 38% of lakes and reservoirs and 10% of streams as impaired, or no longer providing the service or value for which they were designated. Effectively managing our State’s water resources requires collaborative, locally-driven watershed management. Recent peer-reviewed literature indicates that successful efforts rely on open learning processes and social networking, building trust and social capital, training in participatory systems, and local and technical knowledge. In other words, watershed management must become adaptive and flexible.

Tackling watershed problems often requires collaboration among public, private, and civic organizations. Such coordination is challenging, however, because watershed protection efforts are often small-scale, constrained by limited funding and organizational capacity, attenuation of volunteers, and a lack of current scientific information to guide decisions about restoration, management, or policy options. Although North Carolina is home to an array of professionally trained individuals and regional watershed programs, gaps in geographical coverage and disconnects in knowledge-sharing occur throughout the state.

For these reasons, the UNC Institute for the Environment, Watershed Education for Communities and Officials (WECO), the Water Resources Research Institute, the DWQ in NCDENR, and the Triangle J Council of Governments formed a partnership to:

1) Document existing watershed programs in the state,
2) Identify resource and geographical gaps in watershed training and assistance, and
3) Define programmatic needs and networking opportunities.

This report presents the results of a needs assessment, which consisted of a survey of paid watershed professionals and associated follow-up, and proposes next steps based on the results.

---

1 http://online.wsj.com/article/SB10001424052748704728004576176971322420058.html
2 http://ofmpub.epa.gov/waters10/attains_state.control?p_state=NC#total_assessed_waters
3 Clark et al, 2005; Hardy and Koontz, 2009
Section II: Methodology

Survey Design and Implementation

The purpose of the survey was to document existing watershed programs in the state, identify resource and geographical gaps in watershed training and assistance, and define programmatic needs and networking opportunities. (A copy of the survey is located in Appendix D.) The survey framework was developed based on a review of similar studies. A survey conducted by the Tennessee Water Resources Research Center provided a basic structure, which was adapted to address North Carolina contexts and the specific interests of the study. Survey design was reviewed by consultants at the UNC-CH Odum Institute for Social Science, and Qualtrics was used as the online survey platform. A draft survey instrument was sent to peer reviewers at the following organizations: Albemarle-Pamlico National Estuary Partnership, North Carolina Conservation Network (NCCN), NC Ecosystem Enhancement Program, NC Sea Grant and the Town of Chapel Hill Stormwater Management Division. The survey was emailed to 366 potential participants, with follow-up conducted by email and phone to encourage participant response. Data were analyzed with Qualtrics analysis tools and Microsoft Excel.

Survey Participants

The study team developed a database of watershed programs and individuals whose work focuses on watershed protection. The data were gathered from an extensive web search, professional contacts and existing databases, maintained by the following organizations: DWQ in NCDENR, NPDES entities, NCCN, Office of Environmental Education in NCDENR, Soil and Water Conservation Districts / Natural Resources Conservation Service (SWCD/NRCS), USEPA and WECO. The database included both volunteer-based programs and agencies/organizations with paid staff. For the purposes of this survey, a subset of the database was selected to receive the survey. This subset was defined as those agencies/organizations with staff members who are paid to spend at least a portion of their time providing education, outreach, training and/or capacity building focused on watershed protection. To ensure a high response rate, the survey was sent to multiple individuals within the same organization. Subsequent phases of this study engaged volunteers through a series of focus groups and a second survey. Figure 1 provides a data management flow chart.

Using these strategies, attempts were made to identify as many active watershed programs in North Carolina as possible, but some may have been missed. Nevertheless, the survey yielded geographically and organizationally diverse results.

The survey was sent to 366 individuals representing 240 different watershed programs. We received 161 responses, resulting in a response rate of 44% (and representing 143, or 60%, of the identified watershed programs). There were 13 cases where multiple people responded from the same program, and in the interest of developing the most comprehensive data possible, all responses were included. Survey respondents are identified in Appendix A, and duplicates are indicated by a number in parentheses.
Terminology

*Watershed program* or “program” is a general term used to identify the respondents’ place of work.

The watershed programs fell into eight general program *classifications.*
Classification of Programs

Participants were asked to respond for their specific division, unit or program. Some respondents identified with an organization, such as Neuse Riverkeeper or Wake SWCD, whereas respondents from larger agencies tended to identify a specific program within the larger organization, such as Stormwater Outreach and Education in DWQ in NCDENR. For this reason, this report uses watershed program to identify the place of work for which an individual provided responses.

The programs that respondents represented can be grouped into eight basic categories or classifications. A summary of the number of respondents and the percentage of total responses per classification are reported in Table 1. For some questions, responses among different classifications were notably different. In these cases, the data are provided by classification in the discussion below.

Table 1 Number of respondents per classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil and Water Conservation Districts (SWCD)</td>
<td>51</td>
<td>32%</td>
</tr>
<tr>
<td>Nonprofit</td>
<td>25</td>
<td>16%</td>
</tr>
<tr>
<td>State</td>
<td>23</td>
<td>14%</td>
</tr>
<tr>
<td>Federal</td>
<td>17</td>
<td>11%</td>
</tr>
<tr>
<td>University-Based</td>
<td>16</td>
<td>10%</td>
</tr>
<tr>
<td>Local Government</td>
<td>13</td>
<td>8%</td>
</tr>
<tr>
<td>Council of Government (CoG)</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td>Private</td>
<td>5</td>
<td>3%</td>
</tr>
</tbody>
</table>
### Description of Program Classifications

#### Soil and Water Conservation Districts (SWCD)

SWCDs composed 32% (n = 51) of the total respondents. There are 96 SWCDs in the state. Each district boundary coincides with a county boundary, with the exception of Albemarle Soil and Water Conservation District, which covers Camden, Chowan, Currituck, Pasquotank and Perquimans counties. All SWCDs have similar conservation missions but specific activities can vary by district depending on the objectives of the locally elected board, funding, staff size, and needs of the county. SWCDs are funded by county, state, and federal governments.

#### Nonprofit

This sector was represented by organizations that have specific watershed-focused missions as well as those that include a watershed focus among other priorities (such as those focused more broadly on the environment). They represented 16% of all respondents (n = 25). Two respondents from Resource Conservation and Development (RC&D) councils are also in this category.

#### State

A majority of the respondents in this category represented programs within NCDENR, with the exception of the Division of Soil and Water, which is in the North Carolina Department of Agriculture and Consumer Services (NCDA & CS). State respondents represented 14% of total respondents (n = 23).

#### Federal

Many of the federal respondents (n = 17, 11% of total) were with the USDA Natural Resources Conservation Service (NRCS). NRCS is a federal agency that has district conservationists who work locally. Each NRCS office operates under the same mission and goals, but the focus of each district conservationist’s work may vary depending on the needs of counties they serve. Other respondents from federal programs represented the Tennessee Valley Authority (TVA), the U.S. Fish and Wildlife Service and U.S. Forest Service. The TVA is primarily located in Tennessee but also supports watershed protection in North Carolina.

#### University-Based

These programs had an affiliation with and/or funding from universities to conduct watershed programming and represented 10% of total respondents (n = 16). This category includes NC Cooperative Extension offices not located on a university campus.

#### Local Government

All but one respondent represented municipalities with stormwater outreach programs. The one exception was Wake County Parks, Recreation and Open Space. These entities represented 8% of total respondents (n = 13).

#### Councils of Government (CoG)

Nine of the 16 CoGs in the state responded to the survey, for 7% of total respondents (n = 11). Three respondents from within the local CoG (Triangle J) provided information on distinct programs. CoGs are regional bodies that serve multiple counties and coordinate regional planning, economic development, and natural resources projects. CoGs are funded through mixed sources, and membership is drawn from county, city, and other government agencies within a designated area. The low CoG representation is likely due to the fact that not all CoGs have staff members who work on watershed issues.

#### Private

These respondents (5% of the total, n = 5) were primarily individuals working as private consultants, with four out of the five respondents in this role. Duke Energy was also represented in this category.
Section III. Findings

Geographic Spread of Respondents

The map in Figure 2 shows the location of respondents. Each point represents a program’s physical address.

Figure 2 Geographic spread of respondents

There are two points located outside the state boundaries. One represents the Tennessee Valley Authority (TVA) which works in the Little Tennessee River basin, and one represents the Waccamaw Watershed Academy at Coastal Carolina University, which supports watershed efforts in the Lumber River basin.

Respondents are located throughout the state, though many responded from the western portion of the state or clustered in metropolitan areas such as the Raleigh-Durham-Chapel Hill area and the Charlotte-
Mecklenburg area. SWCDs provided the most geographically diverse representation, because they are strategically placed in each county and have personnel with technical watershed skills.

**In Which Basins do Respondents Work?**

Many programs work in more than one basin and, in several cases, have a statewide focus. The number of respondents per basin generally corresponded to the size of the basin. Table 2 indicates the number of respondents indicating work in a specific basin. A complete list of respondents sorted by river basin can be found in Appendix B.

Watershed programs use different methods for delineating and describing their coverage areas, creating a challenge to developing an accurate statewide map of programmatic coverage.

### Table 2 Number of watershed programs supporting each NC river basin

<table>
<thead>
<tr>
<th>Basin</th>
<th>Basin Area (Sq. Miles)</th>
<th>Number of Programs Supporting Basin</th>
<th>Percentage of Survey Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide</td>
<td>52,514</td>
<td>37</td>
<td>23%</td>
</tr>
<tr>
<td>Cape Fear</td>
<td>9,322</td>
<td>41</td>
<td>25%</td>
</tr>
<tr>
<td>Yadkin</td>
<td>7,221</td>
<td>25</td>
<td>16%</td>
</tr>
<tr>
<td>Neuse</td>
<td>6,235</td>
<td>30</td>
<td>19%</td>
</tr>
<tr>
<td>Tar-Pamlico</td>
<td>5,440</td>
<td>22</td>
<td>14%</td>
</tr>
<tr>
<td>Pasquotank</td>
<td>3,635</td>
<td>10</td>
<td>6%</td>
</tr>
<tr>
<td>Roanoke</td>
<td>3,503</td>
<td>17</td>
<td>11%</td>
</tr>
<tr>
<td>Lumber</td>
<td>3,336</td>
<td>12</td>
<td>7%</td>
</tr>
<tr>
<td>Catawba</td>
<td>3,285</td>
<td>16</td>
<td>10%</td>
</tr>
<tr>
<td>French Broad</td>
<td>2,830</td>
<td>21</td>
<td>13%</td>
</tr>
<tr>
<td>Little Tennessee</td>
<td>1,797</td>
<td>10</td>
<td>6%</td>
</tr>
<tr>
<td>Broad</td>
<td>1,513</td>
<td>14</td>
<td>9%</td>
</tr>
<tr>
<td>Chowan</td>
<td>1,378</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td>White Oak</td>
<td>1,264</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td>New</td>
<td>753</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>Hiwassee</td>
<td>625</td>
<td>9</td>
<td>6%</td>
</tr>
<tr>
<td>Watauga</td>
<td>205</td>
<td>8</td>
<td>5%</td>
</tr>
<tr>
<td>Savannah</td>
<td>172</td>
<td>9</td>
<td>6%</td>
</tr>
</tbody>
</table>
General Watershed Program Characteristics

Respondents tended to have small staffs and many years experience in watershed protection.

- **Staffing**: Respondents reported having an average of 6 staff members and a median of 2 staff members who worked at least 10 hours per week supporting watershed protection efforts in their programs. Less than 13% of respondents indicated that they had more than 7 staff members, and of those, many of the responses were from NCDENR.

- **Years of experience**: The average length of time that an organization has been involved in watershed related efforts was 37 years, with a median time of 30 years. US Fish and Wildlife reported the longest history, at 140 years.

Funding Sources

Table 3 presents respondents’ funding sources for watershed programming during the past three years. When analyzed by classification:

- Nonprofits and SWCDs had the most diverse funding sources.
- Nonprofits received more funding from foundations, membership dues, business grants, and general donations than any other classification.
- SWCDs and university-based programs received most of their funding from federal, state, county, and foundation grants.
- Federal, state, and local governments listed federal, state, and local (respectively) as the most frequent funding sources.
- CoGs frequently received funding from state and federal grants (including 319 grants), membership dues, and fees for service.
- All classification types received some amount of funding from state or 319 grants.

Table 3 Sources of funding for watershed programs in the past three years

<table>
<thead>
<tr>
<th>Funding Sources</th>
<th># Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>State grants/funds</td>
<td>97</td>
<td>65%</td>
</tr>
<tr>
<td>Federal funds (other than 319 grants)</td>
<td>85</td>
<td>57%</td>
</tr>
<tr>
<td>319 grants</td>
<td>73</td>
<td>49%</td>
</tr>
<tr>
<td>City/county budget</td>
<td>71</td>
<td>47%</td>
</tr>
<tr>
<td>Foundations</td>
<td>61</td>
<td>41%</td>
</tr>
<tr>
<td>Membership dues</td>
<td>29</td>
<td>19%</td>
</tr>
<tr>
<td>Fees for service</td>
<td>28</td>
<td>19%</td>
</tr>
<tr>
<td>General donations</td>
<td>28</td>
<td>19%</td>
</tr>
<tr>
<td>Special events</td>
<td>20</td>
<td>13%</td>
</tr>
<tr>
<td>Business/industry grants</td>
<td>20</td>
<td>13%</td>
</tr>
</tbody>
</table>
| Stormwater utility                  | 14         | 9% 
| Bequests                            | 11         | 7% 
| Other                               | 4          | 3% 

Organizational Activities

Figure 3 presents activities that are currently being conducted by watershed programs throughout the state. Fifty percent (or more) of the respondents conduct the following activities:

- Collaborating with other agencies/organizations
- Educational programs/materials
- Land conservation
- Grant writing
- Designing/implementing outreach activities
- Developing watershed-related plans
- Monitoring/assessing conditions
- Conducting restoration activities

Table 4 lists the five most commonly selected activities by program classification. Collaboration with others was the only activity selected by all classifications. Activities that were not among those listed above included conducting cleanups (reported by local governments), consulting (by CoGs and private respondents), influencing policy (by local governments and nonprofits), monitoring/assessing conditions (by private and state respondents), and soliciting donations from membership/foundations (nonprofits).

![Activities Conducted by Watershed Programs](chart.png)

Figure 3 Activities conducted by watershed programs
<table>
<thead>
<tr>
<th>Classification</th>
<th>Activity</th>
<th># Resp.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Council of Governments</strong></td>
<td>Grant writing</td>
<td>10</td>
<td>91%</td>
</tr>
<tr>
<td>(n = 11)</td>
<td>Collaborating with other organizations/agencies</td>
<td>10</td>
<td>91%</td>
</tr>
<tr>
<td></td>
<td>Educational programs/materials</td>
<td>7</td>
<td>64%</td>
</tr>
<tr>
<td></td>
<td>Designing/implementing outreach</td>
<td>6</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>Consulting</td>
<td>6</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Federal</strong></td>
<td>Land conservation</td>
<td>16</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 17)</td>
<td>Collaborating with other organizations/agencies</td>
<td>11</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>Conducting restoration activities</td>
<td>9</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td>Educational programs/materials</td>
<td>8</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Developing watershed related plans</td>
<td>7</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Local Government</strong></td>
<td>Educational programs/materials</td>
<td>13</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 13)</td>
<td>Collaborating with other organizations/agencies</td>
<td>12</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>Influencing policy and/or permit decisions</td>
<td>11</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>Conducting cleanups (e.g. debris removal)</td>
<td>11</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>Designing/implementing outreach</td>
<td>10</td>
<td>77%</td>
</tr>
<tr>
<td><strong>Nonprofit</strong></td>
<td>Grant writing</td>
<td>24</td>
<td>96%</td>
</tr>
<tr>
<td>(n = 25)</td>
<td>Collaborating with other organizations/agencies</td>
<td>23</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>Soliciting donations from membership/individuals</td>
<td>22</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>Soliciting donations from foundations</td>
<td>22</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>Influencing policy and/or permit decisions</td>
<td>19</td>
<td>76%</td>
</tr>
<tr>
<td><strong>Private</strong></td>
<td>Conducting restoration activities</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 5)</td>
<td>Monitoring/assessing conditions</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Developing watershed-related plans</td>
<td>4</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>Consulting</td>
<td>3</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>Collaborating with other organizations/agencies</td>
<td>3</td>
<td>60%</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td>Collaborating with other organizations/agencies</td>
<td>20</td>
<td>87%</td>
</tr>
<tr>
<td>(n = 23)</td>
<td>Monitoring/assessing conditions</td>
<td>17</td>
<td>74%</td>
</tr>
<tr>
<td></td>
<td>Developing watershed-related plans</td>
<td>16</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>Influencing policy and/or permit decisions</td>
<td>15</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>Educational programs/materials</td>
<td>15</td>
<td>65%</td>
</tr>
<tr>
<td><strong>SWCD</strong></td>
<td>Educational programs/materials</td>
<td>45</td>
<td>88%</td>
</tr>
<tr>
<td>(n = 51)</td>
<td>Land conservation</td>
<td>44</td>
<td>86%</td>
</tr>
<tr>
<td></td>
<td>Collaborating with other organizations/agencies</td>
<td>38</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>Developing watershed-related plans</td>
<td>30</td>
<td>59%</td>
</tr>
<tr>
<td></td>
<td>Designing/implementing outreach</td>
<td>27</td>
<td>53%</td>
</tr>
<tr>
<td><strong>University-Based Program</strong></td>
<td>Educational programs/materials</td>
<td>13</td>
<td>81%</td>
</tr>
<tr>
<td>(n = 15)</td>
<td>Grant writing</td>
<td>13</td>
<td>81%</td>
</tr>
<tr>
<td></td>
<td>Collaborating</td>
<td>11</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>Designing/implementing outreach</td>
<td>11</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>Developing watershed related plans</td>
<td>10</td>
<td>63%</td>
</tr>
</tbody>
</table>
Skill Sets of Paid Staff

Tables 5 and 6 below provide responses for two related questions in the survey, which asked for information on existing skill sets and needed skills sets. These data provide information on availability of watershed skills in North Carolina and training needs.

- Overall, these data indicate a strong base of professionally trained individuals and watershed programs in North Carolina.
- Response rate for “skill sets paid staff need to be more equipped to perform their roles” was low, indicating that respondents believe the staff members in their programs have the skills needed.
- Among the skills sets that respondents said they needed most were, 1) social marketing, 2) web development, and 3) social media communication. However, responses for these skills were generally low (n=36, 32, 25, respectively). One way to interpret this information is that social marketing, web development, and social media communication have been identified as necessary and useful programmatically but are not skills that individual respondents would like to obtain.

Table 5 Skill sets paid staff currently possess

<table>
<thead>
<tr>
<th>Skill</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS/mapping/surveying</td>
<td>121</td>
<td>76%</td>
</tr>
<tr>
<td>Natural resource conservation planning</td>
<td>116</td>
<td>73%</td>
</tr>
<tr>
<td>Implementing outreach activities</td>
<td>110</td>
<td>69%</td>
</tr>
<tr>
<td>Grant writing</td>
<td>110</td>
<td>69%</td>
</tr>
<tr>
<td>Event coordination</td>
<td>107</td>
<td>67%</td>
</tr>
<tr>
<td>Implementing educational programs</td>
<td>106</td>
<td>67%</td>
</tr>
<tr>
<td>Designing outreach activities</td>
<td>102</td>
<td>64%</td>
</tr>
<tr>
<td>Watershed assessment (i.e. analyzing data)</td>
<td>99</td>
<td>62%</td>
</tr>
<tr>
<td>Watershed planning</td>
<td>97</td>
<td>61%</td>
</tr>
<tr>
<td>Facilitation, conflict resolution and/or stakeholder engagement</td>
<td>86</td>
<td>54%</td>
</tr>
<tr>
<td>Designing educational programs</td>
<td>85</td>
<td>53%</td>
</tr>
<tr>
<td>Stream restoration</td>
<td>84</td>
<td>53%</td>
</tr>
<tr>
<td>Volunteer coordination</td>
<td>82</td>
<td>52%</td>
</tr>
<tr>
<td>Water quality monitoring</td>
<td>72</td>
<td>45%</td>
</tr>
<tr>
<td>Stormwater BMP Design</td>
<td>72</td>
<td>45%</td>
</tr>
<tr>
<td>Influencing policy and/or permit decisions</td>
<td>71</td>
<td>45%</td>
</tr>
<tr>
<td>Database development</td>
<td>64</td>
<td>40%</td>
</tr>
<tr>
<td>Wetland restoration</td>
<td>57</td>
<td>36%</td>
</tr>
<tr>
<td>Social media communication</td>
<td>55</td>
<td>35%</td>
</tr>
<tr>
<td>Web development</td>
<td>44</td>
<td>28%</td>
</tr>
<tr>
<td>Fundraising</td>
<td>43</td>
<td>27%</td>
</tr>
<tr>
<td>Social marketing</td>
<td>38</td>
<td>24%</td>
</tr>
</tbody>
</table>
Table 6 Skill sets paid staff need to be more equipped to perform their roles

<table>
<thead>
<tr>
<th>Skill</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social marketing</td>
<td>36</td>
<td>28%</td>
</tr>
<tr>
<td>Web development</td>
<td>32</td>
<td>25%</td>
</tr>
<tr>
<td>Social media communication</td>
<td>25</td>
<td>20%</td>
</tr>
<tr>
<td>Influencing policy and/or permit decisions</td>
<td>24</td>
<td>19%</td>
</tr>
<tr>
<td>Watershed planning</td>
<td>23</td>
<td>18%</td>
</tr>
<tr>
<td>GIS/mapping/surveying</td>
<td>21</td>
<td>17%</td>
</tr>
<tr>
<td>Stormwater BMP Design</td>
<td>21</td>
<td>17%</td>
</tr>
<tr>
<td>Watershed assessment (e.g. analyzing data)</td>
<td>20</td>
<td>16%</td>
</tr>
<tr>
<td>Database development</td>
<td>18</td>
<td>14%</td>
</tr>
<tr>
<td>Designing outreach activities</td>
<td>18</td>
<td>14%</td>
</tr>
</tbody>
</table>

Skill Sets of Program Volunteers

Of the programs represented in the survey, 57 had volunteers working in their programs on watershed-related issues. The number of volunteers ranged from 5 to 500, and nonprofits and SWCDs had the highest number of volunteers. Table 7 shows the five most commonly cited skills that program staff identified volunteers as having or needing.

- Water quality monitoring is identified as the most common skill set volunteers have and also a skill set volunteers need.
- Respondents appeared to draw heavily on volunteers for education/outreach and event coordination.

Table 7 Most commonly selected skill sets for volunteers

<table>
<thead>
<tr>
<th>Skills Volunteers Have</th>
<th>Skills Volunteers Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill</td>
<td>n</td>
</tr>
<tr>
<td>Water quality monitoring</td>
<td>29</td>
</tr>
<tr>
<td>Implementing educational programs</td>
<td>27</td>
</tr>
<tr>
<td>Implementing outreach activities</td>
<td>24</td>
</tr>
<tr>
<td>Volunteer coordination</td>
<td>21</td>
</tr>
<tr>
<td>Event coordination</td>
<td>19</td>
</tr>
</tbody>
</table>
**Addressing Impaired Waters**

Respondents were asked to identify reasons why impaired waters in their coverage areas were not being addressed, with the ability to provide more than one reason. The total number of responses is presented in Figure 4. Respondents were also given the option to select “other” and provide a free response. Free responses were grouped by similarity and are displayed in Figure 5.

- Limited resources available in local government and within the responding program were the most commonly selected reasons for impaired waters not being addressed.
- In the free responses, “lack of resources” was generally described as lack of funding from state and federal governments as well as lack of personnel.
- Ten responses indicated that impaired waters are being addressed.

**What is an Impaired Water?**

The Division of Water Quality in NCDENR has identified 13,181 surface water assessment units in the state. These units vary in size but can be defined as a reach or area of water (such as a section of an estuary) where water quality is assessed. Based on water quality classifications and data, these assessment units may be listed as “impaired” or not meeting intended uses.

**Reasons Why Impaired Waters Are Not Being Addressed**

According to respondents, the largest reason for impaired waters not being addressed is lack of resources at all levels of watershed management.

![Reasons Why Impaired Waters Are Not Being Addressed](image-url)

*Figure 4 Reasons why impaired waters are not being addressed, multiple choice responses*
Audiences

Respondents were asked to identify important audiences for their programs to reach, choosing from multiple choice options. Results are shown in Figure 6. Respondents were also asked to identify, in a free response question, the hardest audiences to reach from among those they indicated as “medium” and “high” importance to reach. There were no differences in audience importance when examined by program classification.

- The two most commonly selected audiences that were identified as important to reach were local government staff and local government elected and appointed officials.
- These two audiences were also listed most often as the hardest to reach audiences (in 36 free responses).
- The four most commonly selected audiences that were identified as important to reach included all levels of government (local, state and federal).
- Other hard to reach audiences cited (number of responses in parenthesis) were general citizenry (33), businesses (30), farmers (26), students and teachers (26), and developers (25).
- Nonprofits were listed as hardest to reach by a few survey respondents, because they had trouble identifying nonprofits that focused on water quality and watershed related issues.
- Local government and SWCDs identified students and teachers as one of the hardest to reach audiences, stating that there are too many schools to reach, and it is difficult to fit into strict curriculum requirements.

High Value Placed on Local Government Participation in Watershed Efforts

Local government staff and local government elected and appointed officials were identified as the most important audiences as well as the hardest audiences to reach.
Figure 6 Most important audiences for watershed programs to reach

Training and Programming Needs

Survey respondents were asked, in free response questions, what training and programming that they are currently not providing would they like to provide to their local constituents. Common responses are listed below.

- Reducing stormwater runoff, preventing soil erosion, and addressing backyard streams for homeowners and small land owners
- Reducing impacts of stormwater runoff for businesses, elected officials and builders
- Skill building in watershed planning, management and protection
- Education about water quality impacts, stormwater, and watershed protection to all audiences
- Recruiting and empowering volunteers
- Conducting outreach and education

The two preferred training formats were face-to-face interaction and web-based information sharing.
Most Commonly Used Outreach Formats and Most Effective Outreach Tools

Figure 7 represents the most common outreach formats used by programs. Respondents were asked a follow up question to describe, in free response, their most effective outreach tools.

- Outreach formats most often used included websites, public meetings, media and brochures/fact sheets.
- The most effective outreach tool was direct contact (38 responses) which included “word-of-mouth” communication, phone calls, and other personal contact.
- Other effective outreach tools (number of responses listed in parentheses) were meetings (33), websites (31) and newsletters (25).

![Figure 7 Most commonly used outreach formats](image)

Frequency of Use: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often
Organizational Development Expertise

Survey respondents were asked whether, assuming adequate financial resources, their programs had the expertise to provide organizational development support to volunteers and watershed related groups in need of training. Respondents were given a list of organizational development activities and asked to rate their expertise for each activity as none, limited, some, or significant. Figure 8 shows the number of respondents who said they had significant expertise in the noted organizational development activities.

- Most significant expertise was identified in financial management, building scientific/technical skills, grant writing, strategic planning, and stakeholder facilitation.

- Topics with least expertise were fundraising planning, fundraising implementation, and membership development.

Figure 8 Number of respondents that identified having significant expertise in organizational development skills in their program
Networking

Preferred Methods of Receiving Information

Respondents were asked to indicate their preferred methods of receiving new information. The three methods respondents liked best were in-person training sessions or workshops, face-to-face meetings and websites. The least preferred methods were the social media tools, such as Facebook and LinkedIn.

![Preferred Methods of Receiving New Information](image)

**Figure 9 Preferred methods of receiving new information**

Watershed Program Networking Tools and Resources

The survey respondents were also asked to rate a list of possible tools or resources that would be useful to their programs. Of the options provided, respondents rated an interactive mapping tool of watershed data and resources as the most useful. The second highest rated was a networking tool for watershed organizations and professionals.

![Useful Program Networking Tools and Resources](image)

**Figure 10 Tools or resources respondents would find useful to their program**
Section IV: Discussion

This section is organized according to the research objectives of the study, which included:

- Document existing watershed programs in the state,
- Identify resource and geographical gaps in watershed training and assistance, and
- Define programmatic needs and networking opportunities.

Documenting Existing Watershed Programs in North Carolina

Prior to this assessment, no comprehensive, statewide database of North Carolina watershed programs and professionals existed. As noted above, we have now compiled a database with more than 550 contacts, and this report includes information on 143 watershed programs. These results enable us to characterize existing watershed programming and resources across the state and also identify training and networking needs. Notably, watershed programs from all sectors responded to the survey, highlighting the broad interest in better characterizing watershed programming and needs in North Carolina. Although some programs did not respond and others have yet to be identified, the database and this report, taken together, provide the most comprehensive information available to date.

Resource and Geographical Gaps in Watershed Training and Assistance

In terms of human resources, the survey results showed that watershed professionals in North Carolina believed they had the skill sets needed to address watershed protection. Figure 11 illustrates the geographic spread of watershed management skills as reported by survey respondents (selected from among 22 skills, which are listed in Table 5). In the figure, the size of the dot corresponds with the number of skills reported by a respondent, and the location of the dot corresponds with the physical address of the respondent’s program.

Those respondents reporting the greatest number of skills appear to be clustered in three areas: Raleigh-Durham-Chapel Hill, Charlotte-Mecklenburg and the western portion of the state. However, these respondents may be working in other areas as well. For example, state agencies are clustered in Raleigh though staff may work on watersheds in the coastal plain or western portion of the state. This clustering underscores the value of programs that report many skills and are strategically located outside of the clusters, such as the Washington County SWCD and the Richmond County SWCD.

A majority of respondents reported having technical watershed skills, such as GIS/mapping/surveying, natural resource conservation planning, watershed assessment and planning, as well as organizational skills like designing and implementing outreach activities, grant writing, events coordination, and implementing educational programs.
Each program delineated its coverage area in different ways, making it difficult to overlay information. For example, a few programs covered entire river basins, but most focused on smaller watersheds or political boundaries (i.e., one or more counties or a municipality). Further, it was impossible, using the survey responses, to spatially map the coverage area of each program. To depict geographical coverage more accurately in the future, the use of smaller, standardized measurement units is recommended.

In any case, geographic coverage does not equate with capacity to address watershed issues. A better measure of capacity would be an assessment of whether impaired waters were being addressed. A majority of the respondents stated that impaired waters are not being addressed. Those respondents most commonly cited limited resources from local government and within their programs as a rationale for the inaction. In the free responses, “lack of resources” was generally described as lack of funding from state and federal government as well as lack of personnel.
Web Site Development and Social Media

As noted above, web site development and social media skills were identified as necessary and useful programatically but were not among the skills that individual respondents wanted to obtain. In part this may reflect the way that web site / social media responsibilities tend to be structured, with one or two people having primary responsibility unless an organization is larger.

Websites were identified as the most commonly used outreach format and one of the most effective. They were also identified as a preferred method for receiving new information, following in-person workshops and face-to-face meetings. Notably, two popular social media platforms, Facebook and LinkedIn, were among the methods least preferred by respondents.

For social media, results indicated that although respondents did not like to use social media themselves, they saw value in using it to reach their audiences. Interestingly, respondents who showed some preference for social media also indicated that more of their staff had training in social media. It seems likely that those who use it less frequently may do so because they lack the skills to effectively use it. Given these responses and the growing trend towards use of social media, this area may be one to explore in future assessments and trainings.

Addressing Programmatic Needs and Networking Opportunities

After comparing professionals who reported certain skills and others who desired to obtain them (see Table 8), it appears that by partnering, networking and cross-training, programs can fill some of the skill gaps that were identified. The text box, *Opportunities for Partnering and Cross-Training to Address Skill Deficits*, provides specific examples.

Respondents identified two tools that they would find useful to their programs: 1) an interactive map of watershed data and resources and 2) a networking tool for watershed organizations and professionals. Using study data as a starting point, both tools could be developed over time. Given that respondents identified in-person training sessions / workshops and face-to-face meetings as their preferred methods of receiving new information, it seems logical to incorporate an in-person component as well.

Respondents also identified resources they found useful in their watershed work. A list of these resources, in Appendix C, includes programs, organizations and web sites for obtaining North Carolina data and general watershed and stormwater information. These programs also represent substantive content that could be incorporated into the communications tools noted above.

In addition, respondents reported a general need to improve education on water quality impacts, stormwater management and watershed protection. Respondents also indicated that watershed programs need training to improve outreach and education and social marketing.
Opportunities for Partnering and Cross-Training to Address Skill Deficits

The following examples demonstrate how strategic partnerships might be used to address skill deficits across watershed programs. These data are drawn from Table 8 on the following page.

Stormwater BMP Design
Local government and private programs indicated that their staff has BMP skill sets, while CoGs and nonprofits both indicated that they desired these skill sets. SWCD programs are mixed, with some indicating they have the necessary skills while others indicated needing them. Since BMP placement requires dedicated funding and landowner outreach, a partnership between nonprofits (who reported having outreach skills) and local governments (who reported having BMP design skills) may be most beneficial. General knowledge of stormwater BMP design is important for anyone who works on local watershed efforts; however, technical training to engineer and certify BMPs is only required by a subset of people.

Watershed Planning and Assessment
Federal, private and state respondents commonly reported having watershed planning and assessment among their skill sets, while local governments, SWCDs and university-based programs listed these as desired skills. Partnerships and cross-training among these entities could be developed to improve watershed planning and assessment, with federal and state agencies taking the lead.

Influencing Policy and/or Permitting Decisions
Skills relevant to influencing policy and/or permitting decisions were commonly reported by local governments, nonprofits and state programs, although local government respondents were the only ones to rank influencing policy and/or permitting among their top five skill sets. Federal government programs, nonprofits, and SWCDs identified this as a desired skill set. In this arena, state and local governments tend to have direct roles while others, such as nonprofits and SWCDs, typically serve an advocacy role. Enhanced communication and cross-training among these groups could lead to improved understanding of desired policy outcomes and permitting decisions.

Grant Writing
Grant writing is a skill that most nonprofits, CoGs and university-based programs reported having and a skill that local governments identified as a need. Recognizing that local governments may have limited resources in this area, they may benefit from partnering with nonprofits, CoGs and university-based programs to seek grants for local watershed protection.

Outreach Activities
Designing outreach activities was a skill set reported by nonprofits, state programs, and university-based programs, whereas local governments identified this area as a need. However, local governments claimed skills in implementing outreach activities, as did state and SWCD programs. Here again, strategic partnerships could bring together those with expertise in designing outreach activities with those who are in a position to best implement the activities.
### Table 8 Skill sets by program classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Skill</th>
<th>#</th>
<th>%</th>
<th>Skill</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council of Governments (n = 11)</td>
<td>Stakeholder engagement</td>
<td>11</td>
<td>100%</td>
<td>Stormwater BMP design</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>Grant writing</td>
<td>11</td>
<td>100%</td>
<td>Web development</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>Natural resource conservation planning</td>
<td>10</td>
<td>91%</td>
<td>Database development</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>Event coordination</td>
<td>10</td>
<td>91%</td>
<td>Social media communication</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>GIS/mapping/surveying</td>
<td>9</td>
<td>82%</td>
<td>Other</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td>Federal (n = 17)</td>
<td>Natural resource conservation planning</td>
<td>15</td>
<td>88%</td>
<td>Watershed planning</td>
<td>4</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>Watershed assessment (i.e. analyzing data)</td>
<td>13</td>
<td>76%</td>
<td>Watershed assessment</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Watershed planning</td>
<td>12</td>
<td>71%</td>
<td>Natural resource conservation planning</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>GIS/mapping/surveying</td>
<td>12</td>
<td>71%</td>
<td>GIS/mapping/surveying</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Wetland restoration</td>
<td>9</td>
<td>53%</td>
<td>Influencing policy and/or permit decisions</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td>Local Government (n = 13)</td>
<td>Stormwater BMP design</td>
<td>12</td>
<td>92%</td>
<td>Social media communication</td>
<td>3</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>GIS/mapping/surveying</td>
<td>11</td>
<td>85%</td>
<td>Watershed planning</td>
<td>3</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Implementing outreach activities</td>
<td>10</td>
<td>77%</td>
<td>Designing outreach activities</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Stakeholder engagement</td>
<td>10</td>
<td>77%</td>
<td>Grant writing</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Influencing policy and/or permit decisions</td>
<td>10</td>
<td>77%</td>
<td>Implementing educational programs</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td>Nonprofit (n=25)</td>
<td>Grant writing</td>
<td>24</td>
<td>100%</td>
<td>Social marketing</td>
<td>7</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Event coordination</td>
<td>23</td>
<td>96%</td>
<td>Stormwater BMP design</td>
<td>5</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>Volunteer coordination</td>
<td>22</td>
<td>92%</td>
<td>Stream restoration</td>
<td>5</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>Fundraising</td>
<td>21</td>
<td>88%</td>
<td>GIS/mapping/surveying</td>
<td>5</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>Designing outreach activities</td>
<td>18</td>
<td>75%</td>
<td>Influencing policy and/or permit decisions</td>
<td>5</td>
<td>26%</td>
</tr>
<tr>
<td>Private (n = 5)</td>
<td>Water quality monitoring</td>
<td>5</td>
<td>100%</td>
<td>Natural resource conservation planning</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Watershed assessment</td>
<td>5</td>
<td>100%</td>
<td>Influencing policy and/or permit decisions</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Watershed planning</td>
<td>5</td>
<td>100%</td>
<td>Implementing outreach activities</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Wetland restoration</td>
<td>5</td>
<td>100%</td>
<td>Social marketing</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Stormwater BMP design</td>
<td>5</td>
<td>100%</td>
<td>Facilitation and conflict resolution</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>State (n = 23)</td>
<td>GIS/mapping/surveying</td>
<td>22</td>
<td>96%</td>
<td>Social marketing</td>
<td>6</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>Watershed assessment</td>
<td>20</td>
<td>87%</td>
<td>Social media communication</td>
<td>6</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>Designing outreach activities</td>
<td>18</td>
<td>78%</td>
<td>Implementing educational programs</td>
<td>5</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>Implementing outreach activities</td>
<td>18</td>
<td>78%</td>
<td>Designing educational programs</td>
<td>4</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Database development</td>
<td>16</td>
<td>70%</td>
<td>Web development</td>
<td>4</td>
<td>24%</td>
</tr>
<tr>
<td>SWCD (n = 51)</td>
<td>Natural resource conservation planning</td>
<td>47</td>
<td>94%</td>
<td>Web development</td>
<td>14</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>Implementing educational programs</td>
<td>43</td>
<td>86%</td>
<td>Social marketing</td>
<td>13</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>GIS/mapping/surveying</td>
<td>37</td>
<td>74%</td>
<td>Influencing policy and/or permit decisions</td>
<td>11</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Implementing outreach activities</td>
<td>35</td>
<td>70%</td>
<td>Water quality monitoring</td>
<td>9</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Event coordination</td>
<td>33</td>
<td>66%</td>
<td>Watershed assessment</td>
<td>9</td>
<td>20%</td>
</tr>
<tr>
<td>University-Based Program (n = 16)</td>
<td>Grant writing</td>
<td>15</td>
<td>94%</td>
<td>Social marketing</td>
<td>6</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Implementing educational programs</td>
<td>13</td>
<td>81%</td>
<td>Web development</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>Designing outreach activities</td>
<td>13</td>
<td>81%</td>
<td>GIS/mapping/surveying</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>Event coordination</td>
<td>13</td>
<td>81%</td>
<td>Database development</td>
<td>4</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Designing educational programs</td>
<td>13</td>
<td>81%</td>
<td>Watershed assessment</td>
<td>4</td>
<td>27%</td>
</tr>
</tbody>
</table>
Limitations and Lessons Learned

The study team identified several limitations and lessons learned. The first limitation was the lack of a central repository of information on watershed professionals and programs in the state. The survey team responded to this challenge by creating a database to centralize information from many disparate sources. Because the study team relied on internet searches and professional contacts to compile a database, it is still possible that some groups were missed in the process.

Due to a lack of baseline information, creating a survey with clearly defined multiple choice questions and answers was challenging. Yet while free response answers could have captured more information, the demands of qualitative data interpretation would have limited our ability to aggregate and analyze common responses. Fortunately, the baseline data collected through this assessment will inform subsequent surveys.

Many questions asked respondents to speak from a programmatic perspective, without first determining that they were the appropriate representative to do so. Due to the varied nature and organizational structures of participating programs, some respondents chose to speak for the larger organization in which they worked, and others included information only about their specific program within a larger organization. This created inconsistencies that were not anticipated, and in subsequent iterations of this study, we recommend a focused effort to identify a key spokesperson for each organization. However, this challenge underscored the diverse nature of watershed work in North Carolina and the varied responsibilities of watershed professionals and organizations.
Section V. Conclusions and Recommendations

Conclusions

This report represents the first characterization of professionals working on watershed protection efforts in North Carolina. Respondents were located throughout the state, with many located in the western portion of the state or clustered in metropolitan areas such as the Triangle area (Raleigh-Durham-Chapel Hill) and Charlotte-Mecklenburg. Many programs reported working in more than one basin, and some had a statewide focus. Although respondents tended to have many years’ experience and generally identified watershed professionals in North Carolina as having the skill sets needed to address watershed protection, these skills were not evenly distributed across the state. Partnerships, networking and cross-training should enable programs to fill gaps in technical knowledge and skills, thereby improving watershed services overall.

A majority of respondents reported that impaired waters were not being addressed in their coverage areas due to limited resources available to local governments and within their programs. Given the decreased availability of funds for watershed work, networking and cross-training will also become increasingly important in better utilizing existing resources. In addition, local government participation in watershed efforts was identified as critical to their success, underscoring the need to find ways to actively involve local government staff and elected officials in these issues.

Finally, initial project planning yielded a systematically compiled database that is already proving to be a valuable and growing resource. Converting this database into a searchable, editable online format will enable new data to be added by users over time and will lay the groundwork for an interactive mapping and networking tool that compiles watershed data and resources.

Recommendations

This assessment highlights the potential of a statewide watershed stewardship network to enhance watershed protection in North Carolina. It also emphasizes the need to more effectively engage local governments, enhance watershed outreach and education, and increase funding available to protect local watersheds. Based on what we have learned, the study team recommends the following actions:

- **Develop a dynamic searchable website with information on watershed programs and resources across the state.** As noted above, the database created for this needs assessment would serve as the basis for such a site. It could not only serve as a centralized platform to improve watershed-to-watershed communication but also promote, and possibly host, training opportunities. Such a website would serve as an information hub for watershed efforts in North Carolina, including among its users all classifications of respondents to this survey as well as program volunteers and individuals interested in learning more about protecting their local waterways.

- **Promote partnerships and cross-training among North Carolina watershed professionals to address skill deficits within organizations and in underserved areas of the state.** One of many examples of a skill deficit that could be addressed through cross-training is watershed planning and assessment, which often falls to local governments and Soil and Water Conservation Districts who indicated a need for this skill. Federal and state professionals who identified having these
skills could lead such training, which could be conducted using web-based tools or through face-to-face workshops.

Local watershed training focused on capacity building could also be developed for areas of the state lacking coverage and resources. The target audience for this training should be local stakeholders including residents, local government staff, elected officials, civic groups, and small nonprofits. Survey respondents identified the following topics as particularly relevant to these local stakeholders: watershed planning and management, recruiting and empowering volunteers, and conducting outreach and education. Where appropriate, Councils of Government, Soil and Water Conservation Districts, and the Cooperative Extension Service could provide local and regional technical support.

- Engage a variety of stakeholders in developing a statewide watershed stewardship network. Watershed programs from all sectors responded to the survey, reporting a common desire for enhanced networking, collaboration, and cross-training. A logical next step would be to facilitate the identification of shared goals and move towards the founding of a statewide watershed stewardship network.

- Actively involve local government staff and elected officials in management strategies. Respondents placed a high value on local government participation in watershed protection efforts; however, with the exception of the larger local governments that have stormwater NPDES permits, these entities are not necessarily engaged in watershed protection. Research may be needed to determine key factors influencing their lack of engagement and the most effective methods of bringing them into this issue. Potential partners in this outreach include the Councils of Government and the North Carolina League of Municipalities.

- Take advantage of opportunities for face-to-face interactions through local, regional and statewide workshops and conferences. Web-based communication and outreach is a convenient and cost-effective way to reach a large audience. However, developing relationships that will lead to sharing resources and active collaboration on watershed protection efforts requires personal contact. One way to cost-effectively promote face-to-face interaction would be to add watershed-focused training or meetings to existing workshops and conferences addressing water issues (such as UNC-Chapel Hill’s annual Water and Health conference and the WRRI Annual Conference).

- Increase education about water quality impacts, stormwater and watershed protection. Many of the responding programs indicated a need for more water quality, stormwater and watershed protection education but staff and resources are limited. Additional research is needed to identify existing educational campaigns in the state and determine their success rate, as well as need for additional materials, messaging and statewide coordination.

North Carolina programs are well positioned to launch a collaborative watershed protection effort, as we already have a number of successful, well-established regional and local programs. Working together, we can meet many of the needs identified in this assessment through enhanced networking, active partnerships, and targeted training and education. These activities can also serve as a foundation for a statewide watershed stewardship network, thereby building new resources for watershed protection.
# Appendixes

## Appendix A: Survey Respondents Listed by Program Classification

### Federal
- Albermarle-Camden NRCS
- Avery, Mitchell, Yancey NRCS, Spruce Pine Work Unit
- Beaufort, Dare, Hyde NRCS
- Bertie, Tyrrell, Washington NRCS
- Bladen NRCS
- Brunswick, New Hanover, Pender NRCS
- Columbus NRCS
- Forsyth, Stokes NRCS
- Guilford NRCS
- Haywood, Madison NRCS
- Nash NRCS
- Polk NRCS
- Robeson NRCS
- Tennessee Valley Authority - Property and Natural Resources
- US Fish and Wildlife Service - Asheville Field Office
- US Forest Service - National Forests in North Carolina
- Wake NRCS

### State
- NCDA&CS - Division of Soil and Water Conservation
- NC DENR - Albermarle Pamlico National Estuary Partnership
- NC DENR - Division of Water Quality (DWQ) (3)
- NC DENR - DWQ - Use Restoration Watershed Program
- NC DENR - DWQ - Stormwater Outreach and Edu. Listserv
- NC DENR - DWQ - Planning Section - Nonpoint Source Unit
- NC DENR - Division of Water Resources (DWR) (2)
- NC DENR - DWR, Public Water Supply Section
- NC DENR - Ecosystem Enhancement Program (EEP) (3)
- NC DENR - Natural Heritage Program (2)
- NC DENR - NC Coastal Reserve & NERR
- NC DENR - Office of Env. Edu. and Public Affairs
- NC Geological Survey
- NC Wildlife Resources Commission - Div. of Inland Fisheries (2)
- NC Wildlife Resources Commission - Habitat Conservation
- NC Wildlife Resources Commission - Wildlife Diversity Prog.

### CoG
- High Country Council of Governments
- Isothermal Planning & Development Commission
- Kerr Tar Regional Council
- Mid-Carolina Council of Governments
- NC Clean Water Education Partnership (TJ CoG)
- Piedmont Triad Council of Government
- Stormwater Smart (Piedmont Triad Council of Government)
- Triangle Area Water Supply Monitoring Project (TJ CoG)
- Triangle J Council of Government – Water Resources Program
- Upper Coastal Plain Council of Government
- Western Piedmont Council of Governments

### County - SWCD
- Alamance SWCD
- Albermarle-Camden SWCD
- Alexander SWCD
- Alleghany SWCD
- Avery County SWCD
- Beaufort SWCD (2)
- Buncombe SWCD (2)
- Cabarrus SWCD
- Caldwell SWCD
- Carteret SWCD
- Chatham SWCD
- Cherokee SWCD
- Clay SWCD
- Cleveland SWCD
- Craven SWCD
- Cumberland SWCD
- Dare SWCD
- Fishing Creek SWCD
- Forsyth SWCD
- Gates SWCD
- Graham SWCD
- Granville SWCD
- Guilford SWCD
- Haywood SWCD
- Henderson SWCD
- Hertford SWCD
- Hyde SWCD
- Iredell SWCD
- Johnston SWCD
- Jones SWCD
- Lincoln SWCD
- Macon SWCD
- Moore SWCD
- New Hanover SWCD
- Pitt SWCD
- Polk SWCD
- Randolph SWCD
- Richmond SWCD
- Rockingham SWCD
- Rutherford SWCD
- Stanly SWCD
- Transylvania SWCD
- Wake SWCD (2)
- Warren SWCD
- Washington SWCD
- Watauga SWCD
- Wayne SWCD
<table>
<thead>
<tr>
<th>Local Government</th>
<th>Nonprofits</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Burlington - Stormwater</td>
<td>Cape Fear River Watch</td>
</tr>
<tr>
<td>City of Charlotte-Mecklenburg Storm Water Services Division</td>
<td>Carolina Land and Lakes RC&amp;D</td>
</tr>
<tr>
<td>City of Oxford</td>
<td>Carolina Mountain Land Conservancy</td>
</tr>
<tr>
<td>City of Wilmington - Stormwater</td>
<td>Catawba Riverkeeper Foundation</td>
</tr>
<tr>
<td>Johnston County Stormwater Administrator</td>
<td>Haw River Assembly (2)</td>
</tr>
<tr>
<td>Town of Carrboro</td>
<td>Haywood Waterways Association</td>
</tr>
<tr>
<td>Town of Cary Stormwater</td>
<td>Hiwassee River Watershed Coalition, Inc</td>
</tr>
<tr>
<td>Town of Chapel Hill - Stormwater Management Division (2)</td>
<td>Jackson-Macon Conservation Alliance</td>
</tr>
<tr>
<td>Town of Wake Forest - Stormwater</td>
<td>NC Coastal Land Trust</td>
</tr>
<tr>
<td>Town of Waynesville</td>
<td>NC Conservation Network</td>
</tr>
<tr>
<td>Village of Clemmons - Stormwater</td>
<td>Neuse Riverkeeper Foundation, Upper Neuse Office</td>
</tr>
<tr>
<td>Wake Co. Parks, Rec., and Open Space</td>
<td>North Carolina Coastal Federation</td>
</tr>
<tr>
<td>Town of Wake Forest - Stormwater</td>
<td>Pamlico-Tar River Foundation</td>
</tr>
<tr>
<td>Town of Waynesville</td>
<td>River Network</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Private</th>
<th>University Based Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atkins Global (2)</td>
<td>Henderson Cooperative Extension</td>
</tr>
<tr>
<td>Duke Energy Corporation</td>
<td>NC Cooperative Extension - Edgecombe County</td>
</tr>
<tr>
<td>Equinox Environmental Consultation and Design, Inc.</td>
<td>NC Extension - NC A&amp;T University</td>
</tr>
<tr>
<td>Moffat and Nichol</td>
<td>NC Sea Grant</td>
</tr>
<tr>
<td></td>
<td>NCSU Water Quality Group (3)</td>
</tr>
<tr>
<td></td>
<td>Transylvania County Cooperative Extension Center</td>
</tr>
<tr>
<td></td>
<td>UNC Charlotte Urban Institute</td>
</tr>
<tr>
<td></td>
<td>UNC Institute for the Environment - ERP</td>
</tr>
<tr>
<td></td>
<td>Waccamaw Watershed Academy</td>
</tr>
<tr>
<td></td>
<td>Watauga Cooperative Extension</td>
</tr>
<tr>
<td></td>
<td>Water Resources Research Institute (WRRI)</td>
</tr>
<tr>
<td></td>
<td>Watershed Edu for Communities and Officials (WECO) (2)</td>
</tr>
<tr>
<td></td>
<td>Western Carolina University, Dept of Geosciences &amp; Nat. Res.</td>
</tr>
</tbody>
</table>
## Appendix B: Survey Respondents listed by River Basin

<table>
<thead>
<tr>
<th>Broad</th>
<th>City of Charlotte-Mecklenburg Storm Water Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buncombe SWCD</td>
<td>Duke Energy Corporation</td>
</tr>
<tr>
<td>Carolina Mountain Land Conservancy</td>
<td>High Country Council of Governments</td>
</tr>
<tr>
<td>Catawba Riverkeeper Foundation</td>
<td>Isothermal Planning &amp; Development Commission</td>
</tr>
<tr>
<td>Cleveland SWCD</td>
<td>Lincoln SWCD</td>
</tr>
<tr>
<td>Henderson SWCD</td>
<td>NC Extension - Water Quality Group</td>
</tr>
<tr>
<td>Isothermal Planning &amp; Development Commission</td>
<td>UNC Charlotte Urban Institute</td>
</tr>
<tr>
<td>Lincoln SWCD</td>
<td>Western Piedmont Council of Governments</td>
</tr>
<tr>
<td>Polk NRCS</td>
<td></td>
</tr>
<tr>
<td>Polk SWCD</td>
<td></td>
</tr>
<tr>
<td>Rutherford SWCD</td>
<td></td>
</tr>
<tr>
<td>Tennessee Valley Authority</td>
<td></td>
</tr>
<tr>
<td>UNC Charlotte Urban Institute</td>
<td></td>
</tr>
</tbody>
</table>

| Cape Fear                     |                                                      |
| Alamance SWCD                 |                                                      |
| Bladen NRCS                   |                                                      |
| Brunswick, New Hanover, Pender NRCS |                                                    |
| Cape Fear River Watch         |                                                      |
| Chatham SWCD                  |                                                      |
| City of Burlington - Stormwater |                                                      |
| City of Wilmington - Stormwater |                                                      |
| Columbus NRCS                 |                                                      |
| Cumberland SWCD               |                                                      |
| Forsyth SWCD                  |                                                      |
| Guilford NRCS                 |                                                      |
| Guilford SWCD                 |                                                      |
| Haw River Assembly            |                                                      |
| Mid-Carolina Council of Governments |                                                  |
| Moore SWCD                    |                                                      |
| NC Clean Water Education Partnership |                                               |
| NC Coastal Land Trust         |                                                      |
| NC DENR - North Carolina Coastal Reserve |                                      |
| NC Extension - Water Quality Group |                                                      |
| New Hanover SWCD              |                                                      |
| North Carolina Coastal Federation |                                                  |
| Piedmont Triad Council of Government |                                          |
| Randolph SWCD                 |                                                      |
| Rockingham SWCD               |                                                      |
| Town of Carrboro              |                                                      |
| Town of Cary Stormwater       |                                                      |
| Town of Chapel Hill - Stormwater Management |                                         |
| Triangle | Council of Government |                                                      |
| Triangle Land Conservancy     |                                                      |
| Upper Cape Fear River Basin Association |                                      |
| Wake Co. Parks, Rec., and Open Space |                                                 |
| Wake NRCS                     |                                                      |
| Wake SWCD                     |                                                      |

| Catawba                       |                                                      |
| Alexander SWCD                |                                                      |
| Avery County SWCD             |                                                      |
| Avery, Mitchell, Yancey NRCS, Spruce Pine Work Unit |                                          |
| Caldwell SWCD                 |                                                      |
| Carolina Land and Lakes RC&D  |                                                      |
| Catawba Riverkeeper Foundation |                                                      |
| Carolina Mountain Conservancy |                                                      |
| Catawba Riverkeeper Foundation |                                                      |
| Cherokee SWCD                 |                                                      |
| Clay SWCD                     |                                                      |
| Duke Energy Corporation       |                                                      |
| Graham SWCD                   |                                                      |
| Hiwassee River Watershed Coalition, Inc |                                      |
| Southwestern RC&D Council     |                                                      |

| Hiwassee                      |                                                      |
| Cherokee SWCD                 |                                                      |
| Clay SWCD                     |                                                      |
| Duke Energy Corporation       |                                                      |
| Graham SWCD                   |                                                      |
| Hiwassee River Watershed Coalition, Inc |                              |
| Southwestern RC&D Council     |                                                      |

<p>| Little Tennessee              |                                                      |
| Duke Energy Corporation       |                                                      |
| Graham SWCD                   |                                                      |
| Jackson-Macon Conservation Alliance |                                                  |
| Macon SWCD                    |                                                      |
| Southwestern RC&amp;D Council     |                                                      |
| Tennessee Valley Authority    |                                                      |
| Watershed Association of the Tuckasegee River |                                      |
| Western Carolina University   |                                                      |</p>
<table>
<thead>
<tr>
<th>Lumber</th>
<th>Granville SWCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunswick, New Hanover, Pender NRCS</td>
<td>Kerr Tar Regional Council</td>
</tr>
<tr>
<td>Columbus NRCS</td>
<td>NC Coastal Land Trust</td>
</tr>
<tr>
<td>Cumberland SWCD</td>
<td>NC DENR - APNEP</td>
</tr>
<tr>
<td>Moore SWCD</td>
<td>Pamlico-Tar River Foundation</td>
</tr>
<tr>
<td>NC Coastal Land Trust</td>
<td>Piedmont Triad Council of Government</td>
</tr>
<tr>
<td>NC DENR - North Carolina Coastal Reserve</td>
<td>Rockingham SWCD</td>
</tr>
<tr>
<td>North Carolina Coastal Federation</td>
<td>Tar River Land Conservancy</td>
</tr>
<tr>
<td>Richmond SWCD</td>
<td>Upper Coastal Plain Council of Government</td>
</tr>
<tr>
<td>Robeson NRCS</td>
<td>Warren SWCD</td>
</tr>
<tr>
<td>Waccamaw Riverkeeper</td>
<td>Washington SWCD</td>
</tr>
<tr>
<td>Waccamaw Watershed Academy</td>
<td><strong>Neuse</strong></td>
</tr>
</tbody>
</table>

| Beaufort SWCD | Carolina Mountain Land Conservancy |
| Carteret SWCD | Duke Energy Corporation |
| Craven SWCD | Jackson-Macon Conservation Alliance |
| Granville SWCD | Macon SWCD |
| Johnston County Stormwater Administrator | Southwestern RC&D Council |
| Johnston SWCD | Transylvania County Cooperative Extension Center |
| Jones SWCD | Transylvania SWCD |
| Kerr Tar Regional Council | NC Clean Water Education Partnership |
| NC Coastal Land Trust | NC Coastal Land Trust |
| NC DENR - Albemarle-Pamlico Natural Estuary Program | NC Cooperative Extension - Edgecombe County |
| NC DENR - North Carolina Coastal Reserve | NC DENR - APNEP |
| NC Extension - Water Quality Group | NC DENR - North Carolina Coastal Reserve |
| Neuse Riverkeeper Foundation, Upper Neuse Office | Pamlico-Tar River Foundation |
| Pitt SWCD | Pitt SWCD |
| Tar River Land Conservancy | Tar River Land Conservancy |
| Town of Cary Stormwater | Upper Coastal Plain Council of Government |
| Town of Wake Forest - Stormwater | Warren SWCD |
| Triangle Council of Government | Washington SWCD |
| Triangle Land Conservancy | **Watauga** |
| Upper Coastal Plain Council of Government | Avery County SWCD |
| Wake Co. Parks, Rec., and Open Space | Avery, Mitchell, Yancey NRCS, Spruce Pine Work Unit |
| Wake NRCS | High Country Council of Governments |
| Wake SWCD | Watauga Cooperative Extension |
| Wayne SWCD | Watauga SWCD |

| New Alleghany SWCD | White Oak |
| Alleghany SWCD | Alexander SWCD |
| High Country Council of Governments | Carteret SWCD |
| NC Extension - Water Quality Group | City of Wilmington - Stormwater |
| Watauga Cooperative Extension | Jones SWCD |
| Watauga SWCD | NC Coastal Land Trust |
| Pasquotank Albermarle-Camden NRCS/SWCD | NC Coastal Land Trust |
| Beaufort, Dare, Hyde NRCS | NC DENR - APNEP |
| Dare SWCD | NC DENR - Albermarle-Pamlico Natural Estuary Program |
| Hertford SWCD | NC DENR - North Carolina Coastal Reserve |
| NC Coastal Land Trust | NC Extension - Water Quality Group |
| NC DENR - APNEP | North Carolina Coastal Federation |
| NC DENR - North Carolina Coastal Reserve | White Oak-New Riverkeeper Alliance |
| North Carolina Coastal Federation | **Yadkin** |
| Washington SWCD | Alexander SWCD |

<p>| Alamance SWCD | Cabarrus Soil &amp; Water Conservation District |
| Fishing Creek SWCD | |</p>
<table>
<thead>
<tr>
<th>Caldwell SWCD</th>
<th>NC Conservation Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carolina Land and Lakes RC&amp;D</td>
<td>NC DENR - Division of Soil and Water Conservation</td>
</tr>
<tr>
<td>Carteret SWCD</td>
<td>NC DENR - Division of Water Quality</td>
</tr>
<tr>
<td>Catawba Riverkeeper Foundation</td>
<td>NC DENR - Division of Water Resources</td>
</tr>
<tr>
<td>City of Charlotte-Mecklenburg Storm Water Services</td>
<td>NC DENR - Ecosystem Enhancement Program</td>
</tr>
<tr>
<td>Duke Energy Corporation</td>
<td>NC DENR - Natural Heritage Program</td>
</tr>
<tr>
<td>Forsyth SWCD</td>
<td>NC DENR - Office of EE and Public Affairs</td>
</tr>
<tr>
<td>High Country Council of Governments</td>
<td>NC Extension - NC A&amp;T University</td>
</tr>
<tr>
<td>Iredell SWCD</td>
<td>NC Geological Survey</td>
</tr>
<tr>
<td>NC Extension - Water Quality Group</td>
<td>NC Sea Grant</td>
</tr>
<tr>
<td>Piedmont Triad Council of Government</td>
<td>NC WRC - Division of Inland Fisheries</td>
</tr>
<tr>
<td>Randolph SWCD</td>
<td>NC WRC - Habitat Conservation Section</td>
</tr>
<tr>
<td>Richmond SWCD</td>
<td>NC WRC - Wildlife Diversity Program</td>
</tr>
<tr>
<td>Stanly SWCD</td>
<td>NCSU Water Quality Group</td>
</tr>
<tr>
<td>UNC Charlotte Urban Institute</td>
<td>Pamlico-Tar River Foundation</td>
</tr>
<tr>
<td>Village of Clemmons - Stormwater</td>
<td>River Network</td>
</tr>
<tr>
<td>Watauga SWCD</td>
<td>Stormwater Smart</td>
</tr>
<tr>
<td>Yadkin Riverkeeper</td>
<td>Triangle Area Water Supply Monitoring Project</td>
</tr>
<tr>
<td><strong>Statewide</strong></td>
<td>UNC IE Environmental Resources Program</td>
</tr>
<tr>
<td>Atkins Global</td>
<td>US Fish and Wildlife Service, Asheville Field Office</td>
</tr>
<tr>
<td>Bertie, Tyrrell, Washington NRCS</td>
<td>US Forest Service, National Forests in North Carolina</td>
</tr>
<tr>
<td>Equinox Environmental Consultation and Design, Inc.</td>
<td>Water Resources Research Institute (WRRI)</td>
</tr>
<tr>
<td>Forsyth, Stokes NRCS</td>
<td>Watershed Education for Communities and Officials</td>
</tr>
<tr>
<td>Moffat and Nichol</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Resources Identified by Survey Respondents

<table>
<thead>
<tr>
<th>Resources used by Watershed Professionals in North Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clean Water Education Partnership</strong>&lt;br&gt;<a href="http://www.nccwep.org/">http://www.nccwep.org/</a>&lt;br&gt;The Clean Water Education Partnership aims to protect North Carolina’s waterways from stormwater pollution through public education and outreach. The Clean Water Education Partnership (CWEP) is a cooperative effort between local governments, state agencies, and nonprofit organizations to protect water quality in the Tar-Pamlico, Neuse, and Cape Fear River Basins. CWEP Partners provide funding and support for CWEP. Cooperators have helped CWEP by providing radio and television spots and images for this website.</td>
</tr>
<tr>
<td><strong>Clean Water Management Trust Fund</strong>&lt;br&gt;<a href="http://www.cwmtf.net/">http://www.cwmtf.net/</a>&lt;br&gt;CWMTF will fund projects that (1) enhance or restore degraded waters, (2) protect unpolluted waters, and/or (3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits.</td>
</tr>
<tr>
<td><strong>Clean Water Network</strong>&lt;br&gt;<a href="http://www.cleanwaternetwork.org/">http://www.cleanwaternetwork.org/</a>&lt;br&gt;The mission of the Clean Water Network is to work together to protect and restore clean water and wetlands throughout the nation. Through our work we envision a world where our rivers, lakes, estuaries and other waters will be safe for our children to swim in, for aquatic life to live in, and for us all to drink from. Through our collective efforts, our citizenry will be reconnected with the importance of clean water in their lives.</td>
</tr>
<tr>
<td><strong>One NC Naturally, Conservation Planning Tool</strong>&lt;br&gt;<a href="http://www.onencnaturally.org/pages/ConservationPlanningTool.html">http://www.onencnaturally.org/pages/ConservationPlanningTool.html</a>&lt;br&gt;The Conservation Planning Tool (CPT) consists of assessments and maps that identify, evaluate, and prioritize important natural resources required to maintain healthy and sustainable ecosystems statewide. Six assessments and maps are included in the CPT: Biodiversity/Wildlife Habitat, Forestry Lands, Farmland, Open Space and Conservation Lands, Marine/Estuarine, and Water Services. This planning tool illustrates the locations and conservation values of significant natural resources throughout North Carolina, and has been applied by local governments, state agencies, regional councils of governments, funding programs, and conservation organizations to support land use, conservation, mitigation and transportation planning and decision-making.</td>
</tr>
<tr>
<td><strong>NC Ecosystem Enhancement Program</strong>&lt;br&gt;<a href="http://portal.ncdenr.org/web/eep">http://portal.ncdenr.org/web/eep</a>&lt;br&gt;N.C. Ecosystem Enhancement Program is a NCDENR initiative that restores and protects wetlands and waterways for future generations while offsetting unavoidable environmental damage from economic development.</td>
</tr>
<tr>
<td><strong>Environmental Quality Institute (VWIN &amp; SMIE)</strong></td>
</tr>
<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>The Environmental Quality Institute (EQI) is a nonprofit environmental research laboratory located in Asheville, NC dedicated to providing objective chemical and biological analyses to help communities, government agencies, and the private sector gain accurate understanding of complex environmental issues.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>EPA Section 319 Nonpoint Source Management Program</strong></th>
<th><strong><a href="http://water.epa.gov/polwaste/nps/cwact.cfm">http://water.epa.gov/polwaste/nps/cwact.cfm</a></strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The 1987 amendments to the Clean Water Act (CWA) established the Section 319 Nonpoint Source Management Program. Section 319 addresses the need for greater federal leadership to help focus state and local nonpoint source efforts. Under Section 319, states, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>USGS, Water Resources of North Carolina</strong></th>
<th><strong><a href="http://nc.water.usgs.gov/">http://nc.water.usgs.gov/</a></strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>These pages are a source for water-resource information collected and interpreted by the U.S. Geological Survey in North Carolina.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Izaac Walton League</strong></th>
<th><strong><a href="http://www.iwla.org/">http://www.iwla.org/</a></strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Founded in 1922, the Izaak Walton League is one of the nation's oldest and most respected conservation organizations. With a powerful grassroots network of more than 250 local chapters nationwide, the League takes a common-sense approach toward protecting our country's natural heritage and improving outdoor recreation opportunities for all Americans.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>National Association of Flood &amp; Stormwater Management Agencies</strong></th>
<th><strong><a href="http://www.nafsma.org/">http://www.nafsma.org/</a></strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The National Association of Flood &amp; Stormwater Management Agencies (NAFSMA) is an organization of public agencies whose function is the protection of lives, property and economic activity from the adverse impacts of storm and flood waters. The mission of the Association is to advocate public policy, encourage technologies and conduct education programs which facilitate and enhance the achievement of the public service function of its members.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>NC office of Environmental Education</strong></th>
<th><strong><a href="http://www.ee.enr.state.nc.us/index.asp">http://www.ee.enr.state.nc.us/index.asp</a></strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The mission of the NC office of Environmental Education is to encourage, support and promote environmental education programs, facilities and resources in North Carolina for the purpose of improving the public’s environmental literacy and stewardship of natural resources through planning, policy development, community involvement, innovative partnerships and collaboration.</td>
<td></td>
</tr>
</tbody>
</table>
| **NC Source Water Collaborative**  
| The N.C. Source Water Collaborative is a new statewide partnership to protect drinking water. Founded in December 2011, the N.C. Source Water Collaborative includes participants from nonprofit organizations, university programs, state, local and federal agencies, professional associations, and regional councils of government. The collaborative's intention is to support strategies designed to preserve the lakes, streams, rivers and aquifers used for drinking water and the land that protects and recharges these sources of water.  
| **NC Stormwater Interactive Map**  
| NCDWQ maintains an interactive web-based mapping system to help the public determine whether development activities are subject to the post-construction permitting program or other stormwater permitting requirements.  
| **NC Stormwater Outreach and Education Website**  
| Stormwater education information from NCDWQ including reports, maps, data, technical assistance and citizen resources.  
| **NC Stream Watch / Project WET**  
| The Division of Water Resources administers two environmental education outreach programs, Stream Watch and Project WET (Water Education for Teachers). Stream Watch is a stewardship program whereby local citizens can "adopt" a waterway, or a portion of one, and act on its behalf. Project WET is a K-12 interdisciplinary water education program intended to supplement a school's existing curriculum. The Division also works closely with our Departments' Office of Environmental Education.  
| **NC DENR Division of Water Quality**  
| [http://portal.ncdenr.org/web/wq](http://portal.ncdenr.org/web/wq)  
| NC DWQ’s mission is to protect and enhance North Carolina’s surface water and groundwater resources for the citizens of North Carolina and future generations. This is the main portal entrance to all the resources available online by NC DWQ.  
| **NC DENR Division of Water Resources**  
| NC DWR administers programs for river basin management, water supply assistance, water conservation, and water resources development. DWR conducts special studies on instream flow needs and serves as the State liaison with federal agencies on major water resources related projects. The Division also administers two environmental education outreach programs, Stream Watch and Project WET.  

### NCSU River Courses
[http://www.bae.ncsu.edu/programs/extension/wqg/srp/rivercourse.html](http://www.bae.ncsu.edu/programs/extension/wqg/srp/rivercourse.html)

The NC State University Stream Restoration Program offers a series of River Course professional development workshops to serve the needs of environmental professionals, including engineers, ecologists, biologists, hydrologists, geomorphologists, landscape architects, planners and natural resource program managers. Workshop instructors include faculty from the NC State University Department of Biological & Agricultural Engineering (BAE) and associated colleagues. Most courses provide "hands-on" learning experiences with field work in small groups, data analysis, design case studies, and site tours.

### NCSU Stormwater Engineering

Their mission is to "learn and teach" stormwater management and cover the three main aspects of a land-grant university: (1) applied research, (2) extension and engagement, and (3) on- and off-campus teaching. Research areas of interest include the function and impacts of stormwater management such as bioretention areas, green roofs, stormwater wetlands, permeable pavements, water harvesting systems, and other innovative treatment practices. Other research areas target maintenance of stormwater systems, watershed and economic impacts of stormwater practices, Low Impact Development (LID), temperature impacts, and mosquito control.

### NCSU Stream Restoration Program
[http://www.bae.ncsu.edu/programs/extension/wqg/srp/](http://www.bae.ncsu.edu/programs/extension/wqg/srp/)

The NC State University Stream Restoration Program is a team of faculty, staff, and students working to improve water quality and aquatic ecology through research, demonstration projects, and education. We have many partners listed on the About Us page who collaborate on projects and educational opportunities, including our biennial conference.

### NCSU Water Quality Group
[http://www.bae.ncsu.edu/programs/extension/wqg](http://www.bae.ncsu.edu/programs/extension/wqg)

The North Carolina State University (NCSU) Water Quality Group is a multidisciplinary team that analyzes and evaluates nonpoint source (NPS) pollution control technologies and water quality programs in North Carolina and nationwide. They are a component of the North Carolina Cooperative Extension Service (NC CES), Biological and Agricultural Engineering Department (Bio&Ag) at North Carolina State University and the N.C. State University’s Soil and Water Environmental Technology Center (SWETC).

### NC Wildlife Resources Commission (NCWRC) Green Growth Toolbox

The Green Growth Toolbox is a technical assistance tool designed to help communities conserve high quality habitats alongside new homes, workplaces, and shopping centers. The toolbox will help your community plan for growth in a way that will conserve your natural assets—fish, wildlife, plants, streams, forests, fields, and wetlands.
<table>
<thead>
<tr>
<th>Organization</th>
<th>Website</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina Coastal Federation</td>
<td><a href="http://www.nccoast.org/">http://www.nccoast.org/</a></td>
<td>NCCF provides citizens and groups with the assistance they need to take an active role in the stewardship of North Carolina’s coastal water quality and natural resources.</td>
</tr>
<tr>
<td>Piedmont Triad Water Quality Partnership (PTWQP)</td>
<td><a href="http://www.piedmontwaterquality.org/">http://www.piedmontwaterquality.org/</a></td>
<td>The Piedmont Triad Water Quality Partnership is a collaboration of eighteen local governments in the Piedmont Triad Region of North Carolina, working together to educate residents about stormwater and water quality issues, including non-point source pollution, regulations, and best management practices.</td>
</tr>
<tr>
<td>River Network</td>
<td><a href="http://www.rivernetwork.org/">http://www.rivernetwork.org/</a></td>
<td>River Network’s mission is to empower and unite people and communities to protect and restore rivers and other waters that sustain the health of our country.</td>
</tr>
<tr>
<td>Neuse Riverkeeper Foundation</td>
<td><a href="http://www.neuseriver.org/riverkeepers/lowerneuseriverkeeper.html">http://www.neuseriver.org/riverkeepers/lowerneuseriverkeeper.html</a></td>
<td>Neuse RIVERKEEPER® Foundation protects, restores and preserves the Neuse River basin through education, advocacy and enforcement, in order to provide clean water for drinking, recreation and enjoyment to the communities that it serves.</td>
</tr>
<tr>
<td>Southeast Stormwater Association (SESWA)</td>
<td><a href="http://www.seswa.org/">http://www.seswa.org/</a></td>
<td>The Southeast Stormwater Association was created in response to the ever-increasing demand for information on stormwater management and funding questions so you won't have to &quot;reinvent the wheel&quot; each time you undertake a new project! Their boundaries are co-terminus with those of EPA Region IV and include the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee. With a primary focus on services to stormwater professionals in city and county governments, membership is available to those in state, regional and local governments, the private sector, nonprofit organizations and academia.</td>
</tr>
<tr>
<td>TJCOG</td>
<td><a href="http://www.tjcog.dst.nc.us/">http://www.tjcog.dst.nc.us/</a></td>
<td>The Triangle J Council of Governments is a voluntary organization of municipal and county governments in North Carolina's Region J (Chatham, Durham, Johnston, Lee, Moore, Orange and Wake counties). It is one of 17 regional councils established in 1972 by the General Assembly to aid, assist, and improve the capabilities of local governments in administration, planning, fiscal management, and development.</td>
</tr>
<tr>
<td>Water Resources</td>
<td>Water is one of six science mission areas of the U.S. Geological Survey (USGS). Water's mission is to collect and disseminate reliable, impartial, and timely information that is needed to understand the Nation's water resources.</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Water Words that Work</td>
<td>Water Words That Work, LLC helps nature protection and pollution control organizations professionalize and modernize their communications. Water Words That Work can serve as a coach, a consultant, or as full-service advertising agency.</td>
<td></td>
</tr>
<tr>
<td>Waterkeeper Alliance</td>
<td>Waterkeeper Alliance provides a way for communities to stand up for their right to clean water and for the wise and equitable use of water resources, both locally and globally. The vision of the Waterkeeper movement is for fishable, swimmable and drinkable waterways worldwide. Their belief is that the best way to achieve this vision is through the Waterkeeper method of grassroots advocacy.</td>
<td></td>
</tr>
<tr>
<td>Water Environment Research Foundation</td>
<td>The Water Environment Research Foundation, formed in 1989, is an independent scientific research organization dedicated to wastewater and stormwater issues. They are a nonprofit organization that operates with funding from subscribers and the federal government. Subscribers include wastewater treatment plants, stormwater utilities, and regulatory agencies.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Watershed Needs Assessment Survey

You are invited to participate in a research study on watershed stewardship and capacity-building training in the state of North Carolina. The purpose of this survey is to create a comprehensive picture of the resources and geographical coverage of watershed-based programming in the state and identify resource gaps and challenges. We hope that the data we collect will also inform future resource development and local watershed capacity building. The survey is 25 questions and should take you approximately 15-20 minutes to complete. The link you received in the email is unique to you only and cannot be forwarded. If there is someone you know who should take the survey that may not have received it, please type their contact information in the last question on this survey or contact [name of study coordinator]. Your answer for each question will be saved when you hit the forward button. You are allowed to return to previous questions to edit if necessary. Because your survey link is unique to you only, you may start and finish the survey at different times. Your answers will be saved. Thanks for your participation. Results of this survey will be distributed to all participants in a report in a few months.

This survey is being sent to a variety of watershed organizations that provide services, resources, and/or training to citizens, groups, and professionals who conduct watershed restoration and protection activities throughout North Carolina. Included in this group are non-profits, NCDENR, SWCD/NCRS, Cooperative Extension agents, stormwater municipalities and Councils of Government, among others. The first series of questions in this survey will help us gather general characteristics of your organization.

Q1 Please provide your organization’s name. Be as specific possible, listing your organization and then adding your division, unit or program. For example, list NCDENR - Ecosystem Enhancement Program or Town of Chapel Hill - Stormwater Management Division. For the remainder of this survey, “organization” listed in any question will refer to your answer to this first question.

Q2 Which description best fits your organization?

- Local government
- State agency/organization
- Non-profit/community-based
- Academic organization
- Private consulting/business
- Other (please list) ____________________

Q3 Approximately how many years has your organization been involved in watershed related efforts? (Please only enter a number.)

Q4 Which of the following priority topic areas fall under your organization’s mission? (Please check all that apply.)

- Watershed restoration
- Stormwater management
- Citizen/stakeholder engagement
- Education & outreach
- Research/data collection
- Advocacy
- Land/habitat conservation
- Other (please list) ____________________

This next series of questions will help us understand more about staff and volunteers in your organization.

Q5 How many paid staff members does your organization have who work at least 10 hours a week on watershed related issues?
Q6 What skill sets do paid staff in your organization currently possess? (Please select all that apply.)

- Water quality monitoring
- Watershed assessment (i.e., analyzing data)
- Watershed planning
- Natural resource conservation planning
- Wetland restoration
- Stormwater BMP Design
- Stream restoration
- GIS/mapping/surveying
- Event coordination
- Volunteer coordination
- Influencing policy and/or permit decisions
- Designing educational programs (defined as products or services associated with formal learning, such as curriculum development or professional development. Ensures distribution of factual information)
- Implementing educational programs
- Designing outreach activities (defined as products or services that involve contact with the public or particular segment of a population to inform, excite interest and arouse curiosity. A systematic attempt to provide services beyond conventional means)
- Implementing outreach activities
- Social marketing (defined as a planned process for influencing behavioral change using traditional marketing principles for the purpose of societal benefit instead of commercial profit)
- Grant writing
- Fundraising
- Web development
- Database development
- Social media communication
- Facilitation, conflict resolution and/or stakeholder engagement
- Other (please list) ____________________

Q7 Below are the skill sets for paid staff that you did not select. Which of these do you think paid staff need to be more equipped to perform their roles in your organization?

Q8 If applicable, how many volunteers does your organization have who work on watershed-related issues/activities? (Please enter 0 if your organization does not have volunteers.)

Q9 What relevant watershed-related professional skill sets do your volunteers have?

Q10 Below are the skill sets for volunteers that you did not select. Which of these do you think volunteers need to be more equipped to perform their roles in your organization?

Q11 This next series of questions will help us to understand more about the watershed in which your organization works.

Q12 Within which river basin(s) does your organization work? (Please select all that apply.)

- My organization works in the entire state
- Broad
- Cape Fear
- Catawba
- Chowan
- French Broad
- Hiwassee
- Little Tennessee
- Lumber
- Neuse
Q13 If your organization focuses on a specific region or sub-watershed in the river basins you named above, please provide the name(s) of the watershed(s).

Q14 Are there impaired waterways within the area in which your organization works that are not being addressed? If so, please check all the reasons below that apply.

- Lack of personnel or resources within your organization
- No local watershed organization in coverage area
- No interest by local government
- Limited resource availability in local government
- Lack of community engagement
- There are no impaired waterways in the area(s) in which my organization works
- Other ______________________

This next series of questions will help us to learn more information about the activities that your organization conducts.

Q15 Which of these activities is your organization currently involved in?

- Monitoring/assessing conditions
- Developing watershed-related plans
- Conducting cleanups (i.e., debris removal)
- Conducting restoration activities
- Land conservation
- Influencing policy and/or permit decisions
- Collaborating with other organizations/agencies
- Educational programs/materials
- Designing/implementing outreach
- Technical training
- Providing skill building training to local watershed stakeholders
- Leading outdoor activities (e.g., paddling, hiking, etc.)
- Publishing newsletters
- Developing technical publications
- Grant writing
- Providing matching dollars for agency funding
- Soliciting donations from membership or other individuals
- Soliciting donations from foundations
- Consulting
- Lab services
- Other (please list) ______________________
Q16 How important is it for your organization to reach the following audiences?

<table>
<thead>
<tr>
<th>Audience</th>
<th>Not important (1)</th>
<th>Low importance (2)</th>
<th>Medium Importance (3)</th>
<th>High Importance (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-profit organizations</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>State agencies</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Federal agencies</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Scientists, private or public sector</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Local government staff</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Local government elected and appointed officials</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Homeowners</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>K-12 teachers</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>K-12 students</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>University students</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Potential volunteers</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Civic organizations (e.g., churches, scouts)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Farmers</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Developers</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Businesses (other than developers)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Recreation organizations</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>General citizenry</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Large landowners</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Other</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Q17 Of the audiences that you rated as medium or high importance, which are most difficult to reach? Why? As a reminder, you rated the following groups as Medium [list] and the following as High [list].

Q18 How much does your organization rely on the following formats to reach your audience?

<table>
<thead>
<tr>
<th>Format</th>
<th>Never (1)</th>
<th>Rarely (2)</th>
<th>Sometimes (3)</th>
<th>Often (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newsletter (paper)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newsletter (digital)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listserv</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web based forum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blog</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brochures, fact sheets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidebooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classes, short courses, or workshops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field trips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational curriculum development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public media (e.g., TV, radio, newspaper)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational/public events</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q19 What are your organization's most effective outreach tools?

Q20 What programming/training would you like to provide to your local constituents that you currently are not providing?
Q21 If provided the financial resources to do so, does your organization have the expertise to provide the following organizational development activities to volunteers and watershed related groups in need of training?

<table>
<thead>
<tr>
<th>Activity</th>
<th>None (1)</th>
<th>Limited (2)</th>
<th>Some (3)</th>
<th>Significant (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing &amp; structuring an organization (e.g., board governance, policies, bylaws)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial management (e.g., budgets, reporting, grant management)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundraising planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundraising implementation (e.g., capital campaigns, events, corporate development)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing/public relations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff/board training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteer recruitment/training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stakeholder facilitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building scientific &amp; technical expertise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation of your organization's impacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q22 Which of the following tools, resources, or assistance would be most useful to your organization?

<table>
<thead>
<tr>
<th>Tool</th>
<th>Not useful at all (1)</th>
<th>Slightly useful (2)</th>
<th>Moderately useful (3)</th>
<th>Very useful (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide watershed conference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational development training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outreach/education training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water quality monitoring and watershed assessment training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundraising assistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Networking tool for watershed organizations and professionals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactive mapping tool of watershed data and resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listserv</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q23 What is your opinion about each of the following methods of receiving new information?

<table>
<thead>
<tr>
<th>Method</th>
<th>Don't like it at all (1)</th>
<th>It's ok (2)</th>
<th>Like it (3)</th>
<th>Like it a lot (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listserv</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online newsletter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone calls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face-to-face meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Webinar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q24 How familiar are you with the following resources or programs? (Please add programs and resources you use that we might not have listed here.)

<table>
<thead>
<tr>
<th>Resource/Program</th>
<th>Never heard of it (1)</th>
<th>Heard of it, but haven’t used it (2)</th>
<th>Used it some (3)</th>
<th>Used it a lot (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-person training workshops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manuals/handbooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LinkedIn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WECO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Center for Watershed Protection publications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative Extension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil and Water Conservation Districts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DWQ Basinwide Plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNC-Institute for the Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC NEMO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC Conservation Network</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPA Watershed Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC Sea Grant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abermarle-Pamlico National Estuary Prog.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q25 We are interested in learning how watershed efforts are being funded in North Carolina. Please check any or all of the following funding sources below that your organization has received in the past three years that supports watershed-related efforts.

- General Donations
- Bequests
- Membership Dues
- City/County budget
- State grants/funds
- 319 grants
- Federal funds (other than 319 grants)
- Foundations
- Business/industry grants
- Fee for service
- Special events
- Stormwater utility
- Other _______________________

If there is someone you believe we should survey that might not have received one (such as a colleague or new program that we may not be aware of) please provide their name and email contact information.

If you'd like to review your responses or make any changes, please do so now by clicking the back arrow. Clicking the forward arrow will submit your survey and you will not be able to make any further changes.
Bibliography


Georgia Adopt-A-Stream. (online) http://www.georgiaadoptastream.org/db/


NC Conservation Network (online) http://www.ncconservationnetwork.org/about/affiliates/current


Office of Environmental Education, NCDENR, (online) http://www.eenorthcarolina.org/riverbasins-interactive.html

Ohio Watershed Network. (online) http://ohiowatersheds.osu.edu/


Purdue Extension, Purdue University. Indiana Watershed Leadership Academy- First Year Report. (online) URL: www.purdue.edu/watersheds
