A survey of training programs for auxiliary school personnel in environmental education in New England with emphasis on the role of environmental aides.

Warren Masters Little
University of Massachusetts Amherst

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A SURVEY OF TRAINING PROGRAMS FOR AUXILIARY SCHOOL PERSONNEL IN ENVIRONMENTAL EDUCATION IN NEW ENGLAND WITH EMPHASIS ON THE ROLE OF ENVIRONMENTAL AIDES

A Dissertation Presented

By

WARREN MASTERS LITTLE

Submitted to the Graduate School of the University of Massachusetts in partial fulfillment of the requirements for the degree of DOCTOR OF EDUCATION

School of Education
Amherst, Massachusetts
February, 1972

Major Subject: Education Administration
A SURVEY OF TRAINING PROGRAMS FOR AUXILIARY SCHOOL PERSONNEL IN ENVIRONMENTAL EDUCATION IN NEW ENGLAND WITH EMPHASIS ON THE ROLE OF ENVIRONMENTAL AIDES

A Dissertation

By

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Amherst, Massachusetts

February, 1972
DEDICATION

To

Bertram K. Little and Nina F. Little

Through their guidance, assistance, and interests I came to appreciate our American heritage and natural environment and to understand the importance of a community in maintaining both.
ACKNOWLEDGEMENTS

I am deeply grateful to many people for their generous support in helping me to complete this investigation. In particular, I am indebted to the New England School Development Council (NESDEC), of which Dr. Robert S. Ireland is Executive Secretary, for its approval of a small research grant to carry out the study. Special thanks also go to Dr. Garda W. Bowman, Program and Research Coordinator at the Bank Street College of Education in New York, for permission to use her Activity Sheet as a guideline in developing the questionnaire for this study. Further assistance in methodology was received from Dr. Robert Consalvo, President of Heuristics, Inc. Additional helpful advice and materials were received from Dr. Nick Muto, Associate Superintendent of the Wellesley Public Schools and Fredrick Hayen and Marshall Frinks, fellow doctoral students at the University of Massachusetts.

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CHAPTER I

INTRODUCTION

Earth Day in 1970 dramatized a growing concern about the environmental problems that currently face the country--indeed, the entire earth. As awareness of these resource problems has grown, so has the need for what is now referred to as environmental education. Evidence of this is the Environmental Education Act, which was signed into law in October of 1970 and which stated that:

... the deterioration of the quality of the nation's environment and its ecological balance poses a serious threat to the strength and vitality of the people of the nation and is in part due to the poor understanding of the nation's environment and of the need for ecological balance.¹

Today's students must not only learn about current environmental problems but must also be prepared to deal with the probable or possible problems of tomorrow.

The present study is intended to add depth and dimension to the existing knowledge about development and use of auxiliary school personnel in environmental education. This objective will be accomplished by gathering and examining information from programs in the six New England states which use personnel in this capacity. Methods of

recruiting, training, and institutionalizing environmental aides will be identified as will the activities perceived by administrators, selected teachers, and aides to be the functions which environmental aides frequently perform. The evidence gathered, along with a profile of the aides, will assist administrators, teachers, and community members to establish a job description for environmental aides and set up programs to train and utilize such aides.

**General Background**

Nature study, which teaches students to appreciate the natural world, and conservation education, which stresses the wise use of our natural resources, are among the precursors of a more comprehensive environmental education. The effectiveness of nature study depends on the individual teacher's understanding of the natural world; conservation education is important in areas of the country where students need to learn how to produce larger and better crops by using proper soil and water conservation methods. Outdoor education, a third way in which the schools have approached the environment, perhaps comes the closest to the new concept of environmental education in that it is multidisciplinary and it stresses the use of the out-of-doors for what can best be taught there. Unfortunately, outdoor education has always had an active recreation connotation which excluded it from curricula in parts of the country where the emphasis has been on more "intellectually demanding" academic pursuits.

Environmental education does not put the birds, bees, or crops at the top. It focuses on man and puts him squarely in a position of
responsibility, not only for those features of the natural world, but also for understanding his fragile life support systems and maintaining them on an ecologically sound basis. The Environmental Education Act defines the term as meaning

... the educational process dealing with man's relationship with his natural and manmade surroundings, and includes the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, and urban and rural planning to the total human environment.²

Environmental education, then, is more than just the study of plant and animal life and conservation of our natural resources; it is also a study of the environmental problems which man has created. Such a study requires an inquiry approach, and ideally it should be carried on in the context of the local community where such problems can be studied firsthand and where their relevancy is a matter too obvious for explanation. An inquiry approach is necessary in order to fully comprehend the many complex ecological ramifications of man's resource problems. Investigation of these problems should be an integrated part of disciplines such as biology, art, and economics, to name only a few. Alternative solutions must be looked at in the light of political and monetary considerations. Short-term vs. long-term gains and losses must be weighed. It is important not to categorize environmental education as a subject; rather it should be an attitude which must pervade all subject areas—a way of seeing things with an ecological conscience and studying the alternatives in the field if possible, rather than merely hearing about them in the traditional classroom lecture.

²Ibid., Sec. 1532.
The development of more powerful microscopes over the past twenty-five years has led to great scientific achievements in determining how the human being is put together. This fascination with what is called the "skin-in," or biochemical, approach to life has meant that the majority of biology teachers emphasize a laboratory rather than a field approach to biology, and neglect the "skin-out" study of the natural world. The Sputnik craze and the introduction of such educational programs as "kitchen physics" have also helped to create a large block of teachers who have never set foot outside of the classroom and who will ignore the natural world rather than admit their ignorance about it.

It is a fact that while there is an increased awareness of our ecological crisis and a growing interest in using the out-of-doors to study man's relationship to his environment, teachers are poorly trained to handle the education of students in this vitally important area. A recent survey by Professor Stephen Romine of the University of Colorado shows that 81 junior high schools and 106 senior high schools (more than 85% of those queried), distributed nationwide and ranging in enrollment from less than 300 to more than 4,800, reported that the average rating on the extent of efforts in environmental education in 1970-71 is only moderate for each group of schools and effectiveness is rated as less than moderate. There appear to be two ways of remedying this situation. The first is to develop both preservice and inservice training in the area of environmental education for all teachers. This

is being done, but it will take a long time--perhaps more than we have--and the difficulty here is a lack of people in institutions of higher education who have the expertise to train potential or experienced teachers in this area. Romine's survey notes that the average ratings of extent of efforts for special assistance for teachers interested in environmental education are less than moderate, and effectiveness moderate in the junior high schools and less than moderate in the high schools.\(^4\)

The second way to introduce environmental education into the schools as soon as possible is to give working teachers some outside assistance in this area. One alternative is to provide them with auxiliary school personnel trained in environmental education who will assist the teachers until they can receive the necessary inservice training to carry on environmental education on their own within their school, subject area, or classroom. Even then, if an inquiry approach using the schoolgrounds and/or the community is maintained, teachers will continue to need assistance from "environmental aides" in planning and carrying out community-oriented field trips, and determining the human, natural, and physical resources available for use by the schools in developing "environmental encounters."\(^5\)

The use of auxiliary personnel in schools is not a new concept. With the teacher shortage and oversized classes caused by the post-war

\(^4\)Ibid., p. 6.

baby boom, a series of programs to increase teacher effectiveness was developed in the early fifties which involved the use of aides to free teachers from clerical tasks. Despite some resistance at the time, there was a gradual increase in the use of aides through the late fifties and early sixties, and then a marked increase in aide programs with the impetus of federal funding in the late sixties. At the same time, administrators and teachers have become far less concerned about the potential problems involved in the recruiting, training, and institutionalizing of aides. The problems connected with using aides in the classroom, envisioned twenty years ago by many teachers, have not materialized either. With the increased interest in the New Career Concept, available federal funds, and a trend favoring the concepts of team teaching and differentiated staffing, it is estimated that the number of aides climbed from 80,000 in 1968 to about 175,000 in 1970. It would appear that teacher aides are here to stay, and that their position within the schools will become more important in the years ahead.

The use of instructional aides to assist teachers in community problems seems to have developed within the last few years. Prior to that time the literature suggests that some schools have used aides in the role of "assisting teachers on field trips by acting as a chaperone, monitor, and safety expert." Such aides were referred to as "community aides" and the literature suggests that "making arrangements for field trips is an instruction-related function considered by a majority of

sources studied to be appropriate for aides,"^7 although the report cited goes on to say that: "it is usually required that certified professionals be in charge of the field trips but aides may go along to assist."^8 The same report also notes that "the rewards of well thought out and operated community programs are very great."^9

The availability of federal funds has created a new role for community aides— that of interpreting the community to the teachers. At present most of the aides who fill this role are from the core city and are used as the liaison between the urban community and its schools, which are staffed with teachers who may not be acquainted with the community and its problems.

The idea of environmental aides is a recent innovation in New England and the literature is sparse. In 1968, the Liberty Council of Schools' Conservation Education Center, a Title III project which serviced eleven communities and four regional high schools just northwest of Boston, inaugurated what is believed to be the first environmental aide course in Massachusetts. Over forty volunteer aides were trained that year, with another thirty the following year, to assist elementary school teachers in environmental education. Federal funds then ran out and the local educational agencies did not continue the project. The environmental aide component of the Liberty Council's program was picked

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^8 Ibid., p. 19. ^9 Ibid., p. 20.
up by the Elbanobscot Foundation, Inc. in Sudbury, Massachusetts, which
trained over twenty aides in the fall of 1970 and another twenty in the
spring of 1971. In addition, the Town of Wellesley, Massachusetts,
initiated a course in the spring of 1971 for twenty environmental aides
based on a format similar to that developed by the Liberty Council and
the Elbanobscot Foundation.

Purpose of the Study

While enthusiasm for programs like those mentioned above seems
to be growing, they would become more attractive to administrators and
taxpayers alike if there was available an overview of the different
environmental aide programs in the six New England states.

This study, by identifying and pulling together what has gone
on and what is currently taking place in New England, will be a valuable
tool for communities which want to initiate environmental aide training
programs. The study also analyzes how administrators, selected
teachers, and aides themselves conceive the role of the environmental
aide, and this should make it simpler for an administrator to establish
a job description for the aide.

Finally, this study proposes to make a contribution to the
general body of knowledge about recruitment, training, and institution-
alization of auxiliary school personnel in environmental education—in
other words, how such people may be used to assist teachers to educate
today's students and future ones in the all-important area of obtaining
and maintaining a quality environment, fit for life and fit for living.
Underlying Assumptions

The following general assumptions were considered essential to the purpose of the study:

(1) That administrators, selected teachers, and aides can present a fairly precise view of the role and functions of an environmental aide.

(2) That the administrators of programs which train auxiliary school personnel in environmental education are the appropriate authorities to provide responses to the proposed interview.

(3) That the respondents to both the interview and the questionnaire will react honestly and candidly to the instruments in terms of their personal activities and opinions based on their knowledge of the role of environmental aides.

(4) That program administrators want to respond to the needs of the education systems they serve.

Design of the Study

The following investigation is directed at gathering factual information concerning programs in New England which train paid or voluntary auxiliary school personnel in environmental education. The study is organized into six chapters:

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10 The New England states include Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island. Environmental aide training programs were identified in Maine and Massachusetts only, as will be brought out in Chapter III.
Chapter I is concerned with the nature and scope of the study. It includes (1) the general background of the investigation; (2) an explanation of the purpose of the study; (3) the underlying assumptions; (4) design; (5) limitations; (6) significance of the study; and (7) the definition of terms.

Chapter II provides a detailed review of the literature and related research pertaining to the recruiting, training, role, and function of teacher aides as established in the definition of terms. This chapter is divided into the following nine areas: (1) Who is the Typical Teacher Aide?; (2) The Role and Function of Teacher Aides; (3) Community Aides; (4) Role Conflict; (5) Recruitment and Selection of Aides; (6) Placement and Reassignment of Aides; (7) Training of Aides; (8) Training Teachers to Supervise Aides; and (9) Evaluation of Job Performance and Aide Programs.

Chapter III describes in detail the Design of the Study and the systematic plan followed in implementing the stated procedures. The descriptive method of research is utilized in the development of the study. It is a nonexperimental investigation and is generally limited to obtaining baseline data through the use of a structured interview and a questionnaire inquiry directed to the identified study population and pertaining to the following three areas of study:

Section I - A Survey of Past and Existing Programs in New England which Involve Auxiliary School Personnel in Environmental Education.

The purpose of this section is to identify, by means of a structured interview directed at the administrator of each program,
the distinct organizational characteristics of these programs, and thereby to establish an overview of what is being done in New England in this area. It is the investigator's belief that a survey of these programs will be helpful in determining the strategies used by programs which are currently training, or have trained, auxiliary school personnel for use in the schools in environmental education. This information will provide valuable assistance to administrators considering the adoption of environmental aides.

Section II - A Profile of Auxiliary School Personnel Trained in Environmental Education in New England.

This part of the investigation involves an analysis of the results of a series of structured, closed questions which bring out information of value to administrators to assist them in determining recruiting procedures, training and training schedules, and the educational background of aides which can be utilized in an environmental education program within the schools and community.

Section III - An Analysis of How Environmental Aides, the Administrator, and Selected Teachers Perceive the Role and Functions of Environmental Aides.

A structured "Activity Sheet," similar to one developed by the Bank Street College of Education, was designed, administered, and analyzed to fulfill this part of the investigation. The opinions of environmental aides, administrators, and selected teachers in each identified

program were sought to determine what activities they perceived as helpful for an environmental aide to carry out, and those functions which environmental aides frequently perform.

The methodology and procedures used in this investigation are described in greater detail in Chapter III. In general outline form, an overview of the procedures used to gather data for the study is as follows:

(1) A review of the literature and research pertaining to the recruiting, training, role, and function of teacher aides as established in the definition of terms was made.

(2) A cover letter and enclosed short form was sent out to identified personnel in each of the six New England states and the State Department of Education which asked them to determine past or present programs which have developed auxiliary school personnel for use in environmental education. The returns from this questionnaire, plus personal letters and calls to other environmental educators in New England, enabled the investigator to determine the programs which became the identified study population.

(3) The investigator conducted a personal structured interview with the administrators of the identified programs which have trained auxiliary school personnel in environmental education in New England. The interview was designed to elicit perceptual and factual information about the respondent's programs with regard to the organization of the program, preservice and inservice training, and evaluation. Information collected included: (a) a program profile; (b) the organization and
administration of the program; (c) program training; (d) evaluation; and (e) the administrator's evaluation and recommendations.

(4) Demographic data on aides were obtained in the form of answers to closed questions which determined such information as age, number of children, average years of schooling, and reasons for entering the environmental aide program.

(5) Environmental aides, administrators, and selected teachers in the identified projects were asked to list those functions which they perceived as helpful for environmental aides to perform. In addition, the aides were asked to check the frequency they felt they would perform such activities within a school. A checklist of fifty suggested activities was utilized. Consensus regarding the helpfulness and frequency of those suggested auxiliary functions as perceived by the respondents was analyzed with particular reference to rank order. Provisions for activities that did not fit the grade level of the pupils with whom the respondents work, or would be working, were made by having the respondents check never likely to be done by them on the job. Blank spaces were provided at the end for the respondents to list other activities which they believed would be helpful and which they felt they would be likely to carry out. The questionnaire outlined above was reviewed by selected administrators, including Dr. Garda W. Bowman of the Bank Street College of Education, doctoral candidates at the University of Massachusetts in Amherst, and environmental aides with whom the investigator is acquainted. The questionnaire was revised and
refined as a result of the reactions received.

(6) Mailing of the questionnaire to aides and teachers, return and follow-up procedures were established to reflect a systematic ordering of events. The distribution and collection procedures are detailed in Chapter III.

(7) All data obtained from the related literature, interviews, and the questionnaire were analyzed, synthesized, and reported in the appropriate chapters of this study. The information was presented in such narrative, tabular, or graphic form as most appropriately illustrated the findings. Whenever quantitative analyses of the data were made, the investigator utilized weighted scores and percentages. Subjective statements made by the respondents were categorized, described, and utilized appropriately in relationship to the quantitative analysis of the data.

Chapter IV is devoted to a profile of past and present Environmental Aide Training Programs in New England as identified by means of the structured questionnaire sent out to State Department of Education personnel and personal letters sent out to environmental educators by the investigator. Five programs are surveyed: (1) The Liberty Council of Schools' Volunteers for Environmental Education; (2) Maine's Regional Environmental Education Guides; (3) The Elbanobscot Foundation's Environmental Aides; (4) The Lowell Model Cities' Career Ladder Interns; and (5) The Wellesley Environmental Awareness Committee Training Course. The organization and administration, training, and evaluation of each program are taken up in detail, along with the administrator's evaluation and recommendations for future programs.
Chapter V reports, analyzes and synthesizes the findings of the questionnaire, which became the basic framework of the analysis. Since the questionnaire asked for both closed and open responses, the data is accordingly presented in both tabular and narrative form. The investigator strove for an impersonal and objective interpretation of the material he gathered.

The final chapter, Chapter VI, summarizes the information presented in previous chapters and draws conclusions from this. Chapter VI also contains recommendations to assist administrators, teachers, and community members in establishing programs to train and utilize auxiliary school personnel in environmental education on either a paid or volunteer basis.

Limitations of the Study

The proposed study is delimited to the training of adult environmental aides within New England. Information was gathered about programs identified by State Department of Education personnel and others known by the investigator to have been involved with the administration of such programs from September 1968 to the end of April 1971.

The administrators, teachers, and aides who make up the study population for the administration of the structured interview and the Activity Sheet are delimited to those personnel who were or are connected with the five identified environmental aide programs in New England.

The proposed study is limited to the responses received by the cut-off-date from the identified population of administrators, selected teachers, and the aides identified by the administrator as having been
involved with the program through at least half of the preservice training. It is further delimited by pertinent data gained from the interviews and research in the related literature.

The validation of the interview and the Activity Sheet is limited to the professional judgment of administrators to whom it was submitted by the investigator. Finally, this study is limited by its definition of terms.

**Significance of the Study**

The urgency of the current ecological crisis calls for immediate educational measures. New and improved curricula must be developed to encourage the understanding of policies and support of activities designed to enhance the quality of our environment and maintain ecological balance. Teachers must be trained in environmental education along with other educational personnel at the federal, state and local levels.

The nation's teachers cannot all be instilled with an ecological conscience and trained to solve environmental problems with their students overnight. Neither our human nor our physical resources can be activated fast enough to handle the problem in all its magnitude. Alternative solutions must, therefore, be considered and implemented.

It is the investigator's belief that one significant way of meeting the shortage of qualified educators in environmental education is to train people from the local community to assist teachers in this vital area by serving as environmental aides, on either a paid or volunteer basis. It is anticipated that the conclusions and implications
of this study will not only contribute to the particular body of knowledge about the recruiting, training, and institutionalization of such aides in environmental education, but that it will also have some general applicability to existing and future programs involving the use of community members in all types of educational endeavors. The study should be of specific value to several groups.

First, administrators, teachers, and auxiliary personnel in existing environmental aide programs will get ideas for the improvement and refining of their own programs by seeing how similar programs are dealing with such common problems as recruiting, training, institutionalization, and role conflict, as well as the environmental problems of population, pollution, and land use. An exchange of ideas and techniques for working with students in an inquiry approach will also be of significant value.

The study should be useful to developers of future programs for training auxiliary school personnel—school systems, institutions of higher education, a community group in cooperation with a school system, or a private foundation. As schools move toward differentiated staffing, research by those who pioneered in developing teacher aide programs must be brought together and made available for future administrators.

The U. S. Office of Education—which funds the training of teacher aides under the Education Professions Development Act, the Career Opportunities Program and Model Cities, and groups which may be funded under the new Environmental Education Act—should benefit from the conclusions of this study. The same goes for state decision makers
who determine funding of pilot programs and promising projects in the area of both environmental education and the training of auxiliary school personnel. The directives from both the national and state Offices of Education now stress community and parental involvement in the schools, and the training of parents as auxiliary personnel. It is anticipated that this study will assist these leaders in identifying and establishing criteria and guidelines for the funding of future programs in this area.

The study will be helpful to local educational agencies and community members who are seeking ways to bring the schools and the community closer together. It is the investigator's belief that current antagonisms between educators and community members over the cost of education—and how best to spend the money appropriated—can be moderated by greater communication between the schools and the community. It is hoped that, by identifying programs which have attempted to build bridges between school personnel and the community in an area vital to all, some improvement in community-school relations can be realized.

Finally, this investigation will be of value to those members of the education profession who are seeking change in the current methods of educating our children to the environmental crisis which faces them. By examining the use of members of the community in an auxiliary teaching capacity, significant new departures from the established systems can be encouraged and developed.
Definition of Terms

In making a preliminary study of the literature to provide a background for the proposed investigation, the investigator found it necessary to define the following terms which are considered essential to the interpretation and handling of the data. A complete listing of terms used in the study is included in the Appendix in a separate Glossary.

Auxiliary school personnel - noncertified aides in schools who serve in an instructional, administrative, clerical or community and social service capacity, usually on a paid basis. Other names for the same identity include aides, teacher aides, and paraprofessionals.

Environmental Education - the Environmental Education Act of 1970 defines environmental education as the educational process dealing with man's relationship with his natural and man-made surroundings, and includes the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, and urban and rural planning to the total human environment. It is aimed at producing citizens who are knowledgeable of their biophysical environment and its associated problems, and motivated to take action to solve these problems.

Environmental aides - noncertified aides who assist teachers in environmental education by performing such tasks as setting up and assisting on field trips, developing schoolgrounds as outdoor classrooms, determining books and audio-visual aids with environmental interest for teachers and students, on either a paid or volunteer basis.
Ancillary workers - nonprofessional school personnel such as clerical staff and lunchroom workers who are not either directly or indirectly responsible for the instruction of students.

Career ladder - a series of defined steps with both job descriptions and established pay scales which auxiliary school personnel may take toward becoming certified teachers.

Institutionalization - the incorporation of auxiliary school personnel into a school system as an integral part of that system, not as an extraneous and temporary adjunct to it.

Role conflict - perceived or unperceived difficulties between individuals such as teachers and teacher aides which may present problems unless identified and handled effectively.

Preservice education - any program of study undertaken before the completion of the requirements for certification in the field of education.

Inservice education - any program of study undertaken after the completion of the requirements for certification and during the tenure of service in the field of education.
CHAPTER II

A REVIEW OF THE LITERATURE ON TEACHER AIDE PROGRAMS

Introduction

Teacher assistants are not new to our New England schools. Over sixty years ago, mothers took turns bringing lunches to rural schools and helping the teacher supervise the children during the lunch hour. During the Depression, nonprofessional personnel were used as auxiliaries in American schools as part of the government's response to massive unemployment. Although that program gave jobs to many people, there were no provisions for institutionalizing it and it was discontinued before World War II.

With the teacher shortage and oversized classes caused by the postwar baby boom, the Ford Foundation underwrote a series of programs aimed at increasing teacher effectiveness. The first of these, started in Bay City, Michigan, was a conscious attempt to improve classroom performance by freeing teachers from clerical tasks, assigning the latter to teacher aides. Many teachers reacted negatively to this idea for reasons which will be discussed later, and neither teachers nor aides were properly trained to work together. Aides continued to be used through the late fifties and early sixties, but the programs suffered because the aide's role appeared so unimportant--it was a dead end with no potential career advancement. It should be noted that these aide programs were aimed not at improving education but merely
maintaining the current quality of instruction.

With the passage of the Elementary and Secondary Education Act of 1965, which included $75 million for teacher aides, the Scheuer Amendment to the Economic Opportunity Act, which provided $40 million for aides in 1966-67, and the Education Professions Development Act of 1968, federal funds became available for the creation of educational programs that could utilize classroom assistants. There was also money with which to pay these people. The federal grants have resulted in a phenomenal growth of teacher aides in American schools. It is estimated that the number of aides jumped from 80,000 in 1968 to about 175,000 in 1970. It would seem, then, that teacher aides are here to stay and that their position within the schools will become more important in the years ahead.

Federal programs have also fostered the concept of "new careers" for the poor. This idea involves linking the school with the neighborhood it serves by recruiting large numbers of low-income adults into jobs within the schools, including teaching. Part of this concept is the idea of a "career ladder" which makes it possible for an aide to progress through a series of training levels and pay scales until teacher certification is achieved. This removes the stigma formerly attached to the aide's job when there was no chance of advancement.

Who Is The Typical Teacher Aide?

Most teacher aides are middle-class housewives helping out in nearby poverty area schools. A significant minority of teacher aides are suburban housewives employed in relatively affluent suburban
schools either on a volunteer basis or for a wage slightly above the national minimum. Data compiled in Massachusetts in 1967 show that 70% were receiving less than a substitute teacher. On the subject of salaries, there is some argument as to whether wages in a program involving suburban housewives are necessary or likely to increase the quality of aide service. Bennett and Falk do not think so. They write:

It is possible that in a loosely organized program it might actually decrease the quality of aide performance. If the wage reached a level comparable to a regular part-time job for semi-skilled female labor (for example, $2.00 per hour), the aide position might attract a different kind of person, namely lower middle-class women under some family financial pressure. In the absence of an extensive pre-service or in-service program (and this is the typical situation), such an individual, with lower average educational attainment, might not do as much for the teacher as her better educated, more intrinsically motivated volunteer counterpart. There will also be administrative problems attendant upon hiring someone for whom the job is more important than helping out.\(^{12}\)

Gertrude Noar, in her pamphlet *Teacher Aides at Work*, perhaps best describes the social situation which prompts the suburban housewife to become a teacher aide. She writes:

In the middle-class communities, there are many women suffering from the "empty-nest syndrome." Their children are at school or college; their husbands are at work; organizations do not exist in some of these communities, and when they do, they often are over-supplied with volunteers. Many of these women are well-educated and experienced in handling children. They can be of great help as aides in schools.\(^{13}\)

In Massachusetts, data compiled in November, 1967, on the


educational background of teacher aides in the elementary schools show that 4% had not completed secondary school, while 44% had graduated. Nine per cent completed one year of college, 10% two years, 3% three years, and 12% had graduated from college. The percentages are fairly close to the New England figures also compiled in 1967.\(^{14}\)

While the statistics suggest that most aides in Massachusetts and New England fit into the category of housewives with a secondary school education and at least a year or two of college, it should be pointed out that high school and college students have also performed well a wide variety of duties in elementary schools. Their ability to bridge the generation gap and their youthful enthusiasm make them valuable as teacher aides. Likewise, at the other end of the spectrum, retired people have also done creditably in such fields as manual training and vocational education.

The Role and Function of Teacher Aides

To understand the role of a teacher aide, it is necessary first to grasp the changing role of the teacher. Growth in the use of aides reflects the evolution of the teacher's role. For many years, the teacher was virtually isolated in her self-contained classroom, working with the same students day in and day out throughout the year. Bearing this in mind, it is easy to understand why the "Bay City Study" or "Teacher Aide Study" in Michigan in the early fifties evoked such

\(^{14}\)Massachusetts State Department of Education in cooperation with New England Educational Assessment Project, Teacher Aides in the Classroom--A Massachusetts Study (November, 1967), p. 5.
negative responses from many teachers, who saw the installation of an additional adult in the classroom as a real threat to their position. Many fears were expressed, among them the possibility that teachers would be downgraded professionally. It was also felt that the money put into hiring aides should be used to upgrade the salaries of teachers. Teachers were afraid that the number of students in their classes would be increased. They also expressed concern over the possibility that aides might make unfair judgments of a teacher's abilities. Another fear--although many teachers would not admit it--was that, although they could manage a class of thirty children, they were unaccustomed to supervising adults and would not know how to go about delegating the busy work which they had been forced to handle for many years. Indeed, it turned out that some teachers actually enjoyed nonacademic administrative work such as correcting papers and were loath to delegate it to an aide.

The result of this teacher apprehension was that the role of the aide was established as a subordinate one from the beginning, hence the definition of an aide as a noncertified person who performs auxiliary tasks within the school. The literature reflects this concept of the aide by identifying three basic categories in which aides could be beneficial within a school: (a) instructional; (b) administrative and clerical; and (c) community and social service. Instructional aides assist teachers in the classroom. They carry out such tasks as taking the roll, duplicating materials, operating audio-visual devices, correcting objective tests and other similar jobs which will free the teacher to devote more time to her students. Instructional aides do
not take over classes for absent teachers, perform direct disciplinary functions, plan instruction independently or grade nonobjective papers.

Administrative or clerical aides assist with strictly clerical tasks such as typing, record keeping, duplicating of materials, telephone answering, and the overseeing and storing of school supplies. They may also serve as lunchroom, hall or playground monitors. Community or social service aides work with both parents and children on such things as attendance. They interpret the needs, insecurities, and insufficiencies of parents and children to school personnel who may be unaware of such problems. They visit the children's homes, either with or without the teacher, maintaining liaison between the school and the community.

It should be clear here that these job descriptions are not hard and fast. Some aides may perform nearly all of the tasks described in the three areas. Others might be very limited in their duties.

As aide programs have developed over the past fifteen years, many of the fears expressed by the teachers have proved groundless. Classes have not been increased. Aides have been helpful and not threatening. Teachers have been forced to rethink their role. Bowman and Klopf note in their study of fifteen auxiliary school projects:

Many teachers who participated in the programs reported that they perceived their roles in a new perspective after working with aides in the classroom: i.e., as more highly professional with emphasis on diagnosis, planning and coordination, rather than solely upon teacher-pupil interaction. This new role was seen as additive rather than a substitute for teacher-pupil interaction. . . . In essence, the introduction of auxiliaries appeared to serve a
catalytic function in the development of all roles in the school system.  

With the movement toward a higher degree of professionalism in the teacher's role, the role of the aide is also undergoing change. Bennett and Falk outline three role dimensions for aides, the latter two suggesting a much less subordinate function. The first of these is the technical assistance role, which includes all three of the traditional categories mentioned above. The aide is seen as the teacher's "third arm," who takes care of the "dirty work" already outlined. The writers note that "many educators see the entire teacher aide role as composed of technical assistance. They are not always aware of alternatives."  

The second dimension of aide work is called the supportive role and is a bit more difficult to define. Generally, this means that the aide carries out supportive educational functions under the teacher's supervision. At some critical point, an aide becomes proficient above the technical assistance role and she is judged capable of "teaching" as long as she is under the supervision of a certified person. Here there is little concern on the part of the teacher about the potential threat of an aide, and the arrangement opens up all sorts of possibilities for enriching the classroom and improving the quality of instruction rather than merely maintaining it. The aides can take reading groups, diagnose and prescribe students' needs, and contribute their

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15 Bowman and Klopf, New Careers, p. 168.

16 Bennett and Falk, New Careers and Urban Schools, p. 32.
talents in certain fields. Attendant upon the idea of an aide supporting a teacher is the gradual increasing of the aide's responsibilities and the necessity for the teacher to decide when an aide is ready to accept and handle these responsibilities.

The third role envisioned by Bennett and Falk—and the one least generally accepted now—is that of the aide actually supplementing the work of the teacher. This view casts the aide as a person who has something special to add to the teaching situation above and beyond what the teacher herself can contribute. An example of this is a person with musical talent and a first-hand understanding of a particular ethnic culture. For instance:

The musical ability so prized in the American Negro community and nurtured even in very poor ghetto families is . . . probably higher in a cross-section of AFDC mothers than in a typical group of urban elementary school teachers. Or again, many Indian aides can teach nature lore in a way far more productive of learning than the sterile science project that is characteristic of this stage of the American Education system. Even when good scientific habits are taught, the nature lore may be a vital supplement.  

Bennett and Falk also point out that the aide is often vitally helpful to the teacher in getting to know, understand, and communicate with the child and his family. While this is certainly true in urban communities where middle-class teachers may have poor understanding of the urban "turf," it is also applicable to the affluent suburban community where the teacher cannot afford to live in the town where she teaches. Here the environmental aide can provide the all-important

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17 Ibid., p. 35.
link between the teacher, her students and the community of which all are a part.

Community Aides

The role of the "community aide," who acts as an intermediary between the school and the community, is well documented, especially in the urban areas. Aides who live in the neighborhood and understand the "local turf" are invaluable in opening up lines of communication between the schools and the community. They perform such functions as creating and reinforcing positive attitudes of parents and students towards the school, making telephone contacts with parents, dealing with attendance problems, and following through on teacher referrals of behavior, disciplinary, or social problems to counselors or parents. They also act as troubleshooters in identifying students' study and work problems. All of these jobs and many others make the work of school administrators and teachers less difficult.

There are few references to the role of an aide who works outside the four walls of the classroom as well as inside, assisting children and teachers to understand their environment in terms of its resources and problems. One reference suggests the role as "assisting the teachers on field trips by acting as a chaperone, monitor and safety expert."18 A pamphlet put out in 1959 by the Catskill Area Project in Small School Design suggests that:

... up and coming schools make use of community resources for learning. But sometimes pupils miss seeing scientific equipment

18 "Here Are 14 Ways to Use Non-teachers in Your School District," Nation's Schools, 76:42 (December 1965).
in operation, a tour of the museum, a concert in a nearby center, a lecture by a leading speaker, because the arrangements could not be made for them to be accompanied by a responsible adult. School Aides--members of the school staff--have the confidence and respect of the faculty, parents, pupils and may chaperone school social affairs, escort pupils to games, musicals, plays, exhibits, museums, lectures, plants, laboratories and other places for which arrangements have been made by the teachers or school administrators. When teachers accompany pupils, School Aides lend a helping hand, a watchful eye.19

Role Conflict

While there is evidence that many teachers are moving towards seeing aides as second teachers in the classroom, there still are--and will continue to be--those teachers who perceive the aide as a threat. Young instructors, for instance, just out of teacher's college, may not yet have gained confidence in handling children, much less adults who may be twice as old as they are. Role conflict must be understood and dealt with if any aide program is to be successful.

The recommendations of Bowman and Klopf seem to be pertinent here. They suggest:

That role specifications of auxiliaries be defined initially, in order to provide a frame of reference for a new set of relationships, thus preventing either underutilization by unconvinced professionals or overutilization by administrators with manpower shortages.

That role definition, which indicates "the givens," be balanced with role development, which gives variety and scope to the program.

That overemphasis on role differentiation and role prerogatives be avoided, together with their concomitants of rigidity and divisiveness.

That the functions of individual auxiliaries and of the professional with whom they work be developed reciprocally in terms of the dynamics of each specific situation.20


20 Bowman and Klopf, New Careers, pp. 171-72.
Bennett and Falk suggest that schools make an effort to resolve potential conflict by matching teachers and aides. The authors claim this has not been attempted to date. Bowman and Klopf make a variety of recommendations, all of which stress that teacher-auxiliary teams must be pre-trained and work together in an inservice team-training program. The New York State Guidelines for Career Development of Auxiliary Personnel in Education also specifically advise:

That both professionals and auxiliaries share in planning the functions each will perform at the outset, as well as the shift and change of functions as the competence of the auxiliary increases. Although the decision rests with the professional, an openness to the ideas of the auxiliary is crucial.\textsuperscript{21}

The Guidelines go on to suggest that "team teaching" preparation of teachers and aides should concentrate on joint training addressed to the question of new roles and relationships, so that a climate can be established in which both teachers and aides can contribute toward the common goal of improving education for students.

There is one final note worth mentioning on role conflict in the literature. Bennett and Falk feel that the major source of role conflict in the regular or volunteer-type of aide program will not be between the teacher and the aide but rather between the aide and full-time noninstructional staff members within the school. It is not the teachers who feel insecure about their jobs, it is the clerical staff and lunchroom workers who view aides as a threat to their jobs. The New York Guidelines note that, "Sometimes difficulties arise when some

\textsuperscript{21} State Education Department, University of the State of New York, Albany, Guidelines for Career Development of Auxiliary Personnel in Education (June 1968), p. 17.
persons are paid and others are not paid for doing the same thing. The
distinction is that employees must make a full-time commitment which
volunteers are unable or unwilling to do. Tactful interpretation of
this difference is necessary."

Although there is no easy solution to the problem of role con-
flict, efforts should be made to ensure that aides who are paid receive
a lower wage than the ancillary workers. The work the aide is to per-
form must be clearly defined as that which was done by the teacher prior
to the introduction of the aides. Protocol and good judgment dictate
that employee organizations should be consulted before aides are intro-
duced into a school or school system.

Recruitment and Selection of Aides

A key factor in recruiting and selecting aides is the consid-
eration of precisely what kind of person is needed to implement the
objectives of the program. Another factor which must be taken into
consideration where funding is involved are the regulations of the
agency supplying the funds. The socio-economic level of the school
community will also affect selection criteria if the aides are not vol-
unteers. In small communities where people usually know one another on
a fairly intimate basis, less formal recruitment and selection procedures
will undoubtedly be appropriate.

Candidates for teacher aides are recruited from a number of
sources through a number of methods. Potential aides may be solicited

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22 Ibid., p. 10.
through high schools, colleges, social and welfare agencies, and community service groups. They are reached by word of mouth through PTA's and local media. Generally the procedure has been quite simple. Most communities seem to have substantial numbers of qualified individuals who are eager to become involved in aide programs. Money is one reason, but for many, especially in the volunteer-type programs, the opportunity to assist in the education of the community's children is also a factor.

Screening and selection procedures differ depending upon the program's objectives. Most school districts set up their own criteria based on the program's objectives. Some define the role conservatively, others are more on the liberal side. The most common educational requirement is a high school diploma, excepting of course those programs which use high school "Future Teachers." Experience is usually not a requirement and age preferences are noted in some programs but are not considered a real barrier to selection. Health requirements exist in almost all aide programs, usually due to state laws. Physicals and chest X-rays are the same as required for teachers in most cases. Other factors often considered are ability to get along with people, concern and interest in children, and enthusiasm for the required work. In most cases, no sex discrimination is made. The New York State Guidelines recommend that "special efforts be made to recruit male auxiliaries so as to provide a role model with which male pupils may identify and to balance the heavy representation of females in the schools."23

In practice, most aides are women. Rittenhouse sees the reasons

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23 State Education Department, New York, Guidelines, p. 9.
for the difficulty in recruiting men as being obvious.

Men with families cannot support them at prevailing wage levels for aides. For some men, supervision by female teachers is probably unacceptable. A few programs have recruited men, but they are usually high school or college students, who take aide positions as a preliminary to or part of their professional training to become teachers...24

Some projects make special efforts to recruit ethnic minority members. Arrest and conviction records may or may not be considered, the decision resting on the nature of the offense. Opinions differ on whether aides should be selected only from the community in which the schools are located. There is no question that the aide is a better liaison between the school and the community environments when she is familiar with both, and some school districts have had an "unofficial" requirement that the aide must reside in the community, while teachers may be hired from all over the country. Such a requirement may well deprive a community of a valuable, well-trained person who could have contributed much to the program. A related question concerns the hiring of parents of students within the school. This can be a problem depending upon the person who has applied for the job. Some schools would rather not take a chance and institute a policy of accepting anyone outside of their immediate school district. On the other hand, The New York Guidelines suggest that:

Parents of children enrolled in the school be sought out so as to help in making the style of life in home and school more in harmony, thus preventing the necessity for the child to "flip back and forth from one climate to another each day." This may add to his security and his sense of being "at ease," and release him for learning. Parents who understand the goals of the school may help

24 HEW, Paraprofessional Aides, pp. 30-31.
Selection procedures almost always require the completion of an application blank and at least one interview. The interview helps to assess the candidate's personal qualities, interest in the aide program, prior training and experience, language competence, and any special abilities. Usually the principal is the key figure in the selection and hiring of aides. One or more teachers may also participate, since it is good practice to have people who are going to work with the prospective aide involved in the hiring procedure.

As the number of teacher aide programs grows, recruitment of aides will have to become more sophisticated. At the present time, there are no pre-employment training programs which will weed out "undesirable" applicants, nor are there any formalized testing programs to pick the "desirables." There are no standardized criteria for aides and no generally accepted recruitment policies. Bennett and Falk point out that what exist now are two very different sorts of recruitment policy. They distinguish between what they call the "open entry" and the "selective" policies which represent opposite ends of the recruiting spectrum. The open entry policy uses no highly selective criteria for recruiting aides, and principals have great latitude over who shall be picked and where they will come from. Although this policy

25 State Education Department, New York, Guidelines, p. 9.

26 Bennett and Falk define "undesirable" as "really poor people or people without the appropriate life styles of middle class America," (p. 67).
might bring in unsuitable people, its use in the Minneapolis school system has not created any problems and the administrators of the Minneapolis program believe they made the correct decision in favoring this approach. On the other hand, the aide program in St. Paul is staffed through a selective policy which also has proven very satisfactory. New aide programs may adopt either of these approaches to recruitment or may choose a policy somewhere in between.

A point about the St. Paul program worth mentioning is that the salary of the aides is $1.50 per hour. 85% of them reported they were happy with that amount. This suggests that the aides either do not need the money or that the occupational ambition is practically nil. In fact, when the demographic data are analyzed, the program closely resembles a volunteer one.

Placement and Reassignment of Aides

Different strategies have been employed in placing teacher aides. Most frequently, the aides have been just evenly distributed among the schools in the community. Some districts have found they were not getting the most effective results this way and so they have restructured their programs to concentrate the aide's efforts in a few target schools. There have been no formal studies of the results of concentrating aides as opposed to spreading them evenly among the schools, but in the judgment of administrators and teachers who have participated in both programs, a greater concentration of aides is desirable since the fewer supervisors an aide has, the better she is able to concentrate on the limited tasks she has to perform, and the
better job she will do. This indicates that a one-to-one ratio of teacher to aide is the most productive arrangement. The New York Guidelines suggest:

A classroom aide should work with one, at most two, teachers. There is little hope of a team approach or of effective utilization of the services of a person whose work is scattered and diffuse. The teacher who knows an aide is to be with her for only a few hours a week saves a routine task for that period and there is no relationship to the pupils nor involvement in the learning-teaching process. On the other hand, the teacher who expects an aide for at least half a day every day has an opportunity to plan with her helper for varied and creative activities.27

Most of the literature recommends the team approach, with no more than two aides per classroom.

Occasionally, a placement will not work out satisfactorily. As has been mentioned above, some teachers find it hard to delegate work, and some teachers even wish to hold on to some of their non-instructional tasks. This is where the definition and understanding of both the teacher's role and the aide's role is important, and where careful consultation between teachers and aides is necessary. Sometimes, however, reassignments will be required when personality conflicts cannot be resolved. The New York Guidelines recommend that

... careful teaming of professionals and auxiliaries be made with the understanding that placements are not necessarily permanent. If it is made clear that a certain number of changes are expected, they can be carried out without hurting feelings when personalities appear to clash.28

Such reassignments should be handled by the principal, it being

27 State Education Department, New York, Guidelines, p. 11.
28 Ibid., p. 10.
understood that each situation is unique.

**Training of Aides**

As it is with other aspects of aide programs, diversity seems to be the rule when it comes to training aides. But methods can be divided into two major categories: (1) preservice training, and (2) inservice training.

Until recently there was little preservice training. Often the aide merely received a brief orientation by the principal of the school and then learned the ropes, while on-the-job, from the teacher she was assigned to assist. Now, however, some areas have instituted a preschool orientation of two or three days. This is customarily directed by a school administrator or several administrators from an entire school district. Other programs provide a two-week workshop developed and directed by personnel outside the school district, usually from a nearby institution of higher education.

Generally, criteria for the selection of aides have not specified a period of formal training. This is understandable since in the past the aide was simply a technical or supportive assistant. At present, there is a trend towards preservice programs to train people who will have a direct influence on the teaching process. Development of these programs has been spurred by the availability of federal funds such as those supplied under the Education Professions Development Act. Part B, sub-part 2, of this act provides funds for the pretraining of teacher aides, and specifies that this training must be completed prior to service in the schools.
Shank and McElroy\(^{29}\) outline three developing patterns in preservice training. The first type of program is conducted on a college campus, which offers more extensive facilities than most school systems have. This program draws upon the expertise of a professional faculty which can devote more time and energy to a program on home grounds. It frees the teacher aides from the pressures of home and school and has a positive psychological impact on them. A second type of course is conducted in a local setting by higher education personnel. This allows the college instructors insight into and experience with the school environment, and they can adjust the content and presentation of their lessons accordingly, thereby affording optimum relevance to the training. The third type of program is given in the local area by school personnel using consultants from an institution of higher education. This course can be tailored to fit the district's particular needs, and many school districts have the necessary talent to set up and run preservice programs. The limited use of consultants can fill in the weak spots.

Not everyone approves some of these ideas. Rittenhouse notes that the State of Arizona recommends that universities not maintain direct training programs for aides, but rather that they take responsibility only for developing and evaluating such programs, as well as planning training programs for teachers who will then train teacher aides.\(^{30}\) Junior colleges would contribute in much the same way; in


\(^{30}\)HEW, *Paraprofessional Aides*, p. 39.
addition, they would develop career progression at less than the baccalaureate level.

There is universal agreement on the importance of inservice training of teacher aides, and it is the core of all aide programs. Obviously the inservice training given depends on the role the aide is to take. If she is to be involved only in the technical aspect of assisting the teacher, then her on-the-job training merely acquaints her with the tasks she will be expected to perform. If, however, the aide is going to be filling a supportive and perhaps even a supplementary role, she needs more sophisticated training. The inservice programs must be adapted to the particular requirements of the school system in which the aides will be employed. Many states are now developing guidelines which include such subjects as technical training (the use of equipment and details of various bookkeeping systems), role definition, human relations, ethics and standards, development of ways of meeting the cognitive, affective and physical-movement needs of students, and an appropriate repertoire of skills such as the use of audio-visual aids, first aid, knowledge of school and community services, and many others.

There is some debate over when the technical training described above should be given. Bennett and Falk feel that technical or mechanical skills should be covered in preservice rather than inservice training.

Because time will almost certainly be limited for preservice work, an effort should be made to train the aide as thoroughly as possible in the use of all basic equipment in the school. . . .
This training will make the aide of some immediate use to the teacher, and more important, will prevent the aide from being another burden for the teacher in the busy first days of school. 31

These authors go on to say that:

There is one important exception to the notion that the preservice training should focus on mechanical skills. The preservice training should conclude . . . with a thorough review of school policy and operating procedures. This also will spare the teacher the concern that the aide may commit some colossal faux pas on the first day of school. It will also assure greater security on the part of the aides. 32

Both points are well taken, as the function of the aide is to make things easier for the teacher during class time, rather than add to her problems.

Bennett and Falk's ideas for an inservice training program for aides appear equally valid. They suggest that topics such as understanding child behavior, classroom problems and learning materials should be avoided in preservice training and taken up in inservice sessions not only because there is usually a lack of time in the preservice training, but also because they have observed that aides are not ready to handle such material.

The precise content of inservice programs will be impossible to prescribe because of the great diversity in the country of social and economic contexts in which the schools must work. The availability of funds to hire and train aides will continue to determine, to a large degree, the size and scope of teacher aide programs. Bennett and Falk

31 Bennett and Falk, New Careers and Urban Schools, p. 201.

suggest that a "core" curriculum include:

An elementary understanding of human development and child psychology; the social context of the school, neighborhood, and city; teacher/teacher aide relations; familiarization with curriculum materials; and some combination of group counseling and sensitivity training. Some people might add or subtract from this basic list, but it seems like a fairly good beginning.

Training Teachers to Supervise Aides

One of the most neglected aspects of the training of teacher aides is the training of the teachers to supervise them. Bowman and Klopf note that, "It appears that teachers, by and large, have not yet been prepared either by colleges of teacher education or by inservice training programs to orchestrate other adults in the classroom, since this is a relatively new responsibility for those in the teaching profession."34

Because many aide programs have failed to prepare the teacher for her new supervisory role, there has been confusion on the part of school personnel at the beginning of each school year and the threat of serious role conflict and wasted teaching time. Even the teacher who is using an aide only for technical assistance needs some practical and psychological advice in preparing for an aide.

Mentioned earlier under placement and reassignment was the

33 Ibid.,
34 Bowman and Klopf, New Careers, p. 43.
proposal that a one-to-one ratio of teacher to aide is the relationship best calculated for avoiding role conflict. It would also seem that if the teacher were trained ahead of time for her additional role as a supervisor—especially if she were trained to work with her prospective aide in a team relationship—future conflict could be averted or minimized. Half of the programs studied by Bowman and Klopf did actually have a "practicum" (defined as "a sustained, supervised experience with children in an actual educational setting") in which the participants worked together as teacher-auxiliary teams. But in only three of the programs studied did some of the teachers and teacher aides who were to work together during the coming school years have an opportunity to work together in the training program as a team, although this was a goal of all programs. One critical aspect of the training here was the provision of scheduled time for the teacher and aide to review their experiences and plan together.

Shank and McElroy also stress the need for teacher/teacher aide teamwork. They note that when preservice programs are given on campus, "one further advantage may accrue when teachers and teacher aides live together and work together for one or more weeks: it is easy to determine the degree of compatibility which a teaching team may enjoy throughout the school year." They also recommend that when a preservice program is carried out in a local setting the teachers be asked to attend appropriate sessions with the aides.

35 Shank and McElroy, Paraprofessionals, p. 20.
Further emphasis on teamwork comes from Vera Weisz in her report on training auxiliary personnel. She writes:

The team approach is a vital part of the training philosophy and should be stressed throughout Pre-Service. Participating teachers as well as aides will be introduced to team operation through their inclusion in planning the program. During the training, the aides, teachers and program staff members will work as teams in the workshops and seminars, gaining practical experience in cooperative effort which will serve as a foundation for an effective working relationship during In-Service.36

Also worth mentioning are the programs in which Bowman and Klopf found teacher-trainees included among the participants. In these cases, the training appeared to be particularly productive in terms of teacher-auxiliary relationships.

Conversely, in those programs which did not include teacher-trainees in the practicum, the directors frequently expressed regret that their programs lacked this component. The auxiliaries in group interviews spoke of the need for more interaction with teachers in the practicum, and the visiting teams noted the difference in mutual understanding and trust between professionals and nonprofessionals as they worked together. To the team members, the inclusion of teacher-trainees appeared to be the pivotal feature of most programs.37

A note should be made about additional training and continuing education opportunities for teacher aides once they have been placed in the schools. There appears to be little evidence to suggest aides will not continue to benefit from informal seminars and assistance from resource personnel in keeping up with new developments relevant to their work. The aide's job should be looked on as a desirable, satisfying


and status-giving occupation for people who have no desire to acquire further education or to take on the additional responsibilities of a teacher. On the other hand, there should be opportunities for those who wish to progress up the career ladder. One suggestion put forth is that institutions of higher education develop special programs for aides who wish to become teachers and give them credit for aide training and classroom experience. The New York State Guidelines make the following recommendation:

That training include preservice training and continuing inservice training. The latter should include both training which will improve competence at the present level and also training which will enable those who wish to to rise to a higher level within the school system. It is important that training leading to possible promotion be available but not compulsory. The dignity of all work should be recognized and the wishes of those who prefer to remain at the entry level be respected.

In summary, the training of teacher aides requires as extensive a preservice training program as possible. Continued inservice training is also necessary, preferably in a team approach with the teacher with whom the aide will be working during the year. The aide's job should be seen as self-fulfilling in itself, but opportunities for further career advancement should be available for those who want it.

Evaluation of Job Performance and Aide Programs

Evaluation of aide programs is usually carried out at two levels: (1) an evaluation of the performance of the aide, and (2) an assessment of the effectiveness of the total program. Criteria for judgment must be based on the program's stated goals. The most reliable

38State Education Department, New York, Guidelines, p. 20.
evaluation procedures are planned well in advance, carried on continu¬ously, communicated to all concerned--especially to those persons being evaluated--and culminated in written form for further dissemination. Shank and McElroy comment on the need for evaluation and specifically a written report:

The question often asked regarding the evaluation of teacher aide programs . . . is "Why have an evaluation? We know whether our aides are giving good service." The truth is, most school officials really don't know with any degree of certainty. This leads to slipshod or poorly planned changes in the instructional program. Or worse yet, no change whatsoever. A well-conceived and appropriately executed evaluation of teacher aide services is of value to administrators, teachers and students because the information contained in the written report is a basis for decision making.

The writers point out that a written evaluation report may support decisions regarding (a) methods of instruction to be employed by teachers, (b) change or development in curriculum, and (c) reassignment, retention or release of individual teacher aides.

One characteristic of a good evaluation program is flexibility. Once guidelines are drawn up, there should be provisions for continuing revision of the objectives of the program in the light of new findings.

Aide performance is evaluated on a rating basis, using standard forms developed by each program. Pay increases or promotions may depend upon these ratings. They may also be used to assist the aides in improving their performance by alerting them to certain deficiencies. Often self-rating forms are employed. These are not usually scored but are often used as the basis of evaluation discussions with teachers.

\[\text{Shank and McElroy, Paraprofessionals, p. 79.}\]
and other administrators. Since there are a variety of aide programs, each must design performance evaluation forms which reflect its goals and objectives. Such forms should be pretested and they must be clearly phrased so that both evaluators and aides understand the criteria perfectly.

Program evaluation must also be tailored to each individual aide program. The rating is done by the program administrators, teachers, and the aides themselves. Often parents are also asked to participate and, although they are unlikely to have much contact with the aides, it is recommended that their opinions be sought; any reactions are valuable, and this is one way of trying to get the community involved with the schools and the aide program in particular.

Additional interviews and questionnaires can and should be used periodically to supplement the evaluation at the end of the year. If the program is supposed to assist aides in attaining educational and vocational goals, aides should be asked to respond to be sure that the program is meeting this goal.

Attempts are now being made to evaluate aide programs by measuring student achievement and affective changes directly. This is difficult because some variable other than the aides may be responsible for changes that take place in the classroom. Since the primary aim of all aide programs is to improve the learning experience, more research is needed in the controlled evaluation of the effect of aides on children's learning and behavior. Rittenhouse feels that "measurement should also be directed toward specific aspects of aide activities to
identify those that should be altered or dropped if they are ineffective or augmented if they appear to be valuable. 40

Summary

Teacher aides have come a long way in the past twenty-five years. A review of the literature shows that the typical teacher aide—whether paid or a volunteer—is a well-educated, middle-class suburban housewife whose children have left the nest and who wants a productive outlet for her increased available time. As the number of potential aides has increased, the resistance to their use appears to have diminished and the problem of role conflict is manageable. Despite the current surplus of teachers, it would appear that the number of aides used in schools will continue to grow. New programs have been funded to train them for teaching careers, and the concept of differentiated staffing will bring teachers and either paid or volunteer paraprofessionals closer together in their work with students on all levels. The incentives of career opportunities and funds for training suggest to the investigator that there are larger and more positive roles for teacher aides in the immediate future.

A growing concern for our deteriorating environment has led to an increased interest in environmental education at all levels. Many potential teacher aides want to use their knowledge and talents to help children—their own and others—understand environmental problems and become motivated to take action on them. This desire, coupled with educators' interest in maintaining community involvement with the

40 HEW, Paraprofessional Aides, p. 57.
schools--essential in times when the high cost of schooling puts a heavy tax burden on the citizens--has thrust into significance the concept of environmental aides--auxiliary school personnel to assist teachers in environmental education.

Just what the exact role of the environmental aide should be, and how such an aide should be trained has yet to be determined as there is little published information in this area. Most of the literature reviewed suggests team teaching with teachers and new relationships with institutions of higher education and community organizations. Methods of recruitment, training, and institutionalization of environmental aides must be studied as the literature offers little information on these matters. Further investigation of past and current environmental education programs and a study of the role of environmental aides can help to identify models for training such aides and the role which environmental aides should play. It is to this end that the following study is directed.
CHAPTER III

METHODS AND PROCEDURES

As noted in Chapter I, the purpose of this study was to gather factual data and informed opinion about existing programs in the six New England states which train paid or volunteer auxiliary school personnel in environmental education, in order to chart the most effective way of using such personnel to assist teachers in this area. This chapter will describe the methods and procedures used in gathering the information. A descriptive form of research was utilized in collecting, organizing, and analyzing the data in order to get a general picture of the three areas involved in the study. A structured interview and survey questionnaire were developed for use with the identified study population in order to conduct a non-experimental investigation.

Selection of the Study Population

Selection of Programs

In February of 1971, a cover letter with an enclosed short form was sent out to identified personnel in each of the six New England State Departments of Education which asked them to determine projects, institutions of higher education, or schools in the state which are currently (or have in the past) trained teacher aides in the area of
environmental (outdoor or conservation) education. Five of the six short forms were returned. Maine did not reply. New Hampshire noted the Tilton School's Water Pollution Program which has made extensive use of students as instructors in its teacher training program. The investigator wrote Mr. Phillip Murphy, coordinator of the program, and found that no teacher aides as defined in this study had been or were being trained—the population for this study had been delimited to adult programs, excluding students.

Vermont does not as yet have training programs for teacher aides in the area of environmental education and expressed an interest in a summary of the results of this study. There were no suggestions of others to contact in this state.

Massachusetts recommended looking into four projects besides those already known to the investigator. Research into these suggestions showed that only one fulfilled the specifications as outlined in this study. The others involved either student or teacher training, but not aides. The Lowell Model Cities' Educational Component did meet the specifications and became part of the identified study population, along with the Liberty Council of Schools' Environmental Education Volunteer Programs; The Elbanobscot Foundation's Environmental Aide Program, and the Wellesley Environmental Awareness Committee.

41 Those receiving the letter and short form were as follows: Maine: Mr. Douglas Stafford, Science Consultant; New Hampshire: Mr. William B. Ewert, Science Consultant; Vermont: Dr. Karlene V. Russell, Executive Director of Instruction; Massachusetts: Mr. Raymond L. Gehling, Jr., Senior Supervisor of Conservation Education; Connecticut: Dr. William J. Nolan, Chief, Bureau of Secondary and Elementary Education; Rhode Island: Mr. James A. Garvey, Science Consultant.

42 The Liberty Council of Schools' Environmental Education Volunteer Programs; The Elbanobscot Foundation's Environmental Aide Program, and the Wellesley Environmental Awareness Committee.
Program ("Liberty Ladies"), the Elbanobscot Foundation's Environmental Aide Program, and the Wellesley Environmental Awareness Committee.

Connecticut offered no projects, but did recommend contacting three people within the University of Connecticut and Eastern and Southern State Colleges. Although these individuals were not contacted directly, further discussion with educators from Connecticut at the Regional Environmental Education Teach-In held at Springfield Technical Community College in Springfield, Massachusetts, revealed that none of the three institutions had such programs, nor were they aware of any such training programs in the state.

Rhode Island returned the form noting no programs training environmental aides in the state, and making no recommendations about whom to contact for further assistance.

In addition to the formal letter with enclosed short form to state department personnel, the investigator called or wrote personal letters to environmental educators known to him within four of the six New England states asking for information on environmental aide training programs. This phase of the investigation turned up one more program

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43 Those receiving a personal letter or call included: Maine: Mr. Wesley Willink, Director, Regional Environmental Education Program; Mr. Douglas Hunt, Director, Windham Environmental Education Program (ESEA Title III); New Hampshire: Mr. Leslie S. Clark, Educational Director, Society for the Protection of New Hampshire Forests; Mr. Waldo Stone, Director, Otter Lake Conservation School, Greenfield, New Hampshire; Massachusetts: Mr. Richard Short, Supervisor of Conservation Education; Mr. Joseph Freitus, Director, Lincoln-Sudbury Omega Project; Mr. Charles E. Roth, Director of Education, Massachusetts Audubon Society; Mr. James Bradley, Director, EPDA B-2, State Department of Education; and Connecticut: Mr. William Eblen, Director, TETE. The investigator is not well enough acquainted with environmental educators in Vermont and Rhode Island.
for use in the projected study--Maine's Regional Environmental Education Program, serving the schools of Falmouth, Cumberland-North Yarmouth, Freeport, and Yarmouth, and training volunteer "guides" for use in the program in these schools.

In a final effort to locate all environmental aide training programs in New England, the investigator inquired of all conferees at three conferences held in the spring of 1971--the New England Regional Environmental Teach-In mentioned above; the New England EPDA B-2 Conference, also sponsored by the U. S. Office of Education and held in Hyannis, Massachusetts; and the New England Regional Environmental Education Conference held on Block Island, Rhode Island. No further leads turned up and the five programs identified were established as those to be used in the study.

**Selection of Environmental Aides**

With the objectives of comprehensiveness and a relevant survey of the aide population within each program, the investigator went over the list of aides with each administrator. Aides were eliminated from the sample if, in the estimation of the administrator, they had not attended more than half of the preservice training classes. There was no attempt to base selection of respondents upon criteria of age, sex, academic areas, or level of educational attainment. ⁴⁴

**Selection of Administrators and Teachers**

The administrator of each program was defined by the investigator as that professional educator who was directly responsible for

⁴⁴ One aide was eliminated from the sample because of her inability to write English, which was not her native tongue.
the administration (and in most cases, the teaching) of the program. This definition covered four out of the five programs. In the case of the Wellesley Environmental Awareness Committee, the administrator was a volunteer from the community, who also served as an aide. For the purposes of the investigation, her questionnaire was considered among those of the aides, and the opinions of three teachers in the Wellesley system were sought. Teachers were selected at the suggestion of each administrator. Those sampled were judged to be familiar with the aide program. Many had used the aides in their classes.

**Structured Interview**

A structured fact-finding interview was developed to elicit perceptual and factual data from the administrator of each of the five programs identified for incorporation in the study. The areas of investigation were identified on the basis of the review of the literature on teacher aide programs. In order to obtain the information desired and maintain a uniform interview with each administrator, a form was made out which included all of the items which the investigator wished to discuss with the administrator. The interview form had five major sections: (1) Program Profile, (2) Organization and Administration of Program, (3) Program Training, (4) Program Evaluation, and (5) Administrator's Evaluation and Recommendations. The investigator anticipated that administrators could not give him enough time to obtain all of the

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46 For a copy of the interview form refer to Appendix C.
data asked for on the form in one interview without prior knowledge of
the areas to be discussed, and he also felt reluctant to ask for a
second interview. Since the interview was not designed to elicit any
moral or political judgments which might prove embarrassing or threat¬
ening to the respondent later on, and since it was felt that a prior
knowledge of the information desired would facilitate the interview
rather than hamper it, the investigator decided to send each adminis¬
trator a copy of the interview form two weeks in advance of the actual
interview. It was also felt that the interview could then be used to
gather information rather than facts about each program. 47 An effort
was made to reduce bias by sticking close to the interview form with
each administrator. Permission was obtained from each administrator
to tape the interview in order to aid the investigator's recall of the
material later on.

Content of Questionnaire

The questionnaire developed for use in the investigation was
divided into two sections to facilitate its use by different respondents.

Activities Sheet

Section I, entitled "Activities Sheet," was designed to identify
the functions which aides, teachers and administrators perceived as
helpful, and those functions which aides perceived as frequently per¬
formed by auxiliary school personnel in environmental education. The
Activities Sheet was modeled on one developed by Dr. Garda W. Bowman

47 Ibid., p. 18.
and Dr. Gordon J. Klopf of the Bank Street College of Education for an O. E. O. research project on fifteen teacher aide programs undertaken in 1967. The investigator used approximately the same format, with some minor changes in the wording of the instructions. At the suggestion of reviewers only one variable, "helpful" was employed in the left-hand column, rather than the "helpful" and "harmful" used in Bowman and Klopf's Activity Sheet.

Bowman and Klopf's Activity Sheet listed 95 possible functions for teacher aides. Since the investigator needed a second section to obtain other types of information for the projected study, he decided to use only fifty possible functions for the environmental aide, in order to hold the questionnaire to a reasonable length.

The suggested functions in the original Activities Sheet were grouped for the purposes of analysis into three clusters constituting three possible roles for auxiliary personnel in a school setting. This procedure was to a large extent duplicated in the design of the investigator's Activities Sheet, representing Section I of the questionnaire.

48 Bowman and Klopf, New Careers, Appendix E. Written permission to use the format of the Activities Sheet was obtained from Dr. Bowman in a letter dated April 13, 1971.

49 The investigator is indebted to the following educators who reviewed and contributed to the refinement of the questionnaire: Dr. Garda W. Bowman, Program Analyst, Bank Street College of Education; Dr. Robert Consalvo, President, Heuristics, Inc.; Dr. Nick F. Muto, Associate Superintendent for Curriculum and Instruction, Wellesley Public Schools (formerly associated with the Syracuse University Teacher Aide Program); Mr. Charles E. Roth, Director of Education, Massachusetts Audubon Society; Miss Montine Smith, former Assistant Director of Continuing Studies, Massachusetts Audubon Society; and Mr. Chan Waldron, former Eighth Grade Science Teacher, Lincoln Public Schools, now Director of Education at the Worcester Science Center.
Cluster I consisted of those functions which seemed to relate to and support instruction, including both affective and cognitive factors. Cluster II was task oriented rather than pupil oriented, including those duties which, though requiring no professional expertise, often consume a large portion of a teacher's working day. Cluster III was a grouping of functions deemed inappropriate or at least of questionable value when performed by a teacher aide, including functions which were perceived as "taking over" the teaching function and those considered poor practices in education.

The investigator chose 21 activities under Cluster I, 21 under Cluster II, and 8 under Cluster III. Since the emphasis in the investigator's study was on the environmental aspect of the activities, which differed from Bowman and Klopf's study, no attempt was made to balance Cluster III with the other two clusters. In order to prevent any bias in the ordering of the activities, a random method of selection was devised by arbitrarily assigning each activity a number from one to fifty, placing the numbers on pieces of paper, mixing them up in an envelope and drawing them out one at a time. A final review of the Activities Sheet suggested two changes in the activities in order to avoid any confusion among the people filling out the sheet.

Biographical Data

Section II, entitled "Biographical Data," was filled out by aides

The investigator wishes to acknowledge the assistance of his former colleagues on the Liberty Council's Conservation Education Staff, Mr. Chan Waldron and Miss Joreen Piotrowski, and Mrs. Barbara Robinson of the Elbanobscot Foundation Environmental Aide Program in determining possible roles for environmental aides for inclusion in the Activities Sheet.
only and was designed to gather demographic data for a profile of the environmental aide. Section II also included questions concerning the program in which the aides had received their preservice training. This section of the questionnaire was largely structured in form, using questions with a number of answers for the respondent to choose from. This format would provide easily categorized data that would facilitate the tabulating and summarizing process. Clusters of questions were utilized in order to obtain the information necessary to develop a profile of the typical environmental aide and to elicit responses on such subjects as recruitment and interest in teaching as a career. Considerable time was given to developing this section to insure the relevance of subject matter, appropriate item sequence, and adequate categories of response in order to guarantee the reliability of the instrument. No potentially embarrassing questions were placed at the beginning of the section, and all questions not considered of real value to the study were eliminated so as to prevent the questionnaire from becoming too lengthy. (Reviewers estimated forty-five minutes to complete the final form.)

A series of open-ended questions were placed at the end of the questionnaire to allow the respondent to comment freely on such subjects as (1) preservice training, (2) inservice training, (3) aide-teacher-administrator relationship, and (4) aide-pupil relationship, recruiting procedures, reassignment, or any other subject on which the respondent

51 See Appendix C.

52 Greatly appreciated helpful suggestions on the final review of the questionnaire were offered by the investigator's Peer Advisory Group of fellow doctoral candidates and faculty members at the University of Massachusetts in Amherst.
wished to remark.

**Distribution and Return of the Questionnaire**

In order to maximize the number of returns, all questionnaires had a cover letter explaining the importance of the investigation and, in the case of those mailed to aides, a personal postscript from the investigator. (See Appendix B.) A stamped, self-addressed envelope was included with each mailed questionnaire and follow-up questionnaire. Follow-up post cards were handwritten by the investigator, and all telephone calls were personal ones by the investigator or an administrator of one of the aide programs.

The distribution of the questionnaire and follow-up procedures varied with each of the five programs identified for study--again to assure as high a number of returns as possible by the established cut-off date.

Aides in the Liberty Environmental Education Volunteers Program which were trained in 1968 and 1969 before the Liberty Council's demise in the spring of 1970, were mailed the questionnaire. Those who had not answered at the end of two weeks were sent a follow-up card. If the card failed to produce a returned questionnaire, the aide was called, at which time she was asked if she had received the questionnaire, whether she had any questions which the investigator could answer, and if she wished a second questionnaire.

Aides in the first class of the Elbanobscot Foundation's program trained in the fall of 1970 were also mailed the questionnaire, with a post card follow-up two weeks later, telephone calls, and a second
mailing where needed prior to the cut-off date. The second class, held in the spring of 1971, was still in session when the questionnaires were ready for distribution. The investigator was able to attend the next-to-last class and give the questionnaire directly to those aides present, at which time he explained his project and the aides had the opportunity to ask questions. The final class was then visited a week later and the questionnaires were picked up. Again, there was an opportunity to answer any questions that had come up during the week. Those aides who were not present to pick up a questionnaire were mailed one and were then followed up by cards, telephone, and where needed, a second mailing.

The investigator was able to administer the questionnaire directly to many of the "guides" in Maine's Regional Environmental Education Program. Again, questions pertaining to the study and the questionnaire were answered directly, which cut down possible error in interpretation. Those who were not able to make the meeting were mailed questionnaires and were followed up by post cards and telephone calls in much the same manner as the other programs.

The aides in the Wellesley program had their questionnaires delivered personally by the investigator who took time with each aide.

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53 The investigator wishes to express his thanks to Mrs. Barbara Robinson, Administrator of the Elbanobscot Foundation's Environmental Aide Program for her assistance and persistence in making follow-up telephone calls.

54 The investigator is indebted to Mr. Wesley Willink, Administrator of the Regional Environmental Education Program in Maine for setting up this meeting with the guides.

55 Mrs. Katherine Boyd deserves special thanks for her assistance in keeping the investigator's telephone calls to Maine at a minimum.
to go over the questionnaire and answer any questions. The questionnaires were then picked up a week later at the final evaluation session of the preservice course. Those unable to get to the final session, or who had not been able to fill out the form were followed up by telephone and the questionnaires were picked up personally by the investigator.

The Interns in the Lowell Model Cities Education Component filled out the questionnaire under the guidance of their immediate supervisor who had been briefed by the investigator. No follow-up procedures were necessary.

Distribution of the questionnaire to administrators and teachers was handled in the same way as that to the aides. In most cases, the questionnaire was delivered personally and the investigator took time to go over the form. In the case of the administrators, this not only helped them to answer it, but also made it easier for them to answer questions posed by the aides. Some of the questionnaires were picked up personally by the investigator, others were returned personally, or through the mail in a stamped, self-addressed envelope supplied by the investigator.

At the established cut-off date, from a total of 294 questionnaires distributed, 239 responses were received. This represents a 72 percent return, greater than the 65 percent return "reputable" questionnaire studies reported in a sample of theses, dissertations, and professional articles and agreed upon as adequate by the investigator.
and the advisor of his Faculty Advisory Committee. Considering that the questionnaire was of considerable length and that time was undoubtedly at a premium for administrators, teachers, and the average environmental aide during the time of the investigation, the investigator was gratified by this return.

A check for no response bias was not performed. However, an analysis of follow-up telephone conversations and notes included with returned questionnaires (some not filled out), as well as those questionnaires returned after the established cut-off date, suggests the following reasons for not responding:

(1) Did not feel qualified to answer.
(2) Did not complete due to family responsibilities.
(3) No longer involved as an environmental aide.
(4) Questionnaire was too long.
(5) Out of the country or on vacation.

Treatment of Data

The interview form, along with the tape of the interview conducted with each administrator of the five programs investigated in this study, was used to make a descriptive survey of each program, following the outline of the interview form. Direct quotes were used when the investigator felt they would help to illuminate some part of


57 A housewife with 3 children.

58 The questionnaire went out on May 26, 1971 and the cut-off date was established as June 23, 1971.
the program. The nature of this study did not lend itself to the use of statistical treatment of the data, as the purpose of the investigation was to compile perceptual and factual information about environmental aide programs and to develop a profile of, and other pertinent information about, auxiliary school personnel in environmental education. The investigator therefore used weighted numbers\(^\text{59}\) to arrive at a rank order of the functions listed in Section I (Activities Sheet) of the questionnaire. Weighted numbers were also used to determine a rank order of the frequencies which the aides felt they would be asked to perform the stated functions. In Section II (Biographical Data) mathematical measures of central tendency and percentages were used to report the findings. The data were analyzed to provide the investigator with as much insight as possible to report the findings in a comprehensive manner. Where possible the findings were corroborated with existing published data.

Most of the usable information contained in the responses to the questionnaire was highly objective and lent itself readily to manual tabulation. The investigator developed a procedure whereby responses were transferred to the margins of the questionnaire for easy tabulation. This greatly facilitated the construction of the tables needed to present the summarization of the data for this study. The responses to the open-ended questions at the end of the questionnaire were categorized and summarized appropriately. The findings in

\(^{59}\)"Very helpful," was weighted .4 ; "Somewhat helpful," .3 ; "Of very little help," .2 ; and "No help at all," .1 on the left-hand side of the sheet. On the right-hand side: "Most of the time," .4 ; "Often," .3 ; "Seldom," .2 ; and "Never," .1 .
Chapter V were based on an analysis of data compiled. The treatment of the data was simple in method in keeping with a non-experimental study; therefore the analysis was descriptive and the implications drawn and the conclusions stated in Chapter VI were the sole interpretation of the investigator.

Analysis of the Data

The unprocessed data for this study consisted of the interview form and tape of the interview with the administrator of each program identified for the study, along with the responses from aides, selected teachers, and administrators to the two sections of the questionnaire. In addition, the investigator collected both materials put out by the programs and the results of evaluations of the preservice training by participants in three of the programs. This information was made available by the administrators and used with their permission.

The data from the interview forms and tapes are contained in the overview of each project in Chapter V of this study. The data collected from the questionnaire are contained in tables located in Chapter VI and in the Appendix of the study. The responses to Section I (Activities Sheet) of the questionnaire have been compiled into a rank order provided by weighting the responses. Tables have been compiled to handle the responses to the structured questions in Section II (Biographical Data) of the questionnaire, for the purpose of analysis and reporting.

The Liberty Council of Schools' Volunteers for Environmental Education, the Elbanobscot Foundation's Environmental Aides, and the Wellesley Environmental Awareness Committee Training Course.

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In most cases, the responses to open-ended questions have been paraphrased in order to illustrate the respondent's perceptions more clearly and to assist in categorizing the statements. Where information gleaned from sources outside the interview or questionnaire is used, this is noted by the investigator. The categories or groupings of statements of attitude and factual data make up the findings analyzed and reported in Chapters IV and V.
CHAPTER IV

PROFILE OF ENVIRONMENTAL AIDE TRAINING PROGRAMS
IN NEW ENGLAND

Introduction

The data for this chapter on the five programs investigated in the study were collected in taped, structured interviews with the administrators of each project. In addition to these interviews, the writer talked with many others involved in each program and reviewed materials developed by the administrators, teachers, and participants. Where final evaluations of the programs were undertaken, the results were analyzed and used with appropriate notation when the investigator believed the information was of value to potential program administrators. The investigator made no attempt to place value judgments on any of the programs or on the materials developed by the programs.

The writer will deal with each program in a similar manner, discussing each one in terms of the following five areas: location and population, organization and administration, training, evaluation, and administrator's evaluation and recommendations. The programs are discussed in chronological order from the earliest, initiated in the fall of 1968 by the Liberty Council of Schools' Conservation Education Center.

61 Those materials considered useful to potential program administrators have been included in the Appendix.
to the most recent, Wellesley's Environmental Awareness Committee, which started its first class of environmental aides in March of 1971.

Liberty Council of Schools' Volunteers for Environmental Education

Location and Population

The Liberty Council of Schools was a consortium of eleven school districts and four regional high schools funded under Title III of the Elementary and Secondary Education Act of 1965 (P.L. 89-10) from the fall of 1967 to the end of August, 1970. The local educational agencies serviced by the project were located just northwest of Boston, Massachusetts. The towns involved were Acton, Bedford, Bolton, Carlisle, Concord, Framingham, Harvard, Lincoln, Maynard, Stow, and Sudbury. The regional high schools were Acton-Boxborough, Concord-Carlisle, Lincoln-Sudbury, and Nashoba Regional. Approximately 100 public, private, and parochial schools were serviced by the project, with close to 40,000 students and 5,000 administrators and teachers.

Organization and Administration

The Liberty Council project was divided into three components: Administrative Planning and Instructional Development, Special Education, and Conservation Education. The Conservation Education Center was informed it would be phased out just after completing Earth Day activities in the spring of 1970.

62 When the federal funds ceased in August of 1970, the towns involved in the project did not vote local funds to continue it. The Conservation Education Center was informed it would be phased out just after completing Earth Day activities in the spring of 1970.

63 It is important to remember that the term "environmental education" did not become accepted as a term until approximately the fall of 1970.
located at the Hatheway School of Conservation Education—the educational arm of the Massachusetts Audubon Society—in Lincoln, Massachusetts. In 1968 it was staffed with a director, a chief coordinator, two conservation education coordinators, a part-time librarian, and a full-time secretary.

One of the goals of the Center was to develop community human resources for use in the schools. In the fall of 1968 the writer of this study, who was then the director of the Center, proposed to the staff a workshop for volunteers to train them to assist elementary teachers in the area in incorporating conservation education into their curricula. After the staff decided that such a program would be feasible if there was enough interest to warrant setting up and running a workshop, and if permission could be obtained from the Board of Directors of the Liberty Council, the project was turned over to the Center's two conservation education coordinators. Although neither coordinator (nor any of the staff) had any previous experience with teacher aide programs, both were well trained in conservation education and in working with teachers and students.

None of the staff saw the workshop as a field natural history

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64 The Board of Directors consisted of the superintendents of the school districts and the regional high schools within the Liberty Council. A paid executive director was the chief administrator of the project.

65 Mrs. Eva Schafer, currently a science teacher with the Concord, Massachusetts, Middle School, was in charge of the first year's program. When she left the Center for her current job, she was replaced by Miss Joreen Piotrowski who had assisted her the first year. Miss Piotrowski is now a science teacher at the Newman Junior High School in Needham, Massachusetts.
course. Instead, the emphasis was on developing certain attitudes in the workshop participants, these being:

1. That conservation education is a necessary and logical enrichment that should be included in the existing school curricula.

2. That awareness of the environment must come first, before commitment and action.

3. That the identification of an item is not so important as its essence—its shape, feel, color, smell, taste, etc.

4. That it is as important to know of sources and methods of identification as it is to know an object’s name at sight.

5. That volunteers are needed who are enthusiastic and willing to assist teachers, especially in the out-of-doors where increased adult supervision may be more necessary.66

With these affective aims in mind, the coordinators set up the following goals to be achieved by workshop participants. They felt that after completing the workshop sessions, the participants should be able to:

1. Assist area teachers in presenting conservation and pre-conservation experiences to elementary students.

2. Interpret nature on schoolgrounds.

3. Lead nature walks and field trips.

4. Assist in indoor conservation school activities.67

Six sessions were judged to be sufficient to accomplish the goals. All classes would be held at the Center in Lincoln, and would be offered without charge to participants who lived within the Liberty Council area. The only anticipated charge was for some materials offered for sale by


67Liberty Ladies Brochure.
the Massachusetts Audubon Society.

The next matter was to find out whether there were indeed Liberty Council residents interested in taking the workshop and assisting teachers in the elementary schools. The coordinators took the "shotgun method" approach to recruitment to find six interested people (the number determined by the Center as the minimum to guarantee offering the course). The superintendents were informed at a Board of Directors' meeting at which time they gave their approval to the program and permission for the coordinators to contact principals and curriculum planners. The Center's director sent out a letter to approximately ninety principals of the elementary schools within the Council. A press release was also sent to the local papers. "CHOICE," the Center's newsletter which went out to all people interested in the Center's activities, also carried the message. In the case of one town, all of the principals were informed at a meeting at the Center, and were asked to supply names of potential workshop participants. A brochure was prepared and mailed out to any people suggested by administrators or teachers. In addition to these efforts, all staff members talked up the workshop when visiting schools during the course of their work.

At the established cut-off date for enrolling participants, thirty-nine women had signed up. The coordinators were very pleased and made some necessary modifications in plans. They decided to set up two workshops of a similar nature, one on Tuesday morning and one on Wednesday morning.

Selection of the "Liberty Ladies"--as they were called the first
year—was strictly "open entry." No one who expressed an interest by filling out and returning the tear-off part of the brochure was turned away. A form was distributed to the first class which asked for data on the participants' education, experience, interests, the number of children they had and the schools the children attended. The form also asked them the amount of time they would be willing to devote to the schools or nonformal education groups (scouts, church groups, and the YWCA). The coordinators felt that this information would be useful in placing the aides; it was not used as a basis for selection. No interviews were conducted and no physical exams required. Attendance was not mandatory, but prospective aides were expected to attend at least seventy-five percent of the scheduled sessions in order to obtain a "certificate" from the Center. No credit was offered for the course, and no other institution (other than the Massachusetts Audubon Society which supplied some of the training aids and materials) was involved in the workshop.

Training

The Liberty Ladies received both pre- and inservice training, with a strong emphasis on the former. The preservice training for the first workshop participants consisted of six sessions of approximately one and one-half hours each, held in the mornings from nine-thirty to eleven o'clock—a time agreed upon by the women themselves, who took into consideration the distance they had to travel (some as much as fifteen miles), their housework, and the time their children got home from school for lunch.

The content of the training was divided about equally between
understanding and skills. Emphasis was put on the interdisciplinary aspects of conservation education, rather than on nature study. Math, English, music, social studies, and science were all brought into the sessions with suggestions as to how conservation problems could be integrated into all of them. The inquiry approach was stressed, as was the importance of showing the child how his life was bound up with his environment. One session was devoted to the role of the teacher aide. Here the discussion was led by a well-known and well-liked former science coordinator in the Sudbury schools, who talked about how the aides could assist the teacher in her plans for using the out-of-doors as a valuable adjunct to the indoor classroom.

The aides were introduced to a number of skills they would need and would have to master eventually, using their own time and initiative. Use of the senses was emphasized and simple basic equipment to extend the senses such as hand lenses and thermometers were used. How to lead field trips, identification keys and how to use them, how to look at a school yard, animal signs, and indoor and outdoor nature activities were some of the skills to which the aides were introduced. Use of the library and library materials in conservation were also studied.68

There was much enthusiasm for the workshop, and an additional

68 Although the Liberty Council's Conservation Education Center was phased out in June of 1970, the Board of Directors voted to leave all of the books and materials gathered and/or produced by the Center in the Massachusetts Audubon Society's Hatheway School of Conservation Education Library in Lincoln, Massachusetts. The School now maintains its own Center with a full-time librarian, open Tuesdays through Saturdays. With few exceptions, all of the references to environmental aide programs can be found there.
two sessions were added at the request of the participants. One covered winter activities—both inside and out—and the eighth session was devoted to pond study in the spring of 1969.

The format of the workshop consisted of lectures, discussions, and field trips on the Massachusetts Audubon Society's Drumlin Farm Sanctuary. With the exception of the introductory remarks by the director of the Center and the session on the role of the teacher aide, all of the sessions were handled by the Center's two coordinators.

The Center's workshop did not include the type of inservice training given in most teacher aide programs. It was expected by the Center's staff that those workshop participants who were already working in some volunteer capacity in the schools, such as room mothers or library aides, would go back to work as environmental aides in their schools if and when asked to do so by the teachers. Many teachers did not see any use for environmental aides and others "resented the aides or felt insecure about their use."\(^69\) No attempt was made to train teachers to handle aides. Aide-pupil relationships seemed to be good:

The students always enjoy a new face and getting out-of-doors. They possess a natural curiosity about living things and enjoy using the hand lenses and other field equipment.\(^70\)

The Center did offer to place aides upon request of the Liberty teachers. After the aides had completed their preservice training, the

\(^69\) Quoted from interview with Miss Piotrowski, Program Administrator.

\(^70\) Ibid.
names of those who had "graduated" were sent to the principals of the
schools in which they had children. Some aides volunteered to work in
any elementary school within the Liberty Council, and their names also
went out to the principals to be transmitted to the teachers. No aides
were assigned to a school unless a teacher requested them. Aides were
encouraged to keep in touch with staff members at the Center if they
needed assistance, and staff members used every opportunity to bring an
aide along to observe when conducting a class for teachers or students
in the Liberty schools.

Perhaps the most significant work the aides did was with teachers
and students in the pilot day camps run by the Center. Those aides with
both experience and confidence were of great value in supporting teachers
in outdoor activities. Aides who needed experience gained it by accom¬
panying experienced teachers and Liberty staff members. These day camps
and other conservation classes, where aides had the opportunity to de¬
velop their sensory skills and use the simple field equipment and
materials, really constituted the aides' inservice training. Super¬
vision was undertaken either by the Liberty staff or by the teachers who
requested the aide.

Second-Year Workshop

The 1969-70 workshop for environmental aides had certain dif¬
ferences in some phases of the program which are worth mentioning before
continuing with the evaluation of both workshops and the administrator's

71 The administrator felt that there was a "gap" here, and a
"real need to communicate directly with the teachers."
The Center's plans to continue to train environmental aides in the fall of 1969 had to be modified because the staff was decreased from a director, a chief coordinator, and two coordinators, to a director and one coordinator. With the new director tied up with administrative duties, only one workshop could be offered. "Liberty Lady Alumnae" expressed a desire to continue their education, and a refresher course of four sessions consisting of outdoor activities and field trips was scheduled. A continued effort was made to get the more confident aides involved in such-on-the job training as helping with elementary classes at the Massachusetts Wildflower Association's Garden-In-The-Woods in Framingham, and day camp activities in Bedford, Framingham, and Concord. Twelve first-year workshop participants took part in the refresher sessions. Other first-year aides continued to work with specific schools in different towns; some even started their own classes to train environmental aides in these towns. The Center's coordinator kept in touch with them and offered as much assistance as was possible under reduced time commitments.

The Board of Directors did authorize a second-year workshop. The staff decided against the "shotgun approach" to recruiting aides, and also decided to concentrate on developing aides for one town, Concord, in order to establish a critical mass. With the permission of each principal, the Center's staff sent out a letter to all Concord elementary school teachers requesting suggestions for possible new participants for a repeat of the first-year workshop. Twenty-seven signed up, many of
them room mothers recommended by the teachers. It was felt that this would assure the aides of a good working relationship right from the start and allow them to work on the specific schoolgrounds with the teachers. Eight sessions were scheduled the second year, incorporating the same material as was presented the year before with essentially the same format of lectures, discussions, and field trips. The staff took care of the role of an aide, and a maple-tapping session was added, along with a session to prepare aides for Earth Day in April of 1970. More sessions were scheduled out-of-doors and the aides familiarized themselves with various schoolgrounds by actually visiting them for the sessions, rather than discussing them at the Center in Lincoln. In-service training was much the same as the year before.

Evaluation

Evaluation of the Liberty Ladies workshop the first year and the Volunteers for Environmental Education workshop the second year was carried out by the Center's staff the first year, and by the staff plus a professional research firm the second year. For both workshops, the methods used were virtually the same. Testing of the participants was undertaken to determine whether their view of conservation education had expanded so that it encompassed all academic disciplines. Aides were given the same test before the first session and again after the last scheduled session. The test asked them to decide how many of several given newspaper headlines concerned environmental issues (they all did) and to check the curriculum subjects in which they felt environmental

72Heuristics, Inc., 850 Providence Highway, Dedham, Massachusetts.
awareness could be taught. (Every subject taught in the schools was listed, and the Center's staff felt that environmental education is part of all of them, even languages.) After each class the aides were given a single sheet requesting comments on presentation, content, materials used, etc. The final evaluation form covered such questions as which topics were the most helpful, which needed further coverage, and which ones should be deleted. There was space for additional open-ended comment on any aspect of the course the aides desired to discuss. Verbal evaluation was also solicited at the last session.

The evaluation undertaken by the professional research firm consisted of analyzing the instruments utilized by the Center, and putting out a questionnaire to the aides themselves, which elicited the following general reaction:

All of the participants enjoyed the workshop and found it worthwhile. One commented, "The instructors were extremely knowledgeable, clearly liked their work, and made the sessions a real learning experience." Another noted that the course "literally started me on a whole new pastime." The fact that most participants attended a majority of the sessions and 14 said they would be interested in participating in an extension of this workshop further attests to their positive reaction to the Liberty Ladies Program.  

Administrator's Evaluation and Recommendations

The administrator felt that had the Liberty Council continued and been able to offer another workshop for environmental aides in 1971-72, the effort should again have gone into working with a single town. An overview of the past programs, along with information on what the workshop was designed to accomplish and the value of environmental

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aides to the teacher, should be presented to the principal of each school, and an effort made to meet directly with the teachers to outline and discuss environmental aides and the workshop to train them. Uppermost in the administrator's mind was the hope that release time could be arranged for the teachers to allow them to attend the course with the aides, since both could profit from the association with each other as well as from the material. The course content would be essentially the same as offered by the Center in previous workshops, with more class participation and more discussion on student discipline. A textbook was proposed, along with more assigned homework--both suggestions reflecting an evaluation of the workshop by the participants. A field trip to learn more about the town was also recommended.

As for inservice training, the administrator proposed more intensive use of the aides in day camp operations and stressed the necessity here for more clearly defined roles and responsibilities for both aides and teachers. The aides should get continued follow-up by a coordinator who could suggest environmental activities that teachers and aides could work out with their students. The idea here was: "Don't drop them at the end of the workshop." Refresher sessions during the school year for both aides and teachers were recommended as an important adjunct to the workshop.

**Maine's Regional Environmental Education Guides**

**Location and Population**

Maine's Regional Environmental Education Program involves the communities of Cumberland, Falmouth, Freeport, North Yarmouth, and
Yarmouth—a cluster of four school districts (Cumberland and North Yarmouth form one district) with a population of 17,453 (1960 census). Twenty-one schools have been built in this region, between Portland and Brunswick on Maine's coast, with over 350 administrators and teachers working with close to 6,100 students in the kindergarten through twelfth grade.

Organization and Administration

The Intermediate School in Yarmouth has been the headquarters for the program since its inception in 1969. The basic ideas of the program were conceived at the University of Michigan in 1968 by Dr. William B. Stapp, Associate Professor in the Department of Resource Planning and Conservation, and a group of educators including Mr. Dean Bennett, who was a Leadership Fellow in the department at the time. Mr. Bennett returned to Yarmouth to put the ideas into action as the Program Coordinator in the fall of 1969. At that time, Mrs. Katherine Boyd was hired on a half-time basis to serve as Mr. Bennett's Program Assistant, a job which she continues to hold.\(^7\) During its two years of operation, the program has also employed two student teachers from Gorham State College who have worked on a part-time basis in partial fulfillment of their degree requirements.

\(^7\) Mr. Bennett served as Program Coordinator until the spring of 1970 when he resigned to return to the University of Michigan to work on his Ph.D. with Dr. Stapp. He will return to Maine in the fall of 1971 to become Project Director of a statewide ESEA Title III environmental education project modeled after the Regional Environmental Education Program he founded. Mr. Wesley Willink, a M.S. graduate of the University of Michigan, became Program Coordinator in the fall of 1970 and will continue with the project in this capacity in the fall of 1971.
Funding for the program comes from the four school districts, with each supporting a quarter of the budget. In 1970-71, its second year of operation, an additional $5,000 was received from the Maine Environmental Education Project (ESEA Title III) for materials, supplies, and capital outlay since the program will be the model for one started by four other communities in the fall of 1971.

The goal of the program is the development of citizens who have a knowledge of physical environmental problems, who understand how to help resolve these problems, and who are motivated to do so. More specific program objectives are to:

(1) Provide information on local biophysical phenomena and associated problems for students in the kindergarten through twelfth grade.

(2) Create attitudes compatible with creating a quality environment.

(3) Allow for the development and exercise of skills relating to the identification and resolution of environmental issues.

In order to achieve these objectives, the program focuses on developing attitudes towards certain study environments—their biological and physical elements and their associated problems. This is accomplished at the elementary level in three steps. The first is a 30-40 minute classroom presentation on the study environment which provides an orientation for the second step, a field trip around the selected study environment with the students led in small groups by the program coordinator, his assistant, teachers, and volunteer guides. The guides are
citizens from the local communities. The third step consists of follow-
up investigations and the planning of conservation activities using the
inquiry approach, with the help of the program coordinator when and
where needed. The students make use of materials they have gathered
and those which are available at the environmental education center
maintained at the Intermediate School in Yarmouth.

Because the program has been vitally concerned with each com-
munity's environmental problems, there has been an effort from the start
to bring the schools and the communities closer together. With such a
small staff, it would be impossible to carry out the three steps out-
lined above for achieving the program's goals without enlisting support
from citizens in the five towns. Volunteers were needed to assist in
leading field trips to the study areas in the various communities and,
during the second year, to give the classroom presentations. Right
from the start, then, volunteers from the five participating communities
were recruited and trained. At the outset, the program coordinator
spent a good deal of time talking to various groups about the program
and interest was shown by a number of organizations, although there was
little actual input from them and the program has no advisory committee
as such at the present time. Because the program is closely attuned to
community interests, its direction varies with the environmental issues
that make headlines in the local papers.

75 While community involvement is not included in any of the stated
program objectives, the many advantages of citizens assisting with their
children's environmental education in the schools and learning more about
the environmental problems of their own communities can readily be seen
and appreciated.
Three sources have shown great interest in the program and have offered candidates for community volunteer guides: local garden clubs, village improvement societies (although not every town has one), and the Junior League of Portland. In the latter case, provisional members are expected to carry out seventy-five hours of volunteer work before becoming active members. With the belief that many of the young women would be interested in working in the schools on environmental education, Mrs. Boyd developed a "Job Description for Volunteer Field Trip Guides" which she gave to the Junior League Placement Chairman. This helped recruit a number of guides for the program. The job description suggests the following qualifications:

1. Individuals with an interest and concern for the quality of our environment.

2. A belief in the value of education to produce citizens who have an understanding and appreciation of their environment.

3. An interest in children.

Although the program has an unspecified preference for people who have had previous experience in teaching settings (six or seven of the current guides are retired teachers) as well as those who are interested and take part in community affairs, no one has been turned away. Anybody interested in contributing their time and ideas is welcomed. Recruiting, then, has been primarily by word-of-mouth through talks given by the program coordinators to community groups such as garden clubs, the village improvement societies, and conservation commissions. The "Job Description for Volunteer Field Trip Guides" has been useful in
obtaining Junior League provisionals, but has not been widely distribu-
ted. Advertising in the local papers, along with their coverage of
the program's activities, has been helpful, as has been the newsletter
put out by the program. The latter has a wide circulation in the five
communities served.

Over forty guides (all females, married with an average of 3.3
children)\(^76\) have been trained since the program began, with approxi-
mately thirty-seven still willing to be called upon when needed. This
past year, those in Yarmouth, Cumberland-North Yarmouth, and Freeport
received their training during the months of September through November.
Falmouth wished to run their field trips in the spring and so the guides
received their training in April. Upon the completion of the training,
it is hoped that the guides will agree to work when asked and put in
from one and one-half to three hours in the fall or spring leading the
field trips or giving the class presentations in the kindergarten
through sixth grades.

Training

Once a volunteer has expressed an interest in working in the
Regional Environmental Education Program and has indicated the grade
level or levels at which she prefers to work, she is then invited to
participate in a one and one-half hour workshop with fellow volunteers
for each grade in which she will assist. A time mutually agreeable to
both volunteers and the program's staff is arranged. Workshops are held
"on location" in the particular study environment being taken up at the

\(^76\)Statistics taken from Part II of the questionnaire administered
to 78 percent of the guides.
The preservice training received by the guides is strictly functional. They are told exactly what they are expected to do and how to do it. "There is little or nothing in the area of serendipity," according to Mr. Willink, the Program Coordinator. Each volunteer is given a copy of the curriculum guide developed by the coordinator for each level. The staff then outlines the basic concepts they wish to get across at that particular grade level and volunteers have a chance to discuss these. The staff also introduces the theme environment around which the concepts will be developed. In grades two and three, for instance, the study environment is the neighborhood; this is the theme around which topics will be discussed. The volunteers receive a field trip map with the bus and foot routes clearly marked, along with a copy of the suggested topics to be discussed with the children while on the bus or on foot. (See Appendix E.) A blank space is left next to the topics where the guides may make their own notes.

The practice field trip for the volunteer guides is made in exactly the same manner as it will be with the children, only the coordinator and his assistant explain how each of the topics on the sheet and seen along the way fit into the concepts previously discussed. Primary stress is placed on a "non-disciplinary" approach in investigating the topics. No attempt is made to tie in experiences to any particular discipline at the K-6 level, but the guides are shown how experiences may help a child apply information he already has. The guides are not expected to have expertise in any one discipline and are free to contribute whatever they know. Natural and social sciences get the most
coverage on the field trips.

In order to speed up the initial guided phase and allow more time for follow-up activities the second year, teachers in Falmouth and community volunteers in Freeport, Cumberland-North Yarmouth, and Yarmouth were trained to take the place of the coordinator and his assistant in giving the initial thirty to forty-minute class presentations on the study environment prior to the field trip. People interested in giving the classroom presentations were invited to the Center at the Intermediate School in Yarmouth where they received much the same sort of training as did the field trip volunteers. They received a guide for the level they were to present and learned the subject matter to be offered to the students in the kindergarten through sixth grades. In addition, they received instruction on the use of the audio-visual equipment they would need in making the presentation.

When the volunteers have attended the workshop or workshops and understand the methodology, the content, and the study environment at the levels they prefer to work, they are ready to assist on the field trip (or trips) with the students. As noted above, these trips replicate the field trip the guides took with the coordinator, and last approximately one and one-half hours. Placement of the guides is done by the program coordinator or his assistant. The guides are called from the Center when the field trips have been scheduled. It is then up to them to determine whether the dates fit their schedule. This year various volunteers in each community have consented to help with the telephoning. They are notified by the program assistant and, in turn, call the guides in that particular community.
Although the guides usually work in the communities in which they live (and mostly with the schools their own children are attending), some are interchangeable. Once familiar with the inquiry approach and the issue orientation and methodology, they find it fairly easy to pick up the differences in location and are willing to work in other communities.

No counseling of the guides is undertaken as they are not really taking on any responsibility outside the narrow limits of the field trip or classroom presentation.

At the present time, the guide-teacher relationship is strictly incidental. Many times the guides never even meet the teachers, who may or may not also be leading a small group on the field trip, or be present at the classroom presentation.\(^7\)

Information on guide-pupil relationships is spotty. In general, it suggests that the students see the guide in much the same light as they do a substitute teacher—a new face, which is always welcome but which is also untested—and this can present problems for a guide who lacks experience and self-confidence in handling students.

**Evaluation**

Evaluation is carried out by the program coordinator who administers pre- and post-tests to the students to determine the effectiveness of the total program. In addition, a Title III Team from the Maine

\(^7\)Some of the guides thought this was unfortunate as it did lead to some conflict. In general, the guides would have liked a closer relationship, as outlined in Chapter V of this study.
State Department of Education has also evaluated the program. This group did talk with some of the guides, but here again the focus was on the total program, not the guide's role in it. No attempt has been made to evaluate the effectiveness of the guides, since they are only trained to play a small part in the total program—to raise the adult-student ratio on the field trips and to make the initial classroom presentation. There are mechanisms for feedback. The teachers have a direct channel to the coordinator but rarely use it. The guides have an opportunity to express their views in meetings both after their workshops and/or classroom presentations and also after the sessions with the students. These open-ended sessions have produced many valuable comments for the staff.

Administrator's Evaluation and Recommendations

The Program Coordinator, Mr. Wesley Willink, has found that although field trips are extremely important in terms of the visibility of the program to members of the community, his involvement in leading many of them is exceedingly time-consuming, as each one requires close to four hours from the start of the preparation to the time the last item of equipment is put away:

I feel that my time can be put to better use in working with teachers to develop audio-visual aids and materials, implement follow-up activities, and plan future trips.

Time is also needed to work with the school administrators, as in

78 Mr. Dean Bennett's Ph.D. thesis is centered on developing an effective evaluation instrument for the program, which he hopes to pilot in the Yarmouth Program, starting in the fall of 1971.

79 Over two hundred field trips for program students were carried out by the coordinator, his assistant, teachers, and community volunteer guides during the 1970-71 school year.
one town there was difficulty in setting up dates for classroom presentations. To cope with this time problem in the fall of 1971, the coordinator is toying with the idea of using some of his most interested volunteer guides to lead the field trips, which will release him from this task and allow him to use his time more expediently with administrators and teachers.

In order to use his volunteers in a greater capacity, the coordinator sees the need for setting up more and better channels of communication between administrators, teachers, and the volunteer aides:

Administrators and teachers must be made aware of the potential use of inputs by community volunteer aides who can come into the schools as experts in different areas of environmental education. An example might be a person who knows the mammals of Yarmouth and can teach them to third graders. Other possibilities include experts on local history, or those who can debate local environmental issues before an assembly or class. This could be part of the preservice training for these aides. They could come and work at the center with the materials we have here and we could give them more training in problem identification so as to make them the core of community action. I'd like to create an attitude that service by volunteers doesn't end when the field trip ends.

To accomplish these objectives, a preservice training program must be designed which goes beyond merely training the aides for classroom presentations or to assist with field trips. The techniques of leading field trips, which include the handling of children at different age levels, must be taken up, and teachers must be included in the training along with the aides. When the aides do become knowledgeable in particular areas, their names should be entered on an up-to-date list available to the teachers, who should be urged to use it. The coordinator is thinking about developing a sequence of environmentally-oriented activities for the teachers to take up during the year and the "experts" will
be written right into this sequence. Another possible activity for aides is to have them organize slide field trips for use indoors when the weather is bad. The aides might also give these talks to administrators and teachers to help the aides explain what they can do for the teachers.

Mr. Willink observed, "We must keep in mind that preservice training is actually adult education with many beneficial community spin-offs." He feels that periodic meetings with the aides for the purpose of feedback and evaluation are essential, as is teacher evaluation of the work of the aides. A questionnaire is already in the works to obtain information in this area.

Finally, the coordinator is worried about the problem of paid versus volunteer aides:

How far can you go in demanding work from volunteers? If they throw the whole program into the kibosh because they don't show for a field trip or they aren't interested in participating on a particular day, we can't make them do something. We have to depend upon their good will.

According to Mr. Willink, responsibility must be built in, communication lines kept open, and alternatives set up to take care of contingencies. Administrators, teachers, and the aides must all be convinced of the need for an environmental approach to education.

The Elbanobscot Foundation's Environmental Aides

Location and Population

The Elbanobscot Foundation, Inc. is a private, non-profit corporation run by a board of directors. It operates an environmental education center on 100 acres of land in Sudbury, Massachusetts. The center is
surrounded by an additional 1000 acres of land owned by the Sudbury Conservation Commission, the State Department of Natural Resources, and the Sudbury Valley Trustees. The center focuses on promoting environmental education in the nearby communities of Wayland and Sudbury, but it does not limit its activities to these two towns; ten nearby communities have had teachers, community members, and now environmental aides attending courses given by the Elbanobscot staff. Many of the communities, such as Sudbury, Lincoln, Framingham, Concord, and Carlisle, were members of the Liberty Council and the Foundation's land and facilities were used by the Council's Conservation Education Center for many of its workshops and day camps. The staff of both organizations maintained a close relationship.

Organization and Administration

The Foundation recognized the growing need for trained volunteers qualified to assist schools and communities in providing environmental education, primarily out-of-doors. When the nearby Liberty Council, which had been offering volunteer training, was discontinued, Mrs. Barbara Robinson, Chairman of the Wayland Outdoor Education Committee, approached the Foundation through Mrs. Janet Staiano, its Executive Director, about sponsoring such a course. (Mrs. Staiano is also a Wayland resident and a member of the Outdoor Education Committee.) The Foundation was pleased to do so, and offered its facilities and administrative support for the program. Mrs. Robinson agreed to serve as an unpaid administrator, with the assistance of Mrs. Arlene Nichols, Program Director for the Foundation. The Wayland Outdoor Education Committee supplied manuals for use by course participants.
Having no previous experience in running teacher aide programs, the staff decided to set up a pilot course for the fall of 1970 through January of 1971 to test the viability of the proposal and to determine whether future courses should be conducted by the Foundation as part of its on-going environmental education program. Information on coverage and approaches of the former Liberty Ladies Workshop proved valuable, and further assistance in setting up and operating the course was solicited from the Environmental Education Center at the Massachusetts Audubon Society's Hatheway School of Conservation Education in Lincoln, Massachusetts.

The aim of the course, as developed by the staff, was to provide training for aides who could serve schools and community groups in promoting environmental education. The environmental aide's job would include:

1. Helping teachers with outdoor education programs.
2. Helping children enjoy and learn more from environmental experiences.
3. Helping schools or organizations in collecting, digesting, preparing, and publicizing information for environmental education.

Environmental aides were to be used as:

80 Manual for Environmental Aides," The Elbanobscot Foundation, Inc., Wier Hill Road, Sudbury, Massachusetts 01776.
(1) Teaching assistants - paid paraprofessionals within a school system.

(2) Teacher aides - volunteers on a regular basis within a school system.

(3) After-school volunteers - assisting with school clubs, youth groups, or community organizations.

(4) Resource specialists for special assignments in program presentation, field trips, etc.\footnote{Ibid.}

The staff hoped that if the pilot course proved successful, future ones would be self sustaining. They decided to charge participants in the pilot course a $3.00 fee, to cover the cost of handouts and the printing of the "Manual for Environmental Aides." The Foundation absorbed the overhead costs of administrative and clerical help which were needed in addition to the considerably more than 20 hours a week put in by the administrator, Mrs. Robinson. Guest speakers were paid no honorarium or travel expenses, and the participants paid their own expenses for all field trips.\footnote{The inevitable coffee was paid for by the Foundation, but each participant brought in her own cup or mug and took turns in supplying homemade confections.}

Aides were recruited in a number of ways. The staff developed a hand-out sheet with a tear-off section at the bottom. This was sent out to the Foundation's mailing list, which included local parents of children who had formerly attended the summer camp at Elbanobscot, which was established in 1947. Informal verbal contact was made with the
Wayland and Sudbury school systems through Mrs. Robinson, who had worked with both in connection with the Wayland Outdoor Education Committee. Local groups, such as garden clubs and conservation commissions, were also approached. Five small newspapers covering the surrounding towns were contacted and all of them ran articles on the projected course. Word-of-mouth helped, and former Liberty Ladies were useful in spreading the information. Some even took the course.

As in the Liberty Council's Workshop, selection of the aides was open-entry, and no criteria were established:

Requirements for admission are simply an awareness of nature, a willingness to learn, plus some free time to put your training to work in your community. Mothers with school-age children may be in this category, but older and retired persons may also have the time and interest. No specialized educational background is necessary.

Participants were asked to fill out a questionnaire form the first class, but the intent was to obtain information on the participant's background in conservation and education which would help the staff to "identify interests and future possibilities in outdoor education." Aides were expected to attend at least 75 percent of the scheduled classes and to complete a reasonable amount of the assigned homework in order to assure a certificate from the Foundation. It was suggested that the aides should be willing to devote at least one day a week to the schools or non-formal groups, the idea being that they

83 Brochure, The Elbanobscot Foundation, Inc., Wier Hill Road, Sudbury, Massachusetts 01776.
84 The information was also used to help place the aides, as discussed in the section on evaluation.
should give as much time to actual work as went into their preservice training. This was not, however, ever considered a condition for participation in the course.

The pilot session attracted thirty enrollees, five of whom dropped out before the first class. Suburban housewives made up most of the class. None of them were paid to attend the course, nor did they expect any academic credit. Very few were seeking paid jobs.

Training

Elbanobscot's environmental aides received a quite comprehensive preservice training course. The staff felt that there was much more to cover than what the Liberty Workshop had offered. Ten classes were decided upon, each to run from 9:30 to 11:00 A.M. Some outside speakers were asked and others volunteered to handle many of the classes.

Content and skills received about equal coverage. An assistant superintendent and a science coordinator from the Wayland school system spent the entire first class on the kinds of information aides would need to function best in a school program. Matters such as relationship to teacher in charge, safety regulations, protocol, logistics, clothing, and equipment were all taken up from both the school's and the aides' points of view. During the rest of the classes the aides were

85 Two graduate students enrolled in the two courses offered for aides by the Foundation. They took the course during free time and not for credit.

86 The actual day of the week was left open for negotiation with the course participants. Wednesdays became the day for the pilot class.

87 For the General Outline of the ten-week course, see Appendix E.
continually encouraged to work together on regional environmental thinking. There was one session on working with children out-of-doors (expectations, suggestions on how to adapt curriculum for the out-of-doors, etc.), and communication problems between the staff, aides, and teachers were handled when they came up. No formal group process work such as "T" sessions was carried out.

Whatever the subject of the class, all curriculum areas were discussed in relation to how environmental education could be incorporated into them. The interdisciplinary aspect of environmental education was also stressed in the broad homework assignments which covered a variety of disciplines, and which were designed to have the aides bring their own knowledge into use. Creative writing, home economics, arts and crafts, and music received special attention, along with the expected focus on ecology, plant and animal life, geology, land relationships, and the Indian lore of the region. In addition, conservation problems indigenous to the local communities were brought up under social studies.

As for skills, much attention was paid to the techniques of leading field trips. Another skill emphasized was communication--how to spread the conservation message through the presentation of programs, use of library displays, writing of newspaper articles, and so forth.88 Audio-visual skills were covered in the pilot course, as well as the working up of curriculum materials for which the aides really felt a need. Use of identification keys and indoor and outdoor crafts and

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88 It is important to remember that one of the aims of the course was to get people involved in solving environmental problems, not merely to provide aides for use in the schools.
games were taken up in two classes, with an emphasis on the inter-disciplinary aspects of these endeavors.

Most of the classes involved a lecture-demonstration-discussion format, often presented by an outside speaker from the Massachusetts Audubon Society or from one of the local school systems. Several classes included field trips around the Elbanobscot property. Participants were also encouraged to visit schools and observe teachers in action.

Although some effort was made to pre-plan with local schools to insure cooperation in placing aides, no formal arrangements were worked out and no teachers were trained to work with the aides on-the-job. The aides were placed in several different ways. The Foundation acted as a clearing house for requests from schools wishing assistance with field trips or outdoor classes. Some of the aides were put to work in the schools their children were attending even before they completed the preservice classes. Others developed a program for principals and teachers to explain what they felt could be done in environmental education and how they could assist teachers and students in this area. Where teachers were ready to use environmental aides, the staff tried to find an aide willing to volunteer. A number of the aides were placed right away in the Lincoln-Sudbury Regional High School's Project Omega, which was involved in training the high school students to teach environmental education at the local elementary schools. Aides were needed to work with the students and to assist with transportation from the high school to the elementary schools. The Foundation did send a letter to the local schools with the names of the women who had completed the course. Aides were expected to follow it up on their own if they so
desired. "Advertise and marry up with a school or group as soon as possible," was the advice given the aides by the administrator.

At the time of the interview (June 15, 1971), the administrator found it difficult to make an assessment of teacher-aide relationships, as the second course had just ended and there had been little time for the staff to follow up members of the pilot course. Informal feedback suggested some personality conflicts and some pleasant associations. There was no information to be had on aide-pupil relationships beyond the informal comments by the aides. 89

Elbanobscot's Second Course for Environmental Aides

The pilot course had proved successful, and the staff organized a second course of ten classes from March through June of 1971. Participants were recruited by the same methods, with the assistance this time of word-of-mouth advertising by aides and teachers who had been involved in the pilot course. A fee of $15.00 to cover administrative costs was charged to those who were not members of the Elbanobscot Foundation; members paid a $13.00 fee. The staff remained the same, and many of the outside speakers either volunteered again or were asked back to take part in lectures or in leading field trips. Experience with the first course prompted some changes in the preservice training. Instruction on audio-visual aides was minimized as it was felt that the aides could pick up these skills if and when they needed them. The extra time was used in a series of outdoor workshops which included

89 For an assessment of teacher-aide and aide-pupil relationships, refer to the data obtained from the questionnaires sent to aides reported in Chapter V of this study.
graduates of the pilot course as well as the new trainees. The pilot course aides gained some valuable practical experience by conducting outdoor classes and leading field trips with the members of the second course as their students. In this way, all profited from both the content and the methods.

Evaluation

Evaluation of the aides in both courses was undertaken by the staff through the use of personal files maintained for each aide. The information asked for in the initial questionnaire was supplemented by the completed homework assignments and notes made after informal counseling sessions. Part 2 of the final questionnaire administered at the last class of both courses was also aimed at helping to determine the student's personal progress and motivation as an environmental aide. The aide was asked to define the kind of role she would be most interested in and willing to play in the future. Two categories were outlined: (1) working with children—as a paid or volunteer aide, or with youth groups; and (2) working in areas other than with children—in schools, libraries or at home preparing resource materials, planning curriculum, training other environmental aides, or taking political action on environmental problems. Other questions were designed to determine the aide's competence in various areas, and whether or not she had used the information and contacts made in the course, as well as her preference for working with a particular school or assisting with any programs in her community or for the Elbanobscot Foundation.

The administrator and staff attempted to talk with each aide
from time to time about her progress, and to hold group discussions on the homework and on contacts or inservice work carried out by the aides while they were taking the preservice training. The administrator found that one of her big jobs was in the counseling of the course participants:

They all wanted attention and support to help build their confidence, both during the preservice training and when they began to work in the schools or with church or youth groups. This is an important part of the administrator's job and it is essential that somebody be willing and able to take the time to do it.

Both the pilot and the second course were evaluated for the staff by the participants themselves. Continual feedback was asked for and received, but the bulk of evaluative material was obtained in Part 1 of a written questionnaire designed to determine the effectiveness of the course with an eye towards improving future ones. (See Appendix E.) The questionnaire was administered to the aides at the last class and asked for information on course content, including the most and least helpful classes, what should be added or deleted, comments on organization, teaching approaches, and homework. One question was designed to determine if the trainees had absorbed the established working relationship between aides and the schools. The staff also sought informal evaluations from guest speakers and teachers who used the aides.

Administrator's Evaluation and Recommendations

The administrator and the Foundation's program director were generally pleased with the two courses, especially the second session workshops which provided valuable learning experiences for both classes of aides. They said they needed clerical help with the production of the aide's manual so that the administrator could spend more time
counseling the preservice students or following up those working in the schools or communities. Another minor change would be cutting down the size of groups of aides who visited teachers during their preservice training so as not to distract either the students or the teachers. More equipment in the way of hand lenses, soil kits, and plant materials was needed. The administrator was considering introducing more group dynamics and role-playing with typical community environmental problems to help the aides see the many complicated positions that must be understood in dealing with such problems.

The administrator wanted to get community organizations to sponsor aides for the preservice training course. Parent/Teacher Organizations seemed like a good possibility, as did garden clubs and land trust organizations. No participant had been prevented from attending either of Elbanobscot's courses because of inability to pay the fee, but it was felt that interest in the Foundation and its many programs could be generated by seeking student sponsorship.

Another of the administrator's hopes is that she will be able to get retired people interested in taking the course and becoming involved in either the schools or community environmental education. Here the problem is again a lack of time. She remarked,

I feel that the schools ought to have environmental coordinators who could carry on the follow-up and counseling of the aides once they finish the preservice course. They could also assist in recruiting both mothers and retirees for the course.

Also on the administrator's mind are closer, more formal ties

90 See the overview of the Wellesley program in this chapter, which subsisted on P.T.A. funds.
with the school systems even if environmental coordinators on a paid basis cannot be secured in the near future. It is hoped, of course, that some of the aides will serve in this function, as well as continue to come back to train future aides. A final project under consideration is the possibility of arranging graduate credit for the Elbanobscot course through Framingham State College's Division of Continuing Studies.

Lowell Model Cities' Career Ladder Interns

Location and Population

The Education Component of the Lowell Model Cities Program serves seven schools within that area of Lowell, Massachusetts, known as "The Acre." The potential population served by the program is 9,000 with a student population of around 2,600 and approximately 250 administrators and teachers.

Organization and Administration

The Education Component has a paid staff consisting of a director, assistant director, a part-time supervisor of interns who is also the media specialist, two other curriculum developers, two secretaries and two clerk-typists. These administrators are responsible to the Education Task Force of the Acre Model Neighborhood Organization, Inc. (AMNO), which is an elected group of forty citizens from the Model Cities area. The Task Force is the Education Component's policy and advisory board. Programs prepared by the Education Component for the Task Force are submitted to AMNO through the Task Force. The Education Component is under contract to the Lowell School Committee to carry out the programs developed by the Task Force and approved by AMNO.
The City of Lowell has received the endorsement of the Massachusetts Commission for Educational Development to have the second State Experimental School in the Commonwealth. All that remains to secure this is to get the final designation from the State Board of Education. The Task Force and the Education Component administrators see the need for drastic changes in the current methods of schooling. Teachers, aides, and students have a greater opportunity to develop mutual trust and respect under an open-school concept. Learning can be enhanced by doing. There must be freedom to experiment by both the students and teachers, to create self-designed and self-directed educational activities developed for personal and group needs. The total environment affords outstanding learning opportunities, and students must understand that learning is facilitated when a person has a sense of control over his environment rather than being a victim of the environment. The Experimental School will be known as the Center for Human Development. Its aim is to incorporate the latest thinking in open schools by offering an interdisciplinary, interenvironmental, ungraded approach to provide individual instruction, small group instruction, and large group instruction and interaction. The Acre will be used as the experimental population.

In order to achieve this aim, current and future teachers must have the opportunity to work in schools with this new concept in education. The Education Component therefore launched a Career Ladder Intern Program in the fall of 1970 as one element of this new concept. The program will come under the new Center for Human Development, and is aimed at producing the teachers of the future in open schools, and, at
the moment, in the Model Cities Acre area. Sixteen Career Ladder Interns—"Educational Aides," as the Education Component prefers to call them—were chosen to start up the career ladder toward the final goal of becoming professional teachers in an open school.

A number of criteria were established to select these sixteen interns out of the many who applied to participate in the program. First priority went to those who actually lived in the Acre. All of the interns live in the City of Lowell. Aides—male or female—had to have graduated from high school or be at least eighteen years of age. No upper limit was set (the oldest is forty-four) and no physical exam was required. Candidates were screened by the Education Component's staff, the director having over fifteen years of experience with both paid and volunteer aide programs. In addition, a five-man Personnel Committee of the AMNO Education Task Force also took part in the screening process.

Another quality for which the screeners looked was a firm commitment to a professional career in the field of human services. It was made clear to each candidate that the position of Career Intern was not a terminal one, and that it was expected that each intern would work his or her way up the career ladder. The anticipated length of time to complete the training program and receive a B.S. or B.A. is six years. Interns will continue, however, until they receive their degree, working up through a series of pay differentials as they progress up the ladder. At present the pay increments are provided annually and have a relationship to years in the Program rather than degrees of attainment of the aide's career objectives. The career ladder is in the process of being designed
and as yet there are no formal criteria for advancement from one rung to another. Pay differentials for the interns are currently determined by the Program's budget, which also determines the number of college courses which can be bought for the interns each year.

For the financial reimbursement they receive, the interns are expected to put in forty-five hours per week of formal classwork (leading to college credits), study, and work in the Model Cities programs. This includes involvement in the Education Component's program development, implementation, and evaluation. Time is also set aside for group self-evaluation. Curriculum development is undertaken by the interns under the supervision of professionals and the interns are very much a part of the Education Component's team. The interns work with the understanding that when they develop and carry out programs, they are doing so with the professional endorsement of the Education Component.

As Mr. Patrick Mogan, the Education Component's director, explained:

We have told them that there are certain credentials needed for teaching and by using our credentials they are carrying out the program. Actually what they are doing is carrying out a professionally designed program, as we are the professional barometers of the program as it is being developed. All feedback and developmental work will be shared with them as part of their career program.

A number of organizations and agencies are involved with the Education Component in either the planning for the Center for Human Development or the Career Intern Program itself. Mr. Mogan has observed,

The Center for Human Development provides a neutral ground whereby the services of the different human service agencies can be brought to bear on human development. Human service agencies, as presently organized, give only a partial service. However, most consumers of services are in need of the services of many different agencies. Since this interdigitation of
services is no particular agency's responsibility, the consumer ends up with a partial service. Also, the providers of services do not have the opportunity to meld their resources in a "mission-approach" to the consumer's needs. The Center will provide the neutral ground where the resources of existing agencies can be brought to bear on human development under one directorship.

The University of Massachusetts has had an important part in designing the Center for Human Development. Many of the centers in the School of Education, along with computer and guidance departments, have been involved in the planning stages.

As for the Career Intern Program, the Director of the Education Component is currently working with the Commission for Educational Development in revising the guidelines and requirements for interns. The Department of Natural Resources' Lowell-Dracut State Forest, which has recently been approved for funding as an urban-suburban state park, is used extensively by the interns. Middlesex Community College provides the aides with a formal course each semester toward their Adjunct in Arts. Lowell State College has provided tutors one day a week in the skills program. (The tutors are seniors about to become teachers.) Lowell Tech has also assisted in pollution programs and will be working more with the interns in the near future. Lowell Tech's Provost serves on the AMNO Education Task Force, and so keeps in close touch with the intern program.

Funding for the Career Intern Program comes from two primary sources. One is the New Careers Program of the Office of Economic Opportunity, which is a function of the Community Teamwork Agency in Lowell. The second source is the Model Cities Program, which is administered by the Office of Housing and Urban Development (HUD). As of the first of
July, 1971, funds have been made available under Title III of the Elementary and Secondary Education Act of 1965 (ESEA) for the establishment of an Education Bank in which all of the materials developed by the Education Component staff will be stored for use by the students, teachers, and parents within the community.

Training

The interns receive continuous preservice and inservice training. Much of the educational understandings on child development, psychology, sociology, and human development are contained in the courses taken at Middlesex Community College. In addition to these courses, the interns attend full-day workshops under the supervision of the Education Component's trained staff. A great deal of emphasis in the workshops is placed on understanding the total learning environment, and the learning is carried on through an inquiry approach, with each intern encouraged to do his own thing and find out for himself. Disciplines are not categorized and the interdisciplinary aspect of education permeates all of the workshops. The form and shape of buildings have been looked at and discussed and a color awareness workshop was given to explore how both the interns and children perceive their environment. The total environment is the context through which reading is developed. Many of the workshops have involved local field trips to study the flora and fauna in the Acre. Much use has also been made of the nearby Lowell-Dracut Forest to compare and contrast urban, suburban, and rural environments. The interns are often involved in developing the workshops and testing them out on their fellow interns and the staff. At times, experts are brought in from the Massachusetts Audubon Society or the Children's
Museum to instruct. Skills are an important part of the curriculum, and the leading of environmental field trips and the techniques of developing and using audio-visual aids receive much attention. The camera is seen as an important adjunct to learning and its uses have been explored, along with how to research a subject in the library.

Inservice training currently takes the form of working in individual skill programs with students in the Lowell schools. Each intern is responsible for designing, implementing, and evaluating lessons under the guidance and direction of the Education Component's Program staff. The staff attempts to place interns in their area of interest within the three programs (Skills, Adult Education, and Goodwill or Handicapped Program) currently being administered by the Education Component. However, all of the interns are considered "generalists" and they must be at least exposed to all three programs at this stage in their training. In the future, if they wish to specialize, they may do so. Mr. Mogan emphasized,

All of our interns were in all of our programs this past year. They work within their interest area in those programs. In all of the schools that we have these, the interns moved about as a group. All of the sixteen interns were in the skills program, which was required. Five worked in the Adult Education Program and six in the Goodwill Program.

During the 1970-71 year, the interns did not work with the teachers in the classroom. They worked only with students assigned to the Program by the teachers and matched with the interns by the Education Component's staff. These students came out of their classrooms to wherever the interns had their programs set up, and the interns worked
with the students in whatever skill areas the interns had designed or in which the students wished to work. The students then went back to their classrooms. Up until the fall of 1971, the interns worked under the supervision of the Education Component's three curriculum coordinators, all of whom are former teachers. The Education Component staff felt that by the fall of 1971 the interns would have achieved a level of confidence in their skills and a proficiency in many of the discipline areas which would prepare them to move up another step on the career ladder--they could graduate from working under the Education Component's staff members to working directly under experienced teachers in the classroom. Mr. Mogan told the investigator in June, 1971:

The mechanism we are working on for next year is how we can involve the teachers. We have built the Program to the point where we feel very confident now that the interns can work with the teachers and explain what they are doing.

A Masters Internship Program, conducted during the summer of 1971, was designed to develop the open-school concept among thirty Acre teachers from all grade levels. This program also took up the matter of intern-teacher relationships, differentiated staffing, and potential role conflict between teachers and interns. Some of the Lowell interns worked with the teachers in the Masters Intern group in their classrooms. At the moment, information on this program is not available.

At this writing, feedback from the interns suggests that intern-student relationships so far have been good. It seems that students regard the interns more as "big brothers" than as teachers.
Evaluation

Each week the interns get together for a group self-evaluation session known as the intern meeting. The meeting is always open and if there is a problem involving one of the programs, the coordinator of that program is asked to be there; otherwise the matter is not discussed. The intern administrator always sits in. The other two program coordinators also attend many or all of the sessions and can put items they wish to be discussed on the agenda, which is drawn up ahead of time. Chairmanship of the meetings is handled by the interns, with a different person in charge each week.

Every two weeks the entire staff meets with the interns around a planned agenda which takes up anything anyone wishes to discuss about any of the programs or interns. Anyone has a right to place an item on the agenda, which is kept in the secretary's office. The meeting is usually chaired by the Director of the Education Component or his Assistant Director.

A monthly evaluation of the growth and progress of each intern is also carried out, using a formal checklist developed for the purpose. Accumulated data from the 1970-71 program are currently being looked at in total to get a reading on the effectiveness of the entire program. It may well be that the program has been at fault when, for instance, all of the interns score low on some point on the checklist. In situations where the checklists show up individual problems, the matter is taken up individually with the intern.

In the fall, the aides will be utilizing a self-evaluation form
which they will turn in for summation by the staff. If teacher-intern conflicts do arise, much discussion will take place before any effort is made to reassign the intern. About this sort of conflict, Mr. Mogan notes:

We see it more as a necessity for a reevaluation and readjustment rather than a reassignment, as the latter may be a nonresolution of the problem. We try to work toward a solution of the problem rather than merely avoiding it by shifting the intern to some other school or program.

The weekly intern meeting, the bimonthly staff-intern meeting, and the monthly intern evaluation checklist provide plenty of feedback for evaluation purposes.

Evaluation of the Education Component and the Intern Program is carried out by the AMNO Educational Task Force, which acts as the Component's watchdog, reporting their evaluation and suggestions to the Component's administrators and to AMNO itself. In addition, the Social Planner from the Model Cities Agency also looks over the Component's shoulder from time to time.

Administrator's Evaluation and Recommendations

Both the Director of the Education Component and the Administrator of the interns feel that much needs to be done to improve the design of the career ladder which has had its pilot year in Lowell. Some of the suggested improvements include: (1) more formal criteria for establishing the steps in the ladder; (2) guidelines for giving interns credit for their accomplishments outside of or prior to their enrollment in the
intern program; (3) a better system of pay differentials—perhaps a "merit system" for interns; and (4) a better method of screening potential candidates for the Program.

In general, the administrators feel the preservice training the interns received is good. They wish only that they could obtain more funds for outside consultants to assist with both the preservice and inservice phases of the Program. They also feel that a greater effort can be made to tap the human resources among the interns themselves. The administrators would like to have a part-time evaluator on the staff to help prepare a better evaluation package for explaining to interested outsiders what the Education Component and its Career Ladder Intern Program are trying to accomplish.

Wellesley Environmental Awareness Committee Training Course

Location and Population

The Town of Wellesley, Massachusetts, is located approximately thirteen miles west of Boston. Of its 27,951 residents (1970 census) 6,089 are students attending the twelve elementary schools, the Junior High or Senior High. Four hundred and thirty-three administrators and teachers work with these students.

Organization and Administration

In the spring of 1970, a group of citizens involved in environmental activities and education within the Town met at the request of

91 For example, Lowell had one intern who was a qualified trainer in group dynamics with eight years of experience, and yet he was required to take a course in sensory awareness!
Mrs. Nina Lavin, an active member of the Junior League who has a great
interest in education, and who has spent a good deal of time developing
curriculum materials for the Wellesley Curriculum Learning Materials
Center. The purpose of the meeting was to determine whether some sort
of environmental education program could be developed for use in the
Wellesley elementary schools. The writer of this study, who attended
as chairman of the town's Conservation Commission, suggested that the
group consider a project similar to the "Liberty Ladies" program which
was just finishing up its second and last year of operation.

Planning for the course got under way in the fall of 1970 when an
Environmental Awareness Committee was formed, including both educators
and members of the community. (See Appendix E.) Dr. Nick F. Muto,
Assistant Superintendent for Curriculum and Instruction, was asked to
serve as the Committee's administrative advisor and to assist with the
role of the aides, using his prior experience with the Syracuse Teacher
Aide Program. Mr. Richard Talbot, Principal of the Sprague Elementary
School, served as a liaison with the principals and offered his gymnasium
as a meeting place for the training course. Mr. Andrew Halnen agreed to
represent the Curriculum Center, and the director of the Center pledged
administrative support in the form of secretarial help and reproduction
and distribution of materials for course participants. An outstanding
environmental education teacher was also asked to advise, and the writer
of this study agreed to share his experience with the Committee as a
consultant. Mrs. Lavin volunteered to serve as chairman. A small num-
ber of enthusiastic women heard about the formation of the Committee,
asked to join it, and volunteered to handle the jobs of secretary,
treasurer, librarian, and publicity chairman. Others were asked to act as liaison between the Committee and various local environmental organizations to which they belonged.

The Committee met each week throughout the fall at either the Curriculum Center or a meeting room in the school administration building. The first step was to develop a "Statement of Purpose" for the course:

The intent of this course is to educate and develop a team or nucleus of Environmental Aides for each elementary school. These aides will work in cooperation with school personnel to create an approach to Environmental Education that is unique to their own school.

It is anticipated that the outcome of this special interrelationship will lead students into an awareness of their interdependence upon their environment and that this awareness will produce a sense of responsibility towards their neighborhood and a personal commitment to ecological action within their town.

These "Environmental Teams" will provide an exchange of information between schools and the community. It is hoped that this new channel of communication will serve to involve more people in an understanding of the environmental problems we face today and in the future.

Members of the Committee attended a class for environmental aides at the Elbanobscot Foundation and talked with its administrators. They also visited with Miss Joreen Piotrowski, the Administrator of the Liberty Ladies Program during its last year; they talked to the librarian at the Massachusetts Audubon Society's Environmental Education Center; and they went over to the Minute Man National Park in Lexington where they reviewed the National Parks’ NEEDS Program.

Although Mrs. Lavin was an active member of the Junior League, she did not want the Committee to become a Junior League project, funded by that organization and limited to Junior League members and provisionals. She—and the rest of the Committee—wanted a more broadly based community effort, so that the program would not founder after the Junior League members who had worked on it moved on to other projects.
At the outset funding looked like a problem. Although all of the instructors were to be volunteers from the schools or community, money was needed for the purchase of books and materials for course participants. This problem was solved by asking each elementary school Parent-Teacher Association to support the program with a donation from its treasury. The resulting funds more than adequately covered the purchase of materials for the aides. The Wellesley Conservation Council, Inc. donated copies of its "Guide to the Guernsey Sanctuary" and provided field-trip leaders to help the aides study the area. Municipal organizations such as the Conservation Commission, Board of Public Works, Planning Board, and Park and Tree Board all supplied volunteer speakers, as did the Charles River Study Group of the League of Women Voters, and the TAP (Teachers, Administrators, and Parents)--a group of volunteers from the Kingsbury and Phillips Elementary Schools in Wellesley.

An initial objective of the Committee, as outlined in its Statement of Purpose, was to train at least one aide--preferably two or more--from each of the twelve elementary schools in the town. Recruiting was handled through the P.T.A.s in the form of a letter written by the Committee over the signature of the president of each P.T.A., and sent home with the students, after being cleared by the principals and the P.T.A. Executive Committees. The course was publicized in the Wellesley Townsman and the Quincy Patriot Ledger, and the garden clubs and

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93 Each P.T.A. was asked for a donation of $10 to cover running expenses and for materials for the school's library. An additional $5 per aide was also requested, so each school's contribution varied with the number of aides taking the course (from one to three).
community conservation organizations were alerted by Committee Members who also belonged to those groups.

Participation in the course was on an open-entry basis, with the Committee looking for people who had both an interest in the environment and environmental education and the time to participate in the preservice training course. Only one school had trouble finding at least one person who met these simple criteria and that was because the area is one in which both parents in the family commonly hold full-time jobs during the day. Although there were no other criteria for the course, it was hoped that those who participated would take initiative in working with teachers in the schools and would become a nucleus which would attract additional aides for the "Team." The Committee also hoped that the aides would be a link between teachers and the community, and that schools would develop closer ties through the exchange of materials and notes on neighborhood field trips. It was anticipated that aides would bring back to Wellesley information on what other organizations and institutions, such as the Environmental Education Center at Massachusetts Audubon and the Minute Man National Park, were doing in environmental education.

Training

One of the Committee's larger aims was to give the aides greater knowledge of Wellesley and the people who work and live in the town. It was decided early in the planning phase that only local resources--human, natural, and physical--would be used in the course.

94 Two men expressed an interest in the course, but could not attend the sessions because of other commitments. One woman started the course but was forced to resign because she could not complete it.
This meant using teachers and community members who were knowledgeable in environmental problems and education, and moving the class location around as much as possible so that different schools could be visited and different natural areas reviewed on field trips. The Committee had both the Liberty Council's and the Elbanobscot Foundation's Environmental Aide Manuals to use for guidelines and suggestions, plus a first-hand evaluation of the latter and a detailed analysis of the former. With this information, along with a thorough knowledge of the local human, natural, and physical resources and a desire to use them, the Committee was able to offer the aides some sessions well tailored to their needs. The problem (common to the other aide courses) was too much material and too little time in which to cover it. It was decided to hold ten sessions, starting the first week in March of 1971 and running through the end of May. (An eleventh session the first week in June was mutually agreed upon by both the Committee and the aides when it became obvious that it would be needed to allow for an evaluation of the course.) Monday from 9:00 to 11:00 a.m. was the time agreed upon.

Understandings presented in the preservice training included a session conducted by Dr. Muto on the role of an aide. No effort was made to take up group dynamics or child development. Emphasis was placed on science because the teachers whose classes the aides visited were most knowledgeable in that discipline. Classroom sessions included

959:00 to 9:30 was used for announcements and discussion of the homework, based on feedback from the Elbanobscot program which indicated that there just wasn't enough time to go over the assignments so that all could profit from the exchange of ideas and information.
geology and science and nature activities that could be pursued in an indoor laboratory, as well as observations of plants and animals in an indoor pool developed by one teacher who is also hatching quail eggs with the permission of the State Department of Natural Resources' Division of Fisheries and Game. Field trips to a local pond and sanctuary were also nature-oriented and included helpful hints on how to--and how not to--lead such trips. Four different elementary schools were visited and the Committee's teacher advisor and her students explained in detail their approach to the use of schoolgrounds and the integration of ecology into the total curriculum.

Although science was stressed, other disciplines were not left out. The ways in which arts and crafts can be used to develop environmental awareness were demonstrated with slides and photographic displays and "solid waste" collages developed by the students for a conservation display at one of the schools. The aides were even treated to an environmental protest song developed by a music teacher and her students. Social studies did not receive as much attention as some of the other disciplines because the Committee felt that the Curriculum Center had already developed some excellent materials in that area. Still, much of the material given to the aides could be considered as within the category of social studies. A class entitled "Environmental Problems in Wellesley" involved the Superintendent of Public Works, the Executive Secretary of the Planning Board, the Chairman of the Conservation Commission, and a member of the Park and Tree Board in a panel discussion.

96 The Center's Pollution Game, developed with ESEA Title III funds, is known all over the country, as are some of its case histories.
on the policies and powers of the various town organizations. A Wellesley Action for Ecology member explained the town's recycling program, and the pollution problems of the nearby Charles River were discussed in a slide talk by a member of the Charles River Study Group of the League of Women Voters. All of the Curriculum Center's resource materials which pertain to environmental education were outlined in one class for the aides, along with a review by the coordinator of the elementary school libraries of all the environmentally-oriented books, and audio-visual aids available to aides and teachers for their curriculum development.  

Homework assignments were designed to supplement the classes and assist the aides to develop useful skills. The aides were asked to read books on ecology and on the history of Wellesley. They were also asked to determine natural, physical, and human resources within the vicinity of the school by which they were "sponsored" as well as to inventory their schoolgrounds. Other suggested homework included a study of some open space area within the town and a visit to the public library, Curriculum Center and school library to compile a list of the books and materials available for their use in helping teachers to develop curriculum materials in environmental education. (As noted just above, they had been given comprehensive guidance for this particular project.)  

The extensive reference list prepared for the aides by the coordinator has proved very useful to the teachers, which is exactly what the Committee is trying to accomplish--getting the schools involved in environmental education.
For the most part, inservice training will begin in the fall of 1971, when the aides start to work with the teachers in the schools. Several people were already assisting at the time this is being written and will go on with what they are doing. At the suggestion of the Committee at the last meeting in June, some of the aides made it a point to meet with various teachers to explain how they could help so that the teachers could give it some thought over the summer. Wellesley is fortunate in having a number of elementary school teachers who are concerned about the environment. Many of them do not live in the town and are interested in working up a community-oriented approach to environmental education. Although there has been no effort to train teachers to work with aides, and there were at this writing only a few paid or volunteer aides in the town, many of the teachers seem to be familiar with their role and eager to work with the aides. The augury for a mutually satisfactory aide/teacher relationship is good. It is hoped that potential conflicts can be spotted and avoided with the help of Dr. Muto and members of the Committee if needed. There have been no problems to date. The one or two aides not directly connected with an elementary school will be working in some form of nonformal education, such as the Girl Scouts or church groups.

Counseling has been carried on in an informal manner, over the telephone and at class meetings, with questions answered and help offered when and where possible. There will be informal supervision of

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98 It should be noted that although mutual consent between teachers and aides may exist, the schedule still must be reckoned with, and this is handled by the principal and school secretary. Aides and teachers must check with the latter before making immediate plans, and certainly must keep everybody informed.
the aides by members of the Committee, primarily the chairman, and the consultant, who will be training a second group of aides to replace women who have left the town or have requested informally to be reassigned to another school where their children have been placed. Refresher sessions are planned, with the first-year aides scheduled to help training the new participants for their mutual benefit.

Evaluation

Some members of the Committee expressed doubt about the necessity for evaluation, believing that the aides would feel threatened by the "tests" they had to take. To these members the value of the course could be gauged by the number of aides who completed the program, and they were satisfied when only one of the twenty-four aides had to resign because of problems at home. The Committee did agree to allow the consultant to carry on an evaluation of the program, and he employed several different methods to do so. After each class all of the aides were asked for immediate feedback on a simple structured checklist. On this same one-page form there was also room for responses. (See Appendix E.) In addition, the writer kept simple subjective notes on each class.

During the first class the aides were also asked to complete a form to determine how wide a knowledge they had of environmental education and how it could be incorporated into the several disciplines. The same test was administered during the last class in June and the results

99 In Wellesley some of the eleven elementary schools (grades K-6) are overcrowded, and sixth graders from those schools are bussed to a twelfth building. Grades seven through nine are at the Junior High School and ten through twelve at the Senior High School.
were compared, showing that the aides had a better understanding of environmental education and its interdisciplinary aspects. The women were given a chance to express their views on the course and how they felt it could be improved, using the same form as that provided to the Elbanobscot aides. The results were helpful to the consultant in planning the second course scheduled to start at the end of September, 1971.

Administrator's Evaluation and Recommendations

Mrs. Nina Lavin (Chairman of the Committee) felt that an effort should be made to get the aides to be on time for the classes. The half hour from 9:00 to 9:30 a.m. helped, but there were still stragglers. She also felt that the homework was of questionable value as the Committee did not follow it up, due to mixed feelings about its value. Some of the field trips needed to be more structured with specific goals, and there should be more of them. Mrs. Lavin thought that training in the use of audio-visual aids would be helpful, noting that many of the aides do not know how to set up a movie projector or use a mimeograph machine. She also questioned whether it might be better to bring the aides to the town officials rather than vice-versa, as had been arranged for the seminar on Wellesley's environmental problems.

With regard to inservice training, Mrs. Lavin desired some sort of instruction for the teachers on the use of environmental aides; ideally, she thought, teachers and aides should be trained together.

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100 There were mixed feelings amongst the aides; also some found the homework "very helpful," others "overwhelming."

101 Many of the aides found this class to be "one of the most interesting."
She suggested a new form for immediate feedback after each class, and speculated that a controlled discussion might replace the written form, using a show of hands to get answers to the questions. She felt that follow-up of aides within the school was important, and that aides should be given a pat on the back where deserved to help them gain confidence.

The administrator was also worried about perpetuating the program, which is based entirely on volunteer service. She expressed the hope that the current aides will recruit others, and that continued training for both new and experienced environmental aides can be carried out by a permanent Environmental Awareness Committee, made up of both community members and educators in Wellesley.

Summary

Five programs which have trained environmental aides in New England have been investigated and the data obtained from the administrators and a variety of other sources are presented in a similar format. Each program is examined from a number of points of view: organization and administration—which includes the goals and objectives of the program—the staff, other organizations involved, and funding, as well as the number of participants trained, how they were recruited and selected, and what was expected of them. Included is a survey of methods of training, ranging from the single workshops provided in Maine's program to the busy schedule followed by Lowell's Career Ladder Interns—the only program which is specifically preparing professional teachers for the future and paying its participants.
All of the models have a concern for the environment and environmental education (primarily at the elementary school level, with the Lowell program as an exception) in common. Each model is different enough, in both its operation and the size of the population it serves, so that it gives the reader different approaches to procedures and problems common to all of the models.

The investigator has made no attempt to point out positive or negative attributes of any of the programs, nor has he applied any sort of rating scale. Potential administrators may find that one or another of the models is useful as described to build a community program for training either paid or volunteer environmental aides, or that a combination of the suggested methods for handling the recruiting, training, and institutionalization of environmental aides is best suited in designing a new and more useful model tailored to the needs of their community and its students.

Further information on each program will be provided in the following chapter which is devoted to a descriptive analysis of the questionnaire administered to the environmental aides. Additional information will be found in appendices.
CHAPTER V

DESCRIPTIVE ANALYSIS OF QUESTIONNAIRE

Introduction

The purpose of this study is, as stated previously, to gather factual data and informed opinion about existing programs in New England which train paid or volunteer auxiliary school personnel in environmental education, in order to chart the most effective way of using such personnel to assist teachers in this area. Chapter V will analyze the information obtained through a questionnaire developed for use in the investigation.

The questionnaire was divided into two sections. Section I, titled "Activities Sheet," was designed to identify the functions which aides, teachers, and administrators perceive as helpful, and those functions which aides perceive as frequently performed by auxiliary school personnel in environmental education. Section II, titled "Biographical Data," was filled out by aides only and was designed to gather demographic data for profile of the typical environmental aide. Section II also included questions concerning the program in which the aides received their preservice training.

The investigator used a mathematical measure of central tendency (mean distribution point) and percentages to arrive at his general conclusions about the typical environmental aide. He used weighted numbers
to determine a rank order for the functions in Section I which aides feel they would be asked to perform. In some cases, for more efficient analysis and reporting, the investigator paraphrased and clustered the responses to the open-ended questions at the end of Section II.

Tables are used to present a numerical summarization of the data. These tables are included in the body of the chapter when they seem essential to the interpretation and for the understanding of the reader. Where verbal summarization of the data seemed most appropriate, the tables representing the total numerical evaluation of the material are placed in the Appendix of the study. The investigator used figures to represent tabular interpretation of various aspects of information contained in the responses.

Who is the Typical Environmental Aide?

The information received in Section II of the questionnaire suggests that the typical environmental aide is:

-- a female
-- thirty-one to forty years of age
-- a college graduate
-- married
-- the mother of three children whose average age is 9.3 years.

This typical environmental aide looks very much like the middle-class suburban housewife suffering from the "empty-nest syndrome" mentioned in Chapter II.

Descriptive information about the environmental aide which could be considered somewhat sensitive in nature was asked for toward the
middle of Section II of the structured questionnaire. The sex of the respondent was asked for on the first page. Of the 126 respondents, 117 were female and 9 male. The average age of the respondents is shown in Table 1.

**TABLE 1**

**AGE OF RESPONDENTS**

<table>
<thead>
<tr>
<th>Age</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>14-20</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>21-30</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>3.</td>
<td>31-40</td>
<td>21</td>
<td>13</td>
<td>21</td>
<td>0</td>
<td>16</td>
<td>71</td>
</tr>
<tr>
<td>4.</td>
<td>41-50</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>5.</td>
<td>51-64</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>65-</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Environmental aides seem to rank well above the average teacher aide in Massachusetts on the basis of the education they have received when comparing Table 2 below to the statistics compiled by the Massachusetts Department of Education in 1967. Four years of college have been completed by 36% of the environmental aides, while only 1.6% have failed to complete secondary school. A Master or Doctorate degree is

---

102 All nine males were Career Ladder Interns in the Lowell Model Cities Program. The Elbanobscot Foundation had two males in their second session. One did not reply and the other replied after the cut-off date.

held by 11.9%. The educational background of each of the respondents is shown in Table 2.

**TABLE 2**

**EDUCATIONAL BACKGROUND**

<table>
<thead>
<tr>
<th>Attendance at School or College</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student, currently in public, private or parochial school</td>
<td>0</td>
<td>1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>2. Attended high school</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>3. Completed high school</td>
<td>4</td>
<td>7</td>
<td>0</td>
<td>8</td>
<td>1</td>
<td>20</td>
<td>15.9</td>
</tr>
<tr>
<td>4. Attended two-year college or technical school</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>3.9</td>
</tr>
<tr>
<td>5. Completed two-year college or technical school</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td>8.7</td>
</tr>
<tr>
<td>6. Attended four-year college</td>
<td>12</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>22</td>
<td>17.5</td>
</tr>
<tr>
<td>7. Completed four-year college</td>
<td>8</td>
<td>10</td>
<td>16</td>
<td>0</td>
<td>12</td>
<td>46</td>
<td>36.5</td>
</tr>
<tr>
<td>8. Master's degree</td>
<td>3</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>4</td>
<td>14</td>
<td>11.1</td>
</tr>
<tr>
<td>9. Doctorate</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>10. Other</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.4</td>
</tr>
</tbody>
</table>

<sup>a</sup>The "student" in the Maine program is studying to be a teacher.

<sup>b</sup>"Other" represents three aides who have completed three years of nurse's training and are registered nurses.
The aides were asked to list the academic, technical, or special area(s) in which they concentrated if they attended college or had some other form of higher education. A list of the areas noted by the aides appears below, the investigator having arbitrarily assigned them to the three categories:

<table>
<thead>
<tr>
<th>Academic</th>
<th>Technical</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art &amp; art history</td>
<td>Accounting</td>
<td>American diplomacy</td>
</tr>
<tr>
<td>Astronomy</td>
<td>Home economics</td>
<td>Child development</td>
</tr>
<tr>
<td>Biology</td>
<td>Office work</td>
<td>Dress designing</td>
</tr>
<tr>
<td>Botany</td>
<td>Registered nurse</td>
<td>Fashion drawing</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Secretarial</td>
<td>Interior decorating</td>
</tr>
<tr>
<td>Classics</td>
<td></td>
<td>Journalism</td>
</tr>
<tr>
<td>Economics</td>
<td></td>
<td>Library science</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>Social work</td>
</tr>
<tr>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romance languages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sculpture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theatre arts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is obvious that the environmental aides have a wealth of knowledge to contribute.

Out of 126 respondents, 90.5%, or 114 are married and only 1 divorced, as shown in Table 3.

The average number of children--three per family--is consistent throughout the five programs. However, the average age of the children is pulled down from 10.5 to 9.3 by an average age of 3.1 among the children of interns in the Lowell Model Cities Program, where twelve of the thirteen respondents are between the ages of fourteen and thirty
(See Table 1 above). The mean average number and age of children of the environmental aides in each of the five programs is shown in Table 4.

**TABLE 3**

MARITAL STATUS

| Marital Status | Liberty | Maine | Elbanobscot | Lowell | Wellesley | N  | %
|----------------|--------|-------|-------------|--------|-----------|----|---
| Married        | 30     | 24    | 32          | 5      | 23        | 114| 90.5
| Not Married    | 3      | 0     | 0           | 8      | 0         | 11 | 8.7
| Divorced       | 1      | 0     | 0           | 0      | 0         | 1  | .8

**TABLE 4**

AVERAGE NUMBER AND AGE OF CHILDREN

<table>
<thead>
<tr>
<th>Average No. and Age of Children</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average No.</td>
<td>2.9</td>
<td>3.3</td>
<td>2.7</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Average Age</td>
<td>12.0</td>
<td>11.3</td>
<td>9.9</td>
<td>3.1</td>
<td>10.2</td>
<td>9.3</td>
</tr>
</tbody>
</table>

The description of the typical environmental aide can be amplified by saying that she is

-- a volunteer with or without experience.

-- familiar with children through formal or non-formal educational contacts.
-- currently putting in not more than one to three hours a week in environmental education if working at all.
-- partial to working with kindergarten through fourth grades.

The typical attributes listed above were extrapolated from aide responses to questions 1 - 3 on the questionnaire. Respondents were asked whether they were volunteer or paid aides and whether they did or did not have experience. The results are shown in Tables 5 and 6.

TABLE 5
STATUS OF ENVIRONMENTAL AIDES

<table>
<thead>
<tr>
<th>Status</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Volunteer</td>
<td>27</td>
<td>24</td>
<td>31</td>
<td>0</td>
<td>23</td>
<td>105</td>
<td>83.4</td>
</tr>
<tr>
<td>2. Paid Aide</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>3. Student Vol. Aide</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>4. Other</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>0</td>
<td>16</td>
<td>12.6</td>
</tr>
</tbody>
</table>

^aThe one student aide was a college student.

^b"Other" represents thirteen Career Ladder Interns in Lowell, a substitute teacher, a Nature Consultant for the Girl Scouts, and a "prospective teacher."
TABLE 6
EXPERIENCE\textsuperscript{a} AS ENVIRONMENTAL AIDES

<table>
<thead>
<tr>
<th>Experience in Schools</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Experience</td>
<td>23</td>
<td>18</td>
<td>11</td>
<td>13</td>
<td>9</td>
<td>74</td>
<td>58.7</td>
</tr>
<tr>
<td>Without Experience</td>
<td>11</td>
<td>6</td>
<td>21</td>
<td>0</td>
<td>14</td>
<td>52</td>
<td>41.3</td>
</tr>
</tbody>
</table>

\textsuperscript{a}"Experience" here is defined as having worked in the schools or in a nonformal education group as an environmental aide. The breakdown roughly represents those who had received preservice training but no inservice training. Many of those who listed themselves as "with experience" and yet who had not yet completed their preservice training were actually working on-the-job while taking the preservice course.

The majority of the respondents (96.8\%) had had some sort of previous experience with children, although 22.1\% had dealt only with their own; 25.4\% had been either teachers or tutors, while another 25.4\% had helped in the school library, Girl Scouts, garden club youth groups, or sports programs not listed in the questionnaire. The complete picture is given in Table 7.

Environmental aides were asked to identify the number of hours per week they were involved in their work in schools or nonformal educational activities. The results are not very conclusive since a number of respondents used the "other" category to state the specific times when they worked. In the Maine program, the guides are only asked to help out one to three hours in either the fall or the spring. Many of
### TABLE 7
PREVIOUS EXPERIENCE WITH CHILDREN

<table>
<thead>
<tr>
<th>Previous Experience</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. None</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>2. Own Children Only</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>28</td>
<td>22.1</td>
</tr>
<tr>
<td>3. Summer Camp Counseling</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2.4</td>
</tr>
<tr>
<td>4. School Teaching or Tutoring</td>
<td>9</td>
<td>4</td>
<td>12</td>
<td>2</td>
<td>5</td>
<td>32</td>
<td>25.4</td>
</tr>
<tr>
<td>5. Physical Therapy or Nursing</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2.4</td>
</tr>
<tr>
<td>6. Church Youth Groups</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>4.8</td>
</tr>
<tr>
<td>7. Youth Groups</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>18</td>
<td>14.3</td>
</tr>
<tr>
<td>8. Other</td>
<td>10</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>32</td>
<td>25.4</td>
</tr>
</tbody>
</table>

*a"Other" includes helping in the school library, Girl Scouts, garden club youth activities, sports programs, and a number that checked a combination of those listed above.*
the respondents are not yet working in the schools and so marked the "other" category to explain this fact. The hours per week put in by the volunteer environmental aides are illustrated in Table 8.

### TABLE 8

**HOURS PER WEEK WORKED BY VOLUNTEER ENVIRONMENTAL AIDES**

<table>
<thead>
<tr>
<th>Hours per Week</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3 hrs.</td>
<td>14</td>
<td>10</td>
<td>5</td>
<td>7</td>
<td>36</td>
<td>33.1</td>
</tr>
<tr>
<td>4 - 6 hrs.</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td>16</td>
<td>14.6</td>
</tr>
<tr>
<td>7 - 12 hrs.</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>4.6</td>
</tr>
<tr>
<td>13 - 18 hrs.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>19 - 24 hrs.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.9</td>
</tr>
<tr>
<td>25 - 30 hrs.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>.9</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>10</td>
<td>18</td>
<td>8</td>
<td>50</td>
<td>45.9</td>
</tr>
</tbody>
</table>

*a"Other" represents those in the Maine program who work only in the spring or fall on an average of one to three hours, and aides who are not yet working in the schools.*

The only program paying its aides is the Lowell Model Cities Program, and it is therefore not included in Table 8. The thirteen respondents in the Lowell program reported that four were putting in nineteen to twenty-four hours each week, while the other nine marked "other" and noted that they put in between forty-five and fifty hours per week plus homework which is what is expected of them. 104

104 *Supra*, p. 104.
The respondents were asked to indicate the grade level at which they would prefer to work as environmental aides. Preference for the kindergarten through the fourth grades was expressed by 46.9%, with another 23% happy to work at any grade level. These figures appear in Table 9.

**TABLE 9**

**GRADE LEVEL AT WHICH ENVIRONMENTAL AIDES PREFER TO WORK**

<table>
<thead>
<tr>
<th>Grade Levels</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. K - 4</td>
<td>15</td>
<td>16</td>
<td>11</td>
<td>2</td>
<td>15</td>
<td>59</td>
<td>46.9</td>
</tr>
<tr>
<td>2. 5th - 6th</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td>10.3</td>
</tr>
<tr>
<td>3. 7th - 8th</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>4. 9th - 12th</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>5. Any Grade</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>29</td>
<td>23.0</td>
</tr>
<tr>
<td>6. Other</td>
<td>7</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>24a</td>
<td>19.0</td>
</tr>
</tbody>
</table>

a"Other" represents preference for either combinations of the above, nursery school, adult education, handicapped, or nonformal education.

**Recruitment of Environmental Aides**

In response to the question, "How did you hear about the environmental aide program in which you were/are involved?", the responses suggest that word-of-mouth is still an excellent method of communication--38.1% heard about the program through a friend; 23.8% received the
Information from an administrator or teacher; and none heard it through radio or T.V. which was to be expected since the writer discovered during the course of his investigation that neither medium was used for recruiting purposes in any of the programs. How the respondents heard about the environmental aide program is shown in Table 10.

**TABLE 10**

**HOW DID YOU HEAR ABOUT THE ENVIRONMENTAL AIDE PROGRAM?**

<table>
<thead>
<tr>
<th>Source</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elcanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Friend</td>
<td>7</td>
<td>12</td>
<td>13</td>
<td>5</td>
<td>11</td>
<td>48</td>
<td>38.1</td>
</tr>
<tr>
<td>2. Administrator or Teacher</td>
<td>15</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>30</td>
<td>23.8</td>
</tr>
<tr>
<td>3. Brochure or Mailing</td>
<td>6</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>18</td>
<td>14.3</td>
</tr>
<tr>
<td>4. Newspaper</td>
<td>4</td>
<td>0</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>18</td>
<td>14.3</td>
</tr>
<tr>
<td>5. Radio, T.V.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>6. Other</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>12$^a$</td>
<td>9.5</td>
</tr>
</tbody>
</table>

$^a$"Other" in this case includes word through local organizations such as garden clubs, conservation commissions, Junior League, and the League of Women Voters. A few people cited multiple sources.

Of great interest to any administrator considering recruiting personnel for work as environmental aides are the motives leading such people to take the training. The investigator attempted to determine his respondents' prime reason for becoming environmental aides. Although 12.7% took the opportunity to use the category "other" and lumped a number
of reasons together, the results suggest that over 50% were interested in either the environment and its problems or in children and their education. A wish to learn more about the environment in order to pass along their knowledge to youth groups rather than to use it in formal educational settings was expressed by 15.1%. It is also interesting to note that only four out of the 126 respondents took part in the programs merely because they had the time, and none "needed the money."

TABLE 11
PRIME REASON FOR BECOMING AN ENVIRONMENTAL AIDE

<table>
<thead>
<tr>
<th>Prime Reason</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elhanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interested in children</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>31</td>
<td>25.1</td>
</tr>
<tr>
<td>2. Interested in environment</td>
<td>11</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>9</td>
<td>34</td>
<td>27.3</td>
</tr>
<tr>
<td>3. Wanted to learn more to pass on to youth groups</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>19</td>
<td>15.1</td>
</tr>
<tr>
<td>4. Wanted to learn more to educate family</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>7.1</td>
</tr>
<tr>
<td>5. Considering teaching</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>12</td>
<td>9.5</td>
</tr>
<tr>
<td>6. Had the time</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>7. Part of school work</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>8. Needed the money</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>9. Other</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>16</td>
<td>12.7</td>
</tr>
</tbody>
</table>

^a"Other" represents those who combined a number of the reasons.
The investigator wished to find out whether the respondents were interested in either full-time or part-time teaching as a career, with the thought that recruiting might be more fruitful if a program were developed in such a manner as to assist environmental aides--either through credits or financially, or both--to become certified teachers. Three questions were clustered to obtain information on this matter.

The respondents interested in teaching on either a full-time or part-time basis amounted to 38.1%, with 28.6% declining to say a definite no, and 29.3% apparently not interested. Few (three) had not considered the matter and those who marked "other" were happy with their role as an aide.

**TABLE 12**

**INTERESTED IN TEACHING AS A CAREER?**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes, Full-time</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>0</td>
<td>19</td>
<td>15.1</td>
</tr>
<tr>
<td>2. Yes, Part-time</td>
<td>11</td>
<td>3</td>
<td>11</td>
<td>0</td>
<td>4</td>
<td>29</td>
<td>23.0</td>
</tr>
<tr>
<td>3. Haven't given it a thought</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2.4</td>
</tr>
<tr>
<td>4. Not at this time</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>1</td>
<td>11</td>
<td>36</td>
<td>28.6</td>
</tr>
<tr>
<td>5. No</td>
<td>9</td>
<td>13</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>37</td>
<td>29.3</td>
</tr>
<tr>
<td>6. Other</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2^a</td>
<td>1.6</td>
</tr>
</tbody>
</table>

^aThose marking "other" expressed themselves as being happy in the role of an environmental aide.
Of the seventy-three respondents who answered "no" or "not at this time, perhaps in the future" (see Table 12), forty-eight or 66% replied to a following question designed to determine whether there was any interest among the aides in a career ladder. Thirty-three or 68.7% said they would not change their minds and consider teaching as a career even if there were academic and monetary steps over a period of time leading to teacher certification. Fifteen or 33.3% replied "yes," they would change their minds if such academic and monetarily rewarding steps were available. The breakdown of the figures is illustrated in Table 13.

### TABLE 13

<table>
<thead>
<tr>
<th>Answer</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>15</td>
<td>31.3</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>11</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>33</td>
<td>68.7</td>
</tr>
</tbody>
</table>

Sixty-three or 49.2% of the respondents who expressed an interest in a career as a teacher on either a full or part-time basis (see Table 12), and who also indicated they would change their minds about a teaching career if academic and monetary steps were available (see Table 13), were asked how they would prefer to obtain teacher certification. Four choices were offered as well as the usual open-ended response opportunity for those who wished to express their own ideas. The replies are noted
in Table 14.

### TABLE 14

RESPONDENT'S PREFERENCE TO ACHIEVE THE STATUS OF A CERTIFIED TEACHER

<table>
<thead>
<tr>
<th>Preference</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. School full-time</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>8.1</td>
</tr>
<tr>
<td>2. Work part-time, school part-time</td>
<td>7</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>13</td>
<td>21.0</td>
</tr>
<tr>
<td>3. Work part-time, school part-time with promotion and pay</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>25</td>
<td>40.3</td>
</tr>
<tr>
<td>4. Other</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>19b</td>
<td>30.6</td>
</tr>
</tbody>
</table>

For a complete statement of the choice, refer to questionnaire in Appendix D.

Answers to "other" varied from "already certified or able to be" to "currently in college," "unsure," "will be teaching full-time in 1971," "haven't decided." A couple of people questioned the validity of the current teacher certification process.

### Role and Function of Environmental Aides

In Section I of the questionnaire, the aides were asked to identify the functions which they feel are "very helpful," "somewhat helpful," "of very little help," and "no help at all" if performed by an environmental aide. These activities were then tabulated by the use of weighted numbers to produce a rank order of activities for each of
the five programs, as well as a rank order based on the total population of aides returning the questionnaire. The ten highest ranking activities perceived as helpful by all of the aides are found in Table 15.

**TABLE 15**

TEN HIGHEST RANKING ACTIVITIES PERCEIVED AS HELPFUL BY ENVIRONMENTAL AIDES

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity Number</th>
<th>Cluster</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27</td>
<td>I</td>
<td>Helping pupils explore the natural world together.</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>I</td>
<td>Constructing a nature trail with students on the schoolgrounds.</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>I</td>
<td>Taking a small group of pupils on a field trip to a nature center.</td>
</tr>
<tr>
<td>4</td>
<td>49</td>
<td>I</td>
<td>Taking charge of a small group which is working on an ecology project while the teacher works with another group.</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
<td>II</td>
<td>Preparing environmental materials such as a community natural resource guide for use by your school.</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>II</td>
<td>Recruiting others in the community to become environmental aides.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>III</td>
<td>Preparing a lesson on water pollution.</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>I</td>
<td>Finding a community member who would act as an advisor for an independent study project on an environmental problem.</td>
</tr>
<tr>
<td>9</td>
<td>37</td>
<td>II</td>
<td>Making a list of community resource people who will assist a class with studying environmental problems.</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>I</td>
<td>Helping children learn to identify birds and mammals by sight and/or tracks.</td>
</tr>
</tbody>
</table>
Among the top ten activities illustrated in Table 15, there is a significant predominance (six out of ten) of Cluster I activities—those oriented towards direct interaction with pupils. Also of interest is the fact that the top four activities perceived by all of the aides as helpful are Cluster I activities. These facts suggest that the respondents see themselves as "environmental specialists," interacting directly with the students and supplementing the work of the teacher, rather than as "environmental aides," who would assume the more technical assistance or supportive role outlined earlier in this study. (See above, pp. 27-28.)

The inclusion in Table 15 of a Cluster III activity—one of those generally deemed inappropriate for an aide because it might involve intrusion into the teacher's sphere—is another indication that the aides envision for themselves an actively supplemental place in the classroom. The preparation of a lesson plan on water pollution could be of great assistance to a teacher, the respondents felt; many of them were doubtless thinking of their own extensive experience in that area with League of Women Voters' study groups.

Cluster II activities—task-oriented functions such as monitorial, clerical, escorting and general routine duties which, though requiring no professional expertise, often take up much of the teacher's time—show up only three times in the top ten. The specific activities named—#4, "Recruiting others in the community to become environmental aides," #37, "Making a list of community resource people who will assist a class . . . ," and #18, "Preparing environmental materials such as a community natural resource guide . . . ,"--could be described as supplemental work which the respondents suggested they could handle more competently than
the classroom teacher because of their knowledge of the community and its natural, physical, and human resources.

The respondents' view of themselves as "environmental specialists" is not surprising if the reader bears in mind that the bulk of the questionnaire returns came from participants in the Liberty, Elbanobscot, and Wellesley programs. These three programs are similar in that, for the most part, administrators and instructors were not familiar with teacher aide training. The participants themselves were volunteers with little formal knowledge of the role of the teacher aide. Many of the respondents had merely received their preservice training and had yet to begin work with the teachers and students in the schools. It should also be noted that many of the participants in the three programs were well aware of the fact that they knew more about environmental education than a good many of the teachers.

The ten most helpful activities selected by these three programs can be seen in Figure 1, columns 2, 4, and 6. Although the actual activities differ somewhat, all of the top four in the Liberty, Elbanobscot, and Wellesley programs are in Cluster I. #27, "Helping pupils explore the natural world together," is found in all three, as is #1, "Constructing a nature trail with students . . . ." #42 and #35, both having to do with taking charge of small groups of students, appear twice, along with #10, "Helping a teacher make arrangements for a field trip," and #14, "Inventorying . . . the schoolground . . . ."
<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>49 - I</td>
<td>4 - II</td>
<td>49 - I</td>
<td>3 - II</td>
<td>10 - I</td>
</tr>
<tr>
<td>2</td>
<td>27 - I</td>
<td>2 - II</td>
<td>44 - I</td>
<td>27 - I</td>
<td>35 - I</td>
</tr>
<tr>
<td>3</td>
<td>35 - I</td>
<td>27 - I</td>
<td>27 - I</td>
<td>6 - I</td>
<td>1 - I</td>
</tr>
<tr>
<td>4</td>
<td>1 - I</td>
<td>35 - I</td>
<td>1 - I</td>
<td>16 - I</td>
<td>27 - I</td>
</tr>
<tr>
<td>5</td>
<td>5 - III</td>
<td>1 - I</td>
<td>5 - III</td>
<td>1 - I</td>
<td>37 - II</td>
</tr>
<tr>
<td>6</td>
<td>37 - II</td>
<td>13 - II</td>
<td>18 - II</td>
<td>5 - III</td>
<td>9 - I</td>
</tr>
<tr>
<td>7</td>
<td>39 - II</td>
<td>40 - I</td>
<td>37 - II</td>
<td>32 - I</td>
<td>26 - I</td>
</tr>
<tr>
<td>8</td>
<td>44 - I</td>
<td>6 - I</td>
<td>4 - II</td>
<td>35 - I</td>
<td>49 - I</td>
</tr>
<tr>
<td>9</td>
<td>40 - I</td>
<td>16 - I</td>
<td>10 - I</td>
<td>18 - II</td>
<td>4 - II</td>
</tr>
<tr>
<td>10</td>
<td>18 - II</td>
<td>18 - II</td>
<td>9 - I</td>
<td>40 - I</td>
<td>18 - II</td>
</tr>
</tbody>
</table>

Figure 1 -- Comparison of Ten Highest Ranking Activities Perceived as Helpful by Aides in Each Program.

volunteers in a way more closely associated with the "supportive" role of the teacher aide. The top activity in Maine's column, #4, "Recruiting others to become environmental aides," is a supportive one, as is #2, "Operating audio-visual equipment. . . ." Both are important functions in the Maine program, which relies on its aides to assist once a year in the fall and spring either on a field trip or in giving a class. The third ranking activity, #27, "Helping pupils to explore the natural world . . ." could be either supplementary or supportive, but the fourth activity,
#35, "Taking a small group of pupils on a field trip to a nature center," suggests more an escorting role than a supplementary one.

Lowell's top ten are ranked in column 5. The highest ranked activity, #3, "Helping teachers relate environmental education to all disciplines," is a Cluster II activity, but the next three are in Cluster I. #27, "Helping pupils explore the natural world," #6, "Finding a community member for an independent study project," and #16, "Playing games with pupils" reflect the Lowell program's emphasis on the total environment as well as a close personal relationship between the interns and the students. When the survey was made, the interns were working directly with small groups of students, and as yet had not been assigned to the schools as teacher aides.

A comparison of the rank order of all of the activities perceived as helpful by all of the aides, (as well as teachers and administrators) in each of the five programs can be found in Table 21. (See Appendix A.) A general agreement among all of the respondents on the ranking of many of the activities is illustrated in this table. Where there are extreme differences of opinion--such as on Activity #11 where the Lowell program (column 5) ranks "Assisting a guidance counselor . . ." considerably higher than the other four programs (columns 1 through 6)--the reader must again remember the basic differences in the programs. The Lowell program is the only one in which the respondents have any real contact with guidance counselors as the other programs involve aides only with grades K - 6. Other examples of extreme fluctuation can be seen in Activity #13. The Lowell interns wholly reject the idea of "monitoring students," preferring to believe in the concept of learning with the
students rather than teaching them in an authoritarian manner.

The ten activities perceived as least helpful by all of the environmental aides are illustrated in Table 16:

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity Number</th>
<th>Cluster</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>22</td>
<td>II</td>
<td>Checking out the schoolgrounds for safety hazards.</td>
</tr>
<tr>
<td>42</td>
<td>43</td>
<td>III</td>
<td>Directing a student play as part of an Earth Day assembly program.</td>
</tr>
<tr>
<td>43</td>
<td>28</td>
<td>I</td>
<td>Giving a teacher information about a pupil which will help the teacher to work with that pupil.</td>
</tr>
<tr>
<td>44</td>
<td>36</td>
<td>III</td>
<td>Deciding what field trips pupils will take during the school year.</td>
</tr>
<tr>
<td>45</td>
<td>30</td>
<td>III</td>
<td>Preparing questions for a test following field trip.</td>
</tr>
<tr>
<td>46</td>
<td>46</td>
<td>II</td>
<td>Watering a terrarium or changing the water in an aquarium.</td>
</tr>
<tr>
<td>47</td>
<td>33</td>
<td>III</td>
<td>Marking field journals kept by students. (Field trip notes.)</td>
</tr>
<tr>
<td>48</td>
<td>23</td>
<td>I</td>
<td>Singing environmental protest songs with pupils.</td>
</tr>
<tr>
<td>49</td>
<td>29</td>
<td>II</td>
<td>Helping to prepare and serve box lunches on a field trip.</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>II</td>
<td>Correcting true-false tests.</td>
</tr>
</tbody>
</table>

It appears that many of the aides looked upon activities such as #22, "Checking out the schoolgrounds . . . ," #46, "Watering a terrarium . . . ," and #29, "Helping to prepare . . . box lunches . . . ," as
In summary, when asked to rank fifty possible activities helpful to the school if carried out by an environmental aide, the aides chose activities which suggest that they see themselves as supplementing the teacher as "environmental specialists" rather than supporting her in the more traditional role of "environmental aides." This interpretation is strengthened by the fact that respondents placed many supportive tasks at the bottom of their rankings, indicating that these are jobs for ancillary personnel or students. The ranking orders may be significantly

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Liberty (2)</th>
<th>Maine (3)</th>
<th>Elbanobscot (4)</th>
<th>Lowell (5)</th>
<th>Wellesley (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>22 - II</td>
<td>28 - I</td>
<td>21 - II</td>
<td>20 - II</td>
<td>22 - II</td>
</tr>
<tr>
<td>42</td>
<td>30 - III</td>
<td>11 - II</td>
<td>28 - I</td>
<td>13 - II</td>
<td>43 - III</td>
</tr>
<tr>
<td>43</td>
<td>19 - II</td>
<td>34 - II</td>
<td>22 - II</td>
<td>39 - II</td>
<td>28 - I</td>
</tr>
<tr>
<td>44</td>
<td>36 - III</td>
<td>36 - III</td>
<td>29 - II</td>
<td>8 - III</td>
<td>30 - III</td>
</tr>
<tr>
<td>45</td>
<td>33 - III</td>
<td>50 - II</td>
<td>43 - III</td>
<td>12 - III</td>
<td>46 - II</td>
</tr>
<tr>
<td>46</td>
<td>11 - II</td>
<td>46 - II</td>
<td>30 - III</td>
<td>29 - II</td>
<td>11 - II</td>
</tr>
<tr>
<td>47</td>
<td>46 - II</td>
<td>30 - III</td>
<td>33 - III</td>
<td>36 - III</td>
<td>29 - II</td>
</tr>
<tr>
<td>48</td>
<td>23 - I</td>
<td>33 - III</td>
<td>23 - I</td>
<td>30 - III</td>
<td>33 - III</td>
</tr>
<tr>
<td>49</td>
<td>50 - II</td>
<td>29 - II</td>
<td>46 - II</td>
<td>33 - III</td>
<td>50 - II</td>
</tr>
<tr>
<td>50</td>
<td>29 - II</td>
<td>23 - I</td>
<td>50 - II</td>
<td>50 - II</td>
<td>23 - I</td>
</tr>
</tbody>
</table>

Figure 2 -- Comparison of Ten Activities Perceived as Least Helpful by Aides in Each Program.
influenced by the administration of the programs as outlined in Chapter IV of this study and the inexperience of many of the aide respondents. Variations can be found in each program when the ranking of each program's highest and lowest activities are compared. These rankings reflect the actual use of the aides in each program.

The investigator reasoned that what the aide respondents saw as helpful functions for environmental aides to perform in the schools might differ considerably from the activities the aides actually felt they would be asked to perform for the teachers. In other words, whereas the aides might believe they could be most helpful in a supplementary role, they might well perceive their actual role as supportive. The aides were therefore asked to estimate how often they would be likely to perform each activity while on the job. The categories were "most of the time," "often," "seldom," and "never." The responses were again ranked and the ten activities the aides felt they would be most likely to perform in the schools are illustrated in Table 17.

Eight of the top ranked activities are Cluster I pupil-oriented activities. Only four (#27, #35, #49, and #9) are the same as those found in the top ten ranked activities in Table 15. The other six activities include four different ones from Cluster I and two from Cluster II. None from Cluster III are found in the top ten. #13, "Monitoring pupils . . . ," #10, "Helping a teacher make arrangements for a field trip . . . ," and #39, "Gathering natural materials for the teacher's use," do suggest that the aides see themselves as being called upon to perform more supportive tasks; however, it can also be argued that although the activities are different, the aides are still inclined to
believe that the work they will be asked to perform on a frequent basis is supplemental in nature. Again it must be kept in mind that many of the aides had not yet completed their preservice training and so could only speculate on the job ahead. There is agreement that whether the role of the aide is supplementary or supportive, there is no intention

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity Number</th>
<th>Cluster</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27</td>
<td>I</td>
<td>Helping pupils explore the natural world together.</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>I</td>
<td>Helping children learn to identify birds and mammals by sight and/or tracks.</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>I</td>
<td>Attending environmental education workshops.</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>I</td>
<td>Taking a small group of pupils on a field trip to a nature center.</td>
</tr>
<tr>
<td>5</td>
<td>13</td>
<td>II</td>
<td>Monitoring pupils on various occasions such as on the bus or on field trips.</td>
</tr>
<tr>
<td>6</td>
<td>49</td>
<td>I</td>
<td>Taking charge of a small group which is working on an ecology project while the teacher works with another group.</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>I</td>
<td>Helping a teacher make arrangements for field trip.</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>I</td>
<td>Playing games with pupils (such as nature games involving observation).</td>
</tr>
<tr>
<td>9</td>
<td>44</td>
<td>I</td>
<td>Inventorying the natural and physical features on the schoolground with pupils from your school.</td>
</tr>
<tr>
<td>10</td>
<td>39</td>
<td>II</td>
<td>Gathering natural materials for the teacher's use in the classroom.</td>
</tr>
</tbody>
</table>
of "taking over" teacher activities; this is evidenced by the absence of Cluster III activities from the top ten.

A visual comparison of the top ten activities aides in each program feel they are likely to perform is presented in Figure 3.

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Liberty</th>
<th>Maine</th>
<th>Elbanobscot</th>
<th>Lowell</th>
<th>Wellesley</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27 - I</td>
<td>27 - I</td>
<td>27 - I</td>
<td>27 - I</td>
<td>35 - I</td>
</tr>
<tr>
<td>2</td>
<td>9 - I</td>
<td>13 - II</td>
<td>44 - I</td>
<td>6 - I</td>
<td>10 - I</td>
</tr>
<tr>
<td>3</td>
<td>49 - I</td>
<td>4 - I</td>
<td>49 - I</td>
<td>32 - I</td>
<td>27 - I</td>
</tr>
<tr>
<td>4</td>
<td>25 - I</td>
<td>40 - I</td>
<td>16 - I</td>
<td>16 - I</td>
<td>9 - I</td>
</tr>
<tr>
<td>5</td>
<td>13 - II</td>
<td>9 - I</td>
<td>39 - II</td>
<td>3 - II</td>
<td>49 - I</td>
</tr>
<tr>
<td>6</td>
<td>16 - I</td>
<td>35 - I</td>
<td>10 - I</td>
<td>40 - I</td>
<td>47 - I</td>
</tr>
<tr>
<td>7</td>
<td>39 - II</td>
<td>2 - II</td>
<td>38 - I</td>
<td>18 - II</td>
<td>48 - II</td>
</tr>
<tr>
<td>8</td>
<td>35 - I</td>
<td>31 - I</td>
<td>3 - II</td>
<td>38 - I</td>
<td>25 - I</td>
</tr>
<tr>
<td>9</td>
<td>42 - I</td>
<td>38 - I</td>
<td>40 - I</td>
<td>17 - II</td>
<td>14 - I</td>
</tr>
<tr>
<td>10</td>
<td>10 - I</td>
<td>44 - I</td>
<td>32 - I</td>
<td>1 - I</td>
<td>13 - II</td>
</tr>
</tbody>
</table>

Figure 3 -- Comparison of Ten Highest Ranking Activities Aides in Each Program Felt They Would Be Doing in the Schools.

Except for almost complete agreement on Activity #27, "Helping pupils explore the natural world . . ." (columns 2 - 6), which is an obvious choice, there does not appear to be any general consensus on the ranking
of the activities. There is less agreement than can be found in Figure 1, as more activities are represented only once. Again, the divergencies could be attributed to differences in each program and the fact that a large percentage of the aides were not yet familiar with activities they would likely be asked to perform.

A list of the ten activities the aide respondents felt they were least likely to be asked to do in the schools is illustrated in Table 18.

**TABLE 18**

**TEN LOWEST RANKING ACTIVITIES AIDES DO NOT FEEL THEY WILL BE DOING IN THE SCHOOLS**

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity Number</th>
<th>Cluster</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>24</td>
<td>II</td>
<td>Assisting school committees and administrators with proper environmental planning and planting of school buildings and grounds.</td>
</tr>
<tr>
<td>42</td>
<td>7</td>
<td>III</td>
<td>Organizing debates between pupils on environmental issues.</td>
</tr>
<tr>
<td>43</td>
<td>22</td>
<td>II</td>
<td>Checking out schoolgrounds for safety hazards.</td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>III</td>
<td>Marking field journals kept by students. (Field trip notes.)</td>
</tr>
<tr>
<td>45</td>
<td>30</td>
<td>III</td>
<td>Preparing questions for a test following a field trip.</td>
</tr>
<tr>
<td>46</td>
<td>43</td>
<td>III</td>
<td>Directing a student play as part of an Earth Day assembly program.</td>
</tr>
<tr>
<td>47</td>
<td>23</td>
<td>I</td>
<td>Singing environmental protest songs with pupils.</td>
</tr>
<tr>
<td>48</td>
<td>50</td>
<td>II</td>
<td>Correcting true-false tests.</td>
</tr>
<tr>
<td>49</td>
<td>29</td>
<td>II</td>
<td>Helping to prepare and serve box lunches on a field trip.</td>
</tr>
<tr>
<td>50</td>
<td>11</td>
<td>II</td>
<td>Assisting a guidance counselor to find jobs for pupils in environmental areas.</td>
</tr>
</tbody>
</table>
Here the reader will see a close correlation with the ten activities perceived as helpful for aides to perform in the schools as illustrated in Table 16, with seven out of ten activities being found in both tables. The different ones that appear in Table 18 are #24, "Assisting school committees and administrators with proper environmental planning and planting of school buildings and grounds," #7, "Organizing debates . . . ," and #11, "Assisting a guidance counselor." A logical explanation for these activities being at the bottom of the rankings is that with the exception of the Lowell interns, all of the aides who are working in the schools are doing so at the primary and elementary levels where they would have no opportunity for organizing debates or assisting a guidance counselor. Assisting school administrators with planning and planting of schoolgrounds may be seen either as merely something aides would be very seldom asked to do, or as the function of ancillary personnel.

The activities seen by the aides in each program as being the ones they will least likely be asked to perform are illustrated in Figure 4. The figure shows a high incidence of Cluster III activities, with all but the Elbanobscot program including four Cluster III activities in the last ten ranked. Three activities—#29, "Helping to prepare and serve box lunches," #33, "Marking field journals kept by students," and #50, "Correcting true and false tests,"—appear in all of the lists. Four others—#11, "Assisting a guidance counselor," #30, "Preparing questions for a test," #23, "Singing environmental protest songs," and #43, "Directing a student play as part of an Earth Day assembly program,"—appear in the lists of four programs. Two activities—#7, "Organizing debates between students . . . ," and #22, "Checking out schoolgrounds
<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Programs</th>
<th>Activity Numbers and Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Liberty</td>
<td>33 - III</td>
</tr>
<tr>
<td></td>
<td>Maine</td>
<td>20 - II</td>
</tr>
<tr>
<td></td>
<td>Eliaboscot</td>
<td>33 - III</td>
</tr>
<tr>
<td></td>
<td>Lowell</td>
<td>47 - I</td>
</tr>
<tr>
<td></td>
<td>Wellesley</td>
<td>22 - II</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>46 - II</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td>28 - I</td>
</tr>
<tr>
<td></td>
<td>(4)</td>
<td>12 - III</td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td>7 - III</td>
</tr>
<tr>
<td></td>
<td>(6)</td>
<td>23 - II</td>
</tr>
</tbody>
</table>

**Figure 4** -- Comparison of Ten Activities Aides in Each Program Felt They Would Be Least Likely To Do in the Schools.

for safety hazards"--appear in three programs. There appears to be more agreement on those activities which aides in each of the five programs feel they will not be asked to do than upon those which they feel will be a frequent part of their work in the schools. The consensus may again be due to conjecture on the part of the respondents as to what their role will really entail once they begin work in the schools.
A comparison of how aides in each program ranked the entire fifty activities from the standpoint of how often they believed they were likely to be asked to perform the function is found in Table 22. (See Appendix A.) While there are many activities which all of the aides can agree upon as either near the top (Activity #27) or bottom (Activity #50) of the ranking, there are some judgments which are not readily explainable. An example might be #16, "Playing games with pupils . . . ," which ranks quite high with three programs (see columns 2, 4, and 5) as compared to the other programs (columns 3 and 6).

To summarize, analysis of the tables on the order of frequency with which the aides felt they would be asked to perform the activities shows a high correlation between the aides' views as to the most helpful activities they could perform in the schools and how often they feel they will be asked to perform the activities. The more helpful the respondents see the activity, the more frequently they see themselves being asked to engage in it. Again, the ranking orders and correlation between tables may be dependent on the aides' inexperience and their expectations of working only in the elementary schools. It would also appear that individual differences in the programs may explain the lack of consensus between each of the five programs when the top ten activities in each program are compared. There appears to be a good deal of agreement on those activities which the aides do not feel they will be asked to perform in each of the five programs.

The investigator also felt that it was important to determine how the administrators and selected teachers ranked the fifty activities.
In the case of the Wellesley program where the administrator was also an aide, a teacher was selected in her place. The teachers were selected by the administrators and were those who had worked directly with the program, by virtue of having had the aides working "with" and/or "for" them in the various school districts covered by the five different projects. The selected teachers' and administrators' ranking of the ten activities which they felt would be the most helpful appears in Table 19. An analysis of the rankings shows a high correlation with those activities which the aides also see as most helpful. Aides, teachers, and administrators agree on six out of ten—Activities #27, 1, 49, 18, 4, and 37. Four are found in Cluster I and two in Cluster II, but all of the six could be considered either supplementary to or supportive of the teacher's role.

The four different activities ranked high by teachers and administrators include #40, "Attending environmental education workshops," #44, "Inventorying ... the schoolground ...," #14, "Helping a teacher plan trips with pupils," and #26, "Preparing environmentally oriented audio-visual materials requested by the teacher." Although all of these are Cluster I, pupil-oriented activities, they suggest that teachers and administrators responding to the questionnaire see the environmental aide in more of a supportive role. This conclusion is strengthened by the fact that teachers and administrators put at the top of their rank order two Cluster II supportive activities—#37, "Making a list of community resource people," and #18, "Preparing environmental materials ..." Teachers and administrators seem to feel that the aides can help with small groups of students out-of-doors,
TABLE 19

TEN HIGHEST RANKING ACTIVITIES PERCEIVED AS HELPFUL BY TEACHERS AND ADMINISTRATORS

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity Number</th>
<th>Cluster</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37</td>
<td>II</td>
<td>Making a list of community resource people who will assist a class with studying environmental problems.</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>II</td>
<td>Preparing environmental materials such as a community natural resource guide for use by your school.</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>I</td>
<td>Attending environmental education workshops.</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>I</td>
<td>Constructing a nature trail with students on the schoolgrounds.</td>
</tr>
<tr>
<td>4</td>
<td>44</td>
<td>II</td>
<td>Recruiting others in the community to become environmental aides.</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>I</td>
<td>Helping pupils explore the natural world together.</td>
</tr>
<tr>
<td>9</td>
<td>14</td>
<td>I</td>
<td>Helping a teacher plan trips with pupils.</td>
</tr>
<tr>
<td>10</td>
<td>26</td>
<td>I</td>
<td>Preparing environmentally oriented audio-visual materials requested by the teacher</td>
</tr>
</tbody>
</table>

and that the aides' knowledge of the community's natural, physical, and human resources can be very helpful.

When ten activities ranked by teachers and administrators as being the least helpful are compared with the ten ranked lowest by the aides, there is even higher correlation, with agreement on eight out of
the ten activities. The teachers' and administrators' ranking of the least helpful activities to be performed by an environmental aide appears in Table 20. The teachers and administrators ranked #34, "Ordering and checking supplies . . . ," and #8, "Deciding what pupils will see on a field trip," lower than did the aides.

TABLE 20

TEN LOWEST RANKING ACTIVITIES PERCEIVED AS THE LEAST HELPFUL BY THE TEACHERS AND ADMINISTRATORS

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity Number</th>
<th>Cluster</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>22</td>
<td>II</td>
<td>Checking out the schoolgrounds for safety hazards.</td>
</tr>
<tr>
<td>42</td>
<td>34</td>
<td>II</td>
<td>Ordering and checking supplies for use on field trips.</td>
</tr>
<tr>
<td>36</td>
<td></td>
<td>III</td>
<td>Deciding what field trips pupils will take during the school year.</td>
</tr>
<tr>
<td>44</td>
<td>8</td>
<td>III</td>
<td>Deciding what pupils should see on a community field trip.</td>
</tr>
<tr>
<td>29</td>
<td></td>
<td>II</td>
<td>Helping to prepare and serve box lunches on a field trip.</td>
</tr>
<tr>
<td>46</td>
<td>23</td>
<td>I</td>
<td>Singing environmental protest songs with pupils.</td>
</tr>
<tr>
<td>47</td>
<td>30</td>
<td>III</td>
<td>Preparing questions for a test following a field trip.</td>
</tr>
<tr>
<td>48</td>
<td>46</td>
<td>II</td>
<td>Watering a terrarium or changing the water in an aquarium.</td>
</tr>
<tr>
<td>49</td>
<td>33</td>
<td>III</td>
<td>Marking field journals kept by students. (Field trip notes.)</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>II</td>
<td>Correcting true-false tests.</td>
</tr>
</tbody>
</table>
In summary, it can be suggested that teachers and administrators see the role of an environmental aide as being more supportive than supplementary. They do see a need for the aide's knowledge of the natural, physical, and human resources of the community, and the advantage of breaking down large groups of students on field trips. There appears to be little conflict with the aides in those activities perceived by teachers and administrators as being the least helpful functions for aides to perform.

When the teachers' and administrators' top ten are compared with the ten activities which the aides feel they will be most frequently asked to perform in the schools, there appears to be less agreement. Only four activities—#27, "Helping pupils to explore . . .," #40, "Attending environmental workshops," #49, "Taking charge of a small group which is working on an ecology project while the teacher works with another group," and #44, "Inventorying the . . . schoolground . . .,"—are the same, with six that do not match—#9, "Helping children learn to identify birds and mammals . . .," #35, "Taking a small group of pupils on a field trip . . .," #13, "Monitoring pupils . . .," #10, "Helping a teacher make arrangements for a field trip," #16, "Playing games with pupils . . .," and #39, "Gathering natural materials for the teacher's use in the classroom." The investigator has used this comparison to hypothesize that although the aides, teachers, and administrators are generally in agreement as to what activities are helpful for aides to perform, the aides themselves are really not clear on what their role is, or will be in the schools. Table 21 contains a complete
ranking of the fifty activities by the teachers and administrators in column 8. (See Appendix A.)

In summary, when teachers and administrators were asked to rank fifty activities environmental aides might perform from the most to the least helpful, they saw the aides as performing student-oriented activities--directly with the students in many cases--but in a role supporting the teacher. When their rankings are compared with those that the aides feel would be the most helpful there appears to be considerable agreement. This is also true when the activities ranked as least helpful by both groups are compared. However, there does appear to be some difference of opinion over those activities which teachers and administrators feel would be the most helpful and those which the aides feel they will be asked to perform most frequently. The investigator advances the explanation for these findings that the aides are inexperienced and as yet unsure of their role.

In addition to the fifty given activities in Section I of the questionnaire, there were blank spaces left at the end of the section so that aides, teachers, and administrators could add items which they felt would be helpful and which they felt environmental aides are likely to be asked to do. The investigator made no attempt to rank these items, and has simply included them with little editing.

The aides suggested that they might:

-- Act as guides for a small group within a classroom for a weekly outdoor activity--always the same class.
-- Teach children's classes for Wildflower Society.

-- Bring supplies from home for a specialized field activity.

-- Help make a place in the school where environmental materials can be put together, catalogued, etc.

-- Help make a place where environmental materials can be displayed--projects, etc., not just a bulletin board.

-- Help make a place in the library where books can be grouped together relating to the environment.

-- Help the school to use more recycled paper, waste less, use space differently.

-- Set up outdoor classroom situations.

-- Help educate parents through P.T.A. meetings and newsletters.

-- Suggest field trips classes might take during the school year.

-- Create an "environmental encounter" around the problem of private automobiles vs. public transportation (pollution, loss of parking, etc.), with practical follow-up. (Distributing information sheets to car owners.)

-- Help collect a set of slides of the school environment (trees, erosion, wildflowers, etc.)

-- Help coordinate use of open space in the community so as to avoid overuse or doubling up.

-- Help children to become sensitive to their environment by using senses out-of-doors.

-- Help students to take field notes and keep records.

-- Demonstrate and try to teach a concern for all living things.

-- Help children through independent study and research to make a contribution to the education of their peer groups and their school community.
-- Provide information which will enable the teacher to grade the child in a subject area.

-- Prepare lists of project ideas and assist students in developing them into reports.

-- Persuade teachers that an environmental aide could offer valuable help.

-- Develop some continuing projects which might be used for a whole school year.

-- Prepare and implement lessons on ecology.

-- Develop and implement materials for ecology-related activities.

The teachers and administrators also added a number of activities they felt environmental aides could profitably carry out. They are as follows:

-- Help with an Ecology Club—driving for short trips, etc.

-- Teach an occasional unit on "wild foods," "camping," etc.

-- List environmental activities pursued by other grades in the local area.

-- Coordinate a long range program for use or development of the school or local site by various grades within a school.

-- Help Planning Committee organize meetings of a "Conservation Council" for a school. 105

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105 One elementary school in Wellesley has an active "Club" for all who wish to join which is modeled after the Wellesley Conservation Council, Inc.
Training

On the subject of the training they had received, many respondents were as uncritically enthusiastic as the woman who exclaimed, "The Liberty program opened up a whole new world for me!" Several aides identified the parts of the training programs they considered most helpful, and the field trips rated high on this list. One of the Liberty aides commented, "The most helpful activity was going on a walk with a trained observer, because it is not until you have done this several times that you begin to learn how to use your eyes."

Other aides commented favorably on the lectures they had received on teaching methods, on the bibliographies provided, and on the nature games they had learned. One aide reported that she had sent her group of Girl Scout campers on a scavenger hunt devised by the Liberty staff and when it was over the kids begged her for more "nature study type games!"

An aide who had learned about maple tapping in the Liberty course reported that during the late winter she had entertained a total of 500 children. She showed them how to identify a sugar maple, how to tap the trunk, and how to tell the age of the tree. The children tasted the sap from the dripping spiel and then went inside to watch the boiling and straining process. She served them maple syrup on ice cream, and noted that--predictably enough--the kids had loved the whole operation. Many of them had inspired their parents to tap their own maples.

A Maine woman commented, "Our program has been wonderful ... the poor aides dropped out and the better ones stayed in. We are lucky
in that we had two excellent teachers."

One respondent remarked that it was helpful just to see how professional environmental educators approached her own aide training group; another said she profited from watching an experienced teacher in action. Three of the women in the Wellesley program commented that they had learned a great deal about environmental problems within the town through their class with members of the Conservation Commission, Planning Board, and Department of Public Works.

Respondents from all the programs except Lowell seemed to feel they needed more specific training in nature study and ecology. "If we are to be called on as experts in this field we need much more training to be secure in our work," said one.

Another generally recognized need was for more familiarity with teaching approaches. A Liberty aide said she could use more child psychology and teaching philosophy; a Wellesley woman badly wanted information on what material is appropriate for different age groups so that she would not find herself talking over the children's heads; an Elbanobscot aide wanted to know how to introduce her material to a class: she needed, she felt, more ideas for "helping teachers relate environmental education to all disciplines"; a Maine aide thought that problems with students could be anticipated: "We could be told how other people have handled such situations and what we can expect at certain grade levels." One aide requested at least one workshop with teachers during the pre-service training period.

There were several requests for more classroom observation--a
chance to see both how skilled teachers conduct a class and how an experienced aide handles her role. An Elbanobscot respondent who had visited classes on her own initiative recommended that aides should have several opportunities to visit classrooms, and that no more than five people should sit in on a class at one time in order that distraction of the teacher and students be kept to a minimum. A Wellesley aide thought that the lecture portion of her training program could be cut down in order to fit in more class observation.

There were a few respondents who thought the programs they had attended were not intensive enough and didn't offer enough challenge. One aide didn't finish the Liberty course because she found it geared to those who had no knowledge or experience; she did feel that the training was adequate to prepare people in that category, however. A Wellesley woman thought it would be enough just to tell aides where to find the information they needed and to let them go off and do their own research.

The homework assignments seemed to be discouraging to a small number of aides; on the other hand, one woman said they were very valuable not only for the content but also because they strengthened her commitment to the job she had undertaken.

A Wellesley aide complained that one of the field trip leaders was poorly prepared and that no one had learned anything that day. One of the women who had taken the Elbanobscot program objected to what she felt was unnecessary political attitudinizing on the part of the program directors.
There were a couple of suggestions for reorganizing the content of the training courses. A Wellesley woman said, "I would like to learn first about how aides fit into a school system and secondly about environmental problems, so that I would have a useful context into which I can put what I learn."

And then there was one Maine aide who confessed to doubts about her ability to teach, adding, "Sometimes I was bored stiff--sorry, that's the truth!"

The questionnaire asked for comments on both preservice and inservice training. The Lowell interns, however, were the only respondents who received formal on-the-job training (this was primarily with groups of students, not teachers), and the responses from aides in the other four programs showed a generally felt need for such training.

While graduates of the first year programs at the Liberty Council and Elbanobscot were able to ask for and receive advice from the program directors and coordinators, this didn't suffice in many cases. "We didn't get much support or encouragement," one respondent remarked; and another commented, "The inservice training is only what the aide puts into the job herself." The Liberty aide who said, "It would have been ideal for groups of us to work in the classroom after the (training) course, like practice teaching," expressed fairly well the feelings of many of the environmental aides who responded to the questionnaire.

Several of the aides suggested that once they did begin to work in the classroom they should get together on a regular basis to exchange information and ideas. A Wellesley aide thought that the directors of
the various environmental aide programs should take the initiative for organizing such aide workshops. A Liberty Lady commented that it would be helpful to know what was going on in other environmental aide programs—what had succeeded or failed in surrounding communities.

Two respondents mentioned that they had run into discipline problems and felt they would have been better able to cope with this if they had had inservice training. One said she just didn't know what was acceptable conduct in the classroom. Another aide thought that discipline was a problem for her because she went to the school only once a week for just one hour and worked with a different group of children each time without a teacher present. Once she had to call a male teacher to help break up a fight between two boys. She added that once she got to know the children things were much easier for her.

Role Conflict

Aide responses to the question on role conflict can be divided into two general categories. The first type showed a significant appreciation of the teacher's primary position in the classroom, and a concurrent awareness of how the aide must use tact and patience if she is to be effective. One Liberty Council aide who had been a second grade teacher remarked that she "resented strongly the array of 'specialists' who used to parade through my classroom, reeking of their own importance and convinced of the transcendent value of their particular subject matter. I used to have to spend a lot of time preparing the children and the classroom for those 45-minute performances each week." This former teacher would caution an aide that she is not there to show off
her particular knowledge nor to show up the teacher's lack of it. Rather, the aide should defer to the teacher, taking up suggestions the teacher might have and getting the teacher involved in planning the project. "Unless the teacher/aide relationship is one where the aide helps the teacher to get across ideas they both consider important, the aide program is doomed to failure," according to this source. If an aide is puffed up with importance or tactless and insensitive, the teacher will be resentful and hostile and can't help but communicate these feelings to the children, who will also be turned off.

Another aide commented, "The relationship can work as long as none of the 'everyday people' (teachers and administrators) feel threatened."

Because most of the aides are parents of children in the school system (with the exception of those in the Lowell program) they are immediately suspect, according to a Wellesley aide. She said she tried to make it clear that she regarded herself as a "helping guest."

Agreeing with the former second-grade teacher in the Liberty program, an Elbanobscot aide said, "The teacher should decide if she wants an environmental aide; they should not be forced on her." One woman described her approach this way: "I prefer to offer my services in a very general way. I clear my ideas for a program with the principal. We then send around a routing slip stating the purpose of the program and estimating the amount of involvement of students and teachers. Whoever is interested in having her class participate can sign up without feeling pressured in any way."
A Wellesley aide offered, "I suspect that field trips might be the best way for teachers and aides to make initial contact. They are on neutral territory—the situation isn't threatening. Once a mutually respectful, pleasant relationship is established, the teacher will very likely ask for more assistance."

Another suggestion for smoothing the way for an environmental aide program was to introduce all the aides to teachers and parents at a PTA program.

While many of the aides showed this sensitivity to the feelings of classroom teachers, there were also expressions of frustration over the lack of understanding and appreciation by schools in general and certain teachers in particular of what environmental aide programs could contribute.

One aide complained that many of the schools didn't share her belief that environmental education must be an integral part of a student's learning experiences. "Some administrators and teachers look on my services as they would those of a floating music, art, or physical education specialist—a nice occasional break from the usual routine but not an essential part of the curriculum," she said. Another woman echoed, "They look on me as sort of a recreational activity rather than as someone who has a significant contribution to make to the children's understanding." She felt that teachers didn't want her, or anyone else, coming into the classroom on a regular basis. Likewise, a Liberty aide thought that teachers were reluctant to delegate responsibility for teaching a part of the curriculum. This particular aide resented having
to assist, in a passive way, a teacher who was giving an inferior presentation. Some specific complaints were that the schools didn't offer any background preparation for aides who didn't know what the children had studied previously; that teachers didn't prepare the children for the aide's field trip or other presentation so that environmental education could fit into the students' overall experience; that some teachers didn't try to assist the aide on field trips--didn't even try to make the children pay attention. One Maine aide said, "I had a teacher who didn't bother to go on the field trip. How could she possibly follow up on the experience?"

In a different vein, a Liberty aide resented the fact that the teacher made all the plans for the field trip and notified the aide at the last minute, leaving her ill-prepared. An Elbanobscot aide had trouble because she expected the teacher to tell her what to do, but the teacher had assumed the aide was going to work out the science projects by herself. This aide was left unprepared and unhappy.

Two of the environmental aides who answered the questionnaire observed that classroom teachers are so tied down to their schedules that they're unable to take full advantage of the aide program. Said one, "They have to complete their units--there's no time for extras."

It should be noted here that over half of the Maine aides explicitly stated that they had no conflicts with teachers or administrators, and they attributed this to good lines of communication among all of the participants in the program. It must also be pointed out that the Maine aides have little contact with the teachers in that they lead
only one or two field trips or teach a class for which they are specifically trained.

The interns in the Lowell program—which differed significantly from the others surveyed in that the aides were on a career ladder, were being trained for eventual teacher certification, and constituted a recognized part of the educational system—understandably had different attitudes toward role conflict. One of them remarked that the professionals were sometimes imperious, forgetting that they shared the same human attributes as the interns. Another intern said sometimes the professional staff imposed rules that the interns did not find acceptable. Conflicts in the Lowell program, the interns felt, could be taken care of by regular opportunities for discussion between professionals and the interns. 106

Aide-Pupil Relationships

In commenting on the aide-pupil relationships she had experienced, a Wellesley respondent observed, "The environmental aide is a new face with new ideas about a subject frequently more appealing than regular classroom work—and this is also one reason why the aide may be somewhat of a threat to the teacher."

With the exception of those people who had had difficulty with discipline in the classroom, aide-pupil relationships among those questioned seemed to be mutually happy. A Lowell intern remarked that children usually were more at ease with the interns than with the

106 Supra, p. 109.
teachers. Another man in the Lowell program said that he puts himself on the same level with the students—he doesn't take a superior role—and he noted that teachers can't allow themselves to do this.

Respondents from other programs also emphasized the desirability of establishing a "we" relationship as opposed to an "I vs. you" arrangement. A Wellesley aide who is now a full-time teacher advised, "An aide should not regard herself as an 'expert' but should instead be a 'co-discoverer' or 'co-learner.' Her most important function is to impart awareness and appreciation and to help the students find answers. She should participate along with them in the learning experience."

Another Lowell intern noted that projects which included several different activities for the child to perform were most likely to hold his attention, especially if he could choose that activity which interested him the most. From Wellesley came suggestions for stimulating pupil interest with environmental or nature games, a point system of achievement, and a chance for active student participation. One person pointed out that the aide's presentation shouldn't be looked on as all fun, however, and that the children should realize that environmental topics are a serious part of their education. This aide felt she could get this message across better if she could follow up her field trips with some classroom work or at least get the teacher's cooperation in doing this.

One person in the Liberty program reported that she had felt uncomfortable working with children whose socio-economic backgrounds were different from her own, but she thought she managed to do reasonably
Additional Recommendations From Aides

The completed questionnaires turned up several ideas for strengthening the environmental aide programs surveyed in this investigation.

A number of respondents thought the aide programs should be responsible for selling the whole environmental aide idea to school systems. "Once assigned to a school," ran one comment, "it was entirely up to the aide herself to convince principals and teachers that she would be an addition to the school experience." A Wellesley aide suggested that a brief report of the program could be distributed to the teachers. Another person thought that if the schools had information about successful programs in other communities they might be more interested in using the aides available in their own towns.

Many of the respondents indicated a desire for follow-up contacts with the training program after they had embarked on their aide careers. There were requests for further workshops on teaching techniques. A Liberty aide suggested that the program directors could send aides periodical bulletins notifying them of local events children might enjoy, special "save the environment" projects in the area, and idea sheets for new indoor activities during the winter. Another respondent said she could use brush-up courses on what to present at different seasons of the year. A Wellesley aide said she needed a way of getting additional materials and leads on whom to contact for specific information. An Elbanobscot aide felt that the program coordinators could also help out...
with placement; she wanted a permanent teaching position and wondered what jobs, if any, were open in the environmental education field. A Liberty aide wanted some direction as to where she could continue studying on her own. Still another aide wished the program could give her some continuing evaluation of her performance.

One important way of strengthening the programs, according to the replies to this questionnaire, is to increase and formalize teacher involvement. One of the Maine aides suggested that administrators, teachers, and aides should be required to take a course together on the purposes of the program and the methods to be used. She thought this could be given one afternoon a week for a certain number of weeks, or an evening each week, or for a short period during the summer at the University of Maine at Portland, and she specified that the course should be financed by the state. Another Maine aide wished to have the state make a course in environmental education a requirement for a B.S. in teaching. An Elbanobscot aide, who believed nothing would happen in environmental education until teachers became concerned, recommended that science teachers be given released time for courses in environmental problems while the aides take care of their classrooms—"This would cost the schools nothing," she added. One other aide, who didn't go so far as to suggest a required course for teachers, emphasized that teachers and aides must get together ahead of time and plan programs, methods, equipment, and lines of authority.

The performance of the aides themselves could be upgraded, too, several respondents indicated. "Any project an aide starts must be
completed by her if a teacher is to find the aide's help worthwhile," a "Liberty Lady" remarked. "And if a teacher and her students are ex¬
pecting a certain service from the aide program they must not be dis¬
appointed. Environmental aides have to fight the general prejudice that you can't depend upon volunteer help." A "head volunteer" or coordinator could be selected who would receive and fill requests from teachers who wished a certain type of program and who could also make sure that things went according to plan. One of the aides in the Maine program did serve as a coordinator for the other volunteers in her community and she felt it was a good idea to have one person responsible for seeing that there were no mix-ups in scheduling.

Recruitment of more and better people should be another goal. A Wellesley aide thought that the existing ratio in her town of two aides to each elementary school was hardly sufficient, especially during the spring when classes most want to plan field trips. "We could point out new places to visit, for one thing," she wrote. "Now a child can find himself year after year out at Drumlin Farm (The Massachusetts Audubon Society's sanctuary in Lincoln, Massachusetts) looking at the same pigs and cows he's seen every spring since he was in kindergarten!"

A respondent from the Liberty program emphasized how important it is to recruit the right sort of people, since the children are unlikely to benefit from the company of a parent who spends most of her time on a field trip worrying about the condition of her shoes and clothing. "A poor volunteer is worse than none," one Maine aide declared; and yet another woman in the same program said, "We need more volunteers. Every nonworking mother who can find the time to bowl should be required to
volunteer!" The more commonly held opinion was that programs should seek the most competent people available. Children cannot be bluffed, as one person put it, and the aide must know her subject well. One woman complained that since the Liberty program didn't require any commitment on the part of the trainees to use their newly-gained environmental knowledge in a constructive way, some people were just taking a free ride; she seemed to feel they were depriving other, more seriously motivated, people of the chance to contribute to a cause in which she personally believed very strongly.

Several of the aides from the volunteer programs made strong arguments for getting environmental aides into the school systems on a paid basis. There was a feeling that there will never be enough people willing to give their time and energy without some material reward. "We've got to be paid for our work or this whole field will collapse. You can't rely on volunteers forever," was one comment. An Elbanobscot woman observed that our society still values labor primarily by the price tag attached to it. Her point was nicely illustrated by the Wellesley aide who felt the work she did was just as important as the paid services of art, music, physical education and industrial arts instructors, and she thought she deserved to be paid, too.

Evident in some of the comments was a desire to enlarge the aims of the training programs--to take on bigger challenges. A woman in the Maine program, which was limited chiefly to preparing field trip leaders as previously mentioned,\(^\text{107}\) suggested that her group might get involved

\(^{107}\text{Supra, p. 86, and n. 77, p. 86.}\)
in developing environmental programs for the adult community—programs more ambitious than the already familiar anti-litter and tree planting campaigns. She was thinking in terms of a direct attack on basic environmental problems, and wanted to extend her group's efforts beyond her own community by developing regional action programs. Another Maine aide, looking at the possibilities from a less wide angle, thought that her environmental education program could establish a resource center in each school library, staffed by aides. Also, she wrote, aides could take the responsibility for keeping teachers informed about various available environmental education opportunities, such as nature center trips, summer camps, town clean-ups, lectures, and conferences.

Lastly, there were some specific ideas for improving the day-to-day effectiveness of the aide's work. Several respondents suggested that field trips are most successful when there are only five to eight children in the group. One person wrote that if an aide is to be able to develop an idea in depth at all, she must be allowed to meet with students on a regular basis and get to know them. A Liberty Council aide recommended that more thought be given to the use of schoolgrounds for teaching. "For example," she said, "only one class can make a permanent nature trail on a certain site. We should use removable labels for this activity so that several classes can have the experience. Also, if 500 children make 500 individual leaf collections, the trees and shrubs around the school are going to be somewhat the worse for wear."
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to gather data and informed opinion about environmental aide programs in New England to add depth and dimension to existing knowledge about the development and use of auxiliary school personnel in environmental education. Such information, it was felt, would help to ascertain the most effective way of using such personnel to assist teachers and students in this area. Through the structured interview and the questionnaire used as data-gathering instruments, the investigator also sought information on how aides, teachers, and administrators perceive the role of the environmental aide.

This study assumed that aides, teachers, and administrators could supply a fairly definitive description of the role and function of such aides and that the program administrators were the appropriate persons to describe and evaluate the programs. Within the five environmental aide training programs reviewed, 194 aides, teachers, and administrators were identified as the study population. Responses were received from 139 of this group at the cut-off date, representing 72% of those receiving either one or both sections of the questionnaire.
All of the respondents provided information concerning activities which an environmental aide could perform in assisting teachers. In addition, administrators were interviewed on the operational aspects of their programs and the aides supplied information which enabled the investigator to obtain a profile of the typical environmental aide, as well as suggestions for improving training and eliminating role conflict. The data was analyzed within the framework of the underlying assumptions of the study and a summary of the findings, including the investigator's recommendations, will be presented in this chapter.

Summary

Five environmental aide programs are described in this study. The investigator conducted a structured interview with the administrator of each program to obtain information on organization, administration, and the training received by the aides, as well as an evaluation of the program by the administrator and his or her recommendations for improvements.

Of the five programs reviewed, three are similar in many ways. The Liberty Council of Schools' Volunteers for Environmental Education program conducted in 1968 and 1969 served as a model for the Elbanobscot and Wellesley programs which were initiated in the following years. The Liberty Council volunteers, mostly mothers of elementary school children in the suburban towns served by the Liberty Council, were selected at random the first year and through referrals from the Concord school system in the second year of operation. These "Liberty Ladies" were given a preservice training course of six to eight sessions by the
Liberty staff. The course dealt primarily with nature study but also emphasized the interdisciplinary aspect of environmental education, using music, poetry, and social studies themes. No formal arrangements were made for the teachers to work with aides and the aides were encouraged to make their own contacts with teachers if they were not already involved in helping a teacher or school.

The Elbanobscot program took over where the Liberty Council left off. Many of the same towns are involved and the participants are again primarily volunteer mothers whose children are in the elementary schools. Recruitment is through the schools and a mailing piece. The course includes ten sessions, four more than the Liberty course, given by both the Elbanobscot staff and knowledgeable outside speakers. More field trips are introduced and a handbook for aides has been developed which is much more comprehensive than the syllabus developed by the Liberty Council. Attention is given to those aides who prefer to work with nonformal educational groups such as Scouts, church, and other youth organizations.

The Wellesley program is similar to its predecessors in that it, too, involves volunteers who are mothers of children in the Wellesley elementary schools. The Wellesley Environmental Awareness Committee which sponsors the program consists of educators and citizens representing the various conservation-oriented groups in the town. The program patterns itself in form and content along the lines of the Liberty and Elbanobscot courses. It is different, however, in that since all the participants live in the same community, the program can focus on Wellesley's particular problems, and homework can be directed toward
producing specific results of immediate or long-range benefit to students, teachers, and the town at large. Also, participants can become thoroughly acquainted with the natural, physical, and human resources available in their single community.

The Maine Regional Environmental Education Program also involves volunteers, many—but not all—of whom have children in the schools in their town. Other aides are retired teachers; all are female. The Maine program trains aides merely to assist with one class or lead a field trip with one class, so it is rather limited in its design compared to the three programs previously mentioned. Training consists of being taken on a field trip by the program staff, or being instructed by the staff on how to conduct the class (or both, if the aide desires to assist with both).

The Lowell Model Cities' Career Ladder Intern Program differs markedly from all of the four previous programs. The interns are young men and women who are paid as they are being trained to become professional teachers in the Lowell Acre area. Applicants are recruited from the Lowell area and carefully screened by the Education Component staff. Training comprises both a college education and involvement in the Education Component's programs. The latter include many environmental education workshops where the interns are introduced to their total environment—its resources and its problems. The interns worked with students their first year and entered phase two of their training in the fall of 1971 when they began work directly with experienced teachers in the classrooms in the role of teacher aide.
Returns from respondents to the questionnaire allowed the investigator to draw a profile of the typical environmental aide in the five programs reviewed. This person is a female between the ages of 31 and 40 who has graduated from college, married, and raised three children whose average age is 9.3 years. She is a volunteer, with or without experience, who is familiar with children through formal or nonformal education contacts, and who is currently putting in not more than one to three hours a week in environmental education, if working at all. She is also partial to working with pupils in kindergarten through fourth grades.

Respondents were likely to have received word of the training program through a friend, or an administrator or teacher within a school system. Newspapers and mailings were also helpful in the recruiting process. Aides sign up primarily because they are interested either in the environment or in children—or both, as was the case with many who could not decide on a prime reason. Others wish to pass along the information they receive to youth groups, while a percentage are considering teaching or want to use what they learn to enrich their own families' experience. Over half of the respondents are either not at all interested in teaching or might consider it at a later date. On the other hand, 38.1% express a desire to teach either full or part-time. Very few have not given the matter of teaching some thought. Those who wish eventually to acquire teacher status express an interest in going to school part-time with promotion and pay until certification is achieved.

When asked to rank fifty possible activities helpful to the school if carried out by an environmental aide, the aides chose activities which
suggest they see themselves as supplementing the teacher as an "environmental specialist" rather than assisting her in a more traditional supportive role of an "environmental aide." The ranking of activities perceived as helpful shows a high correlation with another ranking of the same activities based on how often the aides believed they would be asked to perform such duties in the schools. The choices made by the aides may have been determined to a significant extent by their lack of experience. Individual differences in the programs may explain a lack of consensus on some activities.

When teachers and administrators were asked to rank the fifty activities in terms of their helpfulness if performed by an aide, their ranking suggests that they see the aide in a more supportive role.

All of the respondents seem to agree on those activities which would be the least helpful for environmental aides to perform, some because they imply "taking over" the teacher's functions, others because they appear to be disruptive or to be the jobs to be carried out by students or other ancillary personnel.

The respondents to the questionnaire suggest many additional activities which they think can be usefully performed by environmental aides. These vary from developing environmental encounters around local problems to helping schools use recycled paper. Teachers and administrators also see other possibilities for environmental aides, such as the coordination of a long-range program for the use and development of a school or local site by various grades within a school, or helping an Ecology Club.
The aides are generally enthusiastic about the training they received, although many offer constructive ideas for improving the various programs. Most frequently mentioned are needs for familiarity with teaching approaches and more classroom observation of skilled teachers. Several aides want more specific training in nature study and ecology.

The aides' replies to the question on role conflict show a significant appreciation of the teacher's primary position in the classroom and the need for tact and patience on the part of the aide if she is to be effective in her work. On the other hand, many people are frustrated over the lack of understanding and appreciation by schools in general and certain teachers in particular of what environmental aide programs can contribute. Aide-pupil relationships seem to be mutually happy, although it must be remembered that many of the aides have not yet actually worked with the students. Some have already experienced discipline problems.

The respondents make a number of additional recommendations for strengthening the programs. Several people think that the aide programs should be responsible for selling the whole idea to school systems. Many aides express the desire for follow-up contacts with the training programs after embarking on their aide careers. A very important improvement, according to the responses to the questionnaire, is the formalizing of teacher involvement with the aides during the training programs. Also, there is a necessity for a "head volunteer" or coordinator who can fill requests from teachers and make sure that things go as planned. Finally, more and better aides should be actively recruited,
and many respondents feel that eventually aides should receive compensation for their time and efforts.

Conclusions

Although the investigation was not designed to derive conclusions from a hypothesis to be tested, a review of the data collected by the investigator in the course of surveying the five programs for the study suggests that there is a female population within suburban towns who are enthusiastic about environmental education and who are interested in working in this area in the schools or in nonformal educational organizations. These women see the need and have the time. They are willing to volunteer their services, although some of them would like to receive remuneration in the future.

The study also suggests that there is some potential for role conflict between such community members and teachers in that the former appear to see themselves as "environmental specialists" supplementing the teachers' work in environmental education. The teacher is looking for assistance of a more supportive nature, seeing the community member in the role of an "environmental aide," which is closer to the more traditional concept of a teacher aide. Perception of the environmental assistant as a "specialist" or as an "aide" varies with the philosophy of each of the five programs. On the other hand, the investigator concludes that aides and teachers seem to be in general agreement on what the aides should not do, and the teachers appear to welcome the assistance they have been receiving. As yet, there has been little apparent conflict. The aides and teachers are still relatively inexperienced,
however, and further study will be needed in this area.

The investigator also noted that a striving for upward mobility is a factor which an administrator must consider. It is not, however, an important one in the programs studied.

Finally, the investigator found that participants in all of the programs studied had ideas for improvements which they were willing to discuss, and these should be of great value to future administrators in developing stronger environmental aide programs.

Recommendations

Introduction

Those of you who have turned into conservationists didn't learn it in the schools, except maybe in the school of natural resources or something like that. Most of us learned it through the National Audubon Society or the local Audubon Society, or we learned it through our museums, or our libraries, or on our own. We never learned it through our school system. School is the last place you'd expect to get any insights into man and his environment or the quality of his life.108

George Lowe, Executive Coordinator for Environmental Education in the U. S. Office of Environmental Education, offered this opinion at the National Conference on Environmental Education at the University of Wisconsin in December, 1970. The investigator's own personal experience suggests that this view is fairly accurate, at least in New England, where there has been little emphasis on environmental education in the

It is obvious that, if we are to raise concerned citizens motivated to take effective action on the environmental problems of today and tomorrow, our school systems must act so that a judgment like Mr. Lowe's cannot be made again. Students must be brought into contact with their environment, and our natural, physical, and human resources must become tools with which to educate them.

The timing seems to be right for educational change. There is more and more evidence that the utilization of persons with special skills, experience, and training--such as environmental aides--enriches the learning experience and should supersede the assignment of all educational tasks to a single teacher. The theory that students can, in fact, gain valuable knowledge from each other and from a variety of other human resources, such as artists, artisans, politicians, athletes, businessmen, clergymen, and convicts, is not a new one. The experiences which these people can share with students are often a far more effective way of helping children understand their total environment than the traditional "2 x 4 education" (the two covers of a textbook and the four walls of the classroom) now being questioned by many educators and students alike. "Open schools" such as the Parkway School in Philadelphia and the Metro High School in Chicago have proved quite successful. Other "alternative schools" such as Dwight Allen, Dean of the School of Education at the University of Massachusetts, has been advocating are also beginning to be accepted as viable methods of educating our youth.

For further discussion of this subject, the reader is referred to the investigator's article, "Environmental Education: Something Old and Something New," Independent School Bulletin, May, 1971.
at a time when much of the traditional curriculum seems to have become isolated from the significant concerns of the community. Alternative schools rely heavily on parents and other community members to provide the sort of relevant understandings for the children which the formal educational system has not been able to give, at least not to the satisfaction of many people.

This investigation suggests that schools are ready right now to emphasize environmental education, focused on local community problems and using natural, physical, and human resources. Both school personnel and members of the community in the programs studied seem aware that all learning has environmental considerations and that environmental education must be local in much of its content. Teachers interviewed in this study appear to see the broad ramifications and "adisciplinary" aspects of environmental education, with its concern for issues as they relate to the environment and its use of increased student and community involvement in the development of materials and teaching techniques. They also now seem to recognize that the community environment is a tool which can teach future citizens how to cope with current and future resource problems.

A multi-entry approach is an effective way to achieve change--maybe the best way--and in order to get environmental education, with its inquiry-oriented, problem-solving techniques, into the schools, the community must be aware of the need for change and have an interest in bringing it about. Teachers can work from within the system and community

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110 Ibid., p. 152.
members can apply pressure from without. The present investigation suggests that much of the impetus for change will come from women who are interested enough in environmental problems and in environmental education for children to devote time to preparing themselves to work within the schools or nonformal education programs. Some, of course, are getting paid to become teachers, and others would like to. Many, however, are willing to volunteer their time for such work. These people have a wide range of talents to contribute which, when properly directed, can be a valuable resource. Further, this investigation shows that teachers and environmental aides see areas of mutual concern and interest in which they can work together to develop and improve environmental education opportunities.

In localities where there is teacher awareness and interest and where community members are also interested enough to both demand and work for change, an environmental aide program can be a linking mechanism between the schools and the community. The program should be able to surmount the general understandable resistance to change and innovation on the part of citizens faced with ever-increasing costs of public education and the accompanying steady rise in their property taxes.

Change is hastened by the threat of a stick or the enticement of a carrot. With regard to the educational changes being discussed here, the stick is nothing less than the crisis of a totally unlivable environment. The threat to our "quality of life" has spurred people to volunteer as environmental aides, and since the threat has not diminished but has become more visible, future recruitment of aides should be no problem. Also, the crisis in the classroom and the threat of further
student uprisings have been responsible for a good deal of reexamination of current educational techniques and the exploration of alternative methods which involve students in the decision-making process—which is what environmental education is all about.

Carrots for educational change are in the form of federal funds. The Lowell Program has Model Cities' money for training teachers under the Career Ladder concept. The training of the Liberty aides was financed under Title III of the Elementary and Secondary Education Act. The second class for Wellesley environmental aides, started in the fall of 1971, was made possible by a grant under the Education Professions Development Act, Part B-2.

One other sign which points towards the expanded use of environmental aides is the increased activity in developing environmental education centers, which are logical sites for the training of teachers and aides now and in the future. If the training programs are to be really effective there are improvements to be made, however, and this study suggests ways in which current and future environmental aide programs may be strengthened.

Sources

The following recommendations come from two sources: the findings of the study itself, and the investigator's own personal knowledge of environmental education, the dynamics of communities, and the process of planned change. They are designed to be of value to administrators

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111 One center in Connecticut has started to train volunteer aides to work in the city schools in the state in the fall of 1971.
of future environmental aide programs which might be sponsored by institutions of higher education, public school systems, or volunteer community groups. The information should also be of value to the director of a nature center or an organization like the Elbanobscot Foundation who is interested in developing environmental aides to service a number of communities on either a paid or volunteer basis.

Operation Plan

The recommendations are fitted into an operational plan which the investigator has developed for designing and implementing an environmental aide program. Readers are referred to Chapter II and to the Bibliography for further references; directions pointed out in previous research on teacher aides are not repeated but are supplemented with ideas furnished by the present research. The ordering of steps in the plan was done by the investigator. Administrators may wish to add, subtract, or restructure sections according to their own particular timing schedules.

Program Planning

1. Identify the environmental needs of the community or communities, including the schools and nonformal education groups.

The need for environmental education has been seized upon so suddenly and so many ideas and techniques have been rushed to the market place that people are easily bewildered and hard pressed to choose the most appropriate courses of action. A survey of the needs of the particular community and its teachers will establish certain goals for an environmental aide program and will also clarify for teachers how the
prospective aides will be able to assist them and their students. Identification of the community's needs is perhaps the most important selling point for any program.

Before an individual or a group initiates an aide program to assist teachers in environmental education, he/they should determine exactly what teachers and students feel they need in order to become environmentally literate citizens. Pollution kits for first graders, for instance, may seem like an excellent project for development by environmental aides, but if teachers think the concept of pollution is beyond the comprehension of a first grade child, the idea must be rejected. A survey of teachers and students may come up with basic ingredients for an environmental aide training program quite different from the ones reviewed in this study. On the other hand, items on a community's "must have" list are likely to include several of the suggestions brought out in this investigation as to how environmental aides can be most helpful to teachers and students. (See Tables 21 and 22, Appendix A.)

In considering the needs of teachers, it should be remembered that many suburban teachers cannot afford to live in the communities in which they teach, and they will need assistance in interpreting the local natural and physical environment and in obtaining help from local human resources.

The initial assessment of the needs of a community or communities should discover whether potential participants in an environmental aide program will be looking for financial reward or progress toward teacher
certification, or both. In some areas this may be the case; in others participants will volunteer their time because of their needs for personal commitment to a worthwhile educational endeavor. It is possible that an aide program may have both types of participants. If so, there may be a need to assure volunteers that their services are just as valuable as those people who are advancing toward full-time teaching assignments.

2. Establish a program philosophy.

A program philosophy or body of principles should be established, based on the determined needs of the community and schools. For instance, "the program should be incorporated as an integral part of the school system, not treated as an extraneous and temporary adjunct to the system." This becomes very important where an organization outside of a particular locality is training aides for use in that community. Every effort must be made to work out a program philosophy which will be accepted by the communities involved, so that the aides in turn will be supported in their school and community work. Community commitment to the program does not imply that aides should be forced on teachers, however. On the contrary, aides should be used only where teachers are ready and willing to receive them.

3. Identify the groups which should be involved in the initial planning and consult them.

Environmental education being as broad a concept as it is, many groups should be consulted in the initial planning stages of an  

\(112\) Bowman and Klopf, New Careers, p. 175.
environmental aide program. Such groups include teacher associations and PTA's as well as community groups such as land trust organizations, village improvement societies, garden clubs, League of Women Voters, Junior League, fraternal and service organizations, sportsmen's clubs, Golden Age groups, and the various youth organizations--Scouts, YMCA and YWCA, Campfire Girls, 4-H, and church groups. Such organizations may well be looking for activities for their membership and may therefore supply people to be trained--and possibly the funds to train them--if they are involved in the initial planning of the program.

Out of the consultations it is recommended that some sort of Advisory Committee be established with representation of the organizations which indicate an interest in an environmental aide program. Such a group must have a clearly defined role in the planning, execution, and evaluation of the aide program, and must not exist as a "rubber stamp" for the program administrators. (See Appendix E for the example of Wellesley's Environmental Awareness Committee.)

Perhaps assessment of the community's needs indicates that a career ladder program like that being conducted by the Lowell Model Cities Education Component is desirable. Then institutions of higher education within the community, or close to it, should be consulted in the initial phases of planning to see whether arrangements can be made to have the career ladder interns receive degree credits in a program worked out by the Advisory Committee and the college or university. If the aide course will include participants who wish to complete requirements for a degree started previously, a college may be willing to offer credit for the aide course under their continuing education program.
Again, it must be stressed that if career advancement is desired, it must be made possible but not compulsory; the importance of volunteer contributions must not be derogated.

4. Identify available resources (natural, physical, and human) which will be helpful in setting up the aide course.

Many of the human resources useful in setting up the course may have been discovered in consulting with various community groups. A further inventory should include the institutions of higher education mentioned above, auditoriums, libraries, natural areas, nature centers and sanctuaries, farms, greenhouses, historical buildings, public works facilities, and private industries. These are the potential physical locations and natural resources for the program, and the people who operate them are potential instructors or field trip leaders for training sessions. Many cities and towns now have master plans for the development of the community which not only define existing development and open space, but also project into the future. Regional plans should also be reviewed.

5. Identify sources of funds to carry out the program.

Funding for an environmental aide program will depend to a large degree on how the course is set up, who is going to administer it, who will be involved in the program and what they will be doing with the training they receive. Support for environmental aide programs can come from federal and state governments, local communities, and private foundations. If a large scale program is contemplated with a career ladder such as the Lowell program, the director may be able to tap
federal and state sources such as Model Cities, Career Opportunities, Part B-2 of the Education Professions Development Act, and Title I of either the Elementary and Secondary Education Act or the Higher Education Act. Whichever federal or state sources are identified, it will undoubtedly be necessary to match some of the funds with money from the community. Along with public funds, private foundations should also be identified, especially if the program is being run by a non-profit organization similar to the Elbanobscot Foundation. If a director applies for federal or state funds to initiate an environmental aide program, he must know where in the community he can go to get money to continue the program when his original grant runs out. He may have to finance the program entirely with locally raised funds, or he may get a continuation of the grant on the condition that the community match the federal or state funds. In any case, a community must be fully apprised of its future financial responsibilities before any contracts are drawn up.

For local programs like the one in Wellesley, which aims only to train volunteers as environmental aides, a variety of local funding sources should be considered to assist mainly in purchasing materials and paying for secretarial and printing work which volunteers cannot take care of themselves. The school system or systems—as in the case of the Maine program—may well supply funds and/or materials and equipment needed for the program, since the aides will, in many cases, be working directly with the teachers and students in the schools. Non-formal education groups should be asked to sponsor their program participants, and the local parent-teacher associations are also likely to pay
registration fees. Other financial sources include service and fraternal organizations, land trusts or other local conservation organizations, garden clubs, women's groups like the Junior League, and village improvement societies. Local businesses and industry should also be approached as they may be willing to donate facilities and/or equipment if not actual cash.

**Program Content**

1. Establish measurable goals and objectives for the environmental aide program.

Assuming that a survey of the community and its school certifies the value of an environmental aide program, the next step is to establish goals and measurable objectives consistent with the program philosophy. If clearly defined goals are lacking, it will be impossible to evaluate the program efficiently and there will be no sound guidelines for selecting the appropriate content and instructional methods. Administrators and instructors must know what they expect of the environmental aides at the end of their preservice and inservice training. Another important reason for stating clear objectives is to be sure that the environmental aide is able to perform in the desired manner. Tests can assist administrators, teachers, and aides to determine how successful they all have been in achieving the objectives of the program, but unless goals are clear and firmly fixed in the minds of all involved in the program, such tests can be misleading, unfair, and useless. Precisely written objectives will allow aides to measure their own progress towards achieving their goals, and they will also help prevent future role conflict between environmental aides and teachers, as both will
have a clear idea of what the aides are being trained to accomplish.

2. Review school curriculum.

If the environmental aide program is to provide genuine assistance to teachers in environmental education, careful attention must be paid to reviewing the entire existing curriculum in the education system in which the aides are to be employed. The training the aides then receive can be aimed at reinforcing, supplementing, or expanding what is already being done in the schools in environmental education. This type of assistance will be much more effective than the introduction, through the aide program, of materials unknown or untested by the teachers. The latter could be more threatening to a teacher than helpful. Many programs such as the Science Curriculum Improvement Study (SCIS), as well as new projects in geography and social studies, need to be adapted to the local community and the aides can be taught to assist teachers in finding the local natural and physical materials, taking field trips to local areas, and so forth.

It is important to review all the subject areas, not just science. Environmental education pervades all disciplines, and this investigation has shown that the teachers and environmental aides in the programs reviewed see it in this light. The study has also shown that environmental aides have a wide variety of educational backgrounds and talents to bring to teachers and students; a program director with a thorough knowledge of where environmental education can be fitted into the existing total curriculum will find it easy to plug the aides in where they can be of the most value to teachers and students on the
basis of the education they already possess.

3. Clearly define roles and responsibilities.

The traditional role of the teacher aide has been the assumption of certain clerical and monitoring tasks which have freed the teacher for more professional duties such as individualized instruction for her students. Teacher aides have been taught that their job did not include "taking over" a class or classroom from the professional teacher, and indeed many state laws forbid the aide from doing so. The role of the environmental aide needs more clarification, since if she has a lengthy preservice training period similar to the Liberty, Elbanobscot, or Wellesley programs, she is conceivably better prepared to teach many aspects of environmental education on an elementary school level than the teachers she is trained to assist.

In order to establish what is potentially a new aide-teacher relationship, teachers will need assistance in clarifying their role and the role of the environmental aide. Ideally, this could be accomplished by including teachers in the environmental aide training program, or by developing an inservice training course in environmental education for teachers which would also include aides. The chances of role conflict will be greatly reduced if the two groups have an opportunity to define their roles and responsibilities together. The difficulty will be in finding a time when both can take such a course during the school year, or even during the summer months.

A possible solution to potential role conflict might be for teachers to be responsible for the goals and objectives they wish to
achieve with their students with regards to environmental education. Environmental aides would then be asked to set up the program with the teachers and their students to achieve the objectives. All would be involved with the evaluation of the program. A chief coordinator would be necessary to assist in counseling both the aides and the teachers as they adjust to their new relationship.

This investigation also suggests that the position of the environmental aide within the school needs clarification—is she really a "teacher aide" or an "environmental specialist"? If the latter, is her role similar to that of the gym teacher and the music specialist who come in at specific times of the day and "do their thing" while the teacher takes a much-needed break? The answer may very well be that the environmental aide is a combination of the two, or one or the other in different situations. The point is that role clarification is necessary not only because of its value in minimizing role conflict but also because it facilitates making proper monetary remunerations when payment is involved. Bowman and Klopf recommend "that role specifications of auxiliaries be defined initially, in order to provide a frame of reference for a new set of relationships, thus preventing either underutilization by unconvinced professionals or overutilization by administrators faced with manpower shortages."\textsuperscript{113} Chances of the latter may not be as great today, but the necessity for role definition and clarification for all involved in the program must be given careful consideration.

\textsuperscript{113}Supra, p. 30 and n. 20, p. 30.
4. Set up a plan for total community involvement.

Environmental education must be initiated almost at birth and continued until death. It is important then that it not be looked upon as compartmentalized into such groups as "K-3" or "7-9." Wesley Willink, Administrator of the Maine program, noted that the training the aides received was "nothing more than a sneaky method of adult education," and environmental aide programs should be set up with adult education in mind. As has been stated above, a multi-level entry is valuable in the change process and, if the overall goal is to produce environmentally literate citizens, then nothing short of a total community commitment should be sought.

Environmental education is so broad in its scope that it is actually possible to involve the entire community as either "students" or "teachers" with the community itself being the school. As to who the "students" will be, the director responsible for setting up an environmental aide program should think about recruiting "Golden Agers," who may have time on their hands and a tremendous amount of knowledge and experience to contribute to the younger generations. Sliding down the scale, high school "future teachers" should also be enrolled in such a course, where they could put their knowledge to use at the elementary school level. Possibly these students could take younger children on field trips during the day which would release teachers to take an environmental education course with potential environmental aides during the school hours. While on the subject of released time, it is not inconceivable that an environmental aide could take over a teacher's class for a period long enough for the teacher to participate in nature
study courses such as those given during the day by Audubon Societies, nature centers, or garden clubs.

So there are senior citizens, high school students, housewives, and others involved in environmental education as "students" in an aide program. Who will be the "teachers"? If the community is to be the environmental classroom then the teachers should be those who are directly involved in manipulating its human, natural, and physical resources. Mayors, councilmen, conservation commissioners, city and town planners, health department personnel, public works commissioners, builders, sanitary engineers, and others are all part of the big picture and all have a story to tell. Private organizations on local, state, and federal levels should also be part of the teaching staff. Their input is essential to the development of environmental encounters which illustrate human ecology--the social dynamics of the community. The latter is at least as important as the community's natural resources.

5. Set up a plan for training (and/or retraining) environmental aides, teachers, and administrators.

The training plan for an environmental aide will be dictated by a number of factors such as community interest, available resources, and funds. Courses may be as intensive as the Lowell program for potential career teachers or as simple as the one-session training course designed for the volunteers in the Maine program. A course similar to those conducted by the Liberty Council, Elbanobscot, and Wellesley is perhaps close to the median, and if such a course is contemplated it is recommended that the following subjects be considered for inclusion in the training plan:
-- The role of teachers and teacher aides in environmental education

-- Basic ecology, geology, and natural history

-- Human ecology--community government and organizations

-- Community resources and resource problems

-- Field trips and field trip techniques

-- Nature games and crafts

-- Understanding students (age levels, discipline, ethics)

-- Audio-visual aides and environmental materials--their availability and use in schools and nonformal education groups

Other items which also deserve consideration include a discussion of physical handicaps as they pertain to education out-of-doors, first aid, and time to observe skilled teachers. Work in curriculum development should also be considered, especially if the aides are being trained as "environmental specialists" rather than environmental aides.

As has been mentioned before, it is highly desirable to consider training teachers, teacher aides, and "future teachers" together in the areas noted if at all possible. If an environmental education program including all these people can be initiated, it is the investigator's suggestion that the concepts of "preservice training" and "inservice training" be abandoned. The subject matter outlined above should be taken up in an extended program running throughout the school year rather than be compressed into an eight or ten-week period, at the end of which time the aides are left pretty much to their own devices. Certainly there should be an initial training period of several weekly meetings, covering the basic material and techniques. The aides should have one orientation class on school policies and classroom regulations before
they are assigned to a school. After this, the course might meet once
or twice a month. At these times, material studied previously could be
taken up in greater detail, and successes or failures in presentation
could be shared. New material, such as seasonal projects on snow track-
ing or spring wildflowers, could be presented. Additional field trips
could be scheduled where new techniques of leading such trips might be
tested. These monthly or semimonthly meetings might be used as practi-
cums for aides and teachers to try out new methods on other aides who
are still in the preliminary phase of their own training--these sessions
would benefit all concerned. The meetings would offer an opportunity
for communication and idea-sharing among aides working in different
schools, and if conflicts have developed between the aide program and
the schools, these could be aired and solutions could be planned.

Aides and teachers should be encouraged to supplement their
training program by taking specialized courses in nature study, geology,
birds, or whatever interests them. Such courses are run by the Audubon
Society, nature centers and organizations like the Elbanobscot Foundation,
and often by garden clubs. Universities and colleges may also offer con-
tinuing education courses in subjects which will be of value to an
environmental aide, and which may give her college or teacher-certifica-
tion credits if desired. The point is that no aide course can make an
"instant expert" of someone without a previous background in science or
nature study. A course will get a participant started; the rest is up
to the individual.

Aides who have a strong background in a particular area such as
biology, sociology, or perhaps dramatics may wish to establish themselves
as "environmental specialists." As such, they would travel from one school or nonformal education group to another within a community when their talents were called for. They should also be asked to help teach future environmental aides. Individuals who opt for this role will need special training in curriculum development and in understanding what children can absorb at different ages.

It is recommended that homework be assigned--but on an optional basis--unless the course is being given for credit. Some aides--and some teachers--may feel threatened by the homework, while others may not have the time to do it. Assignments should center around the environmental education needs which have been expressed by the teachers and students. Time should be allotted during each class session to go over the homework so that the entire class can profit from the work prepared and suggestions made to improve it.

The training of teachers and aides together, although ideal, may not be practical. Other alternatives should be considered. The training sessions might be structured so that certain classes and field trips in which joint participation is most to be desired are scheduled during the evening or on weekends. If the teachers have enough notice, substitutes can be found and released time authorized so that they may attend a daytime event; or another teacher may be able to fill in, making it unnecessary to hire a substitute. As mentioned above, "future teachers" could take over a class for a field trip, freeing the teacher to attend environmental aide sessions.

If there seems to be no way to include teachers in the training
program, a director might decide to begin the course by assigning his trainees to meet with teachers who have indicated they would like assistance from aides. Together the teachers and prospective aides could decide how best to increase their own and their students' understanding of environmental topics. In effect, these conversations would determine the content of the aides' training sessions. In this way, topics which might not be relevant to actual classroom work could be eliminated from the training program. This approach to program planning almost guarantees elimination of role conflict. It is also a method by which teachers and teacher aides who are currently working together under the auspices of other teacher-aide programs might become trained in the important area of environmental education.

6. Inventory resources.

The natural, physical, and human resources available to an environmental aide program will have been fairly well identified before the program gets under way. However, a definitive inventory must be compiled. These inventories always need updating, and after the training program has begun the aides themselves should take on the inventorying work. Each aide should familiarize herself with areas close to the school where she expects to work or the neighborhood where her nonformal education group is located. She should also get to know the people nearby whom she may want to contact for assistance. The aides can develop an outline to produce a general description of each natural area or other resource, including how to reach it, times it can be visited,

114Supra, p. 194.
and uses it can be put to by various classes and in various subjects.\footnote{115}

Program Operation

1. Review administrative personnel.

Once the program has been set up and is under way, a continual review of administrative personnel must be made to assure that any needed changes are made before problems develop. If the program is staffed by volunteers, it should be kept in mind that interest may wane or die out completely as time goes on and the work settles into a routine. Volunteers who have children in the schools may lose their enthusiasm as their children move up through the school system and outgrow Scouting or church groups. Families are mobile, too, and moves will necessitate the filling of vacancies. Potential replacements for people serving as aides or environmental specialists should be kept on a list which is updated from time to time.

2. Set up an organizational chart.

If the program is a simple one, an organizational chart may not be necessary. If, on the other hand, a program similar to the one in Lowell is contemplated, it would be wise to set up a chart which will clearly delineate authority—which, in turn, should determine responsibility. The chart will help clarify the roles played by administrators within the structure of the program. Job descriptions can also be added.

\footnote{115}{An example of the Liberty Council's Community Resource Guide is on file at the Hatheway School's Environmental Education Center in Lincoln, Massachusetts.}
Without such a chart, conflict may prevent the smooth functioning of the program.

3. Review facilities and natural areas.

Facilities used in the program should also be reviewed to assure that they continue to be adequate and appropriate for the program. This is particularly important with outdoor areas which may deteriorate under constant use by school and nonformal education groups. A review of the facilities might indicate a need to rotate field trip areas to prevent irreparable harm to one area; it might show that a kind-hearted businessman or farmer is being overburdened by visitations of environmental enthusiasts. The aides should understand the importance of a constant review of facilities and natural areas, and will probably be able to help in this matter.

4. Review materials and equipment.

A review of books, other written materials, audio-visual aids, and miscellaneous equipment should be made on a regular basis to ensure that what is on hand is adequate and in usable condition. The aides should be responsible for this job—doing it not only for the training course but also for school resource centers where the latter exist. Aides may want to review films for classroom use—something teachers rarely have time for. Aides who have an interest in library work can help in keeping reference materials up-to-date for use by teachers, aides, and students. Because much of the aides' work will be out-of-doors, the chances for loss and breakage of equipment are greater than if the equipment were used only in the classroom. A constant check on the number and condition of such
items as pond nets and hand lenses should be made to ensure that everything is there when the next class needs it. Items should be replaced when necessary.

Diffusion

One priority for the director of an environmental aide course is to design an ongoing diffusion program. This should include publicity for the aide program in the local papers with names and pictures, and coverage on radio and TV whenever possible. Perhaps the best way to build up the program is to schedule talks to PTA's, fraternal clubs, youth groups, and so forth, to maintain community interest and recruit new aides and sources of funds.

Channels for the diffusion of information on the program should be clearly established. One person might take charge of newspaper publicity; another would travel the speaker's circuit; another should be responsible for internal diffusion--getting information to and from teachers, administrators, aides, and others actually involved in the program. Internal diffusion may be accomplished through regular meetings among program staff, teachers, and aides in the different schools to make sure that all is functioning smoothly and that there is no duplication of efforts. A simple newsletter put out by and for the aides might keep them up-to-date and inform them of meeting times and locations. In Wellesley, news about the aide program along with the activities of various town Boards and environmental groups are noted in a weekly column in the local newspaper.

It is strongly recommended that the advisory committee be given
a leading role in both the diffusion and evaluation of the program. If the group really represents the community, and maintains close contact with all phases of the aide program, it can provide the linkage necessary to assure smooth sailing for the project. The principal administrator or "coordinator" should act as liaison between the advisory committee and the aides and school system. Such an administrator may be either paid or a volunteer. If paid, it is recommended that the individual be responsible to and, if possible, paid by the advisory committee. This will guarantee the authority of the advisory committee, which otherwise could easily become nothing but a rubber stamp for the school administration. A paid administrator with an education background is likely to know the system and should have no trouble in establishing rapport with principals and teachers, as well as with the aides.

If the administrator is a volunteer from the community or the director or staff member of a nature center, great care must be taken to assure that the school system or systems are sold on the idea of either paid or volunteer environmental aides. The volunteer administrator must work that much harder in establishing lines of communication and generating the cooperation necessary if the schools and the environmental aides are to function as a team in the promotion of better environmental education for all.

Evaluation

Evaluation should have two objectives. The first is an assessment of the entire program. A well-developed diffusion system should provide immediate feedback from school administrators, teachers, environmental aides, and the students themselves. Such feedback, whether
positive or negative, must be encouraged, and in order to obtain it, the
program must have the clearly stated goals, clearly defined staff respon-
sibilities, and easy channels for communication which have been pre-
scribed above. Feedback for evaluative purposes should not end with
whatever training the aides complete prior to going into the schools or
nonformal groups. The advisory committee, staff and school administra-
tors, teachers, aides, and students should all be urged to make continual
suggestions for improving the program, and these should be funneled back
to the advisory committee for action.

Secondly, there should be an evaluation of the participants
taking part in the program. If the climate for this is not threatening,
participants will be able to regard evaluation as helpful for their own
growth as well as necessary for strengthening the program. All evaluation
devices should be explained carefully--a potential aide must not be dis-
couraged by the threat of "flunking a test." Evaluation instruments
should be designed to help participants deal from their personal strengths
in working with teachers and students, and to determine what further
knowledge they need to make them more effective either as environmental
aides or as potential career teachers knowledgeable in environmental
education.
APPENDIX A

TABLES OF FINDINGS
<table>
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<tr>
<th>AN</th>
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<td>3</td>
<td>Helping relate environmental education to disciplines.</td>
<td>19</td>
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<td>17</td>
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<td>Prepare lesson on water pollution.</td>
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<td>16</td>
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<td>34</td>
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<td>18</td>
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<td>19</td>
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<td>22</td>
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<td>25</td>
<td>Help pupil look up information in a book.</td>
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Note: AN = Activity Number; Cl = Cluster; Li = Liberty; M = Maine; E = Elbanobscot; Lo = Lowell; W = Wellesley; CAR = Composite Aide Ranking; T&A = Teachers and Administrators.
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<td>Decide what field trips pupils will take.</td>
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APPENDIX B

SURVEY SUPPLEMENTAL MATERIALS

(Short form with cover letter, cover letter for survey.)
Dear

I am currently a doctoral student at the University of Massachusetts' School of Education in Amherst, where I am researching a dissertation which centers around the development of strategies to train teacher aides in environmental education.

For the last three years I have been connected with a Title III ESEA project which has trained over fifty such "environmental aides."

This letter is to inquire as to whether you are aware of any projects within your state--either in institutions of higher education or in school districts under local or federal funding (Title I, III ESEA, EPDA B-2, COP programs, etc.) which are involved in programs to train auxiliary school personnel (either adults, college students, or high school students) in the area of environmental, outdoor, or conservation education.

Enclosed is a short form which I hope that you will take a minute to fill out. Also enclosed is a stamped, self-addressed envelope for your convenience. Any information you send along will be much appreciated.

Thank you in advance.

Sincerely yours,

Warren M. Little

Encl:
FROM:        DATE:

TO:          Warren M. Little
             106 Dover Road
             Wellesley, Massachusetts 02181

SUBJECT:     Information on Teacher Aide programs which are teaching environmental education

I know of no projects, institutions of higher education, or schools in the state of ________________ which are currently (or have in the past) trained teacher aides in the area of environmental (outdoor or conservation) education.

I would suggest that you contact the following person(s) who (might) (would) be able to assist you in your research on "environmental aides."

Further comments:

(Many thanks!)
Dear

Enclosed is a questionnaire concerned with how you perceive the role of a teacher aide in environmental education. It is part of a New England-wide study being carried out in conjunction with the New England School Development Council (NESDEC).

This project is concerned specifically with the development of auxiliary school personnel in environmental education. The results of this study will provide us with information necessary to better define how environmental aides can assist teachers in this all-important area.

It will be appreciated if you will complete the questionnaire as soon as possible, and prior to June 25, 1971. Please return it in the stamped, self-addressed envelope enclosed. Your name will be used only to determine whether we have or have not heard from you. It will in no way be used in the results of the study. The information received from you will be treated in a professional and confidential manner.

While the questionnaire is rather lengthy (the estimated time to complete it is 45 minutes), the information will be very helpful in developing future programs for environmental aides, and your cooperation is greatly appreciated.

We would welcome any comments that you may have concerning any aspect of the questionnaire or study, and thank you in advance for your assistance.

Sincerely yours,

Warren M. Little
Member, NESDEC
Environmental Education Committee

Encl.
APPENDIX C

STRUCTURED INTERVIEW FORM
I. Program Profile:

1. Location: ____________________________________________________________

2. Population served by the Program: _________________________________________

3. No. Schools served: _____ Grade levels at which Aides are involved: ____________

4. Student population: _______ Administrators & Teachers: ________________

II. Organization & Administration of Program:

1. Goals and Objectives: (Carefully stated & implemented with def. procedures?)

________________________________________________________________________

________________________________________________________________________

2. By whom is the Program administered?

   a. School District _________________________________________________________

   b. Institution of Higher Education: _________________________________________

   c. Other organization: ___________________________________________________

   d. Other: _______________________________________________________________

3. What other organizations (Advisory Committees, business organizations, P.T.A.) are involved? ________________________________________________________________

4. If the Program is carried out by a school system and/or other outside organization, is there cooperation in the planning both before the program is inaugurated and after it is institutionalized? _______ If so, how? __________
5. How is the Program funded?

6. No. of Aides trained: ______ Dates: __________________________

7. Volunteers? _____ Paid? _____ If paid, is there a pay scale? ______

8. Hours/week Aides expected to work: __________________________

9. Other expectations?

10. Sources of Aides: __________________________________________

11. Criteria for Selection: Open ended? _____ (Health, age, economic status, personality, ability, etc.)

12. Career Ladder? _____ If so, are the steps spelled out? ______

13. Project Administrator Paid: _____ Volunteer? _____ hrs./wk OJT ______
   Any previous experience w/ Aide programs? _______________________

14. Administrative help: (Asst. Dr. Secretary, etc.) .................
III. Program Training:

1. Preservice Training:

   a. Instructional Content: (Functions for which Aides trained.)

      1. Understandings (Aides role, child devt. pp. process etc.)

   b. Curriculum areas: (EE in what disciplines?)

   c. Skills (AV equip, field trip leading, curriculum materials etc.)
Structured Interview with Administrators, Cont.

2. Instructional process:

a. Lectures:

b. Field trips:

c. Seminars:

d. Other:

c. Counselling. (Type & Content - Ind. small gr. teams, etc.)

2. Inservice Training:

a. Are teachers trained to handle aides? If so, how?

b. Methods of Placement of Aides:

c. Are Aides assigned when teachers are ready to use them?

d. Types of On-the-job training:

Understandings:
Structured Interview with Administrators:

Curriculum:

Skills:

c. Aide-Teacher-Administrator relationship: (Any conflict?)

f. Aide-pupil relationship:

g. Methods of supervision of Aides: (When and by whom?)

h. Methods of reassignment:

IV. Program Evaluation:

1. By whom is/was the program evaluated?

   a. Advisory Committee? (Role & Functions)

   b. Administrator and/or teachers?

   c. Outside consultants? (Who and from where?)
2. Methods use to evaluate the Program:
   a. Tests:

   b. Other:

3. Were there means for feedback? (from Aides & Teachers)

V. Administrator's Evaluation & Recommendations: (On both own program and for the setting up of future Environmental Aide programs.)

1. Program organization & administration: - How can it be improved?

2. Program Training:
   a. Additions to preservice:

   b. Deletions to preservice:

   c. Other comments on improving preservice training:
d. Suggested changes to improve inservice training:


e. Suggested changes to program evaluation:

f. Further comments (Methods to diminish role conflict, teacher training, funding, etc.)
APPENDIX D
SURVEY QUESTIONNAIRE
ACTIVITY SHEET FOR PARTICIPANTS IN PROGRAMS THAT TRAIN AUXILIARY SCHOOL PERSONNEL IN ENVIRONMENTAL EDUCATION

Mr. 
Miss 
Name: Mrs. ____________________________

Last First Middle Initial

Name of Program: __________________________________________ State: ________________

Position: (Check One) Environmental Aide: _______ Teacher: _______ Administrator: _______

If Aide or Teacher, Grade level(s) of pupils with whom you work: ____________________________

Section I. Activities Sheet: (To be filled out by Aides, Teachers, & Administrators)

Attached is a list of some activities that an environmental aide might perform. Beside each item, CHECK the column on the left which best describes how helpful this particular activity seems to be to you when performed by an environmental aide. If you are an aide, please also CHECK the column on the right which best describes how often you believe you will do this particular activity in the school or school system where you expect to work or are working. If the activity does not fit the grade level of the pupils with whom you will do the work, you would check it as never likely to be done by you on the job. Blank spaces have been left at the end for you to add items which you feel would be helpful and which you feel that you, as an aide, are likely to do. PLEASE CHECK A RESPONSE TO EVERY ACTIVITY. DO NOT SKIP ANY ACTIVITIES.

Example:

Below, please practice by checking the following items which do not appear on the attached form. Discuss this questionnaire with the Director of your program if you have any trouble filling out this form, or make notes on the back.

<table>
<thead>
<tr>
<th>Aides, teachers, &amp; Administrators - HOW HELPFUL TO THE PUPILS AND THE SCHOOL DO YOU THINK IT WOULD BE IF AN ENVIRONMENTAL AIDE DID THIS?</th>
<th>Aides only HOW OFTEN DO YOU BELIEVE YOU ARE LIKELY TO DO THIS ON THE JOB?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very helpful</td>
<td>Somewhat helpful</td>
</tr>
</tbody>
</table>

A. Printing a pupil's name on his photograph.

B. Organizing outdoor activities for the class.

C. "Covering up" for children who cheat.
### Activities

| Aides, Teachers, Administrators - How helpful to the pupils and the school do you think it would be if an environmental aide did this? |
| --- | --- |
| Somewhat helpful | Of little help | No help at all |
| Very helpful | Very helpful | Very helpful |

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Constructing a nature trail with students on the schoolgrounds.</td>
</tr>
<tr>
<td>2. Operating audio-visual equipment such as movie &amp; slide projectors.</td>
</tr>
<tr>
<td>3. Helping teachers relate environmental education to all disciplines.</td>
</tr>
<tr>
<td>4. Recruiting others in the community to become environmental aides.</td>
</tr>
<tr>
<td>5. Preparing a lesson on water pollution.</td>
</tr>
<tr>
<td>6. Finding a community member who would act as an advisor for an independent study project on an environmental problem.</td>
</tr>
<tr>
<td>7. Organizing debates between pupils on environmental issues.</td>
</tr>
<tr>
<td>8. Deciding what pupils should see on a community field trip.</td>
</tr>
<tr>
<td>9. Helping children learn to identify birds and mammals by sight and/or tracks.</td>
</tr>
<tr>
<td>10. Helping a teacher make arrangements for a field trip.</td>
</tr>
<tr>
<td>11. Assisting a guidance counselor to find jobs for pupils in environmental areas.</td>
</tr>
<tr>
<td>12. Planning homework assignments to prepare children for a field trip.</td>
</tr>
<tr>
<td>Activities</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>13. Monitoring pupils on various occasions such as on the bus or on field trips.</td>
</tr>
<tr>
<td>15. Duplicating environmental materials on a ditto machine.</td>
</tr>
<tr>
<td>16. Playing games with pupils (such as nature games involving observation).</td>
</tr>
<tr>
<td>17. Developing a key to local trees.</td>
</tr>
<tr>
<td>18. Preparing environmental materials such as a community natural resource guide for use by your school.</td>
</tr>
<tr>
<td>19. Setting up transportation for field trips.</td>
</tr>
<tr>
<td>20. Assisting the school librarian to identify environmental books and audio-visual materials.</td>
</tr>
<tr>
<td>22. Checking out the schoolgrounds for safety hazards.</td>
</tr>
<tr>
<td>23. Singing environmental protest songs with pupils.</td>
</tr>
<tr>
<td>24. Assisting school committees and administrators with proper environmental planning and planting of school buildings and grounds.</td>
</tr>
</tbody>
</table>
HOW HELPFUL TO THE PUPILS AND THE SCHOOL DO YOU THINK IT WOULD BE IF AN ENVIRONMENTAL AIDE DID THIS?

(If you are an aide, please CHECK each item on both left and right hand sides before checking next item. Teachers & Administrators - CHECK only the left hand column.)

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>Aides only, HOW OFTEN DO YOU BELIEVE YOU ARE LIKELY TO DO THIS ON THE JOB?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Most of the time</td>
</tr>
<tr>
<td>25. Helping a pupil look up information in a book.</td>
<td></td>
</tr>
<tr>
<td>26. Preparing environmentally oriented audio-visual materials requested by the teacher.</td>
<td></td>
</tr>
<tr>
<td>27. Helping pupils explore the natural world together.</td>
<td></td>
</tr>
<tr>
<td>28. Giving a teacher information about a pupil which will help the teacher to work with that pupil.</td>
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</tr>
<tr>
<td>29. Helping to prepare and serve box lunches on a field trip.</td>
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<tr>
<td>30. Preparing questions for a test following a field trip.</td>
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</tr>
<tr>
<td>31. Coordinating clean up activities around schoolgrounds with pupils.</td>
<td></td>
</tr>
<tr>
<td>32. Helping a pupil to learn to do something new and perhaps a little more difficult than he thinks he can do.</td>
<td></td>
</tr>
<tr>
<td>33. Marking field journals kept by students. (Field trip notes.)</td>
<td></td>
</tr>
<tr>
<td>34. Ordering and checking supplies for use on field trips.</td>
<td></td>
</tr>
<tr>
<td>35. Taking a small group of pupils on a field trip to a nature center.</td>
<td></td>
</tr>
<tr>
<td>36. Deciding what field trips pupils will take during the school year.</td>
<td></td>
</tr>
<tr>
<td>Aides, teachers, &amp; Administrators - HOW HELPFUL TO THE PUPILS AND THE SCHOOL DO YOU THINK IT WOULD BE IF AN ENVIRONMENTAL AIDE DID THIS?</td>
<td>Teachers &amp; Administrators - CHECK only the left hand column.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>(If you are an aide, please check each item on both left and right hand sides before checking next item. Teachers &amp; Administrators - CHECK only the left hand column.)</td>
<td></td>
</tr>
<tr>
<td><strong>Very helpful</strong></td>
<td><strong>Helpful</strong></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>37. Making a list of community resource people who will assist a class with studying environmental problems.</td>
<td></td>
</tr>
<tr>
<td>38. Helping pupils learn the proper use and care of tools and equipment.</td>
<td></td>
</tr>
<tr>
<td>40. Attending environmental education workshops.</td>
<td></td>
</tr>
<tr>
<td>41. Filing and cataloging environmental education materials.</td>
<td></td>
</tr>
<tr>
<td>42. Helping pupils pick out environmentally oriented books at the library.</td>
<td></td>
</tr>
<tr>
<td>43. Directing a student play as part of an Earth Day assembly program.</td>
<td></td>
</tr>
<tr>
<td>44. Inventorying the natural and physical features on the schoolground with pupils from your school.</td>
<td></td>
</tr>
<tr>
<td>45. Introducing environmental education into youth groups such as the YMCA Scouts, or Sunday School.</td>
<td></td>
</tr>
<tr>
<td>46. Watering a terrarium or changing the water in an aquarium.</td>
<td></td>
</tr>
<tr>
<td>47. Making phone calls to supply resource people for class presentations.</td>
<td></td>
</tr>
<tr>
<td>48. Making arrangements for the use of field trip equipment.</td>
<td></td>
</tr>
<tr>
<td>Aides, teachers, &amp; Administrators</td>
<td>HOW HELPFUL TO THE PUPILS AND THE SCHOOL DO YOU THINK IT WOULD BE IF AN ENVIRONMENTAL AIDE DID THIS?</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Helpfulness</td>
<td>Very helpful</td>
</tr>
<tr>
<td>49. Taking charge of a small group which is working on an ecology project while the teacher works with another group.</td>
<td></td>
</tr>
<tr>
<td>50. Correcting true-false tests.</td>
<td></td>
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<td>51.</td>
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<td>52.</td>
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<td>54.</td>
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<td>56.</td>
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<td>57.</td>
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</tr>
</tbody>
</table>
Section II. Biographical Data: (To be filled out by Aides only)

The following information will be used to develop a profile of environmental aides and to determine your reactions to the aide program in which you are involved. The data collected will be considered confidential and will in no way reflect individual answers to the questions asked.

Name of program: ___________________________ State: ___________________________

1. Please circle the number and check the appropriate line which best describes your status as an environmental aide in the program.

   1. Volunteer aide with experience ______ without experience ______
   2. Paid aide ______
   3. Student volunteer aide ______
   4. Student paid aide ______
   5. Other (Specify) ______

2. If you are a volunteer, how many hours per week do you put in on the job? (Circle one - figure 6 hours = one day)

   1. 1 - 3 hours
   2. 4 - 6 hours
   3. 7 - 12 hours
   4. 13-18 hours
   5. 19-24 hours
   6. 25-30 hours
   7. Other (Specify) ______

3. If you are paid, how many hours per week do you put in? (Circle one - 6 hrs. = 1 day)

   1. 1 - 3 hours
   2. 4 - 6 hours
   3. 7 - 12 hours
   4. 13-18 hours
   5. 19-24 hours
   6. 25-30 hours
   7. Other (Specify) ______

4. How did you hear about the environmental aide program in which you were/are involved? (Circle one)

   1. From a friend.
   2. Through and administrator or teacher in the school system.
   3. Brochure or other type of mailing piece.
   4. Newspaper
   5. Radio or television
   6. Other (Specify) ______

5. What was your PRIME reason for becoming an environmental aide? (Circle one only)

   1. I was very interested in children and their education.
   2. I was very interested in the environment and its problems.
   3. I wanted to learn more about the environment to pass on to youth groups.
   4. I wished to learn more about saving our environment to educate my family.
   5. I am considering teaching as a part-time or full-time occupation.
   6. I had the time.
   7. It was part of my coursework.
   8. I needed the money.
   9. Other (Specify, using the back of this sheet.)
6. Previous experience with children prior to becoming an aide. (Circle one)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>None</td>
</tr>
<tr>
<td>2.</td>
<td>Raising own children only</td>
</tr>
<tr>
<td>3.</td>
<td>Summer camp counseling</td>
</tr>
<tr>
<td>4.</td>
<td>School teaching or tutoring</td>
</tr>
<tr>
<td>5.</td>
<td>Physical therapy or nursing</td>
</tr>
<tr>
<td>6.</td>
<td>Church youth groups</td>
</tr>
<tr>
<td>7.</td>
<td>Youth groups (Scouts, YWCA, etc.)</td>
</tr>
<tr>
<td>8.</td>
<td>Other (Specify)</td>
</tr>
</tbody>
</table>

7. Educational background: (Circle one)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Student currently in public, private, or parochial school.</td>
</tr>
<tr>
<td>2.</td>
<td>Attended high school</td>
</tr>
<tr>
<td>3.</td>
<td>Completed high school</td>
</tr>
<tr>
<td>4.</td>
<td>Attended two-year college or technical school</td>
</tr>
<tr>
<td>5.</td>
<td>Completed two-year college or technical school</td>
</tr>
<tr>
<td>6.</td>
<td>Attended four-year college</td>
</tr>
<tr>
<td>7.</td>
<td>Completed four-year college</td>
</tr>
<tr>
<td>8.</td>
<td>Master's degree</td>
</tr>
<tr>
<td>9.</td>
<td>Doctorate</td>
</tr>
<tr>
<td>10.</td>
<td>Other (Specify)</td>
</tr>
</tbody>
</table>

8. If you attended college or some other form of higher education, in what academic, technical, or special area(s) did you major? (List) |

9. Age (Circle one)

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>14 - 20</td>
</tr>
<tr>
<td>2.</td>
<td>21 - 30</td>
</tr>
<tr>
<td>3.</td>
<td>31 - 40</td>
</tr>
<tr>
<td>4.</td>
<td>41 - 50</td>
</tr>
<tr>
<td>5.</td>
<td>51 - 60</td>
</tr>
<tr>
<td>6.</td>
<td>65 -</td>
</tr>
</tbody>
</table>

10. Married (Check one) Yes ______ No ______

11. Divorced (Check one) Yes ______ No ______

12. Number of children (Specify) ______

13. Ages of children (Specify) ______

14. At what grade level do you prefer to work as an aide?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kindergarten through fourth grade</td>
</tr>
<tr>
<td>2.</td>
<td>Fifth - sixth grades</td>
</tr>
<tr>
<td>3.</td>
<td>Seventh - eighth grades</td>
</tr>
<tr>
<td>4.</td>
<td>Ninth - twelfth grades</td>
</tr>
<tr>
<td>5.</td>
<td>Any grade level</td>
</tr>
<tr>
<td>6.</td>
<td>Other (Specify)</td>
</tr>
</tbody>
</table>

Section II. Biographical data, Cont.

15. Are you interested in teaching as a career? (Circle one)
1. Yes, full-time
2. Yes, part-time
3. Haven't given it any thought.
4. Not at this time, perhaps in the future.
5. No.
6. Other (Specify)______________________________

16. If you checked no to question # 15, would you change your mind if there were academic and monetary steps over a period of time which would lead to teacher certification? (Check one) Yes _____ No _____

If you checked yes to either question #15 or #16, please answer # 17:

17. I would prefer to: (Circle one)
1. Go back to school full-time to become teacher certified.
2. Work part-time on the job as an aide at my existing level and go back to school part-time until certified.
3. Go to school part-time, but be promoted to higher levels of responsibility with a higher salary as my educational training is increased until I am certified.
4. Other (Specify)______________________________

18. Please comment on any or all of the following for which you feel your information would be helpful for future environmental aide training programs.

1. Preservice training: (Training received prior to working in the schools. Include activities you considered most helpful, least helpful, additional activities, organization, teaching approaches, and homework, if any.)

Please use the back of this sheet if you desire.
2. **Inservice training:** (On-the-job training in the schools - include activities you considered most helpful, least helpful, organization, teaching approaches, and additional areas in which you feel you need more help.)

3. **Aide - teacher - administrator relationship** (Where do the conflicts arise? How can the relationships be improved?)

4. **Aide - pupil relationship, recruiting procedures, reassignment, or any other subject you wish to comment on.** (Please use the back of this sheet if you wish.)
APPENDIX E

MATERIALS USED IN ENVIRONMENTAL AIDE PROGRAMS
TEACHERS IN THE
LIBERTY COUNCIL OF SCHOOLS
NEED YOU!

Conservation is a vital requirement in today's school curricula. Your volunteer aid is needed to help teachers meet the growing demand for this necessary addition.

HOW CAN YOU HELP?

The workshop has been designed to prepare you to:
1. assist area teachers in presenting conservation and pre-conservation experiences to elementary students.
2. interpret nature on your schoolgrounds.
3. lead nature walks and field trips.
4. assist in indoor conservation school activities.

TOPICS SCHEDULED
What is conservation? 
Reading to children.
How to lead a nature walk.
Geology and soil study.
How to study your schoolgrounds.
Animal signs.
Plant keys and how to use them.
Nature crafts, games, and indoor activities.

Become a "Liberty Lady" volunteer and make a real contribution to education in your school district!

LIBERTY LADIES WORKSHOP
WHEN? Oct. 9 - Nov. 13 1968
6 SESSIONS
TIME? Wednesdays, 9:30-11:30 AM
WHERE?
All classes to be held at the

Hatheway School of Conservation Education
South Great Road (Rt. 117)
Lincoln, Mass.

259-9500

Offered without charge to Ladies or the Liberty Council or Schools area.

For Further Information, contact

Mrs. Eva Schafer Ext. 53
Miss Jo Piotrowski Ext. 79

Distributed under Public Law 89-10 Title III ESEA
To: Principals of Liberty Council Elementary Schools  
From: Warren M. Little, Director, Conservation Education Center  
Re: "Liberty Ladies"  

September 13, 1968

The Council's Conservation Education Center is setting up a program to train interested adults to serve as volunteer teacher assistants in the teaching of pre-conservation experiences to children working in Liberty's primary and elementary schools.

The teacher assistants when trained will be available to assist teachers when they need them in: (1) the use of their school grounds for education purposes, (2) nature study, and (3) leading field trips.

The program will be conducted at the Conservation Education Center for two hours a day one day a week for four to six weeks at no cost to the volunteers. The exact schedule and time will be decided at the first meeting.

Mrs. Eva Schafer, Conservation Coordinator with the Center, will conduct the program, assisted by Miss Joreen Piotrowski, also a coordinator. They are ready to start as soon as there are enough volunteers to warrant giving the course.

Enclosed is a card which I hope you will use to suggest the names, addresses, and phone numbers of some adults who would be interested in such a course. Mrs. Schafer will be in touch with them as soon as I receive your cards.
LIBERTY LADIES WORKSHOP SCHEDULE - FALL, 1969

Oct. 9
9:30 - 9:45 Registration
9:45 - 10:15 Welcome and Introduction
10:15 - 10:45 "Myths and Parallels" - 16 mm movie
10:45 - 10:55 Break
10:55 - 11:30 Library Resources
How, what, when to read to children

Oct. 16
9:30 - 10:10 How to lead a nature hike
10:10 - 10:25 Break
10:25 - 11:30 Geology walk

Oct. 23
9:30 - 10:00 Keys and how to use them
10:00 - 10:15 Break
10:15 - 11:30 Nature walk - reminder of what was learned about nature walk. Recognize at least 10 species of trees and plants.

Oct. 30
9:30 - 11:30 How to look at a schoolyard

Nov. 6
9:30 - 9:50 Mammal and Bird Mounts
9:50 - 10:00 Break
10:00 - 11:30 Animal Signs Walk
Bring for next time: toothbrush, dried natural materials, shirt cardboard, scissors, shoe box, clorox bottle, 2 aluminum pie pans, coffee can with plastic top.

Nov. 13
9:30 - 11:30 Crafts and rainy day activities
Crafts, flannelboard stories, nature games
JOB DESCRIPTION
For
VOLUNTEER FIELD TRIP GUIDES

1. Qualifications
   a. Individuals with an interest and concern for the quality of our environment.
   b. A belief in the value of education to produce citizens who have an understanding and appreciation of their environment.
   c. An interest in children.

2. Grade Level Workshop (Kindergarten through Grade 6)
   a. The Coordinator describes concepts to be emphasized in each grade.
   b. The Coordinator conducts the actual Field Trip which each class will undertake.
   c. Each volunteer is asked to attend the workshop for each grade in which she will assist.
   d. Time involved in this phase: 1½ hours per grade.

3. Classroom Presentation
   a. The Coordinator, or his assistants, gives a presentation of slides and charts, covering the twelve areas of concern, to each class at each grade level, K-6. This presentation provides orientation for teacher, children, and guides before the Field Trip.
   b. Each volunteer is asked to attend one classroom presentation for each grade level in which she will assist.
   c. Time involved in this phase: 45 minutes per grade.

4. Field Trip
   a. Teacher, coordinator, assistants, and volunteers divide each class in each grade level into small groups (usually 4 or 5 children) for field trips. Each field trip guide will serve in the role of teacher, in order to help each child understand
his environment and to make the trip a meaningful experience for him.

b. The Field Trip may be entirely on foot, or partly by bus and partly on foot, depending upon the study environment and grade level.

c. The Field Trips are usually scheduled one week in advance, four or five days a week. Cancellations due to adverse weather conditions govern the rate of completion of this third phase of the program. The trips take place mostly in the Fall. They continue in the Spring when necessary.

Time involved per Field Trip: 1½ hours.
<table>
<thead>
<tr>
<th>Greely Road</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement - Sand and gravel</td>
<td></td>
</tr>
<tr>
<td>Play equipment</td>
<td></td>
</tr>
<tr>
<td>Clorox bottle bird feeder</td>
<td></td>
</tr>
<tr>
<td>Fence around parking area</td>
<td></td>
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<tr>
<td>Trees with burlap</td>
<td></td>
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<tr>
<td>Cedar hedge</td>
<td></td>
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<tr>
<td>Blue spruce</td>
<td></td>
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<tr>
<td>Light</td>
<td></td>
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<tr>
<td>Wheel</td>
<td></td>
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<tr>
<td>Antennae</td>
<td></td>
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<tr>
<td>Trellis</td>
<td></td>
</tr>
<tr>
<td>Circular drive</td>
<td></td>
</tr>
<tr>
<td>Tree stump</td>
<td></td>
</tr>
<tr>
<td>New clothesline</td>
<td></td>
</tr>
<tr>
<td>Play equipment</td>
<td></td>
</tr>
<tr>
<td>Woods - Animal home</td>
<td></td>
</tr>
<tr>
<td>(Brush pile)</td>
<td></td>
</tr>
<tr>
<td>Light - Basketball hoop</td>
<td></td>
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<tr>
<td>Picnic area</td>
<td></td>
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<tr>
<td>Overhead power line</td>
<td></td>
</tr>
<tr>
<td>House for sale</td>
<td></td>
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<tr>
<td>Retaining wall</td>
<td></td>
</tr>
<tr>
<td>Plantings - Flagstone walk</td>
<td></td>
</tr>
<tr>
<td>Land - Graded up to foundations</td>
<td></td>
</tr>
</tbody>
</table>
The Environmental Education Center is beginning an exciting new program for volunteers:

**What:** A training course for environmental aides.

**Why:** There is a need for qualified volunteers who can assist schools and organizations in the teaching of environmental education, primarily out-of-doors.

**Who is eligible?** Requirements for admission are simply an awareness of nature, a willingness to learn, plus some free time to put your training to work in your community. Mothers with school-age children may be in this category, but older and retired persons may also have the time and interest. No specialized educational background is necessary.

**Who will teach?** Distinguished practitioners in the field of outdoor education will share their experiences and advice.

**What will be taught?** Some of the topics to be considered are: how to interpret nature at different age levels; how to prepare and present conservation subjects; how to handle outdoor experiences (everything from field trips to cookouts); nature crafts and games for large and small groups - both indoors and out; how to use school grounds; techniques for communication such as use of displays, audio-visual equipment, mapping, etc., and some of the do's and don'ts of volunteer etiquette.

**When:** This training program will meet Wednesday mornings for ten classes, beginning September 33 with seven sessions before the Thanksgiving vacation and the remaining three after the Christmas vacation.

**Cost:** The $3.00 application fee will cover supplies only and there will be no fee for the training.

**Approach:** Not everyone will be able or want to aid the community in the same way. Therefore this program will attempt to evaluate your skills so that your volunteer time can be put to its best use. As the kinds of opportunities available are brought to your attention, new doors may open to enrich your life as well as benefit the environment.

Please enroll:

Name ____________________________________________
Address ____________________________________________

Special Area of Interest, if any _________________________

[ ] Check here if could attend if held on another day.

Phone Number _________________________________
The Environmental Education Center is beginning an exciting new program for volunteers:

**What:** A training course for environmental aides.

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**When:** This training program will meet Wednesday mornings for ten classes, beginning September 30 with seven sessions before the Thanksgiving vacation and the remaining three after the Christmas vacation.

**Cost:** The $3.00 application fee will cover supplies only and there will be no fee for the training.

**Approach:** Not everyone will be able or want to aid the community in the same way. Therefore this program will attempt to evaluate your skills so that your volunteer time can be put to its best use. As the kinds of opportunities available are brought to your attention, new doors may open to enrich your life as well as benefit the environment.

---

Please enroll:

Name ____________________________
Address ____________________________

Special Area of Interest, if any ____________________________

[ ] Check here if could attend if held on another day.

Phone Number ____________________________
GENERAL OUTLINE OF TEN-WEEK COURSE: 9:30-11:30 am, Wednesdays.

1. The Role of the Volunteer: September 30, 1970

The kinds of information needed to function best in a school program (safety regulations, special rules, relationship to teacher in charge, etc.).
Problems of protocol, logistics, from the school point of view. Problems from the volunteer point of view—what is expected of them (need to know proper clothing, equipment, preparation for particular assignment in advance).

Volunteers are to fill out form at beginning of session, describing personal interests, skills, background, what they expect to get out of the course.

Homework - List environmental experiences inventory during week.

2. Teaching Outdoor Education: October 7.

Approach to outdoor education through direct experiences in environment.
Importance of involvement and awareness rather than extensive knowledge or subject matter.
Idea of student-teacher partnership.
How to work with different age groups (plus special children) on nature subjects.
Outdoor possibilities (curriculum enrichment).

Homework - Write up list of possible outdoor learning experiences for schools. (age groups and subjects will be assigned).


Meaning of interdependence—interrelationships within environment.
Fundamental conservation attitudes, ethics.
Role of environmental education in fostering these attitudes.

Homework - Observe animals in your vicinity over the week. Keep notes on habitat, relationships, food cycle, kinds of evidences, etc.—adaptation to man.


How to inventory school grounds (visit school for this session).
How to lead a nature walk—possible fall themes.
How to conduct field experiments—sample of outdoor equipment (soil or pollution kit, magnifying glass, etc.).

Homework - Visit nearest or assigned school and do a general inventory.
THE ELBANOBSCOT FOUNDATION
ENVIRONMENTAL AIDES COURSE

Evaluation of Program

The following questionnaire is designed to help evaluate the effectiveness of this course in order to improve upon it for the future. It is also aimed at helping to determine your personal progress and direction as an environmental aide. Please be frank and open in your criticisms and assessments. If additional space is needed, use other side.

Course Content:

What class(es) did you consider most helpful? Why?

What class(es) did you consider least helpful? Why?

What additional information and training do you feel should be provided as part of this course or as additional related courses?

Part of Course:

<table>
<thead>
<tr>
<th>Demonstration of microscope</th>
<th>soil kit</th>
<th>other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observing teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice teaching before aide group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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</tbody>
</table>

Additional Courses:

<table>
<thead>
<tr>
<th>Natural history (general)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>or specific areas</td>
<td></td>
</tr>
<tr>
<td>such as birds, trees</td>
<td></td>
</tr>
<tr>
<td>List here</td>
<td></td>
</tr>
<tr>
<td>Child psychology</td>
<td></td>
</tr>
<tr>
<td>Group Dynamics</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

Please comment on home work assignments — too much? too little? relevant?

Please comment on the organization of course material, the length of course, and the order and emphasis of subjects.

Outline what you think are helpful teaching approaches to working with children in the out-of-doors.

Indicate what you think are proper guidelines for volunteers who will be working with schools on outdoor education programs. What is necessary for a good working relationship? What do you think should be your relationship to the teacher you might assist or the school program?
**Personal Direction**

What kind of role are you most interested and willing to play in the future? Check as many categories as you have interests but double check any priority categories.

### WORKING WITH CHILDREN

<table>
<thead>
<tr>
<th>Role</th>
<th>Full Time</th>
<th>Part Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>In schools as a paid teacher or teacher aide</td>
<td></td>
<td></td>
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<tr>
<td>In schools as a volunteer — on regular basis (e.g. 2 times weekly)</td>
<td></td>
<td></td>
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<tr>
<td>– special programs (e.g. field trips)</td>
<td></td>
<td></td>
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<tr>
<td>With youth groups as volunteer — after school activities</td>
<td></td>
<td></td>
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<tr>
<td>– summer program</td>
<td></td>
<td></td>
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<tr>
<td>– other?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### NOT WORKING DIRECTLY WITH CHILDREN

<table>
<thead>
<tr>
<th>Location</th>
<th>Role</th>
<th>Type of Work:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Schools</td>
<td>In Libraries</td>
<td>At home</td>
</tr>
<tr>
<td>As a volunteer</td>
<td>As a paid worker</td>
<td>cataloguing</td>
</tr>
<tr>
<td>Preparing resource materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio-visual aids (slides, cassettes, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help training others to become environmental aides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>public information programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>political action on conservation problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have indicated you want to be a volunteer, do you want eventually to become a paid worker in environmental education field after more training? _____

Do you want to become a paid worker in other fields? Which ________________________

Do you want to remain a volunteer? _____

Please list by order of preference the subject area in which you feel most confidence and with which you feel most comfortable?

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>______</td>
</tr>
<tr>
<td>Mammals</td>
<td>______</td>
</tr>
<tr>
<td>Amphibians, reptiles</td>
<td>______</td>
</tr>
<tr>
<td>Rocks &amp; Minerals</td>
<td>______</td>
</tr>
<tr>
<td>Geology</td>
<td>______</td>
</tr>
<tr>
<td>Indian Lore &amp; Archeology</td>
<td>______</td>
</tr>
<tr>
<td>Insects</td>
<td>______</td>
</tr>
<tr>
<td>Aquatic Life, including fish</td>
<td>______</td>
</tr>
<tr>
<td>Water Activities (Boating etc.)</td>
<td>______</td>
</tr>
<tr>
<td>Astronomy</td>
<td>______</td>
</tr>
<tr>
<td>Ecology</td>
<td>______</td>
</tr>
<tr>
<td>Conservation Politics</td>
<td>______</td>
</tr>
<tr>
<td>Environmental Quality (pollution)</td>
<td>______</td>
</tr>
<tr>
<td>Population Biology</td>
<td>______</td>
</tr>
<tr>
<td>Consumer Protection (environment)</td>
<td>______</td>
</tr>
<tr>
<td>Projects and Nature Crafts</td>
<td>______</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>______</td>
</tr>
<tr>
<td>Edible foods</td>
<td>______</td>
</tr>
<tr>
<td>Camping &amp; Outdoor Cooking</td>
<td>______</td>
</tr>
<tr>
<td>Other</td>
<td>______</td>
</tr>
</tbody>
</table>

If there are any particular skills, such as map-making, photography, group song leading, display preparation, dye-making, special arts and crafts abilities, or any other skills, please list here.

Indicate how you have used the information and contacts gained from this course to date.

Check here if you would like a personal interview and assistance in getting started as an environmental aide _____

Indicate whether you would like to be working with a particular school or whether you would like to be as a volunteer on any programs in your community or Elbanobscot.
5. Communication: October 23.

How to use newspapers, libraries to best advantage, How to get out information, use audio-visual techniques, How to make displays, exhibits, films, Slide presentation or film here as example of how to run a program,

How to promote good relations within community: e.g., school-home, organizations-public. Spreading the good word on conservation,

Homework - Plan a program for a class or organization on an assigned subject, using as many good communication techniques as possible.


Samples of local trees and preliminary test, Discussion of identification techniques and use of these techniques outdoors, How to keep records, field notes, How to use dichotomous key or other process of identifying relationships,

Homework - Prepare a key for an assigned collection of objects.

7. Outdoor Crafts and Games: November 11.

(For camping or day field trips, scouting experiences, etc.). Use of natural materials for creative purposes-- arts (prints, designs, baskets, etc.) or games (scavenger hunts, e.g.), How to make aquariums or terrariums, Outdoor session,

Homework - Write up outdoor game or craft for a collection the class will prepare to be used by school and youth leaders.


What to do on a rainy day, Bringing materials inside for examination and use, Making slides, using microscope, Songs, plays with environment theme-- creative arts,

Homework - Same as above, but for indoor use.


Opportunities for winter experiments, field study outdoors, sight and sound observations, animal evidences, tracks,

Homework - Take a group out (or your family) on a winter field trip, using some of the methods learned here. Report back on reactions, kinds of information needed.

The intent of this course is to educate and develop a team or nucleus of Environmental aides for each elementary school. These aides will work in cooperation with school personnel to create an approach to Environmental Education that is unique to their own school.

It is anticipated that the outcome of this special interrelationship will lead students into an awareness of their interdependence upon their environment and that this awareness will produce a sense of responsibility towards their neighborhood and a personal commitment to Ecological action within their town.

These “Environmental Teams” will provide an exchange of information between schools and the community. It is hoped that this new channel of communication will serve to involve more people in an understanding of the Environmental problems we face today and in the future.
WELLESLEY ENVIRONMENTAL AWARENESS COMMITTEE
TRAINING COURSE FOR ENVIRONMENTAL AIDES

General Outline of Ten-Week Course

1. March 8, 1971 — Sprague School — 9:00

Opening Address: “Environmental Aides” Relation To The School System by Mr. Ned Morningstar
from The Curriculum Center

Natural and Physical Properties of Wellesley

A. The Geology of Wellesley by Douglas Sands, Science Teacher at Junior High School
   Geologic history of Wellesley and its influence on the town.

B. The Charles River Watershed by Mrs. H. Shippen Goodhue of the Watershed Association
   a. Slide show of the problems and potentials of the entire length of the Charles River.
   b. Discussion of what is presently being done in Wellesley.

Homework: Read “Web of Life”.
Visit one of the sites mentioned in the geology booklet, preferably near your own school.

2. March 15, 1971 — Sprague School — 9:00

Basic Ecology by Warren Little

A. The basic understanding of the interrelationships of living things and their environment
   will be obtained by studying food chains, cycles, and prey-predator relationships.

B. Human ecology will be discussed with special emphasis on the town of Wellesley.

Homework: Read Mr. Talbot’s History of Wellesley.
Attend Town Meeting.
Determine the natural, physical, and human resource problems within the vicinity of your school. How would you use this information with the students in your school.
3. March 22, 1971  — Bates School  — 9:00

Winter Out of Doors by David Webster

A. Lecture on snow geology and mammal signs.

B. The use of dichotomous keys in identifying animal tracks.

Recommendations:

Boots and warm clothing

Homework: Read “Snow Stumpers” from your school library. Obtain copy of League of Women Voters’ “Your Town” and read.

4. March 29, 1971  — Hunnewell School Gym  — 9:00

Environmental Problems in Wellesley

Panel discussion on policies and powers of the various departments:

Everett Kennedy  — Supt. of Public Works
Harry Palladine  — Chmn. of Conservation Commission
Charles Thomas  — Ex. Sec. of the Planning Board
Mary Fyffe  — Member of Park and Tree Board

Homework: Visit a town-administered open space:

1. Determine which department has jurisdiction.
2. Observe the condition – natural? – man-made changes?
3. If area is changed, what reason?
4. Do changes serve the town in some way?
5. Write a paragraph describing your observations. If area has been altered state your evaluation, for better or worse?
6. Make an outline for a school children’s field trip to this area, to help them make the same observations and form their own conclusions.
5. April 5, 1971 — Sprague School Gym — 9:00

**Resource Materials Available**

A. A presentation of the materials available in the central circulating library of the elementary schools by Mrs. Florence Landry, Library Coordinator.

B. A workshop in some of the environmentally oriented units available in the schools from the Curriculum Center by Mr. George Moore, Elementary Curriculum Coordinator.

C. A showing of the varied collection of the visual materials available from the Conservation Council.

**Homework:** Check your own library, Curriculum Center and other sources for materials available for a possible presentation on a given subject for your school.

6. April 12, 1971 — Brown School — 9:00

**Exploring the Out-Of-Doors Indoors**

A. **Activities in the classroom** by Richard Eaton, 6th grade teacher at Brown School.

   a. To appreciate the value the indoor laboratory offers.
   b. To show the variety of activities possible at various grade levels.
   c. To lead children to observe and develop optimum environments and to improve those less desirable.
   d. To prove environmental education must involve building for the future.

B. **Living with plants and animals in the classroom** by Judy Greiner 2-3 teacher at Brown School.

   a. Daily observations of plants and animals leads to an understanding of the life cycle and environmental needs of each, and to the realization of their interdependence.
   b. Caring for the animals teaches children compassion and respect for all living things.
   c. Specific knowledge of housing and feeding of animals.

**Homework:** Fill out environmental experiences inventory.
Read Guernsey booklet.
7. April 26, 1971 — Guernsey & Susan Lee Sanctuary — 9:00
(Alternate rain date: April 29, 1971)

Exploring The Out-Of-Doors With Children

A. Helpful hints on leading field trips by Ethel Sanders and Edith Kingsbury of the Conservation Council.
   a. Importance of flexibility — awareness and enthusiasm of youngsters often more important than subject matter.
   b. Need to demonstrate to children respect for our environment, and sensitivity to the fact that we are creatures too.
   c. Must remind children and adults NO COLLECTING rule.

B. Guernsey Sanctuary
   a. Not recommended for very young children.
   b. Observations of trees, shrubs, mosses, lichens, ferns, wildflowers, early signs of spring.

C. Susan Lee Sanctuary
   a. Birdwatching
   b. What to look for, where and when.
   c. Know habitat, food habits, seasonal variations, influence of daily weather.

Homework: Visit another open space area and list its assets for a field trip. Note possibilities for pond study.

Recommendations: Wear boots, bring rain hat and binoculars if possible.

8. May 3, 1971 — Longfellow Pond — 9:00

Discovering In The Out-Of-Doors by Amelia Archibald, of the Conservation Council and Andy Halnen of the Curriculum Center.

A. The study of pond life, amphibians and reptiles, insects, galls, cacoons.

B. Learning how to observe and where to look.
   a. The importance of first hand experiences in the outdoors.
   b. Specific activities to help broaden children's powers of observation.

C. Problems and limitation of collecting.

Homework: In preparation for workshop No. 9 explore your own school yard and inventory its possibilities for an environmental education program at your school.
*May 5, 1971 — Visit to National Park, Lincoln — Meet at Schofield Parking Lot — 9:00

9. May 10, 1971 — Schofield School — 9:00

The Web of Life

Lecture by Miss Edwina Lareau of Schofield School on her approach to using school grounds and integration of Ecology into the curriculum.

Homework:
1. Draw a Web of Life for your school.
2. Prepare short list of ideas for Natural Arts and Crafts for Workshop No. 10. Bring any you happen to have at home.
3. Fill out Course Evaluation Sheet. Prepare to discuss your opinions on course and any suggestions for future courses.

10. May 17, 1971 — Sprague School — 9:00

A. Exploration of Aides Role by Dr. Nick Muto, our Administrative Advisor.

B. Application of Aides Training by Silvia Dix, T.A.P. Representative

C. Examples of Nature’s Arts and Crafts will be presented and displayed.

D. Evaluation and Discussion Session
ENVIRONMENTAL AWARENESS COMMITTEE

Dr. Nick Muto
Mr. Dick Talbot
Mr. Andrew Halnen
Miss Edwina Lareau
Mr. Warren Little
Mrs. Raymond Lavin
10 Maugus Avenue (235-7419)

Mrs. Edward Crowley
61 Ivy Road (235-8568)

Mrs. Richard Sutton
111 Westgate Road (235-1830)

Mrs. Burton Lowe
11 Appian Way (235-5642)

Mrs. J. A. Herd
29 Thomas Road (237-0595)

Mrs. Robert Smith
70 Radcliffe Road (235-5147)

Mrs. Archie Morrison
86 Woodlawn Avenue (235-8449)

Mrs. Douglas McNair
166 Washington Street (237-1198)

Mrs. William H. Cluggish
55 Northgate Road (237-2316)

Administrative Advisor
Principal Advisor
Curriculum Center Coordinator
Teacher Advisor
Consultant
Chairman
Secretary
Treasurer
Librarian
Publicity
Conservation Commission Liaison
Conservation Council Liaison
Pre-School and Church Liaison
Committee for Environmental Action Liaison
5. **Communication:** October 28.

How to use newspapers, libraries to best advantage.
How to get out information, use audio-visual techniques.
How to make displays, exhibits, films.
Slide presentation or film here as example of how to run a program.

How to promote good relations within community: e.g., school-home, organizations-public. Spreading the good word on conservation.

Homework - Plan a program for a class or organization on an assigned subject, using as many good communication techniques as possible.

6. **Use of Keys in Identification:** (trees) November 4.

Samples of local trees and preliminary test.
Discussion of identification techniques and use of these techniques outdoors.
How to keep records, field notes.
How to use dichotomous key or other process of identifying relationships.

Homework - Prepare a key for an assigned collection of objects.

7. **Outdoor Crafts and Games:** November 11.

(For camping or day field trips, scouting experiences, etc.).

Use of natural materials for creative purposes - arts (prints, designs, baskets, etc.) or games (scavenger hunts, e.g.).
How to make aquariums or terrariums. Outdoor session.

Homework - Write up outdoor game or craft for a collection the class will prepare to be used by school and youth leaders.

8. **Indoor Programs:** January 4, 1971.

What to do on a rainy day.
Bringing materials inside for examination and use.
Making slides, using microscope.
Songs, plays with environment theme - creative arts.

Homework - Same as above, but for indoor use.

9. **Winter Field Trip:** January 11.

Opportunities for winter experiments, field study outdoors, sight and sound observations, animal evidences, tracks.

Homework - Take a group out (or your family) on a winter field trip, using some of the methods learned here. Report back on reactions, kinds of information needed.

10. **Review, tests, analysis, questions:** January 18.
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Environmental Problems in Wellesley

Panel discussion on policies and powers of the various departments:

Everett Kennedy – Supt. of Public Works
Harry Palladine – Chmn. of Conservation Commission
Charles Thomas – Ex. Sec. of the Planning Board
Mary Fyffe – Member of Park and Tree Board

Homework: Visit a town-administered open space:

1. Determine which department has jurisdiction.
2. Observe the condition – natural? – man-made changes?
3. If area is changed, what reason?
4. Do changes serve the town in some way?
5. Write a paragraph describing your observations. If area has been altered state your evaluation, for better or worse?
6. Make an outline for a school children’s field trip to this area, to help them make the same observations and form their own conclusions.
5. April 5, 1971  —  Sprague School Gym  —  9:00

Resource Materials Available

A. A presentation of the materials available in the central circulating library of the elementary schools by Mrs. Florence Landry, Library Coordinator.

B. A workshop in some of the environmentally oriented units available in the schools from the Curriculum Center by Mr. George Moore, Elementary Curriculum Coordinator.

C. A showing of the varied collection of the visual materials available from the Conservation Council.

Homework: Check your own library, Curriculum Center and other sources for materials available for a possible presentation on a given subject for your school.

6. April 12, 1971  —  Brown School  —  9:00

Exploring the Out-Of-Doors Indoors

A. Activities in the classroom by Richard Eaton, 6th grade teacher at Brown School.

   a. To appreciate the value the indoor laboratory offers.
   b. To show the variety of activities possible at various grade levels.
   c. To lead children to observe and develop optimum environments and to improve those less desirable.
   d. To prove environmental education must involve building for the future.

B. Living with plants and animals in the classroom by Judy Greiner 2-3 teacher at Brown School.

   a. Daily observations of plants and animals leads to an understanding of the life cycle and environmental needs of each, and to the realization of their interdependence.
   b. Caring for the animals teaches children compassion and respect for all living things.
   c. Specific knowledge of housing and feeding of animals.

Homework: Fill out environmental experiences inventory. Read Guernsey booklet.
Exploring The Out-Of-Doors With Children

A. Helpful hints on leading field trips by Ethel Sanders and Edith Kingsbury of the Conservation Council.
   a. Importance of flexibility — awareness and enthusiasm of youngsters often more important than subject matter.
   b. Need to demonstrate to children respect for our environment, and sensitivity to the fact that we are creatures too.
   c. Must remind children and adults NO COLLECTING rule.

B. Guernsey Sanctuary
   a. Not recommended for very young children.
   b. Observations of trees, shrubs, mosses, lichens, ferns, wildflowers, early signs of spring.

C. Susan Lee Sanctuary
   a. Birdwatching
   b. What to look for, where and when.
   c. Know habitat, food habits, seasonal variations, influence of daily weather.

Homework: Visit another open space area and list its assets for a field trip. Note possibilities for pond study.

Recommendations:
Wear boots, bring rain hat and binoculars if possible.

Discovering In The Out-Of-Doors by Amelia Archibald, of the Conservation Council and Andy Halnen of the Curriculum Center.

A. The study of pond life, amphibians and reptiles, insects, galls, cocoons.

B. Learning how to observe and where to look.
   a. The importance of first hand experiences in the outdoors.
   b. Specific activities to help broaden children’s powers of observation.

C. Problems and limitation of collecting.

Homework: In preparation for workshop No. 9 explore your own school yard and inventory its possibilities for an environmental education program at your school.
9. May 10, 1971 — Schofield School — 9:00

The Web of Life

Lecture by Miss Edwina Lareau of Schofield School on her approach to using school grounds and integration of Ecology into the curriculum.

Homework: 1. Draw a Web of Life for your school.
2. Prepare short list of ideas for Natural Arts and Crafts for Workshop No. 10. Bring any you happen to have at home.
3. Fill out Course Evaluation Sheet. Prepare to discuss your opinions on course and any suggestions for future courses.

10. May 17, 1971 — Sprague School — 9:00

A. Exploration of Aides Role by Dr. Nick Muto, our Administrative Advisor.

B. Application of Aides Training by Silvia Dix, T.A.P. Representative

C. Examples of Nature’s Arts and Crafts will be presented and displayed.

D. Evaluation and Discussion Session
ENVIROMENTAL AWARENESS COMMITTEE

Dr. Nick Muto
Mr. Dick Talbot
Mr. Andrew Halnien
Miss Edwina Lareau
Mr. Warren Little
Mrs. Raymond Lavin
10 Maugus Avenue (235-7419)

Mrs. Edward Crowley
61 Ivy Road (235-8568)

Mrs. Richard Sutton
111 Westgate Road (235-1830)

Mrs. Burton Lowe
11 Appian Way (235-5642)

Mrs. J. A. Herd
29 Thomas Road (237-0595)

Mrs. Robert Smith
70 Radcliffe Road (235-5147)

Mrs. Archie Morrison
86 Woodlawn Avenue (235-8449)

Mrs. Douglas McNair
166 Washington Street (237-1198)

Mrs. William H. Cluggish
55 Northgate Road (237-2316)

Administrative Advisor
Principal Advisor
Curriculum Center Coordinator
Teacher Advisor
Consultant
Chairman
Secretary
Treasurer
Librarian
Publicity
Conservation Commission Liaison
Conservation Council Liaison
Pre-School and Church Liaison
Committee for Environmental Action Liaison
WELLESLEY ENVIRONMENTAL AIDE PROGRAM

I would appreciate you helping me to evaluate the aide program by checking the following aspects of this class: (You do not have to sign your name.)

<table>
<thead>
<tr>
<th>Physical Arrangements (Lighting, seating, noise, etc.)</th>
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<tbody>
<tr>
<td>poor</td>
<td>adequate</td>
<td>more than adequate</td>
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<table>
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<tbody>
<tr>
<td>Less than expected</td>
<td>About as expected</td>
<td>More than expected</td>
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<tr>
<th>Interest of Meeting</th>
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<tbody>
<tr>
<td>boring</td>
<td>interesting</td>
<td>very interesting</td>
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</table>

<table>
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<tr>
<th>Value of Meeting</th>
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<tbody>
<tr>
<td>little value</td>
<td>average value</td>
<td>very valuable</td>
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</table>

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<tr>
<th>How Did it Meet Your Expectations?</th>
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<tbody>
<tr>
<td>Less than expected</td>
<td>About as expected</td>
<td>More than expected</td>
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<table>
<thead>
<tr>
<th>Length of Meeting</th>
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<tbody>
<tr>
<td>too long for topic coverage</td>
<td>about right</td>
<td>too short</td>
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</table>

Please comment on any way the class could be improved:
APPENDIX F

GLOSSARY
GLOSSARY

Certification

The process of legal sanctioning, authorizing the holder of a credential to perform certain services in the public schools of a state.

Conservation education

Traditionally aimed at the wise use of our natural resources for the greatest number of people for the greatest period of time. Resource rather than human oriented.

Differentiated staffing

A concept of staff organization that seeks to make more efficient and effective use of educational personnel in the school community by assigning teachers and other educators, such as teacher aides, appropriate responsibilities based on carefully prepared definitions of the many educational functions within the school.

Liberty Council of Schools

A Title III project under the Elementary and Secondary Education Act of 1965 of which the Conservation Education Center was one component. The Council serviced the eleven school districts of Acton, Bolton, Carlisle, Concord, Framingham, Harvard, Lincoln, Maynard, Stow, and Sudbury, Massachusetts. In addition, Acton-Boxborough, Concord-Carlisle, Lincoln-Sudbury, and Nashoba Regional High Schools were also in the Council.

Liberty Ladies

Environmental aides trained by the Liberty Council's Conservation Education Center to work within the elementary schools in the Council in environmental education on a voluntary basis.

New Career Concept

Auxiliary school personnel may now move through a series of defined steps towards certification and a teaching career rather than remaining in a static position as a teacher aide.
Team Teaching

A concept of staff organization that seeks to improve the quality of education at any or all levels in a school community by combining teaching personnel with different academic resources in the preparation and presentation of courses or classes.

The Elbanobscot Foundation, Inc.

A private, nonprofit educational corporation in Sudbury, Massachusetts, devoted to environmental education. The only environmental education center currently training environmental aides in New England.

The Model Cities Program

A program designed to concentrate public and private resources in a comprehensive five-year attack on the social, economic, and physical problems of slum and blighted neighborhoods. Authorized by Title I of the Demonstration Cities and Metropolitan Development Act of 1966, its purpose is to upgrade the total environment of such neighborhoods and significantly improve the lives of its residents.

Wellesley Environmental Awareness Committee

A committee of Wellesley, Massachusetts citizens and educators who have set up a program to train environmental aides for the Wellesley Public Schools.
SELECTED BIBLIOGRAPHY

Books


Pamphlets and Periodical Articles


"Here Are Fourteen Ways to Use Non-teachers in Your School District." Nation's Schools, Vol. 76 (December, 1965), 42.


Reports


Minneapolis Public Schools, Special School District No. 1. Teacher Aide Program. Minneapolis, Minnesota, Fall, 1967.


Unpublished Materials

Bennett, Dean. "Organization and Operation of the Yarmouth, Maine, Environmental Education Program." Yarmouth, Maine. (Mimeographed.)


Little, Warren M. "Operation Plan." A paper prepared for the writer's Comprehensive Examination. School of Education, University of Massachusetts, Amherst, Massachusetts, March, 1970. (Typewritten.)


Regional Environmental Education Program. "General Description of the Elementary Phase of the Program." Yarmouth, Maine. (Dittoed.)


Roth, Charles E. "Curriculum Overview for Developing Environmentally Literate Citizens." Developed for the Liberty Council of Schools in cooperation with the Massachusetts Audubon Society, Lincoln, Massachusetts. (Mimeographed.)


Other Sources


Interviews with selected administrative personnel, teachers, and environmental aides within the five programs sited in the investigation.

Correspondence or discussions with numerous educators known to the investigator to have knowledge in the area of teacher aide training and/or environmental education.
CURRICULUM VITA

WARREN MASTERS LITTLE

Home Address: 106 Dover Road, Wellesley, Massachusetts
Home Telephone: (617) 235-3167
Business Address: Environmental Education Task Force
                 Massachusetts Audubon Society
                 Lincoln, Massachusetts 01773
Business Phone: (617) 259-9500, Ext. 77
Date of Birth: 12 January 1933
Citizenship: United States
Marital Status: Married Jean E. Hardy, 1 September 1956
               Three children, born in 1957, 1963, and 1965
Health: Excellent

Formal Education:


   Tufts University, School of Education, Ed.M. (Education and Biology) 1966

   Boston University, NSF Summer Institute, post-graduate credits in BSCS Green Version Biology and Zoology, Summers of 1965 and 1966

   Harvard University, Graduate School of Education, post-graduate credits in Field Botany, Zoology, Aquatic and Field Biology, Summers of 1962 and 1963

   Harvard University, A.B. Social Relations, 1955
WARREN MASTERS LITTLE

Certification:

Massachusetts Teaching Certificate in Biology and Social Studies

Camp Naturalist with three stars (certification by New England Camping Association, Massachusetts Audubon Society and the American Nature Study Society)

Professional Practice:

Executive Secretary, Massachusetts Task Force on Environmental Education (Funded under the Environmental Education Act of 1970, Massachusetts Audubon Society, fiscal agent) 1971-1972

Director, Wellesley Aides for Environmental Education (Funded under EPDA-B-2, Wellesley Public Schools fiscal agent) 1971-1972

Wellesley Public Schools, Environmental Education Consultant 1970-


Massachusetts Audubon Society Summer Institute in Environmental Education, Lincoln, Massachusetts. Instructor, 1967-1968; Co-Director, 1969; Assistant Director, 1970

Northeastern University, Boston-Bouvé College Camp, Instructor in Natural Science, Summers 1967-1971

Framingham State College--Instructor, Environmental Education, Fall 1969

Concord-Carlisle Adult Education Program, Instructor, Conservation Education, Fall 1967

Professional Practice (continued):

Camp Patoma, Holliston, Massachusetts--Head, Camp Nature Program, Summer 1961

Camp Chewonki, Wiscasset, Maine--Head, Camp Nature Program, Summer, 1960

Boston Museum of Science, Boston, Massachusetts, Education Department, 1958-1959

Military

Basic Training, Infantry Officer Candidate School, Commissioned as a 2nd Lieutenant in 1956


1170th and 7499th Army Reserve Service Units, Supply Officer, 1958-1962

Discharged with rank of Captain in 1962

Professional Affiliations:

Massachusetts Advisory Committee on Conservation Education (appointed by State Board of Education) 1964 - Currently Chairman of Sub-committees on the Commonwealth's Commitment to Environmental Education and Use of Schoolgrounds

Massachusetts Committee on Environmental Education (Title III ESEA Directors and Environmental Education Center Directors) 1967-1970; Chairman, 1968 and 1969

New England School Development Council (NESDEC) Environmental Education Advisory Council 1970-


Conservation Education Association (Steering Committee, New England Regional Conferences 1965, Program Chairman, N.E. Conference, 1969)
WARREN MASTERS LITTLE

Professional Affiliations (continued):


Publications:


Little, W. M. Ecological Notes in Guernsey Sanctuary, Wellesley Conservation Council, Inc., Wellesley, Massachusetts, 1969

Little, W. M. "Conservation Projects for Boy and Girl Scouts," Liberty Council of Schools, Lincoln, Massachusetts, 1968


Community Activities:

Wellesley Town Meeting Member 1966-

Wellesley Park and Tree Board 1971--; Chairman, 1971-


Member, Open Space Coordination Committee

Member of Mosquito Control Committee

Wellesley Conservation Council, Inc. 1959- (Former Vice-President, Board of Directors, Education Committee 1959-)

Rivers Country Day School, Corporation Member 1966-
Community Activities (continued):

Boy Scouts of America, (Former Scoutmaster and Merit Badge Counselor; Post 527, Wellesley, Massachusetts, Advisory Committee)

Museum of Transportation at Larz Anderson Park, Brookline, Massachusetts, Board of Trustees, 1967-

Permanent Class Secretary, Harvard Class of 1955

Awards:

Massachusetts Audubon Society's "Conservation Teacher of the Year" 1964


November 1971