Advancing environmental education at the U.S. Environmental Protection Agency: An analysis of program characteristics workforce needs and obstacles

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Advancing Environmental Education at the U.S. Environmental Protection Agency: An Analysis of Program Characteristics, Workforce, Needs, and Obstacles

by

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Advancing Environmental Education at the U.S. Environmental Protection Agency: An Analysis of Program Characteristics, Workforce, Needs, and Obstacles

Chairperson: Robin Saha, Ph.D.

This report describes the results of an analysis of the Environmental Protection Agency (EPA) Headquarters environmental education (EE) programs that sought to inventory the current programs, assess the needs of staff, and provide recommendations for how EE can be advanced at the Agency. Information was gathered on important program aspects, common obstacles and needs, staff characteristics, and staff perceptions of EE. A mixed methods approach was used to gather data that included interviewing, a focus group, freelistening, document analysis, and participant observation.

EE is not a commonly used term to describe programs at EPA that utilize educational approaches, however 51 programs were identified at the Agency and they include the following program types: Internships/Fellowships, K-12 programs, community education/outreach programs, training programs, and voluntary programs. These programs target a variety of audiences but tend to focus on adults using non-formal education approaches. The staff, which is highly educated, believe that EE supports the Agency's mission in many ways.

EE programs are finding mixed success and staff feel they are limited by the following obstacles: resources, lack of valid program evaluation, lack of collaboration, lack of management support, and an inefficient product approval system. While there are no easy solutions to overcoming these obstacles we provide the following recommendations for how the EE approach can be advanced in the future: (1) Facilitated Communication by the Office of Environmental Education, (2) Professional Development for EE Staff and Strategic Hiring of Future Staff, (3) Emphasize Evaluation, (4) Improve Product Review System, (5) Active Management Support for EE Programs, and (6) Include the EE Approach in EPA's Future Strategic Plans.
A. Acknowledgements

We would like to thank all of the staff members at EPA who took the time to participate in our interviews, focus group, and surveys. In addition we would like to thank Andrew Burnett, Michael Baker, Sheri Jojokian, Diane Berger, Ginger Potter, and Kathleen McKinnon, from the Office of Environmental Education for their input, review, and support for this project. Special thanks also goes to Emmalou Norland who provided expert advice in the initial phase of our research. We also thank Travis Weiss who video taped the focus group and Brian Taylor and Ron Slotkin from the Office of Multimedia, Communication, and Technology for helping with technical issues related to the focus group videotape. Finally, we appreciate the input and advice from our graduate committee members Dr. Robin Saha, Professor and Tom Roy, Director, Environmental Studies Department, University of Montana, Dr. Kari Gunderson, Aldo Leopold Wilderness Research Institute, Dr. Michael Paolisso and Dr. Erve Chambers at the Department of Anthropology, University of Maryland, and Dr. Susan Abbott-Jamieson, National Oceanic and Atmospheric Administration.
## Table of Contents

Executive Summary........................................................................................................... 1

I. Introduction....................................................................................................................... 7

II. Methods and Analysis................................................................................................... 12

III. Findings....................................................................................................................... 18

   A. EE Program Inventory................................................................. 19
   B. EE Workforce Analysis............................................................. 28
   C. Staff Perceptions of EE.............................................................. 34
   D. Working Within the EPA: The Obstacles, Needs, and Current State of
      Agency EE Programs................................................................. 42

IV. Conclusion and Recommendations................................................................................ 59

V. Appendices

   A. EPA EE Programs................................................................. 65
   B. Interview Instrument............................................................. 85
   C. Additional Inventory Information............................................. 86
   D. Free List Results....................................................................... 89
   E. Acronyms.................................................................................. 90
Table of Figures and Tables

Figure 1: EPA HQ Offices with EE programs/efforts ........................................... 19
Figure 2: Audiences Targeted by EPA EE Programs ........................................... 20
Figure 3: Percentage of EPA EE Program Types .................................................. 21
Figure 4: Highest Degree Obtained .......................................................................... 29
Figure 5: Educational Disciplines of EPA EE Staff .............................................. 30
Figure 6: Marketing Practices of EPA EE Programs ............................................ 86
Figure 7: Number of EPA Staff per EE Program ................................................... 86
Figure 8: Years EPA EE staff members have been employed in the Federal Government ................................................................................................. 87

Table 1: Most Frequent Freelist Responses ............................................................. 35
Table 2: Needs of EPA EE Programs ................................................................. 43
Table 3: Obstacles of EPA EE Programs ............................................................... 87
Table 4: Education Discipline Categories for EPA EE Staff .................................. 88
Table 5: Detailed Freelist Data ................................................................................. 89
Executive Summary

Environmental Education (EE) programs are scattered throughout the Environmental Protection Agency (EPA) Headquarters (HQ) offices. While many are finding success - despite the constraints of the Agency - it is clear that now is a critical time to advance the EE approach and create more visibility for this innovative tool which supports EPA’s mission in numerous ways. This report describes the results of an analysis of EPA HQ EE programs that sought to inventory the current programs, assess the staff needs, and provide recommendations for how EE can be advanced at the Agency. Information was gathered on important program aspects, common obstacles and needs, staff characteristics, and staff perceptions of EE.

Data was collected on each program through a mixed methods approach, primarily consisting of interviews with 52 EPA staff members most directly involved in EE programs, followed by a focus group that clarified emergent themes from the interviews. In addition, we analyzed several EPA documents including the 2003-2008 EPA Strategic Plan, and used participant observation during a number of key meetings related to EE at the EPA. Finally, we analyzed the results of a free list exercise in which interviewees listed all the words they felt were associated with EE - to further explain how staff members understand EE and view its role at the EPA.

EE is not a commonly used term to describe programs at EPA that utilize educational approaches, however 51 programs were identified at the Agency that can be encompassed by a broad definition of EE and they include the following program types:

- Internships/Fellowships
- K-12 programs
- Community Education and Outreach programs
- Training programs
- Voluntary programs

The most commonly targeted audiences of the identified EE programs include communities, businesses and industry, and local/state/tribal professionals. Other audiences include K-12 schools, higher education, and underserved populations.

The EPA HQ staff members working on EE programs are highly educated, with 61% holding advanced degrees in discipline categories such as policy/administration, environmental sciences/studies, and the social sciences. However, most staff members lack expertise in education and programs could benefit from further training of staff in this field and related evaluation techniques.

All staff participants agreed that education supports EPA's mission in a variety of ways, including by:

- Transferring environmental knowledge to a variety of audiences.
- Preventing human health risks and pollution by teaching choices and encouraging good stewardship.
- Improving EPA efforts and services (including adherence to regulations).
- Raising environmentally literate youth and the next generation of environmental scientists.
- Generating public support for environmental policy.

Although the 52 EPA staff members interviewed tend to associate the term EE more often with formal schools, they agree that education does have a role at the Agency. It appears that those involved in EPA EE programs believe that the EPA has a large role
in outreach and education for adults, the general public, and regulated communities, which includes using programs to build awareness, train, and change behavior.

Several important topics related to common obstacles and needs were identified during the analyses which help to describe the current state of the EPA EE programs. These include:

- **Limited Resources (funding, time, and staff):** Although budgets varied tremendously across the programs, many staff indicated that in general, budgets have been in decline for several years. Nearly half of the EE programs are currently assigned only one staff member who typically spends only a fraction of his/her time on the program. Adequate resources are a necessary component of a successful program and are linked to the major themes discussed below.

- **Program Evaluation and Strategic Planning:** While evaluation efforts are becoming more important for these programs, a formalized evaluation effort is not a central component of EE programs, nor is strategic planning for the future that is linked to program goals. Many programs incorporate feedback and other formative evaluation efforts, while very few have conducted comprehensive program evaluations. Respondents recognize the difficulty in demonstrating meaningful results especially in terms of how EE leads to environmental improvement. Staff described the challenges of competing with other EPA efforts which can more easily demonstrate results.

- **Collaboration, Communication, and Competition at the EPA:** A lack of collaboration and communication among EE programs was identified as an obstacle which tended to be attributed to EPA culture, competition, lack of
resources, management priorities, and lack of knowledge regarding other EE programs. Several participants expressed a desire and/or a need to have some sort of facilitated communication for EE programs that may help to overcome these obstacles and ultimately improve EE efforts.

• Materials/Product Review: EPA EE programs develop a significant amount of materials and products for their programs. Most of these products must go through a system of review to determine if they are duplicative, appropriate, and meet certain standards. EPA’s product review system was deemed inefficient by some of the interviewees most of whom also felt that the current system generally provides unconstructive feedback which limits the effectiveness of EE programs.

• Management/Administration/Agency Support: While some participants described a lack of support at various levels in the Agency, and others felt they were well supported, the data indicate that support for EE programs tends to fluctuate and in general there is a lack of support for the EE approach. This may be due to relatively common political changes in upper-level management, as well as the tendency for EE to be verbally supported, but not actively with resources, recognition, and/or encouragement. The EPA’s current strategic plan also contributes to the lack of support for EE by never identifying education as a strategy.

There are no easy solutions to the challenges that EE programs face. It is clear that to advance the educational approach at EPA, its visibility and accountability within the Agency must be increased. To aid in this effort we offer the following recommendations:
1. **Facilitated Communication by the Office of Environmental Education:** We encourage OEE - with its unique position in the Agency – to put more effort into facilitating communication among EPA EE programs. We encourage them to use their resources and their connection to the professional field of EE to foster collaboration among educational efforts at the Agency.

2. **Professional Development for EE Staff and Strategic Hiring of Future Staff:** We encourage EPA EE staff to seek out training and professional development related to education, evaluation, and other key topics. We believe that the Agency should encourage and provide such training whenever possible, and again encourage OEE to aid in this effort. We also recommend developing a strategy for the hiring of future staff including emphasizing strong backgrounds in communication and education.

3. **Emphasize Evaluation:** In order to gain more support and create effective programs, the existing programs must couple evaluation methods that seek to measure outcomes with strategic planning for the future based on program goals.

4. **Improve Product Review System:** In order to advance the EE approach it would be helpful to revamp the product review system to become more efficient, user-friendly, and helpful. We also encourage the staff members that are involved in reviewing EE products to make efforts to educate the users of the system on how to gain the most benefit from it and to provide more useful feedback specific to the education approach.
5. **Active Management Support for EE Programs:** In order for the EE approach to succeed at the EPA, there must be more active support at all management levels in the form of necessary resources, recognition, and encouragement.

6. **Include the EE Approach in EPA's Future Strategic Plans:** We encourage those involved in future strategic planning to explicitly include education as a recognized and encouraged approach to achieving the Agency's mission.
I. Introduction

Environmental Education (EE) has roots in several fields, some dating to the late 19th century, including nature study, conservation education, outdoor education, and science education\(^1\). It emerged as a formalized field in the U.S. during the second half of the 20th century as the term began to be defined and discussed in the academic world. In the 1970’s several key factors contributed to the development of this field internationally including the Belgrade Charter\(^2\) and the Tbilisi Declaration.\(^3\) Today this once small field is well established as evidenced by the existence of several professional organizations, academic journals, and research institutions devoted specifically to EE.

Yet another key factor in the development of the EE field was the passage of the National Environmental Education Act of 1990\(^4\) (NEEA), which included several important mandates beginning with the establishment of an Office of Environmental Education (OEE) at the Environmental Protection Agency (EPA). This new office was further mandated to serve as a leader in the field of EE by providing grants, training programs, publications, fellowship opportunities, awards, and to coordinate EE efforts at the federal level. In addition to partnering closely with the professional organizations such as the North American Association of Environmental Education (NAAEE)\(^5\), OEE has supported the development of the Environmental Education and Training Partnership

\(^5\) The North American Association for Environmental Education (NAAEE) is a network of professionals, students, and volunteers working in the field of environmental education throughout North America and in over 55 countries around the world.
(EETAP), and the National Environmental Education and Training Foundation (NEETF), two institutions that are focused on advancing the field of EE through training and research. In addition OEE has coordinated the National Environmental Education Advisory Council (NEEAC), which periodically reports to Congress on the implementation of NEEA, the status of EE in the U.S., and provides recommendations on how to improve these efforts.

The NEEA also mandated OEE to specifically coordinate EE efforts at the EPA. The Environmental Protection Agency, which has traditionally been a regulatory agency, is developing new approaches for achieving environmental protection goals, many of which utilize education to some degree. It has been noted that these approaches are diverse and largely uncoordinated, yet reflect innovative ideas about how to improve management of the environment. As one of many new approaches, environmental education is not well coordinated, understood, or recognized within the Agency. EE programs are scattered throughout the EPA and while this approach has been somewhat successful, it is clear that now is a critical time to advance the EE approach and create more visibility for this innovative tool which supports EPA’s mission in numerous ways.

This report describes the results of an analysis of EPA Headquarters (HQ) EE programs that sought to inventory the current programs, assess the needs of staff, and provide recommendations for how EE can be advanced at the Agency. Information was gathered on important program aspects, common obstacles and needs, staff

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6 EETAP delivers environmental education training and support to education professionals across the U.S.
7 Members of NEETF encourage public-private partnerships to support environmental education initiatives through grants and programs.
characteristics, and staff perceptions of EE. More specifically we sought to answer the following questions:

1. What types of EE programs and activities exist at EPA, who are they targeting, and what approaches are they using?
2. What are the educational backgrounds of EPA staff that work on EE programs?
3. How does the staff understand and conceptualize EE, particularly in relation to the EPA mission?
4. What are the common needs and obstacles of EE programs?
5. Are there ways in which EE at EPA can be improved in the future?

By answering these questions we will provide a clear understanding for the Agency and the general public of how the EE approach is being utilized, how it can benefit the Agency, and what factors are limiting the effectiveness of EE programs. We used a mixed methods approach to gather data that included interviewing, a focus group, participant observation, and document analysis. Throughout this report, we answer these questions based on common themes identified from our data analysis, and when pertinent we include illustrative examples and quotes from EPA staff.

This research was made possible through the National Network for Environmental Management Studies Fellowship Program (NNEMS), a program sponsored by EPA’s Office of Environmental Education (OEE). This was one of several projects proposed by various HQ and regional offices for the 2004 NNEMS program. Andrew Burnett, an Environmental Education Specialist in OEE, submitted the original request for applications and served as the project officer. The original proposal stated that the researchers:

“will be working with staff of EPA’s OEE at Headquarters to review environmental education programming efforts in various EPA headquarters offices. This will involve collecting and analyzing information about all of EPA’s education and education-
related programs, including voluntary compliance and other non-regulatory programs; assessing their needs; and providing recommendations as appropriate”.

The data collection took place from June 2004 to November 2004, and was followed by the data analysis and preparation of this report from November 2004 to March 2005. The research design and data collection was a collaborative effort that was equally shared by Andrea Goldman, a student in applied anthropology at the University of Maryland, and myself. The bulk of the data analysis included in this report and the drafting/revision of the report was completed by me.

As researchers, we had the opportunity to gain an insider perspective on EE at EPA. Although we are not employees of EPA, we were essentially imbedded in OEE and treated to some extent as regular staff in that office. This allowed us to gain a unique perspective that would not have been available to external researchers.

Report Organization

This report is organized in several sections and subsections including:

- **Methods:** Describes the research methods used, the criteria for program/staff selection, and the limitations of the research.

- **Findings:** This section provide answers to the questions stated above through analysis and interpretation of the data and includes the following subsections:

  - **EE Program Inventory:** This subsection specifically provides answers to question 1 (*What types of EE programs and activities exist at EPA, who are they targeting, and what approaches are they using?*) by analyzing and interpreting much of the quantitative data collected during the interview process and

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describing the categories of EE programs that were identified through the research.

- **EE Workforce Analysis:** This subsection specifically provides answers to question 2 (*What are the educational backgrounds of EPA staff that work on EE programs?*) by analyzing quantitative and qualitative data collected during interviews that specifically relates to the educational and professional backgrounds of the staff participants. The section also includes insights from the analysis of documents focusing on EPA’s workforce.

- **Staff Perceptions of EE:** This subsection specifically provides answers to question 3 (*How does the staff understand and conceptualize EE, particularly in relation to the EPA mission?*) by analyzing the interview responses and specifically analyzing the data collected during a freelisting exercise (see methods section for a description of freelisting).

- **Working Within The EPA:** This subsection specifically provides answers to question 4 (*What are the common needs and obstacles of EE programs?*) by analyzing data collected during interviews and the focus group. Additional interpretation is presented based on participant observation and document analysis.

- **Conclusion and Recommendations:** Concludes the main body of the report by synthesizing the findings and answering question 5 (*Are there ways in which EE at EPA can be improved in the future?*) by providing recommendations for how EE at EPA can advance in the future based on the findings of this report.
II. Methods and Analysis

In attempting to answer the research questions described in the introduction, we used a mixed methods approach that included interviews, free listing, and a focus group. This approach was used to gather both quantitative and qualitative data, which ensured that we could confidently answer our unique set of questions. We also employed document analysis and participant observation techniques to further inform this report. The development of the mixed methods approach was informed by consultation with staff in the Office of Environmental Education (OEE), several experts in evaluation and assessment, and our university advisors and graduate committees.

Sampling

The initial research efforts were focused on familiarizing ourselves with EPA education programs in order to develop criteria for sampling both programs and staff. We began identifying possible programs to include in our sample from a list of contacts previously identified by OEE in addition to internet research. We later used a snowball sampling technique in which we asked each person we interviewed to tell us the names of others we should speak with.

In order to determine which programs to include in the sample we developed a working definition of EE that is based on discussions with EE professionals and literature in the field of EE. For the purposes of this research environmental education programs are those which actively seek to increase environmental literacy and awareness, and inspire informed action through a process of audience engagement. In other words an effort is not considered environmental education if it engages with an audience in a
passive manner (i.e. strictly information distribution) or cannot be considered a stand-alone effort. EE efforts at the EPA can include such activities as "awareness building, outreach to the public and regulated community, information dissemination, and technical assistance," if they have the goal of encouraging critical thinking, problem-solving, informed decision-making, and responsible/knowledgeable action.

Data was gathered on each individual program that initially fit our definition. After an initial inventory of 65 programs we used the definition to narrow the final number to 51 programs that fit our sampling criteria. Although 52 interviews were conducted this report reflects only 46 (due to the exclusion of programs). The process of sampling began to answer question 1 (What types of EE programs and activities exist at EPA, who are they targeting, and what approaches are they using?) by identifying several categories of EE programs including internships/ fellowships, K-12, community education/outreach, training, and voluntary programs (see chapter III, section A for more information on program types).

**Interviews**

The interviews lasted approximately one hour and were both semi-structured and open-ended. The questions gathered information on the work/educational background of the staff members, general program information, and staff perception about EE at EPA (for interview instrument see Appendix B). This was the primary data collection method, thus each section of this report is informed by interview data. We pilot tested the

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interview questions with two staff from OEE and received feedback from our university advisors and several EPA staff members including an expert in evaluation.

We conducted in-person interviews with one person for each program, including a few cases in which a staff member was the contact for several programs. We attempted to interview the individual who coordinates and spends the most time on the effort. In a few instances we were not able to set up interviews, due to lack of response from staff. Thus, although we were not able to achieve a 100% sample of programs, we do feel confident that we spoke with the majority of people involved in EPA HQ EE programs.

Detailed notes were taken from each interview and transcribed into a Microsoft Access database. Although the interviews provided primarily qualitative data, we were able to extract quantitative data and produce descriptive statistics. This provided answers to questions 1 (What types of EE programs and activities exist at EPA, who are they targeting, and what approaches are they using?) and 2 (What are the educational backgrounds of EPA staff that work on EE programs?). The text was later transferred into Atlas. Ti (a text analysis software package) for further analysis of the qualitative data. This software allowed us to identify common responses and subsequently code them into emergent themes and patterns. These themes were later used to identify needs, obstacles, and staff perceptions that provided answers to questions 3 (How does the staff understand and conceptualize EE, particularly in relation to the EPA mission?) and 4 (What are the common needs and obstacles of EE programs?).
Free lists

At the conclusion of each interview, respondents were asked to free list the terms they felt were associated with environmental education. Free listing is a method used often in anthropology that asks participants to list the terms that compose a category or domain of cultural knowledge. This method is one way to obtain information about the shared perceptions and meanings among a group of people. The free list activity was used to help identify the terms and concepts that comprise EPA EE staff’s cognitive understanding or conceptualization of environmental education. This method was used to help answer question 3 (How does the staff understand and conceptualize EE, particularly in relation to the EPA mission?) and generated 482 different terms (see Appendix D for the most common terms ranked according to frequency). The most common terms and their relevance to question 3 are interpreted in Chapter III, section C of the report. This data was also used to inform selection of culturally relevant terms for a triadic comparison survey; however due to limited response and inconclusive results the data from the triadic survey is not interpreted in this report.

Participant Observation

In addition to these methods, we were participating in and observing the activities of the Office of Environmental Education (OEE). Our position as NNEMS Fellows working within OEE allowed us to attend many meetings with Office staff, some of which influenced this report. In particular the National Environmental Education

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Advisory Council (NEEAC) meeting - held July 29-30 - provided an opportunity to observe and participate in several discussions related to strategies for raising the visibility of EE at the EPA. This included a discussion with Steven Johnson who at the time was the Assistant Administrator of the EPA, but was recently nominated to become the Administrator. Field notes were taken during these meetings and are described in Chapter III, section D to help answer question 4 (What are the common needs and obstacles of EE programs?).

**Document Analysis**

Additional insights emerged from analysis of literature documents related to EPA and environmental education. The 2003-2008 EPA Strategic Plan: Directions for the Future and former EPA Administrator Mike Leavitt’s Enlibra Principles were used to inform the discussion in Chapter III, section D that provides answers to question 4 (What are the common needs and obstacles of EE programs?). The EPA’s 1999 Workforce Assessment Project provided information described in chapter III, section B which provides answers to question 2 (What are the educational backgrounds of EPA staff that work on EE programs?). A review of web-based and printed program materials helped in the creation of the definition of EE stated above as well as the sampling criteria. The analysis of the U.S. OPM Handbook of Occupational Groups and Families informed the discussion in section II, subsection B related to the job descriptions of EE staff. Finally, a detailed analysis of the National Environmental Education Act and the 1996 National Environmental Education Advisory Council’s Report Assessing Environmental Education in the United States and the Implementation of the National Environmental
Education Act of 1990 helped to describe the role of EE at EPA, the role of OEE, and connect EE programs at EPA to the larger professional field of environmental education.

Focus Group

A focus group was conducted with a small population of our interview participants in order to clarify some of the emergent themes from analysis of the interview data. Fifteen staff members were invited (selected based on previous interest in attending), and nine confirmed attendance; however only five staff members attended including one individual who was not a previous interview participant. The focus group consisted of a 2-hour, researcher facilitated, discussion among participants regarding personal experiences with EE programs, common needs and obstacles (see tables 1 and 2), EPA cultural issues, and a needs ranking exercise. Although participation was limited, the focus group provided more in-depth qualitative data that helped to answer questions 3 (How does the staff understand and conceptualize EE, particularly in relation to the EPA mission?) and 4 (What are the common needs and obstacles of EE programs?).

Limitations

In addition to the limitations of certain methods due to the lack of response described above, time and budget constraints limited our research to only including EPA HQ staff involved in EE programs. Environmental education efforts are occurring within the 10 EPA regions were excluded from our sample. It was also beyond the scope of this research to interview EPA staff, including managers, not directly involved in education programs, in order to gain their views on EE.
III. Findings

This chapter describes the major findings of the research that answer the questions stated in the introduction. Each section incorporates both displays and discussions of data, further interpretation, and additional relevant information. This Chapter includes the following subsections:

A. EE Program Inventory

B. EE Workforce Analysis

C. Staff Perceptions of EE

D. Working Within The EPA: The Obstacles, Needs, and Implications for Agency EE Programs
A. EE Program Inventory

This section provides answers to question 1 (What types of EE programs and activities exist at EPA, who are they targeting, and what approaches are they using?) by providing a description of the quantitative data needed to understand how the EE approach is utilized at the EPA. Several categories of EE programs were identified after sampling and interviewing by looking for similarities in approaches, targeted audiences, and goals. Each program type is discussed below including definitions, goals, targeted audiences, approaches, and examples of each type (for a complete list of EE programs and descriptions see appendix A). While specific goals of programs vary widely, it is clear that most programs have overall goals related to increasing awareness, action, and behavior change for the protection of the environment and human health. As figure 1 shows, there are EE programs in nearly every office at EPA Headquarters. This indicates the breadth of topics that are covered by these programs.

![Figure 1: EPA HQ Offices with EE programs/efforts](image-url)
During the interviews staff were asked who the targeted audiences for the programs were (see question 4 in appendix B). In creating the categories in figure 2, the interview responses to this question were coded for similar responses and then lumped into these more distinct categories. As Figure 2 shows, there is a range of audiences targeted by EPA’s EE programs and the results indicate a large portion of the EE programs target audiences other than formal K-12 students and teachers (32 target community/non-formal, 26 target business/industry, and 23 target local/state/tribal professionals). It is important to note that although most programs target multiple audiences, they also tend to focus on one category from Figure 2, so the data may be somewhat misleading. Although formal K-12 schools and teachers are targeted by 17 and 19 programs respectively, these tended to be secondary targeted audiences (only 9% of the programs focus primarily on K-12 audiences). In fact, in partially answering question 1 (What types of EE programs and activities exist at EPA, who are they targeting, and what approaches are they using?), EPA EE programs tend to target various adult and
non-formal audiences. This data is consistent with the fact that the EPA is considered a regulatory agency; thus many of its efforts, education and otherwise, are associated with industries, professionals, and communities.

Figure 3 below shows the percentage of the five program types based on the 51 programs that met our definition of EE. This includes 13 voluntary, 12 community, 11 internship/fellowship, 10 training, and 5 K-12 programs. The program type data reinforce the point that EPA EE programs target mainly adult audiences. It is important to note that some of these programs do not often refer to their efforts as EE; however they do fit our definition and sampling criteria (see Chapter II) thus they have been included in the inventory (the issue of why some programs are not often referred to as EE is described in more detail in section C of this chapter). A more detailed discussion of the program types follows (see appendix A for a detailed list of the programs included).
**Voluntary**

This category is the most prevalent program type (25%) and includes thirteen programs that seek to establish partnerships and/or achieve voluntary compliance of non-mandated standards (i.e. standards that have not been addressed specifically in federal and state legislation). These programs target audiences such as state agencies, schools, industries, businesses and communities. Voluntary programs allow EPA staff to provide program partners with technical assistance and education on a variety of topics including greenhouse gases, toxics, solid waste, indoor air quality, and best health care practices. The goals of voluntary programs include:

- Working with industry to incorporate environmentally sound practices and the use of better technology.
- Reducing and preventing pollution and waste.
- Reducing risk from environmental and health hazards.

**Example: Best Workplaces for Commuters (BWFC)**

Office of Transportation and Air Quality

BFWC promotes employee commuter benefits. Best Work Places for Commuters builds on the efforts of many top employers to help get employees to work safely, on time, and free of commute-related stress. In turn, this helps minimize environmental impacts associated with drive-alone commuting. This voluntary program provides the tools, guidance, and promotion necessary to help U.S. employers of any size incorporate commuter benefits into their standard benefits plan, reap financial gain, and receive national recognition. Participating companies earn the designation "Best Work Places for Commuters" - a mark of excellence for environmentally and employee-friendly organizations.
Community Programs

This is the most general program type and includes twelve programs (24% of total) that target the general public (adults and youth), underserved populations, or specific communities and organizations. These programs do not include specific adult audiences such as school bus drivers, or industry sectors, nor do they target formal K-12 schools (but do often target school aged youth). Training may be one aspect of these programs, though in general training is not the main emphasis. Community programs cover a spectrum of topics including radiation, toxics, Superfund, asbestos, watersheds, and estuaries. These programs tend to have goals which include:

- Capacity building for community members and groups concerned about a variety of issues.
- Preventing health and environmental problems.
- Increasing environmental knowledge and awareness of community members.
- Increasing compliance with regulations.
- Changing individual behavior and increasing participation in environmental issues.

Example: Global Warming Education Program and Visitors Center
Office of Atmospheric Programs

This program seeks to help inform the public about global warming and encourage individuals to learn about options for reducing greenhouse gas emissions. Materials and sources are provided for a wide variety of audiences. They are designed so that educators and outreach professionals can use them in presentations and classroom activities on climate change science, potential impacts, and mitigation options. Climate change outreach materials include general resources, basic-level fact sheets, advanced fact sheets, brochures, and tool kits such as the State and Local Outreach Kit and the Climate Change, Wildlife, and Wildlands Toolkit.
**Internships/Fellowships**

This category includes eleven programs (22% of total) which target higher education audiences (high school through college). A few of the programs strive to attract more minority students to environmental careers, by targeting underserved groups for fellowships and internships. One aspect of these programs is experiential and on-the-job training. Several of the programs also provide funding for student research and design. The internship/fellowship programs cover an array of subjects such as sustainability, EPA careers, and environmental justice. They provide many opportunities for participants ranging from working directly with an EPA office to working with grassroots organizations. These programs generally have goals which include:

- Increasing the number of environmental professionals in general as well as the number of minority environmental professionals.
- Strengthening underserved higher education institutions and students of such institutions.
- Providing underserved populations with training and mentors.
- Providing EPA with a well trained and diverse workforce and attracting future leaders.
- Providing professional development to higher education audiences such as improving research skills and leadership abilities.
- Enabling students to design sustainable solutions to environmental challenges.
Example: Environmental Protection Intern (EPI) Program
Office of Human Resources

The EPI program provides paid internships for undergraduate and graduate students. During this time interns are exposed to an array of different EPA programs and positions with the intention of attracting them into environmental careers. This program also seeks to provide EPA with a diverse group of eager young people to enhance the Agency workforce.

Training

The training category includes ten programs (20% of total) whose main focus is providing necessary training for specific audiences (often local/state/tribal environmental professionals). Training programs commonly use workshop, web-based, and/or other self-guided approaches. These are generally for audiences such as industry and government environmental professionals (employed with state/local/tribal natural resource and environmental agencies) rather than for higher-education and teachers. Topics range from air and water quality to environmental justice to legislation. The goals of training programs include:

- Improving community involvement and planning for environmental issues informed by social science techniques.
- Training environmental professionals to utilize available tools and better identify and address issues.
- Building capacity from the local to the international level.
- Training environmental professionals to successfully implement and comply with legislation.
K-12 Programs

This program type includes 5 programs whose main focus is educating students and providing tools for teachers in formal K-12 schools. K-12 programs are the least prevalent (9% of total) among our sample of EPA EE programs. The K-12 programs cover topics relating to water, air quality, skin cancer, and general stewardship of the environment. They tend to have goals which include:

- Giving students a background in environmental topics.
- Increasing awareness and interest in environmental topics among students.
- Providing workshops and tools for educators so they can effectively teach about environmental topics.
- Changing attitudes and behavior towards the environment.

Example: Drinking Water For Kids (DFWK)
Office of Groundwater and Drinking Water

The DFWK Program seeks to give students a background in water related issues both specific to drinking water and broader water related topics such as wastewater. This outreach effort offers games, classroom activities, information, and other services to K-12 schools and teachers. To ensure that these products can be easily utilized by teachers, the program has aligned many of its products with the National Science Standards.
Summary

The inventory of EE programs shows that the environmental education approach is being utilized in many different ways to achieve a variety of goals. There are some common program types that tend to share goals, targeted audiences, and general educational approaches. While individual programs often target multiple audiences the majority of programs focus primarily on adult audiences using non-formal approaches (by this we are implying that EE programs do not often engage the audience through formal classes or classroom settings). The subjects that are covered by this broad spectrum of programs are also quite diverse and cover nearly every major topic that the EPA addresses in its other approaches.
B. EE Workforce Analysis

This section provides answers to question 2 (What are the educational backgrounds of EPA staff that work on EE programs?) as well as an analysis of the implications of staff backgrounds to the success of the EE approach at the EPA. The data presented in this section are summarily derived from the interviews, but also include data from document analysis.

The workforce at U.S. EPA HQ includes a diversity of individuals with varying skills and qualifications. Those individuals involved in EE programming have an array of backgrounds that contribute to the success of the Agency in many different ways. In order to create and sustain successful programs it is important for the Agency to understand the backgrounds of the current workforce as well as what qualifications and skills are important for the future staff, as evidenced by the EPA’s Workforce Assessment Project\(^1\). This analysis will provide a more depth look at this small segment of EPA’s workforce, that of EE practitioners.

As Figure 4 shows, there are some obvious differences when the EE segment of the workforce is compared to the total EPA workforce. One of the most notable differences is the percentage of staff who obtained advanced degrees (beyond Bachelors), which includes 61% of EPA EE staff compared to 41% of the total EPA workforce. Clearly the staff members involved in these EE programs are highly educated.

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\(^1\) The objective of the EPA Workforce Assessment Project was to help the agency assess, understand, and act on the implications of strategic change for its future workforce. The Workforce Assessment Project involved understanding EPA’s current workforce competencies; identifying and articulating near-term competency gaps; envisioning plausible alternate futures the EPA workforce may face; and analyzing and identifying new competencies these alternate futures may create. This report provides conclusions and recommendations about the Agency’s human resources that are designed to ensure EPA continues to serve its stakeholders as it moves into the future.
As Figure 5 (below) shows, the disciplinary backgrounds of EPA EE staff members are quite varied. The most common disciplines include policy/administrative (23%), environmental specific (21%), and social sciences (17%). See Appendix III for specific disciplines that make up the categories used in Figure 5.

While EPA EE staff members are highly educated, it is interesting to note that only 10% of the staff members interviewed have a background in communications/english (6%) and/or education (4%). The EPA’s Workforce Assessment Project noted that:

“Communication is the most critical competency shortfall” of the current EPA workforce. The report went on to describe that “transferring knowledge is a key part of the agency’s mission. [This] requires competency in communication, knowledge management, broad environmental understanding, and others.”

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Thus not only is communication vital to EPA's undertakings, but in terms of the EE workforce, a background in communications seems even more important to support the outreach and education efforts. Indeed effective communications are essential for changing behavior, influencing policy, and fostering an environmentally literate public. There is clearly a lack of background in education and communication disciplines among the EPA EE workforce. However, grounding in the sciences and policy is an important factor in hiring professionals into EPA's workforce, thus it is not surprising that the majority of the EPA EE staff members have backgrounds in disciplines related to these topics.

Our examination of the job descriptions and job titles of participants indicates that working on EE programs is only a small part of what many of the participants do at the Agency. Nearly all participants indicated that they have many other responsibilities besides coordinating an education program. Approximately one-third of the participants

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stated that they have not even been formally assigned to the EE programs that they coordinate as part of their job description. In addition 43% of the programs we identified have only one staff person directly involved in the program. This indicates a low level of importance and priority for many educational programs at EPA. In some cases staff members are coordinating programs on a voluntarily informal level with little support.

This issue can be further explored by looking at the job classifications of EPA EE staff members. While there was a spectrum of job titles including: Environmental Engineers, Information Technology Specialists, Program Analysts, Program Managers, Directors, and Environmental Scientists, the majority of research participants are classified as Environmental Protection Specialists. This is a standard series in the Federal Government that includes positions requiring duties such as “advising on, managing, supervising, or performing administrative or program work relating to environmental protection programs.” While this is a general and somewhat open-ended category, this classification does not indicate educational backgrounds as suitable or needed.

In order to further understand the EE workforce, data were collected on the types of ongoing professional development the EPA EE staff members are undertaking, including conference attendance and training. Among this segment of the EPA workforce, conference attendance tends to focus on the topics that the staff are involved with (such as water or environmental justice) rather than the approaches the staff use (i.e. education). Of the 46 participants, only 8 indicated that they attend conferences that are specifically related to education. In addition, respondents indicated that conference attendance often occurs to showcase staff members’ program rather than engage in

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professional development opportunities. However, approximately 30% of the staff participants have attended formal trainings related to teaching, communications, social marketing, and/or education, including at least 10% who have formal teaching experience. In general, no participants indicated consistent training or professional development related to education.

Participants identified their lack of knowledge regarding practices, tools, and methods of EE and education as an obstacle in implementing and sustaining successful EE programs. In a few cases respondents indicated a desire to receive additional training and education related to this obstacle although they were not specifically asked this.

This discussion is not meant to criticize the EPA staff members involved in educational programs - who are clearly well educated and talented individuals - but rather to make the point that EE programs at EPA could be enhanced through training existing staff in educational practices and approaches. The National Environmental Education Advisory Council (NEEAC) noted in 1996 that:

“Over the long term, one of the most cost-effective efforts that can be undertaken to improve environmental education in the United States is to improve the quality of pre-service and in-service teacher professional development, and training for instructors in environmental education programs outside the classroom (for example, with youth and community groups, zoos and museums, and other nonformal educational institutions). Although good programs exist, most experts agree that teacher and instructor training for environmental education is inconsistently available.”

 Supporting Quotes

"There is not very clear guidance on what are effective education tools. We need to know what is more cost-effective to invest in formal or non-formal EE? We need more examples and case studies of effective education programs."

"I need to know what an effective education program is, because I really don't know."

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EPA EE staff members have many different roles in EPA’s EE programs but they are commonly either instructors (as in the case of many training programs) or program developers (as in the case of many community, voluntary, internship/fellowship, and k-12 programs). Although they may not always be the instructors, the NEEAC indicates that continued professional development is important for the success of the EE practitioners at the Agency. As noted in the Workforce Assessment Project (EPA, 1999), "Professional development can help attract and keep the Agency’s best. Some of the things that can be done to support professional development include: technical training and education, encouragement, [and] recognition." In addition, it seems logical that making education and communication backgrounds a requirement of the future EPA EE workforce will enhance EPA’s education programs and their benefit to the Agency. While this research has not attempted to evaluate the effectiveness of EE programs at EPA, there is always room for improvement, and a close look at the current EE workforce indicates this is an area that should not be overlooked in the future.
C. Staff Perceptions of Environmental Education

This section provides answers to question 3 (*How does the staff understand and conceptualize EE, particularly in relation to the EPA mission?*). We begin with an analysis of the freelist exercise (see chapter II for a detailed description of this method) to provide a unique look at how staff members understand the term environmental education. Next we build on the freelist analysis by analyzing how individuals perceive or understand education’s role in supporting EPA’s mission of protecting the environment and human health. This includes discussion of the staff perception of how education complements other Agency strategies and approaches such as science, regulation, enforcement, and compliance. However, we were also aware - based on our interviews - that environmental education can have different meanings to staff that may differ from our interpretation of the previously stated definition of EE.

**A shared understanding of EE?**

In this subsection, we interpret data from the freelist exercise and incorporate direct responses from EPA EE staff to show how they understand the term environmental education and why they may be timid about referring to their programs as EE. Essentially this is a search for a few underlying themes or dimensions that may be both widely shared and important in shaping respondents’ conceptions of EE.

The free listing exercise was designed to elicit all the possible terms or words that respondents use or think about in reference to the concept of environmental education. As table 1 shows below, *awareness* was the most frequently listed term associated with EE, mentioned by 33% of the participants. Closely following was *outreach, children,*
curriculum, schools, information, communication, learning, students, and training (see Appendix IV for additional freelist data).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Term</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>1</td>
<td>AWARENESS</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>OUTREACH</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>CHILDREN</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>CURRICULUM</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>SCHOOLS</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>INFORMATION</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>COMMUNICATION</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>LEARNING</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>STUDENTS</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>TRAINING</td>
<td>5</td>
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</tbody>
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These results suggest that EPA EE staff associate the term EE with formal schools and young audiences. As one staff member noted:

"Here at the office you say education and they understand it as training, capacity building. I guess it is education but we are dealing with a whole different audience and set of circumstances. The problem is when you say EE-people don't understand what it means. In EE you start with the younger generations."

There is a tendency for EE staff to think of environmental education primarily in terms of formal education programs for children; thus most of them will refrain from referring to their programs as EE. The following quote represents just a few of the variety of terms that staff members use to describe their efforts:

"You can call it education, information, public relations, but to me its all education...I'd say formal EE is not a priority- in this sense I'd be thinking about curriculum tools. I'm thinking of education in the broadest sense."

Indeed, program staff members often refer to their activities as training, outreach, social marketing, internships, voluntary partnerships, and so on. Such efforts may be considered non-formal education, targeted mainly towards adult audiences including communities, regulated industries, minorities, and other special groups. Thus while the..."
term environmental education may not often be used to describe these programs, they are ultimately education programs "for the environment." It is reasonable and culturally acceptable for our respondents to feel that at EPA, education is quite synonymous with outreach, the goal of which is to make people aware of environmental problems. One respondent noted:

"Education is fundamental to what we do even though it's not called environmental education. No matter what we are calling it, the EPA should be using education to reach the public."

As the next section will show, our data indicate that those involved in EE programs believe that EPA should play a greater role in outreach and education for adults and the general public, including using programs to build awareness, train, and influence behavior, rather than a role in the formal public school system. Thus the EE approach is philosophically supported by the staff participants.

Education’s Role in Supporting EPA’s Mission: The Perspective of EE Staff

When asked how education complements the EPA’s other strategies, all interview participants agreed that education contributes in some way to the EPA mission. Many acknowledged the importance of education and a desire to achieve balance between education and other EPA strategies. It was never stated that "education is all we need" (except for in the context of an "ideal world"); thus, regulation is still seen as one of the primary approaches to achieving agency goals and objectives. Indeed it has been noted that "new tools" for environmental protection such as education are complementary to more traditional tools such as regulation, and that both are necessary to achieving
environmental protection. Nonetheless, a large number of respondents expressed a desire for more emphasis on educational approaches within the Agency. Overall, education was seen as important to make the public and regulated community aware of environmental problems, in order to protect them when necessary, and become part of the solution to these problems when possible.

Participants' responses provide insight into the underlying beliefs and values about the role of education for protection of the environment and human health. Many interviewees spoke in broad terms, referring to education and outreach as a means to build knowledge and awareness, which they think lead to action or behavior changes on behalf of the environment. From analysis of these responses we developed a simple model that shows how staff members believe education can lead to action on behalf of the environment.

| Education → Increased Awareness / Knowledge → Behavior Change / Action |

While this model indicates a linear process leading to behavior change, we do not mean to generalize that all staff participants see the model as being this simple. It is interesting to note however that this model is almost identical to a model identified by Hungerford and Volk, two well-known EE researchers, in 1990 that represented the traditional thinking in the field of EE at the time. In comparing this model to the research at the time, Hungerford and Volk concluded that the process is not nearly this simple or linear.²

In fact, they noted that "issue awareness does not lead to behavior in the environmental

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dimension” (pp. 17), and that there are many other variables that must be addressed to achieve behavior change. Researchers in the field of EE have continued to address the problems with this model and are making progress in terms of identifying the factors that shape behavior towards the environment. Thus the field of EE has much to offer these EE programs including how this simple model can be adapted to incorporate the additional factors that influence behavior.

Expanding upon the general responses that informed the model above, many interviewees discussed education as a way to improve what EPA does now and in the future. The following points represent the array of views respondents hold about how EE specifically complements EPA’s mission. These points were identified by analyzing the interview data - most specifically the responses to the question about how EE complements EPA’s mission (see question 17 in appendix B) - looking for common themes and responses. Using text analysis software we created codes for responses to this question that had common themes or terms, the result of which was the identification of several major points. These are discussed briefly below and supported with exemplary quotes. Environmental education complements EPA’s mission by:

• **Transferring environmental knowledge**

  A few respondents mentioned that they believe the environmental knowledge gained by targets of EPA education programs is often transferred to their relatives and peers. This was specifically referred to by one staff member as “the multiplier effect.” She mentioned that when students gain knowledge from a program, they may go home and discuss that environmental topic, like recycling,
with their parents. In effect, there is a belief that through educating a person, that person will talk to others and spread the environmental knowledge, or "pass the word along." Participants felt that the knowledge transfer also occurs among the regulated community.

- Preventing human health risks and pollution by teaching choices and encouraging good stewardship

There was also a commonly held belief that education is a proactive and preventive strategy for achieving the Agency's mission. Many staff members were able to cite examples of how education could lead to behavior change and prevention of human health problems, including mercury exposure from fish consumption and lead exposure from paint. Staff also believed that education could help prevent pollution (especially non-point source pollution) where awareness of the problem could lead to informed action, such as not dumping oil down storm water drains. As one staff member pointed out "an ounce of prevention is worth a pound of cure." Others spoke of the EPA as primarily a regulatory agency, which is reactive rather than proactive in addressing environmental problems. They believe that education as a strategy is a complementary and proactive approach. A staff member commented on his/her views in the following way:

"Education is central to non-point source pollution issues because it is people pollution. People absolutely have to be aware of these issues and, more importantly, be willing to act on them. We cannot just rely on technology to solve our problems, although technology is also central to this issue."

- Improving regulatory and voluntary compliance
Education was also seen as a way to improve environmental compliance with regulations and achieve better public relations for the agency. Staff stated that there should be efforts to educate the regulated community on why regulations exist, including emphasizing the importance of environmental regulations in helping protect the environment and human health. Staff believed that people must be aware that the regulations exist, and understand their importance, to follow them. A few staff members also mentioned that EPA's education programs can create good relations between the Agency and the regulated community. As one respondent noted:

"Regulations are needed in some cases such as factory pollution. But we also don't want to always be the bad guy with the big stick. That doesn't create good will. It [education] shows our willingness to work with the public. These voluntary programs have a better chance of achieving behavior change. People aren't told what to do, but learn why it's important. It shows EPA's flexibility."

- **Raising environmentally literate youth, including the next generation of environmental scientists**

A handful of EPA staff members, mostly those involved in internship/fellowship and K-12 programs, mentioned that EPA plays a role in educating American youth and training the next generation of environmental scientists. They felt that it was important to nurture positive environmental attitudes in young people, and to foster an interest in science. There was a belief that building positive environmental attitudes early in life will lead to the development of environmentally responsible adults and improvement in environmental compliance.
• *Generating public support for environmental policy*

Staff also described the role that environmental education plays in generating public support for environmental policy, including support for the EPA itself. This is based on the belief that if the public has a good understanding of environmental issues that they will more actively support the development and enforcement of related policies. As one staff member stated:

"The public drives the country and if they don't care/are not aware, it won't get regulated. If people are aware of an issue, it will be in the public eye, and they will write their Congressman- like mercury in fish."

In summary, participants felt that education supports the EPA in a variety of ways. Environmental Education is thought to serve as a complementary tool to the traditional approaches for protecting the environment and human health. However, it is important to note that for this question we asked how *education* complements the EPA’s mission, not how *environmental education* complements the mission. This is because we believe that people understand the term environmental education differently from education, and, as our data shows, in many cases staff members do not refer to their programs as EE.

While we do not expect the EPA to refer to all programs that have an educational component as environmental education, we do encourage staff members and managers to begin to interpret the term EE more broadly. The professional field of EE has much to contribute to the education efforts at the EPA; however the contributions may be limited if there is an unwillingness to be associated with environmental education.
D. Working Within The EPA: Obstacles, Needs, and Current State of Agency EE Programs

This section provides answers to question 4 (What are the common needs and obstacles of EE programs?) including an analysis of the most important challenges faced by the staff involved with EPA environmental education (EE) programs. It concludes with an interpretation of what is needed to achieve program success at the Agency based on staff feelings of success. This portion of the report is critical to informing an understanding of what factors are limiting the success of the EE approach at the EPA. The analysis in this section also provides the basis for many of the recommendations presented in chapter IV. The data presented here is mostly from interviews as well as additional analysis based upon the focus group, participant observation, and document analysis.

The intention behind asking program staff to reveal the needs and obstacles for implementing EE programs at the EPA was to understand these challenges from a staff perspective including how they are related, what the implications are for EE programs, and how they might be overcome. Table 2 below shows the most commonly expressed needs that were identified from an analysis of the interview data. This included the identification of common topics and a tabulation of the percentage of respondents who mentioned them during interviews. An obstacles list was also generated, but, not surprisingly, the obstacles and needs lists were quite similar, thus the needs list sufficiently represents the important challenges that programs face (see Appendix C for the obstacles). Rather than discussing each obstacle and need separately, we have chosen to discuss several emergent themes that were identified through analysis of the interview data. These themes incorporate the majority of the topics listed in table 2 and directly
represent the language many staff members used when describing their needs and obstacles. Each subsection also provides our critique of the current efforts and struggles of EE programs based on participant observation and document analysis.

<table>
<thead>
<tr>
<th>Table 2: Needs of EPA EE Programs</th>
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<tbody>
<tr>
<td>Needs</td>
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<tr>
<td>Resources: funding, staff, time</td>
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<tr>
<td>Management/Agency/Administration support</td>
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<tr>
<td>Coordination, communication, and support from OEE</td>
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<tr>
<td>Collaboration with other EPA programs/means to find collaborators</td>
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<tr>
<td>Cultural shift in EPA attitude towards education</td>
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<tr>
<td>Knowledge of effective tools and programs for EE</td>
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<tr>
<td>Program evaluation guidance/Demonstrate results</td>
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<tr>
<td>Interns/Staff willing to mentor students</td>
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<tr>
<td>Freedom to be able to do these activities</td>
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<tr>
<td>Improve product review process</td>
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<tr>
<td>Better market research/needs assessments on target audiences</td>
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<tr>
<td>A Formal team of EPA staff working on education programs</td>
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<tr>
<td>Legislative mandate to do this work</td>
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<td>Access to subject matter experts</td>
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**Resources**

As Table 2 shows, resources - which includes funding, staffing, and time - was the most common need (and obstacle) identified by EPA EE staff for the development and implementation of programs. Resources are clearly necessary to build and sustain any program for EE at EPA. The budgets of the EE programs identified in this report vary tremendously from essentially no funding to several million dollars. However, the vast majority of staff members indicated that the budgets for education have been steadily declining for several years. This was not true for all programs, but was especially true for programs that were more than a few years old. We identified at least three programs that are operating with no reliable funding at all, so they rely on existing resources such as
staff and time to continue. As we will show, the topic of limited resources is not something that can be easily remedied or separated from the other challenges faced by EE staff.

**Evaluation and Strategic Planning**

In general, a formalized program evaluation process is not a central component of EE programs at EPA. This is also true of the field of EE as NEEAC noted in a 1996 report which states:

"In general, environmental education programs have not received rigorous evaluation to determine their effectiveness. Several factors have contributed to this, including limited funding to undertake short and long term evaluations, difficulty in identifying quantitative objectives, and the complexity of measuring long-term educational changes."¹

While the professional field of EE has made tremendous progress towards improving evaluation since 1996, EPA EE programs are still struggling with evaluation, and are faced with many similar factors that NEEAC identified in 1996. However, there is an indication that evaluation is becoming more important for EE programs. Many staff members described the difficulties associated with evaluation, and expressed a need to develop better ways to measure the success and results of EE programs. Although it is low in the list of needs in Table 1, several staff described current efforts in strategic planning and program evaluation to increase and improve measurements and outcomes.

In general, the evaluations that programs have undergone tend to be formative in nature. Evaluation is commonly used to inform the development and implementation of programs, to help them adapt over time, but is less often used to determine program

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effectiveness or outcomes. Very few programs could actually reference an ongoing, comprehensive program evaluation process. Approximately seven programs were identified that have in the past, or are currently undergoing a formal program evaluation, including both internal and external reviews.

The types of evaluation methods used in EPA EE programs varied greatly, with the most common method being some sort of verbal or written feedback from program participants. Other common methods included the use of participant counts, product/service pilot testing, and focus groups. There was also some similarity in evaluation methods among a few of the program types. For instance, most Internship/Fellowship programs conducted participant tracking to determine program outcomes. This was accomplished by collecting information such as what fields and/or jobs the program participants pursue after the program. This program type also collected feedback from participating students, staff supervisors, and in some cases the student’s academic advisor.

The voluntary programs were the only program type that were attempting to link outcomes to specific environmental results. Several of these programs were systematically collecting data from participants and trying to relate this to a sector of environmental improvement. Clearly, this is not a simple task, and staff members
described the difficulty in quantifying these types of measurements. However there seemed to be optimism that this ultimately can be done.

Many staff participants described the difficulty in measuring education program outcomes. They also described a lack of understanding of methods for valid evaluation. Although counting the number of people reached or publications distributed is relatively easy data to gather, staff participants realize that ultimately these outputs cannot demonstrate program effectiveness. Participants expressed frustration with these issues and while some were being proactive and creative in their evaluation techniques, others seemed at a loss for how to overcome these obstacles. Respondents also described the difficulty demonstrating results that show how EE leads to improvement of the environment and human health. While results from EPA efforts in technology and regulation can sometimes easily show how the agency is improving environmental conditions, the EE programs cannot often link program results to such measurements.

The difficulty in showing positive results often limits managerial support for EE programs. This is due in part to the emphasis on performance measurements in the Federal Government, as required by legislation such as the Government Performance and Results Act of 1993 (GPRA), and also from the Office of Management and Budget’s new Program Assessment Rating Tool (PART). Staff participants pointed out that results from EE programs often must be measured over long time periods to show significant improvement, which is problematic because the Agency tends to want immediate results. Scholars in the field of EE have noted that environmental education “faces the problem of measuring developments which are essentially long-term – but having to do this under
the eyes of stakeholders anxious for progress, in the short to medium term.\(^2\) (pp. 380).

Difficulty showing results is common in the field of EE, and EPA’s EE programs may benefit from communicating and connecting with EE professionals outside the Agency.

A further indication of the limited efforts at evaluation of EE programs is the lack of planning for the future. When staff members were asked where they saw their programs in five years, very few programs referenced any sort of strategic planning efforts, although at least two identified specific 5-year plans. Although EPA EE staff members were mostly positive about the future of EE at the Agency, there is little evidence of concrete and strategic planning for the future.

When asked about the future of their EE programs, some staff members were optimistic, although in different ways, including their expectations that:

- programs will eventually achieve goals and no longer be needed,
- programs will become self-sustaining
- programs will quickly expand and become well recognized.

These responses differed depending on the age and goals of the program. While some expected to expand in order to continue to address ongoing environmental problems (such as air pollution), others expected to end due to success (such as completely ending lead exposure). However, a common response was that the programs would continue on the same path that they have for some time without any major changes. While many of the staff members have hopes that their programs will expand, grow, and change in the

future, they seemed to be grounded by a more realistic view that they will continue to be limited by resources.

In summary, evaluation methods, especially in relation to education, are not well understood by EPA EE staff. As described in the workforce section, the majority of the staff interviewed lack formal education and/or training related to the field of education and educational program evaluation. Our analysis suggests several possible approaches to improve EE program evaluation including: further training for EE staff members, implementation of more comprehensive evaluation processes, and strategic planning linked to program goals. However due to limiting factors such as budget, time, and staff, this set of obstacles will require innovative solutions.

**Collaboration, Communication, and Competition at the EPA**

Participants were quick to note that collaboration and communication at the EPA are uncommon. They identify this as an obstacle to implementation of effective EE programs. While collaboration and communication were not the highest ranked needs, many staff members identified a duty and desire to collaborate and communicate with other EPA offices more often. They noted that such opportunities are limited by other obstacles such as lack of...
resources, management priorities, and limited knowledge of other EE efforts at the Agency.

Competition was described as yet another factor limiting successful collaboration and communication. This obstacle was identified by staff participants from several program types, but was most commonly mentioned by staff involved with voluntary programs. Nearly all participants from voluntary programs mentioned this as an obstacle and described a sort of territoriality that is associated with this relatively new strategy at EPA. At least two staff members from voluntary programs indicated that Energy Star has set the bar in terms of success, and has also worked competitively against other voluntary programs. This is merely one example of the competitive nature that exists within the Agency.

In our attempt to identify and interview a staff member from each EE program at EPA HQ, we became well aware of the competitive culture at the Agency. Unfortunately, a number of EE programs were not included in this research because of a lack of response from staff, such as in the Office of Research and Development (ORD). Our research uncovered a document describing an effort in ORD to create a stand-alone EE effort (which included several programs) similar to efforts in OEE.
interview a staff member regarding this effort were not successful, thus we could not include all of the programs in that office.

The lack of collaboration left staff members feeling that they were not reaching as many people as they could or should. More collaboration among EPA EE programs could benefit the programs and the Agency in many ways including sharing information (partners, literature, evaluation techniques), building a more unified EE community, and increasing the visibility of EE within the Agency. Collaboration was considered one of the “most serious competency gaps” as well as one of the “most important competencies” in the *Workforce Assessment Project* (EPA, 1999). To overcome this trend of compartmentalized and competitive programs it will take a significant commitment by individual EPA staff and managers.

Several participants suggested that collaboration may improve with a facilitated effort at communication among EE programs. This was specifically stated by some respondents as a need, with a few mentioning that they would like to see more coordination and support from the Office of Environmental Education (OEE). While there are some common misunderstandings about the role OEE plays at the Agency, it does not seem unrealistic that the Office could take on such an effort. One of the many mandates that OEE was given in the *National Environmental Education Act* is to “assure the coordination

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**Supporting Quotes**

"I'd like to see them [OEE] doing more of like what you are doing and have a better way to connect everyone together. I'd hate to say a "Task Force," cause they just talk, talk, talk and don't get anything done. But a way for people to get together who are doing educational things in the agency."

"There is simply not much communication among programs in the EPA. I think this would strengthen the education we do. But we are all limited with time, so we need someone to facilitate this communication."
of Federal statutes and programs administered by the Agency relating to environmental education, consistent with the provisions and purposes of those programs, and work to reduce duplication or inconsistencies within these programs.\(^3\) OEE has made efforts to coordinate EE programs in the past but in past years they too have been limited by resources.

**Materials/Product Review**

Product review is a process that all educational materials must go through to gain approval before they are produced. Conducted by the Office of Public Affairs, the product review system is used to ensure that products have unique concepts and content, thereby preventing duplicative efforts. While listed relatively low as a need in Table 1, the product review process at EPA was specifically mentioned as an obstacle by at least six staff members.

The most common frustrations were that the system is inefficient, confusing, and that staff reviewers don’t have expertise in education or specific issues that EE programs focus on. Research participants were disappointed to receive what they considered unhelpful comments on their products. Other frustrations included the limitations of using only recycled products and difficulty of getting approval to print in multiple colors. Participants to the focus group session agreed that a major need for EPA education programs is improvement of the product review system.

Management/Administration/Agency Support

Agency organizational structure is important for understanding concepts such as management, agency, and administration support, which were common concepts mentioned by our research participants. Respondents characterized agency support to mean support throughout the Agency, including those at the staff level, while Administration support referred primarily to the politically appointed members of the Agency. A lack of management support was often an obstacle for staff working on EE programs, and as Table 1 shows it was high in the list of stated needs.

Support from managers is crucial to the sustainability of a program for many reasons, most importantly the influence such support can have on resource distribution. Management support at all levels is important if staff members want to be successful with their programs. Management support occurs on a continuum starting with the branch, division, or immediate office management moving to mid-level management and finally to politically appointed senior level management.

According to staff members, management support for EE programs tends to be dependent on several factors. These include:

- individual manager interest in EE
- whether the particular issue is a popular topic or politically sensitive
- the traditional priorities of the office
- the degree of support at higher levels
- the ability to stay on the managers agenda
- the ability to show positive results
Several respondents described the difference between “stated” management support and “active” management support, pointing out that education is often championed verbally, even at the top level, but is not often programmatically supported with resources.

Beyond additional resources, some respondents simply desired encouragement and recognition from management. Some staff members also described the dilemma when support exists at some levels, such as in their office, and not others, for example middle management. In several instances this required keeping efforts “low on the radar”, because attention of certain managers could jeopardize the program. Unfortunately this also limits the reach and effectiveness of programs.

Interviewees noted that management support for EE at EPA tends to fluctuate, especially when politics are a factor. Support tended to be higher for programs covering topics or approaches that the current administration may be actively supporting, such as voluntary programs with industry or programs to help combat childhood asthma. However, even when support exists, participants noted that it takes significant effort to stay on the radar screen of supportive managers. This requires consistent and persistent

**Supporting Quotes**

"Right now my boss is very supportive of my efforts and gives me a lot of freedom to do what I think is important. But we are very dependant on the Agency and upper management support."

"It doesn't, of course, stay on the radar screen for the office directors because they have so many important things on their radar screen."

"I would say [I need] a higher level of management involvement and interest. When you have senior leaders promoting and advocating for your program you get more support at all levels including state and local levels."

"Management is interested in what their management is interested in and that's what's on the radar screen."
marketing to managers, and because of other obstacles (like lack of results for EE programs), it can be difficult to compete with regulatory efforts.

A few individuals mentioned during interviews that they needed to have the freedom to be able to conduct educational efforts without upper management approval. This may seem to be an unrealistic request, considering that this is a government agency with a built in system of clearances, reviews, and chains of command. However these participants stated that they can’t get enough done in the organizational structure of EPA. They justified this desire for freedom by describing the education efforts as a very different approach to other Agency activities; thus there is a major need for flexibility.

Although the staff members were passionate about the need for education and the important role this approach plays at the agency, they often felt marginalized in this viewpoint indicating a lack of Agency support. The staff tended to see education as a proactive effort, in contrast to what the EPA Workforce Assessment Project (1999) refers to as “the reactive and near-term” efforts that “scientists and engineers tend to work more on” (pp. 53). Some respondents commented that EE is undervalued in the agency as a tool for environmental protection, and were displeased about how others in the Agency view EE. Several participants mentioned that EE has been referred to as “cute”, “neat”, “fluffy”, and “extra”. They also responded that in many cases education is an afterthought of programs at EPA. A few staff members indicated that there is a need for a cultural shift in EPA attitudes about the role of education for supporting the Agency’s mission as evidenced by the following quote:

“[We need] a change of mindset that would have to come from the top down. It might have to be forced, even from the administrator.”
In order to achieve such a cultural shift it seems that the leadership must come from the Agency’s Administration, and management at all levels. The issue of Administration support is complex because the senior managers in the Agency are appointed politically leading to a steady fluctuation of Agency strategies coinciding with political changes. To illustrate the issues that arise from this fluctuation and its impact on EE, it is useful to describe the current and former Administrations’ support for the EE approach.

There is an apparent contradiction in the Administration’s support for environmental education that becomes evident when one compares the 2003-2008 EPA Strategic Plan with former EPA Administrator Leavitt’s philosophy of environmental stewardship. The EPA’s most recent strategic plan makes almost no mention of education, although it does mention strategies that use education to some degree, such as voluntary programs. With respect to the significant number of explicit educational efforts in offices throughout the agency, it is interesting to observe the disregard for this approach in the strategic planning of the Agency.

The strategic plan was developed under former EPA Administrator Mike Leavitt’s authority. Administrator Leavitt’s portion of EPA’s website described his approach to environmental stewardship, articulated in a document he co-authored called the Enlibra Principles. The 6th principle, Change a Heart, Change a Nation, states:

"Environmental education and understanding are crucial. Governments at all levels can develop policies, programs and procedures to protect the environment. But the success of these policies ultimately depends on the daily choices of citizens. Beginning with the nation's youth, people need to understand their relationship with the environment. They need to understand the importance of sustaining and enhancing the natural world for themselves and future generations. If we are able to make environmental progress, it will be
because citizens understand that a healthy environment is critical to the social and economic health of the nation. Government has a role in educating people about stewardship of natural resources.\footnote{Leavitt, Mike and Kitzhaber, John. *Enlibra Principles*. [Online]. Available at http://www.epa.gov/adminweb/administrator.enlibra.htm}

Clearly, the former Administrator had strong "stated" support for EE and believes that government should play a role in educating the public about the environment.

The recently nominated EPA Administrator, Steven Johnson, who is also the current Acting Administrator, has shown a personal interest in EE at the EPA and continues to include the *Enlibra Principles* on his portion of EPA's website. In the most recent National Environmental Education Advisory Council (NEEAC)\footnote{NEEAC is comprised of representatives from organizations outside of the federal government who provide EPA with advice on EPA's implementation of the National Environmental Education Act. The 11-member Council also provides EPA with important linkages to schools, universities, state departments of education and natural resources, not-for-profit organizations, and business and industry. The Council reports to Congress on the status of EE in the U.S., makes recommendations for improving these efforts, and works with EPA to implement these recommendations.} meeting in July of 2004, Acting Administrator Johnson described the challenges he has observed for EE at EPA.\footnote{Johnson, Steven L. (2004). (Personal field notes from 2004 NEEAC meetings).} While Acting Administrator Johnson acknowledged the Agency's traditional regulatory approach, he also expressed support for new tools such as capacity building and education. When asked how the visibility of EE could be increased within the Agency, he responded by emphasizing the need to demonstrate results and recognized the difficulty in linking EE to environmental improvement outcomes. The Acting Administrator described an ongoing debate at several levels of government about the role EE should play in the Agency. The debate appears to focus on whether there is a need for an office to oversee EE in the Agency, or whether EE should be left to individual offices. The Acting Administrator indicated that he doesn't feel it must be one way or the other, but can see the benefit of both of these approaches.
This is a critical time to advance EE in the Agency, especially with an EPA Administrator who philosophically supports EE. However, the recent political changes in Agency leaders solidify the point that support for EE will continue to fluctuate. While EE programs are able to function at the EPA under these circumstances, it seems that until education is explicitly recognized as part of EPA’s strategy, the EE approach will continue to face the same obstacles described here.

Finding Success at the Agency

We feel that it is important to mention that not all staff members believe that their programs have needs. In fact, there were four instances in which staff members indicated that their program had no needs. It might be assumed that if a program has no needs, it is because it has the necessary components for a successful program. Success does not necessarily mean that the program is effective, but rather that staff members are able to implement a program to their satisfaction. Without conducting a detailed assessment of each program it cannot be assumed that each of these programs has all of the components necessary to achieve such success; however it is useful to identify some of the characteristics of these programs that may contribute to their feeling of success. These include:

- Management support at many levels
- Legislative authority
- Ample resources
- Formal evaluation process
• Well-trained staff

• Intra-agency and inter-office collaboration

• Well-defined and Specific Goals

This list includes characteristics that are closely related to the needs and obstacles we identified for other programs. Thus we feel it is a reflection of some of the most important characteristics that EE programs need to succeed at the EPA.
IV. Conclusion and Recommendations

This report has examined the current EPA EE programs based on program characteristics, common obstacles and needs, workforce characteristics, and staff perceptions of EE, including opinions about the role of EE at EPA. Initially, our intention was to evaluate the EE approach at EPA looking for gaps, biases, and duplication in the EE programs. Throughout the research process, we became aware that more fundamental issues must be addressed before such an evaluation can be useful. We have shown that there is a broad spectrum of EE programs at the EPA, reaching a variety of audiences and spanning a number of topics concerning protection of the environment and human health. These programs take a different approach than more traditional efforts such as regulation, research, enforcement, and information distribution. They incorporate active audience engagement and seek to inspire informed action of the regulated community as well as the general American public.

The staff members who are running these EE programs are highly educated and make tremendous progress despite the constraints of the Agency. However, this segment of EPA’s workforce has a limited background in communications and education, thus there is a need for more professional development opportunities. They collectively believe in education as a tool to support EPA’s mission, and tend to avoid referring to their programs as environmental education and instead use terms such as outreach, training, and voluntary partnerships.

The EPA EE programs identified in this report are not well recognized or supported. It is apparent that these efforts tend to be isolated and scattered throughout the Agency. There are many issues that these programs face which limit their visibility in the
Agency including lack of resources, lack of communication, and lack of active support. EE programs are typically overshadowed by the more well known and visible regulatory programs. Although there are no easy solutions to the challenges that EE programs face, we believe that in order to advance the EE approach at EPA, its visibility within the Agency must be increased.

Recommendations

The following recommendations directly address the needs, obstacles and gaps that are documented in this report. They are meant to advance the EE programs that exist, and pave the way for the development of future programs. We hope that ultimately they will contribute to EE becoming a more visible and validated approach at the EPA.

1. Facilitated Communication by the Office of Environmental Education

This report has identified a lack of communication and collaboration among the EE programs that is limiting the success of the EE approach. Staff participants identified both a need and a desire to have a coordinated effort at facilitated communication, and we recommend that OEE take on this role. This is necessary in order to increase collaboration, decrease duplication, and increase visibility of the EE approach. OEE – with their unique position in the Agency - should put forth their best effort to foster this communication and collaboration among the various programs based on the desires of the EE workforce. This Office could serve as a tremendous resource to EE staff members especially due to their close connection to the professional field of EE. One way to achieve this would be to host periodic staff gatherings on topics of interest related to implementing education programs. This could include guest
speakers, trainings, sharing of educational materials, and showcasing program successes. OEE has recently undertaken a significant effort to create a strategic plan for the Office that will help it better achieve its goals and show positive results of how the goals are being accomplished. To ensure OEE puts forth their best effort, we suggest that they incorporate this recommendation as a goal in their current strategic plan including ways to evaluate the success and outcomes of this effort.

2. **Professional Development for EE Staff and Strategic Hiring of Future Staff**

We recognize that the staff members running EPA EE programs are highly educated and strongly believe in education as a tool to support EPA’s mission. However, it is clear that, in general, the staff lacks training and expertise in educational approaches including evaluation of such approaches. We encourage staff to seek out training opportunities and hope that OEE’s efforts at facilitation will provide such opportunities in the future. The Agency has a responsibility to encourage and provide professional development opportunities that will help staff be more effective in their jobs, especially as new approaches are utilized. We also suggest that periodic training related to education should be a requirement for all staff members that are involved with educational efforts. We also recommend having a strategy for the hiring of future staff into education programs including emphasizing strong backgrounds in communication and education.

3. **Emphasize Evaluation**

We have established that evaluation is not often a central component of EE programs. Many programs rely on simple measurements, such as participant counts, that do not measure effectiveness. This leads to limited support and especially limited resources
for these programs. EE programs will continue to be inhibited by these issues, especially if they are unable to show useful results. We recognize the limitations that these programs face, but emphasize that showing meaningful results will go a long way towards gaining support of managers, the Administration, and colleagues. We also recognize that evaluation should not be used only as a means to gain support, but also to improve the effectiveness of EE programs. This can only be accomplished by coupling evaluation methods that seek to measure outcomes with strategic planning for the future based on the goals of the program. We recommend that staff not only make efforts towards conducting more meaningful evaluation themselves, but more importantly consider using internal and external experts who can more effectively produce outcomes based evaluations.

4. **Improve Product Review System**

Although we can’t provide specific steps to take, it is clear that EPA’s product review system could use improvements in order to become more efficient, user-friendly, and helpful. It is also important that staff members fully understand how to use the current process efficiently and to its fullest extent. Our data indicate that there is a tremendous amount of confusion among EPA EE staff regarding the use of the product review system, and that the feedback is often not helpful for improving products. We encourage those individuals that are involved in reviewing EE products to make efforts to educate the users of the system and to provide more useful feedback specific to the education approach.

5. **Active Management Support for EE Programs**
This report has identified several positive ways in which management supports EE programs including Acting Administrator Steven Johnson’s strong verbal support for raising the visibility of the EE approach. However, it seems that in order for EE to succeed as a valid approach at the Agency there needs to be more active support. This will require different actions for different management levels, but it must come in the form of necessary resources, recognition, and encouragement. We also encourage managers to hold EE programs to certain standards specific to this educational approach and believe that one way of achieving this is to support further training of EPA staff involved in education programs.

6. Include the EE Approach in EPA’s Future Strategic Plans

This report has documented a breadth of educational programs, many ways in which education can contribute to EPA’s mission, and several instances of stated support for EE; however education seems to be left out of the Agency’s most recent strategic plan. While it could be argued that the strategic plan does support some of the approaches that EE programs use, we encourage those involved in future strategic planning to explicitly include education as a recognized and encouraged approach to achieving the Agency’s mission.

It will take a concerted effort by the staff and administration of the EPA to advance the environmental education approach. To implement the recommendations above it will require action at all levels within the Agency. It may be important to seek support outside the Agency including professionals in the fields of EE and evaluation as
well as other agencies with EE efforts. There appear to be many parallels between the
obstacles of EPA EE programs and the field of EE including how to effectively evaluate,
influence behavior, and develop new programs. It seems likely that EPA EE efforts
would benefit from a more formal connection to this and other related fields that are
actively researching ways to advance this approach.

This report has not attempted to provide a specific roadmap for how the EE
approach can be advanced at the EPA, but hopefully has provided valuable information to
begin such a process. The participants have identified many ways in which the EE
approach can benefit the Agency including improving compliance, encouraging
stewardship, generating public support, and so on. However until the environmental
education approach becomes well recognized and supported it may be difficult to see
such tangible results.

In the future it seems important to expand this research beyond the EE efforts at
EPA Headquarters to include EPA’s regional efforts and possibly efforts of other
agencies. There is much more to be learned about how the EE approach is being utilized
to protect the environment and human health, and a more comprehensive inventory seems
to be the first step. In addition evaluations of program outcomes will help to inform the
development of new programs and provide the necessary information for effectively
carrying out EE at the EPA. We encourage the use of this report to inform the
development of future research and hope that the process will continue at the Agency and
beyond.
Appendix A: EPA EE Programs

Office of Administration and Resource Management

OARM Research Triangle Park
Information Resources Management Division
ECO Summer Training Initiative with North Carolina Central University

Program Type
Internship/Fellowship

Audience
Higher Education

Website
N/A

Description
This is a 12 week internship program that seeks out students from HBCUs (in this case NCCU) in order to bring them to work with scientists, administration, and IT specialists on public administration, GIS, biology, or chemistry. The students have to go through an application process. The goal is for students to be able to utilize their academic and work experience during the internship training. The students gain valuable experience over the summer. They travel to DC twice for meetings and conferences, one being focused more on personal professional development.

Office of Human Resources
Customer Services Support Center (CSSC)

EPA Intern Program (EIP)

Program Type
Internship/Fellowship

Audience
Higher Education, Community/Non-Formal

Website
N/A

Description
The EPA Intern Program is for entry level applicants who have completed at least a bachelor’s degree. EIP is an entry-level hiring program designed to attract and retain future leaders for the agency. Once hired, participants undergo two years of professional development activities including conferences, job rotations to other EPA Offices, and a field experience.

Human Capital Planning and Policy Division
Asian American and Pacific Islander (AAPI) Outreach

Program Type
Community

Audience
Community/Non-Formal, Underserved, Local/State/Tribal Professionals

Website
www.epa.gov/aapi

Description
On June 7, 1999, President Clinton signed Executive Order 13125 to improve the quality of life of Asian Americans and Pacific Islanders (AAPIs) through increased participation in federal programs where they are underserved. This order has been renewed and altered several times with the most recent order being EO 13339 signed by President Bush in May 2004. EPA developed the National
Asian American and Pacific Islander Outreach Strategy to create a comprehensive framework for strengthening the Agency’s relationship with the nation’s diverse and growing AAPI community. The strategy rests on four pillars: 1) Community Partnerships; 2) Economic Opportunities; 3) Education Pipeline; and 4) Employment and Professional Advancement. Together, these pillars provide a strong foundation for ensuring that EPA:

- Responds effectively to the environmental and public health needs of AAPIs, and encourages public participation and informed decision-making.
- Provides economic opportunities for AAPI businesses.
- Encourages AAPI youth to be stewards of the environment and to consider the pursuit of environmental careers.
- Enhances diversity and professional opportunity within the Agency’s workplace.

Office of Air and Radiation

Immediate Office

American Indian Air Quality Training Program

Program Type
Training

Audience
Underserved, Local/State/Tribal Professionals

Website
http://www.epa.gov/air/tribal

Description
Tribes have a variety of regulatory tools and programs available to them as they work to protect their tribal air quality resources. To help tribes, OAR is working to provide technical assistance and program support to build tribal capacity. In addition, OAR is working to develop federally based programs to enable EPA to address air quality problems in Indian Country in cases where a tribe may be unable to do so themselves. The TribalAIR web site is designed to strengthen EPA and Tribal air quality programs in Indian Country by providing timely and user-friendly access to key information, promoting the exchange of ideas, and making available relevant documents to all environmental professionals who live and work in Indian Country.

Office of Air Quality Planning and Standards

Education and Outreach Program

OAQPS Environmental Education Program

Program Type
K-12

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals

Website
http://www.epa.gov/air/oaqps/eog/envedu.html

Description
This program is based on teacher workshops and K-12 resource materials and also calls on the Office of Environmental Education’s grant program. Local and regional teacher training workshops provide elementary, middle, and high school teachers with current air quality information, access to national and international air quality experts, and an opportunity to participate in hands-on experiments. The available educational materials include lists and descriptions of fact sheets, brochures, student activities, and lesson plans that can be used to supplement and update existing materials for air quality instruction in the classroom.
The Air Pollution Training Institute

**Program Type**
Training

**Audience**
Local/State/Tribal Professionals

**Website**
http://www.epa.gov/oaqps-eog/index.html

**Description**
The Air Pollution Training Institute (APTI), primarily provides technical air pollution training to state, Tribal, and local air pollution professionals, although others may benefit from this training. APTI's goal is to facilitate professional development by enhancing the skills necessary to understand and implement environmental programs and policies. The curriculum is divided into subject areas, for which four delivery formats are available: classroom, telecourse, self-instruction, and web-based. APTI also provides special course and workshop offerings.

Office of Atmospheric Programs
Climate Protection Partnerships Division

**Energy Star**

**Program Type**
Voluntary

**Audience**
Business/Industry, Community/Non-Formal, Local/State/Tribal Professionals

**Website**
http://www.energystar.gov

**Description**
ENERGY STAR® is a voluntary program sponsored through a partnership with the U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy. This Federal partnership strives to increase consumer awareness, interest, and desire for energy efficient products. DOE and EPA are promoting the use of energy efficient equipment by awarding the ENERGY STAR® label to appliances and electronic equipment that significantly exceed the minimum national efficiency standards. EPA undertakes a variety of efforts to (1) educate the public about the link between energy use and air emissions, (2) raise awareness of how products and services carrying the government-backed ENERGY STAR can protect the environment while saving them money, and (3) educate consumers about the hidden price tag of a product—the cost of energy to operate that product over its lifetime.

Climate Protection Partnerships-Methane Program Group

**Methane Outreach**

**Program Type**
Voluntary

**Audience**
Business/Industry, Community/Non-Formal

**Website**
http://www.epa.gov/outreach/index.html

**Description**
The program provides information and resources for the following topics:
Science: Find out more about methane's role as a greenhouse gas.
Sources and Emissions: Find out more about the sources of methane and current emission levels.
Projections and Mitigation Costs: Find projections of future methane emissions and the costs associated with reducing those emissions.
Voluntary Programs: Learn more about EPA's voluntary programs to reduce methane emissions which
include AgSTAR, Coalbed Methane Outreach Program, Natural GasSTAR Program, Landfill Methane Outreach Program
Other Non-C02 Gases: Learn more about the science, emissions, and reduction opportunities for other non-C02 greenhouse gases.

Global Programs Division

Global Warming Education Program/Visitor Center

Program Type
Community

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry, Underserved, Other

Website
http://yosemite.epa.gov/oar/globalwarming.nsf/content/visitorCenter.html

Description
The Environmental Protection Agency has launched a series of innovative initiatives to help inform the public about global warming and encourage individuals to learn about options for reducing greenhouse gas emissions. A wide range of audiences are targeted with educators being just one. Materials and sources are provided for a wide variety of audiences. They are designed so that educators and outreach professionals can use them in presentations and classroom activities on climate change science, potential impacts, and mitigation options. Climate change outreach materials include general resources, basic-level fact sheets, advanced fact sheets brochures, and tool kits such as the State and Local Outreach Kit and the Climate Change, Wildlife, and Wildlands Toolkit.

Sunwise School Program

Program Type
K-12

Audience
Students K-12, Teachers K-12

Website
http://www.epa.gov/sunwise:

Description
The SunWise Program is an environmental and health education program that aims to teach the public how to protect themselves from overexposure to the sun through the use of classroom-based, school-based, and community-based components. SunWise Partner Schools receive materials that facilitate cross-curricular classroom learning. The program also encourages schools to provide a sun-safe infrastructure, including shade structures (e.g., canopies, trees) and policies (e.g., using hats, sunscreen, sunglasses) that promote sun protection in a school setting. Though based in schools, SunWise also supports community partnerships, such as inviting guest speakers to school assemblies, to enhance sun safety efforts.

Office of Radiation and Indoor Air

Indoor Environments Division

Indoor Air Quality Tools for Schools Program

Program Type
Voluntary

Audience
Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals

Website
http://www.epa.gov/iaq/schools/index.html

Description
Indoor Air Quality Tools for Schools (IAQ TfS) program is comprised of a resource kit that shows
schools how to fix their indoor air problems and an awards program that recognizes schools and school districts that demonstrate a strong commitment to improving children's health and indoor air quality. There are also training modules and a website with information on design tools for schools now available. There are three different types of awards offered. The Excellence Awards are for schools/school districts that show outstanding achievement in fixing their indoor air quality problems, not only in fully implementing IAQ TIs, but also in their communications and outreach efforts. The action kit includes information about why IAQ is important to schools, understanding IAQ problems and solutions and other educational information about IAQ.

**Radiation and Protection Division**

**Radiation Protection Programs**

- **Program Type**
  - Community

- **Audience**
  - Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Business/Industry

- **Website**
  - [http://www.epa.gov/radiation/programs.htm](http://www.epa.gov/radiation/programs.htm)

- **Description**
  - The Radiation Protection Program responds to emergencies, assists in Homeland Security, assesses risks, sets protective limits on emissions and informs people about radiation and radiation hazards. An example of how the program educates is the Understanding Radiation Toolkit. The kit contains a guide, two videos, and a supplement for either teachers or journalists. The goal of the kit is to enable the public to make informed choices about radiation exposure.

**Office of Transportation and Air Quality**

**Certification and Compliance Division**

**Best Work Places For Commuters**

- **Program Type**
  - Voluntary

- **Audience**
  - Community/Non-Formal, Business/Industry

- **Website**

- **Description**
  - Offering innovative solutions to commuting challenges faced by employers and employees, the Best Work Places for Commuters is a business/government voluntary initiative advocating employee commuter benefits. Established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation (DOT), this program address limited or expensive parking, reducing traffic congestion, improving employee recruiting and retention, and minimizing the environmental impacts associated with drive-alone commuting. Participating companies earn the designation "Best Work Places for Commuters"- a mark of excellence for environmentally and employee-friendly organizations. Best Work Places for Commuters builds on the efforts of many top employers to help get employees to work safely, on time, and free of commute-related stress. It provides the tools, guidance, and promotion necessary to help U.S. employers of any size incorporate commuter benefits into their standard benefits plan, reap financial benefits, and gain national recognition.

**Clean School Bus USA**

- **Program Type**
  - Voluntary

- **Audience**
  - Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals,
Business/Industry

Website
http://www.epa.gov/otaq/schoolbus/index.htm

Description
Clean School Bus USA brings together partners from business, education, transportation, and public health organizations to work toward these goals: Encouraging policies and practices to eliminate unnecessary public school bus idling; upgrading ("retrofitting") buses that will remain in the fleet with better emission control technologies, fueling them with cleaner fuels, and replacing the oldest buses in the fleet with new less polluting buses. The program provides funding, resource/outreach materials, and advisory information.

It All Adds Up to Cleaner Air Program

Program Type
Voluntary

Audience
Community/Non-Formal, Local/State/Tribal Professionals

Website
http://www.italladdsup.gov/index.html

Description
This program is a collaborative effort between OTAQ and the Department of Transportation’s Federal Highway Administration and Federal Transit Administration. It All Adds Up to Cleaner Air is a unique public education and partnership-building initiative to help regional, state and communities reduce traffic congestion and air pollution. It All Adds Up seeks to inform the public about the connection between their transportation choices, traffic congestion and air pollution, and emphasizes simple, convenient actions people can take to improve air quality and reduce congestion. It All Adds Up provides state and local agencies with national themes and materials that can be easily adapted and tailored to meet information needs at the local level. Communities receive guidance and technical assistance for developing successful outreach campaigns, including free, high-quality promotional tools and evaluation resources to measure the effectiveness of the initiative. Communities also enjoy the benefits of a nationwide network of information and idea exchange through online forums, conferences and teleconferences.

SmartWay Transport Partnership

Program Type
Voluntary

Audience
Business/Industry

Website
http://www.epa.gov/otaq/smartway/index.htm

Description
SmartWay Transport is a voluntary partnership between various freight industry sectors and EPA that establishes incentives and informational tools for fuel efficiency improvements and greenhouse gas emissions reductions. By 2012, this initiative aims to reduce between 33 - 66 million metric tons of carbon dioxide (CO2) emissions and up to 200,000 tons of nitrogen oxide (NOx) emissions per year. At the same time, the initiative will result in fuel savings of up to 150 million barrels of oil annually. There are three primary components of the program: creating partnerships, reducing all unnecessary engine idling, and increasing the efficiency and use of rail and intermodal operations.
Office of Enforcement and Compliance Assurance

Office of Criminal Enforcement, Forensics, and Training
Office of Criminal Enforcement, Forensics, and Training
OCEFT Intern Program

Program Type
Internship/Fellowship

Audience
Higher Education, Underserved

Website
N/A

Description
The Office of Criminal Enforcement, Forensics, and Training (OCEFT) Intern program places college students of all majors in unpaid positions to gain on-the-job experience. Volunteer interns in the Criminal Investigation Division (CID) are given an opportunity to work with EPA's Federal agents on a broad range of investigative and environmental matters. The intern attends criminal search warrants when appropriate; observes forensic investigations of environmental crime scenes; helps agents obtain information from documents and evidence; observes trials, hearings, sentencings, etc. The intern will be given closed cases for review to gain insight into the types of investigations and the techniques used. CID Headquarters interns assist in providing logistic and analytical support to the field. The National Enforcement Investigation Center (NEIC) interns serve as laboratory technicians and support staff in conducting complex instrumentation analyses and filed sampling to support environmental cases. At the National Enforcement Training Institute (NETI), interns assist in course development, work with NETI OnLine, and support instructors conducting training courses. The Legal Council and Resource Management Division (LCRMD) interns assist with legal research and provide analytical and logistical resource management support.

Office of Environmental Justice
Office of Environmental Justice
Community Intern and Environmental Protection Intern Programs

Program Type
Internship/Fellowship

Audience
Higher Education, Underserved

Website
http://www.epa.gov/compliance/environmentaljustice/interns-index.html

Description
Since 1992, the Office of Environmental Justice has managed a training program under a cooperative agreement between EPA and the Environmental Careers Organizations, Inc. (ECO) (http://www.eco.org) to provide training opportunities for hundreds of college students. Several of these students come from historically black colleges, Hispanic serving institutions, Asian serving institutions, and tribal colleges. The original purpose of the program was to not only expose undergraduate and graduate students to the different kinds of EPA programs with the intention of attracting them into environmental careers, but to also provide EPA with a diverse group of eager young people to enhance the workforce. In 2000, the Community Intern Program was established and successfully placed 16 students in local community organizations where they might experience environmental protection at the grassroots level and learn about methods used by these local organizations to address local environmental issues. In order for an organization to qualify for an EPA funded intern, they must meet the definition of a "local community-based organization." The Community Intern Program is a terrific opportunity for EPA to strengthen existing partnerships and to create new ones with the community organizations where we work.
Environmental Justice Training

Program Type
Training

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry, Underserved, Other

Website
http://www.epa.gov/compliance/environmentaljustice/training/eqjw.html

Description
This set of workshops has been developed by EPA, State, Tribal and local governments, business and industry, academia, environmental groups and communities. It explores the origins of the Environmental Justice movement, perceptions and definitions of environmental justice, laws pertaining to environmental justice, controversies and issues surrounding environmental justice, and success stories to show collaborative problem-solving. It also provides an overview of Geographic Information Systems (GIS), and other analytical tools to help participants understand, integrate and address environmental justice issues.

Office of International Affairs

Office of International Affairs

International Catalogue of Environmental Training Modules:

Program Type
Training

Audience
Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry, Other

Website
http://www.epa.gov/oia/techassist/training/traincatalog.html

Description
The standard module uses a three-step process and a combination of case studies, exercises and other interactive methods to teach the fundamentals of a specific environmental management technique. Drawn from a broad range of organizations within the host country, both public and private, participants typically include representatives from national, state and local governments and universities, trade associations and other non-governmental organizations. Arranged on a case-by-case basis, delivery of the training modules depends on available funding.

Office of Prevention, Pesticides, and Toxic Substances

Office of Pesticide Programs
Biopesticides and Pollution Prevention Division, Environmental Stewardship Branch

National Integrated Pest Management (IPM) in Schools Initiative

Program Type
Voluntary

Audience
Teachers K-12, Community/Non-Formal, Business/Industry, Other

Website
http://www.epa.gov/pesticides/ipm

Description
Integrated Pest Management (IPM) is a safer and usually less costly option for effective pest management in the school community. A school IPM program employs commonsense strategies to
reduce sources of food, water and shelter for pests in school buildings and grounds. IPM programs take advantage of all pest management strategies, including judicious careful use of pesticides when necessary. EPA funds grant programs to initiate IPM in schools projects. The two major types of grants awarded are from the Pesticide Environmental Stewardship Program (PESP) through the cooperative agreement with the National Foundation for IPM Education and PESP Regional grants.

**PESP Project**

**Program Type**
Voluntary

**Audience**
Community/Non-Formal, Business/Industry

**Website**
http://www.epa.gov/opbhppd1/PESP-grants.htm

**Description**
The Pesticide Environmental Stewardship Program (PESP) is a voluntary program that forms partnerships with pesticide users to reduce the health and environmental risks associated with pesticide use and implement pollution prevention strategies. EPA started the program in 1994. There are two categories of membership in PESP:

- Partners- Organizations that use pesticides or represent pesticide users.
- Supporters- Organizations that do not use pesticides but have significant influence over the pest management practices of pesticide users. (Food processors, for example, may influence the use of pesticides on produce they buy, even though they do not apply pesticides to the produce themselves.)

Supporters may also include public interest groups whose constituencies have a strong interest in pesticide risk reduction.

**Office of Pollution Prevention and Toxics**

**Pollution Prevention Division- Prevention Analysis Branch**

**Hospitals for a Healthy Environment (H2E)**

**Program Type**
Voluntary

**Audience**
Business/Industry

**Website**
www.h2e-online.org

**Description**
The primary goal of the H2E effort is to educate health care professionals about pollution prevention opportunities in hospitals and health care systems. Through activities, such as the development of best practices, model plans for total waste management, resource directories, and case studies, the project hopes to provide hospitals and health care systems with enhanced tools for minimizing the volumes of waste generated and the use of persistent, bioaccumulative, and toxic chemicals. Such reductions are beneficial to the environment and health of our communities. Furthermore, improved waste management practices will reduce the waste disposal costs incurred by the health care industry.

**Economics, Exposure, and Technology Division**

**Design for the Environment**

**Program Type**
Voluntary

**Audience**
Business/Industry

**Website**
http://www.epa.gov/oppe.dte
**Description**
The Design for the Environment (DfE) program is one of EPA's premier partnership programs, working with individual industry sectors to compare and improve the performance and human health and environmental risks and costs of existing and alternative products, processes, and practices. DfE partnership projects promote integrating cleaner, cheaper, and smarter solutions into everyday business practices. The DfE process promotes voluntary environmental improvement by addressing industries' need for key information on how to incorporate environmental concerns into business decisions. The process systematically identifies the array of technologies, products, and processes that can be used to perform a particular function within an industry and related pollution prevention opportunities; Evaluates and compares the risk, performance, and cost tradeoffs of the alternatives; Disseminates this information to the entire industry community; Encourages and enables use of this information by providing mechanisms and incentives to institutionalize continuous environmental improvement. DfE provides decision-makers with information, tools, and incentives to make informed decisions that integrate risk, performance, and cost concerns. A DfE project potentially provides many benefits, including: Reduced health, safety, and ecological risks; Increased efficiency and customer acceptance; Improved worker morale and productivity; Reduced regulatory burden; Improved channels of communication, cooperation, and collaboration among stakeholder organizations; Expanded business and market opportunities.

**National Program Chemicals Division**

**Asbestos Outreach**

**Program Type**
Community

**Audience**
Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Business/Industry

**Website**
http://www.epa.gov/asbestos

**Description**
The goal of this program is to provide the public with resources and information regarding asbestos and asbestos containing products and their health effects. People believe that asbestos has been banned and is no longer a concern but there is a lot of asbestos that has been left in place which can become a hazard if disturbed. Even though the amounts of asbestos containing products have been significantly reduced since the 70's, there are still some products available. The asbestos outreach efforts have recently been revitalized and are many out of date materials are now in the process of being updated.

**Lead Awareness Program**

**Program Type**
Community

**Audience**
Community/Non-Formal, Local/State/Tribal Professionals, Underserved, Other

**Website**
http://www.epa.gov/opptintr/lead/leadphed.htm

**Description**
EPA's Lead Awareness Program designs outreach activities and educational materials, awards grants, and manages a toll-free hotline to help parents, home owners, and lead professionals learn what they can do to protect their families, and themselves, from the dangers of lead.
Office of Research and Development
National Center for Environmental Research
Environmental Science and Research Division

Greater Research Opportunities Graduate/Undergraduate Student Fellowships

Program Type
Internship/Fellowship

Audience
Higher Education

Website
http://es.epa.gov/ncer/fax2004fellow

Description
The GRO program, like its predecessor program (the Minority Academic Institutions (MAI) program,) is intended to strengthen the environmental research capacity of small to mid size institutions of higher education that receive limited funding to build such capacity, including in particular institutions with substantial minority enrollment. The program provides quality environmental research fellowships to undergraduate and graduate students, thereby encouraging them to pursue careers in environmentally related fields and to continue their education beyond the baccalaureate level. This goal is consistent with the mission of EPA, which is to provide leadership in the nation’s environmental science, research, education, assessment, restoration, and preservation efforts. This mission will benefit both the public and private sectors which will need a steady stream of well-trained and culturally diverse environmental specialists if our society is to meet the environmental challenges of the future.

Science to Achieve Results (STAR) Fellowships

Program Type
Internship/Fellowship

Audience
Higher Education

Website
http://es.epa.gov/ncer.fellow

Description
The STAR Program offers master’s and doctoral level graduate students fellowships for environmentally related fields of study. Master’s level students may receive support for a maximum of two years. Doctoral students may be supported for a maximum of three years, usable over a period of four years. The fellowship program provides up to $37,000 per year of support. The purpose of the fellowship program is to encourage promising students to obtain advanced degrees and pursue careers in environmentally related fields. The STAR fellowship program has proven to be beneficial to both the public and private sectors by providing a steady stream of well-trained environmental specialists to our society to meet environmental challenges. It has also provided new environmental research in physical, biological and health sciences, engineering and social science.

Environmental Engineering Research Division

P3 Student Competition

Program Type
Internship/Fellowship

Audience
Higher Education

Website
http://es.epa.gov/ncer.p3

Description
P3 is a partnership between the public and private sectors to achieve the mutual goals of economic
prosperity while protecting the natural systems of the planet and providing a higher quality of life for its people. The P3 competition will provide grants to teams of college students to research, develop, and design sustainable solutions to environmental challenges. P3 highlights people, prosperity, and the planet – the three pillars of sustainability – as the next step beyond P2 or pollution prevention. The P3 Award Competition has two phases: initially teams compete for $10,000 P3 grants. Recipients use the money to research and develop their projects during the academic year. Then in spring 2005, the P3 grant recipients will be invited to Washington, D.C. to compete for the P3 Award which conveys additional funding for further design development and implementation.

National Exposure Research Lab
Research Apprenticeship Program for High School Students

Program Type
Internship/Fellowship

Audience
Students K-12, Other

Website
N/A

Description
This program selects outstanding minority high school students and provides them with environmental training throughout the school year, and culminates in a summer research apprenticeship at the Office of Research and Development at the Research Triangle Park (RTP) campus. One of the goals of this program is to provide the students with role models and hands-on training, so that hopefully they will be inspired to pick an environmental career and go on to college.

Office of Solid Waste and Emergency Response
Office of Solid Waste
Communication, Information, and Resources Management Division -Communication Services Branch

Office of Solid Waste Educational Resources

Program Type
K-12

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Business/Industry, Other

Website
http://www.epa.gov/epaoswer.education/index.htm

Description
This program provides a wealth of materials for teachers, kids, students, and researchers, and communities to develop an increased knowledge of solid waste issues. These online resources are intended to increase environmental awareness and inspire participation in environmental activities. Activities and project ideas are provided for students of all ages to learn more about waste reduction, reuse, and recycling. The program also provides information sources, tools, and data to enable student researchers to collect environmental information for use in projects and reports. Teachers will find curriculum, activities, games, and other educational materials to teach students about waste generation and management. Student award and grant information is also provided, as well as information about environmental careers.
Municipal and Industrial Solid Waste Division - Municipal Waste Reduction Branch

WasteWise

Program Type
Voluntary

Audience
Local/State/Tribal Professionals, Business/Industry

Website
http://www.epa.gov/epaanswer/non-hw/reduce/wastewise/index.htm

Description
WasteWise is a free, voluntary, EPA program through which organizations eliminate costly municipal solid waste, benefitting their bottom line and the environment. WasteWise is a flexible program that allows partners to design their own solid waste reduction programs tailored to their needs. Partners are guided to set goals for 1) waste prevention 2) recycling 3) use of recycled materials. There is a large education component to the program including publications and resources for recycling and reducing waste.

Office of Superfund Remediation & Technology Innovation

Office of Brownfields Cleanup and Redevelopment

Brownfields Job Training Grants

Program Type
Training

Audience
Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Underserved

Website
http://www.epa.gov/swerosps/ftjoh.htm

Description
Grants provide funding for job training programs in communities that contain brownfields. This training is often related to topics regarding brownfield assessment, cleanup, safety and hazardous wastes. One of the goals is to train people in the affected to communities so that they can gain jobs directly related to brownfields cleanup.

Superfund Program

Community Involvement and Outreach Center

Program Type
Community

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry, Underserved, Other

Website

Description
Superfund community involvement is the process of getting community members actively involved in planning for and cleaning up a Superfund site. Community involvement is founded on the belief that people should know what EPA is doing in their community and be able to have some input into the decision making process. Superfund community involvement is not a public relations effort to sell the Agency or its plans and it is not just a one way communication of information. The goal of Superfund community involvement is to advocate and strengthen early and meaningful community participation during Superfund cleanups. Superfund community involvement staff will strive to: Keep the community well informed of ongoing and planned activities; Encourage and enable community members to get involved; Listen carefully to what the community is saying; Take the time needed to deal with community concerns; Change planned actions where community comments or concerns have merit; Explain to the community what EPA has done and why. The program provides many tools and
resources to achieve these goals.

Office of the Administrator

Office of Public Affairs
Office of Environmental Education
OEE Environmental Education Program

Program Type
All

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry, Underserved, Other

Website
www.epa.gov/enviroed

Description
The National Environmental Education Act of 1990 establishes the U.S. EPA Office of Environmental Education (OEE) and authorizes a variety of activities and programs including the Environmental Education and Training Program and Environmental Education Grant Program. OEE also oversees the National Network of Environmental Management Studies, an environmental internship and fellowship program, and administers the President’s Environmental Youth Awards. The National Environmental Education Advisory Council and a Federal Task Force on Environmental Education serve as advisory and networking bodies for OEE. The National Environmental Education and Training Foundation (NEETF), a non-profit organization also receives funding through the act.

Office of Water

American Indian Environmental Office
Washington Internships for Native Students (WINS)

Program Type
Internship/Fellowship

Audience
Higher Education, Underserved

Website
http://www.american.edu/wins

Description
The 6-credit summer Washington Leadership Seminar for WINS interns is designed specifically for Native students. Students receive three credits for the internship and related class and three credits for the academic course. The academic course covers topics important to Native communities such as tribal sovereignty; trust responsibilities; health and social welfare issues; and gaming and economic development concerns. Special arrangements are made with a wide range of federal agencies, congressional offices, and Native organizations to provide a focused internship experience for WINS participants. American Indian and Alaska Native students who are enrolled in a college or university as a sophomore, junior, senior, or graduate student in good academic standing are eligible to apply to participate in WINS.

Tribal Lands Environmental Science Scholarship Program

Program Type
Internship/Fellowship

Audience
Higher Education, Underserved
Website
http://www.epa.gov/epapages/epahome_intern.html

Description
This program's intent is to enable Native Americans to work for the environmental protection of tribal lands by assisting them in their pursuit of environmental science degrees. Full-time junior, senior, and graduate students majoring in an environmental discipline are eligible to compete for the scholarships. Students compete based on grade-point average, knowledge of Indian culture, commitment to environmental protection, character and leadership ability, level of study, and work experience. EPA works with the American Indian Science and Engineering Society (AISES) to select the scholarship winners.

Office of Ground Water and Drinking Water
Drinking Water Protection Division
Drinking Water Academy

Program Type
Training

Audience
Community/Non-Formal, Local/State/Tribal Professionals, Business/Industry

Website
http://www.epa.gov/safewater/dwa.html

Description
The Drinking Water Academy (DWA) is a long-term training initiative whose primary goal is to expand EPA, State, and Tribal capabilities to implement the 1996 Amendments to the Safe Drinking Water Act (SDWA). In addition to providing classroom and Web-based training, the DWA will act as a resource for training materials pertaining to SDWA implementation. EPA formed the DWA to help EPA, States, and Indian Tribes enhance program capability to meet the public health protection objectives of the SDWA requirements. The 1996 SDWA Amendments created a number of new programmatic challenges for the States, Tribes, and the water systems they regulate. The Amendments also provided new funding opportunities to meet these growing needs. DWA training will support EPA, State, and Tribal efforts to implement these new regulations.

Drinking Water for Kids

Program Type
K-12

Audience
Students K-12, Teachers K-12

Website
http://www.epa.gov/safewater/kids_index.html

Description
A general outreach effort that provides games, classroom activities/experiments, and information on children’s health with relation to safe drinking water standards. The resources are available mostly online.

Health Care Providers Outreach and Education

Program Type
Training

Audience
Business/Industry

Website
http://www.epa.gov/safewater.ndwat.hpcmem.html
Description
The goal of HCPP is to provide information on waterborne disease and the symptoms that may be caused by infectious agents, including microbial contaminants. A video has been developed in cooperation with the Centers for Disease Control that provides continuing education credits to health care providers. Using three case studies, the video provides the basics on drinking water quality and how health professionals are involved in local drinking water issue.

Office of Wastewater Management
Municipal Support Division-Municipal Assistance Branch
Water Alliance for Voluntary Efficiency (WAVE) Saver Water Management Software
Program Type
Voluntary
Audience
Local/State/Tribal Professionals, Business/Industry
Website
http://www.epa.gov/owm/water-efficiency/index.htm#wave
Description
WAVE is no longer a sign-up partnership program. However, they still offer free water management software. Three versions of the software are available: hotels, office buildings, and educational institutions (which also applies to military installations, office parks, research campuses, etc.).

Office of Wetlands, Oceans, and Watersheds
Assessment & Watershed Protection Division - NPS Control Branch
Non-point Source Pollution Outreach
Program Type
Community
Audience
Community/Non-Formal, Local/State/Tribal Professionals
Website
http://www.epa.gov/owow/nps-outreach.html
Description
Includes materials such as the Non-point Source Pointers, which is a series of fact sheets designed to help the public increase their understanding and management of non-point source pollution in their community. Examples of Best Management Practices, project success stories are provided, and resources such as a guidebook of useful tools practitioners need to develop and implement effective watershed outreach plans. Also included is a guide for conducting watershed outreach campaigns.

Assessment & Watershed Protection Division - Watershed Branch
Broadcast Meteorology Project
Program Type
Voluntary
Audience
Business/Industry, Other
Website
http://www.neef.org/Adult/watershed2.shim
Description
EPA's Office of Water launched a new partnership project designed to use television weather reports as a vehicle to raise the environmental awareness of the American public. Weather events—like droughts, floods, and hurricanes—directly impact the quality of our water resources. They offer a perfect opportunity for meteorologists to discuss connections between weather and watersheds. In addition to discussing the environmental implications of weather events, meteorologists can provide
the public with useful tips on how they can protect their watershed. For example, meteorologists can provide tips on how viewers can conserve water to minimize drought impacts and how they can minimize erosion and runoff. By utilizing watershed maps, visualizations and tips, meteorologists can significantly enhance the public’s understanding of watersheds.

**Volunteer Water Monitoring**

**Program Type**  
Community

**Audience**  
Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry

**Website**  
http://www.epa.gov/owow/monitoring-ytd.html

**Description**  
This program provides an assortment of resources to aid in volunteer water monitoring including fact sheets, methods manuals, databases, conference information, and more. Volunteer monitoring programs are organized and supported in many different ways. Projects may be entirely independent or may be associated with state, interstate, local, or federal agencies; with environmental organizations; or with schools and universities. The volunteers learn a great deal while also helping the EPA to monitor water quality.

**Watershed Academy**

**Program Type**  
Training

**Audience**  
Community/Non-Formal, Local/State/Tribal Professionals, Business/Industry

**Website**  
http://www.epa.gov/owow/watershed.wacademy/

**Description**  
EPA’s Watershed Academy provides training and information on how to implement watershed approaches to local, state, tribal, and federal officials and private practitioners of watershed management. The Watershed Academy consists of four key components:
1. Training Courses on topics ranging from basic watershed management principles to the application of more complex technical tools.
2. Training Materials, which include an information transfer series with numerous documents that highlight institutional/organizational/technical aspects of implementing watershed approaches.
3. Watershed Management Facilitation, in which the Academy assists states and tribes in reorienting their water resource management programs along watershed lines.
4. Web-Based Training, at Watershed Academy Web (www.epa.gov/watertrain), through which EPA offers over 40 free, self-paced training modules and a watershed management training certificate.

**Watershed Outreach**

**Program Type**  
Community

**Audience**  
Students K-12, Teachers K-12, Community/Non-Formal, Local/State/Tribal Professionals, Higher Education, Business/Industry

**Website**  
http://www.epa.gov/owow/watershed/outreach/outreachnonjs.html

**Description**  
There are many materials available to help you understand and promote watershed protection. Some materials are downloadable directly from this web site. Others must be requested by telephone, email, or regular mail. The types of materials available include: Watershed-related pictures and clip art, activities just for kids, links to watershed related web sites with activities and information.
Watershed/Water Drop Patch Project

**Program Type**
Community

**Audience**
Students K-12, Teachers K-12, Community/Non-Formal

**Website**
http://www.epa.gov/owow/education.html

**Description**
There are two patch projects. The Water Drop Patch Project (1998) is for Girl Scouts only, whereas the Watershed Patch Project (2002) is a collection of watershed activities for schools, community groups and science clubs. Both programs offer activities, information and patches for completion of certain requirements. The purpose of the Water Drop Patch Project is to encourage young people to: Make a difference in their communities by becoming watershed and wetlands stewards; Use their skills and their knowledge to educate others in their communities about the need to protect the nation’s valuable water resources; Explore the natural world to gain an interest in science and math.

Oceans and Coastal Protection Division

Community Culture and the Environment: A Guide to Understanding a Sense of Place- guidebook and training

**Program Type**
Training

**Audience**
Community/Non-Formal, Local/State/Tribal Professionals, Business/Industry

**Website**
http://www.epa.gov/cgi-bin/clrtgw?top-isplay&document=clserv:OW:1614;rank=4&template=epa

**Description**
The goal of this resource is to try and educate people on different social science tools and techniques for understanding community values. This works at increasing skills in participatory research and planning for environmental issues. The training component of this program is generally two days long and consists of interactive presentations and exercises on using different social science methods. The 279 page guidebook is available for free, even to those who do not participate in the training.

The National Estuary Program

**Program Type**
Community

**Audience**
Other

**Website**
http://www.epa.gov/owow/estuaries

**Description**
The National Estuary Program was established in 1987 by amendments to the Clean Water Act to identify, restore, and protect nationally significant estuaries of the United States. There are currently 28 estuary partnerships receiving funding to safeguard the health of some of our Nation's most important coastal waters. These groups, such as the Long Island Sound Study, involve extensive community participation, outreach and education efforts. The goal of these efforts is to increase awareness and build understanding about the importance of estuaries, how individual behavior impacts their overall health and what people can do to improve environmental conditions. There is also an exploring estuaries website which includes background info, games and activities, and resources for teachers (http://www.epa.gov/owow/estuaries/kids/site_index.html)
Wetlands Division

Wetland's Education

Program Type
K-12

Audience
Students K-12, Teachers K-12, Community/Non-Formal, Business/Industry, Underserved

Website
http://www.epa.gov/owow/wetlands/education

Description
Education activities include designation of an American Wetlands Month, and providing games to educate children about protecting water. Supplemental curricula and other teaching tools provide educators with information on integrating wetlands education in the classroom. Education programs engage students in hands on activities that encourage science education and watershed stewardship.
Programs Not Included in Final Inventory

The following is a list of programs which initially appeared to fit our definition, but after interviewing program staff it was decided that they did not. This list does not reflect programs that have been discontinued or never got off the ground that were originally on our list.

Children’s Health Protection Education and Outreach
Reason not included: This program infuses messages in other programs products and services, thus they have no stand alone EE programs or materials.

South Africa Lead Outreach Program
Reason not included: This program is funded through a grant program in the Office of International Affairs, but is not an EPA program.

Office of Environmental Information (OEI) Outreach, Window to My Environment
Reason not included: OEI has many efforts which support and benefit EE at EPA, but they have no stand alone EE programs.

Acid Rain Kid’s Page
Reason not included: This web-based effort lacks an active educational component, although it does offer a wealth of information and online games.

Public Liaison Office Special Outreach Programs
Reason not included: This office organizes special programs periodically based on requests from school groups, universities, and organizations, but this is not a formalized program.

Office of Pollution Prevention and Toxic Substances Interns
Reason not included: This office provides many opportunities for summer interns to interact and communicate with one another, however the interns are typically hired through other established internship programs at EPA.
Appendix B: Interview Instrument

**Background info**
Number of years worked in the federal government __________
Federal Agency ________________________________________________
Office _________________________________________________________
Title/Position _________________________________________________

Highest Degree Obtained (circle one)
- High School/GED
- College
- Masters
- PhD
- JD
- MD
- Other

Discipline of Highest Degree ______________________________________

Conferences regularly attended ______________________________________

Training _________________________________________________________

**Interview Questions**
1. What are the names of the educational programs that you are involved in through this office?
2. Can you briefly describe the program and what it seeks to achieve?
3. What are the legislative mandates behind the program?
4. Who are the target audiences?
5. How is the program marketed? (individual schools, school districts, word of mouth, newsletter, newspaper, television, internet,...)
6. What subject areas does the program focus on?
7. Are program materials offered in any language other than English?
8. What year was the program established?
9. How many staff members are working on this program?
10. Who are the partners for this program?
11. Where has the program been implemented?
12. What is the program budget?
13. Is the program aligned with national/state or other education standards?
14. How do you evaluate this program? How are the results used?
15. Where do you see your educational programs in five years?
16. Is working on education programs part of your formal job description?
17. How does education complement the regulatory, enforcement, and other strategies of the EPA?
18. What priority does education have in your office?
19. What do you feel are the biggest obstacles in developing/ implementing education programs in your office? In the larger office and agency?
20. What do you need to help you continue to develop effective education programs? Why? Other than time and funding?
21. What is your relationship with the US EPA Office of Environmental Education?
22. What help has the Office of Environmental Education provided in terms of resources and services to assist you in your educational programming efforts?
23. Freelist environmental education (List all the terms that come to mind that you feel are associated with environmental education)
Appendix C: Additional Inventory Information

Figure 6: Marketing Practices of EPA EE Programs

- Newspaper/Journal: 2
- Television: 2
- PSA's: 4
- Newsletter: 10
- Partners: 11
- Schools/School Districts: 14
- List-Serve/Mailing List: 18
- Other: 21
- Conferences/Events: 29
- Word of Mouth: 30
- WWW: 38

Number of Programs

Figure 7: Number of EPA Staff per EE Program (n=46)

- 1 staff: 42.5%
- 2 staff: 12.5%
- 3 staff: 22.5%
- 4 staff: 5.0%
- 5 and above: 17.5%

# of Staff per program
Figure 8: Years EPA EE staff members have been employed in the Federal Government

![Bar chart showing the number of staff employed for different time periods.]

Table 3: Obstacles of EPA EE Programs (No particular order)

<table>
<thead>
<tr>
<th>Obstacles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of funding</td>
</tr>
<tr>
<td>Lack of collaboration and communication</td>
</tr>
<tr>
<td>Lack of Management support</td>
</tr>
<tr>
<td>Difficulty demonstrating results (measurement and evaluation)</td>
</tr>
<tr>
<td>EPA staff attitudes and misunderstanding of EE’s importance</td>
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<tr>
<td>Territoriality and competition between programs</td>
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<tr>
<td>Understanding and meeting the needs of your audience</td>
</tr>
<tr>
<td>No mechanism to find what similar programs are out there</td>
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<tr>
<td>Politics and bureaucracy</td>
</tr>
<tr>
<td>Materials/product review</td>
</tr>
<tr>
<td>Lack of resources</td>
</tr>
<tr>
<td>Lack of time</td>
</tr>
<tr>
<td>Finding outside topical/subject experts</td>
</tr>
<tr>
<td>Lack of knowledge on best practices/tools/methods in EE</td>
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<tr>
<td>Limited by ability to do surveys and market research</td>
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<tr>
<td>Lack of facilitated communication among EE programs</td>
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<tr>
<td>EPA staff do not want to mentor students</td>
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<tr>
<td>Not enough people/staff</td>
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<tr>
<td>Visibility</td>
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<tr>
<td>Lack of communication skills in the scientific/technical community</td>
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<td>Education Discipline Categories for EPA EE Staff</td>
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## Appendix D: Free List Results

### Table 5: Detailed Freelist Data

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**Appendix E: Acronyms**

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<tr>
<th>Acronym</th>
<th>Definition</th>
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<td>EE</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
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<tr>
<td>FTE</td>
<td>Full Time Equivalent</td>
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<tr>
<td>HQ</td>
<td>Headquarters</td>
</tr>
<tr>
<td>NAAEE</td>
<td>North American Association of Environmental Education</td>
</tr>
<tr>
<td>NEEA</td>
<td>National Environmental Education Act</td>
</tr>
<tr>
<td>NEEAC</td>
<td>National Environmental Education Advisory Council</td>
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<tr>
<td>NNEMS</td>
<td>National Network for Environmental Management Studies</td>
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<tr>
<td>OEE</td>
<td>Office of Environmental Education</td>
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<tr>
<td>GPRA</td>
<td>Government Performance and Results Act</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
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<tr>
<td>MDS</td>
<td>Multi-Dimensional Scaling</td>
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<tr>
<td>PART</td>
<td>Program Assessment Rating Tool</td>
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<td>ORD</td>
<td>Office of Research and Development</td>
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