

UNITED STATES
DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Region
State, Federal & Constituent Programs Division



FINAL REPORT

Grantee: UPPER CAPE COD REGIONAL TECHNICAL SCHOOL

Project No: 95-FIG-119

Grant No: NA56FK0613

Project Title: ENVIRONMENTAL TECHNOLOGIES RETRAINING PROGRAM FOR
UNEMPLOYED FISHERMEN

Period Covered: 11/01/95 - 04/30/97

Prepared by: _____

Approved by: _____

Date: JULY 16, 1997

Statutory Funding Authority: Anadromous Fish Conservation Act
(P.L. 89-304)

- ☐ Chesapeake Bay Studies
- ☐ Endangered Species Act
- ☐ Interjurisdictional Fisheries
Act (Title III of P.L. 99-659)
- ☐ Magnuson Act
- ☐ Oyster Disease Research
- ☐ Saltonstall-Kennedy
- ☒ Unallied Industry Projects
- ☐ Unallied Science Projects
- ☐ ACFCMA

UPPER CAPE COD REGIONAL TECHNICAL SCHOOL

FINAL REPORT

GRANT # NA56FK0613

JULY 16, 1997

I. Environmental Technologies Retraining Program for Unemployed Fishermen.

Margaret M. Wise - Coordinator of Extension Programs
Upper Cape Cod Regional Technical School
Grant # NA56FK0613
July 15, 1997

II. Abstract

Upper Cape Cod Regional Technical School ("UCCRTS") was awarded a grant to provide educational and training opportunities to fishermen who were impacted by the closure of the George's Bank and had been left unemployed. The final report will outline the goals, objectives, and accomplishments of the project and summarize the level at which the goals were attained.

III. Executive Summary

The final report will provide an overall review of the project including an assessment of the outcomes. The project as a whole was successful and efforts to provide training and education in this field will continue to be developed and offered to both high school and adult students. The biggest barrier that existed was reaching the enrollment figures we projected. Improvements in the fishing industry and continued opportunities in the industry contributed to the problem resulting in people not willing to make the time commitment necessary to complete program objectives. Multiple strategies were implemented in an effort to accommodate the population ending in similar results.

IV. Purpose

- A. The problem of the fishing industry that was addressed through the UCCRTS project was the increase in unemployment among the fishermen on Cape Cod and the Islands due to the indefinite closure of George's Bank. By February 1995, the unemployment rate for fishermen had reached 10.9% demonstrating a real need to provide education and retraining opportunities to these people and their families.
- B. The objectives of the project were to develop a ten month environmental technician training program that would provide the fishermen with the skills necessary for entry-level employment in a number of environmental related occupations. Other objectives of the project included recruitment of fishermen; providing support services including pre-employment skills, counseling and job placement services; developing internship experiences for all students; obtainment of operator in training certification; and obtainment of OSHA certification.

V. Approach

A. The work accomplishments in accordance with the objectives included the following:

1. For recruitment, we developed an application, posters and a plan for notifying all potential human resource agencies of the program and the admission requirements. The agencies included JTEC (Job Training and Employment Corporation); Massachusetts Rehabilitation Commission; New Directions; the Fishing Family Assistance Centers on the Cape, Southeastern Massachusetts and Rhode Island; Department of Employment and Training; Department of Transitional Assistance; and the Cape Cod Economic Development Council.

A press release was issued on January 18, 1996 and an informational open house was held on February 12, 1996.

An instructor was hired to begin research and curriculum development for the program in December 1995. Visitations were made to off-Cape schools offering environmental technology along with visits to local industry to determine skills and competencies necessary for entry-level employment.

Once students were recruited, instruction began on March 19, 1996. Math, science, and environmental technologies including instrumentation usage were the initial focus of the program.

Throughout the program, the Coordinator of Extension Programs was networking with local companies and developing the format to create internship experiences for the students.

In July 1996, students participated in and received their OSHA 40 certification. Following the summer activities, the need for an extension to complete wastewater certification was evident. This was the result of a change in instructional staff combined with the timing of the licensing exams. Over the course of the year, students received instruction in municipal and industrial wastewater; water treatment, instrumentation; environmental science and OSHA 40.

Students completed program objectives in April 1997 and are currently employed or seeking employment.

B. Project Management

Work Accomplishments	Person Responsible	How It Was Done
1. Purchased equipment for laboratory	Coordinator of Extension Programs	through bid process
2. Hired instructor	Coordinator of Extension Programs	ad in newspaper and interviews
3. Developed program brochure	Coordinator of Extension Programs	information gathered by Coordinator of Extension Programs from industry
4. Hosted an "open house" for interested fishermen	Coordinator of Extension Programs	wrote news release and contacted agencies
5. Selected program participants	Coordinator of Extension Programs	through academic/occupational assessment & individual counseling
6. Reviewed existing curriculum and made adaptations	Instructor	went over curriculum obtained from another school, reviewed with local employers and made changes where needed.
7. Provided instruction and skills in environmental technology to students	Instructor	lecture and lab demonstrations
8. Provided academic instruction in related math/science	Math/Science Instructors	lecture and lab demonstrations
9. Development of internship sites in local industry	Instructor Coordinator of Extension Programs	visitations, development of internship guidelines
10. Completed course in municipal wastewater through the University of California	Instructor	lab/lecture
11. Completed OSHA 40 license program	Consultant	lab/lecture
12. Completed industrial wastewater course through the University of California	Instructor	lab/lecture
13. Completed water treatment course	Instructor	lab/lecture
14. Completed pre-employment work skills training (resumes, interviewing, job applications, etc.)	Employment Counselor	lecture completed work activities

VI. Findings

A. Actual accomplishments include:

1. completion of all program components by six fishermen
2. completion of OSHA 40 certification by eight students
3. completion of municipal wastewater treatment course by five students
4. completion of industrial wastewater treatment course by six students
5. completion of water treatment operator's course by six students
6. Job placement to date: two students are placed at wastewater treatment plants; one student is placed at an environmental laboratory and one is at the Otis ANGB working on the clean-up. Wages range from \$12.00 per hour to \$27.00 per hour.

B. The most significant problem encountered was satisfactory enrollment. UCCRTS projected serving fifteen persons under the project. Initially, potential students had been selected to fill all openings. Over the next month, fishing improved and many left to return to fishing. The situation was explained to our program contact who told us to continue with the project. The program started as scheduled and recruitment efforts continued.

The other problem that evolved was a change in instructional staff. As a result of the change combined with the dates of the licensing examinations, an extension was requested and granted.

C. No additional work is needed.

VII. The only project goal that was not met was an enrollment of fifteen. All other program goals and objectives outlined in the project were met.

Curriculum was developed to provide skill competencies in different aspects of environmental technologies including instrumentation, water/soil quality, testing, water treatment and industrial/municipal wastewater. The laboratory was completed and will continue to be utilized by both high school and adult populations providing training and retraining opportunities. Contacts made for internship placements will enable high school students to have that as a component of their education. Currently, graduates are at 50% placement. We continue to provide assistance and look forward to more placements in the near future.

In the attachments are copies of a news release, a newspaper ad, a program application, the advisory committee members, course outline and course descriptions.

ATTENTION

FISHERMEN AND FAMILIES

UPPER CAPE COD
REGIONAL TECHNICAL SCHOOL
220 Sandwich Road, Bourne, MA 02532

ANNOUNCES

NEW RETRAINING PROGRAM

IN

ENVIRONMENTAL TECHNOLOGIES

This is an opportunity to receive cost-free instruction in an industry with increasing employment opportunities.

Course offers:

hands-on instruction
Osha 40 training
hazardous wastewater technology
process control and instrumentation
sampling and field analysis

IMPORTANT INFORMATION

*Eligibility is limited to fishermen or members of their families.
This project is funded 78% by the US Dept. of Commerce
NOAA and 22% with non-federal funds.*

Classes begin in March, 1996 - December, 1996

INFORMATIONAL OPEN HOUSE
January 18, 1996 at 7:00 P.M. in the School Library

Contact Extension Programs Office for further information:
(508) 759-7711 * 563-5515 * 295-1320

**ATTENTION
FISHERMEN AND
FAMILIES
FREE RETRAINING
PROGRAM IN
INDUSTRIAL
WASTEWATER**

Upper Cape Cod
Regional Technical School
located at 220 Sandwich Road in Bourne, MA
is sponsoring a retraining program for fishermen
and their families.

The program is Environmental
Technologies and will run from November
18, 1996 until April 19, 1997.

Graduates may seek employment as
industrial wastewater operators.

*This project is funded 78% by the
Department of Commerce, NOAA and 22%
with other funds. Eligible individuals will
attend free.*

**Don't miss out on this opportunity!
Space is limited.**

**Call the Extension Programs Office at
(508) 759-7711, ext. 206
for additional information.**

NEWS RELEASE

For Immediate Release

February 12, 1996

For further information, contact:

Margaret M. Wise, Coordinator of Extension Programs

ATTENTION: FISHERMEN AND FAMILIES NEW FREE RETRAINING PROGRAM IN ENVIRONMENTAL TECHNOLOGIES

Upper Cape Cod Regional Technical School located at 220 Sandwich Road in Bourne, MA is sponsoring a retraining program for fishermen and their families. The program is Environmental Technologies and will run from March until December. Graduates may seek employment in municipal or industrial wastewater sites, superfund sites, water analysis companies, etc. This project is funded 78% by the Department of Commerce, NOAA and 22% with other funds. Eligible individuals will attend free.

Don't miss out on this opportunity! Space is limited. Call (508) 759-7711 Extension Programs Office for additional information.

Upper Cape Cod Regional Technical School

220 SANDWICH ROAD, BOURNE, MASSACHUSETTS 02532

David P. Sampson
Superintendent - Director

Telephone: Area 508
759-7711 - 295-1320 - 563-5515
FAX: 508-759-7208

Barry J. Motta
Assistant
Superintendent-Director

Environmental Technician Program Fishing Industry Grant Application

1. Date _____ Date of Birth _____
2. Name _____
3. Address _____
4. Town _____ State _____ Zip _____
5. Home Phone _____ Business Phone _____
6. Mailing Address (if different) _____
7. Name of nearest relative or friend to be notified in case of an emergency:

Phone _____
8. Are there any health factors that might effect your educational training? _____
If yes, please describe _____
9. List last grade completed in school _____
10. List any college course(s) you have completed _____

List your work experience since leaving school

12. How long have you been a fisherman? _____



BOURNE - FALMOUTH - MARION - SANDWICH - WAREHAM

INFORMATION SURVEY

Understanding that this program is accelerated and will require 20 to 25 hours per week instruction, please check below the schedule that would be the most convenient for you.

Spring (March to May) and Fall (September to December)

- _____ three days per week from 8:00 A.M. to 4:00 P.M.
- _____ four days per week 1:00 P.M. to 6:00 P.M.
- _____ two days per week 1:00 P.M. to 6:00 P.M. plus two nights per week 6:00 to 10:00 P.M.

Summer (June to August)

- _____ two days per week 8:00 A.M. to 4:00 P.M. plus two nights per week 6:00 to 9:00 P.M.
- _____ three days per week 8:00 A.M. to 4:00 P.M.
- _____ three nights per week 6:00 P.M. to 10:00 P.M. and Saturday 8:00 A.M. to 4:00 P.M.

Are you available April 15th to April 19th to take the OSHA 40 certification program? _____

(The course would probably meet from 8:00 or 9:00 A.M. to 4:00 or 5:00 P.M.).

Comments or Suggestions: _____

Name _____

Upper Cape Cod Regional Technical School

220 SANDWICH ROAD, BOURNE, MASSACHUSETTS 02532

David P. Sampson
Superintendent - Director

Barry J. Motta
Assistant
Superintendent - Director

Telephone: Area 508
759-7711 - 295-1320 - 563-5515
FAX: 508-759-7208

ENVIRONMENTAL TECHNICIAN TRAINING PROGRAM

COURSE OUTLINE AREAS OF STUDY

Health and Safety Issues

- Personal Protective Equipment (including selection of respiratory protection and chemical protective clothing)
- Analyzing a Hazardous Event/Situation
- Managing Emergency Operations
- First Aid/CPR (procedures and certifications)

Hazardous Material Management Training

- Hazardous Material Personal Protective Equipment
- Hazardous Material Instrumentation, Monitoring
- Hazardous Material Communication Standards (including labeling and employee training)
- OSHA Certification (40-hour program)

Understanding and Complying with Regulations

- Introduction to Environmental Protection Regulations
- Air Quality Regulations (Federal Clean Air Act, Air Quality Compliance)
- Water Quality Regulations (Clean Water Act, Safe Drinking Water Act)
- Waste Regulations (RCRA, CERCLA)
- Toxic Substances Regulations (TSCA, FIFRA)
- Spills and Release Reporting (CERCLA, EPCRA, TSCA, RCRA, etc.)

Water and Wastewater Technology

- Water Processing and Distribution Systems
- Mass Level I Municipal Wastewater Certification
- Mass Level I Industrial Wastewater Certification
- Mass Level II Municipal Wastewater Certification
- Mass Level II Industrial Wastewater Certification
- Mass Water Treatment Certification



Process Control and Instrumentation

- Instrumentation: Types, Theory, Calibration, Troubleshooting, Maintenance and Applications
- Environmental Equipment and Instrumentation

Site Characterization, Sampling and Field Analysis

- Sampling and Sample Preparation
- Quality Control and Data Interpretation

Related Academic Courses

- Applied Sciences
- Applied Mathematics
- Applied Communications
- Basic Electronics
- Technical Writing
- Computer Literacy

ENVIRONMENTAL TECHNICIAN TRAINING PROGRAM

COURSE DESCRIPTION

OSHA 40 Hazwoper

Hazardous waste clean-up procedures, site safety, hazardous materials, incident response, confined spaces and first aid/adult CPR.

Hazardous Materials

Hazardous Materials provides basic training, certification and knowledge to identify many criteria pollutants and volatile chemicals. It is a safety course designed to help the technician in dealing with toxic chemical spills and how to use certain reference manuals to help in the clean-up process. It also teaches the technician how to correctly ship and label dangerous chemicals.

Municipal Wastewater Treatment

This course will instruct students in the preliminary devices utilized to remove or reduce in size the large and entrained, suspended, or floating solids. It is a course designed to teach students that primary treatment removes organic and inorganic solids by the physical process of sedimentation and floatation; and that secondary treatment processes consist of the biological treatment of wastewater by utilizing different types of microorganisms in a controlled environment. The course will include methods of disinfection as a treatment of the effluent for the destruction of pathogens.

Industrial Wastewater Technology

This course will provide students with the terminology used in industrial wastewater treatment and introduce students to the physical, chemical and biological properties associated with treating industrial wastes before they become incorporated into the municipal wastewater system. Obtaining samples, testing and reporting results will be included in laboratory and field exercises.

Sampling and Sample Preparation

This course will introduce students to proper monitoring and sampling techniques that provide high quality and representative data from the media being sampled. Students will be introduced to the material, equipment, and techniques used to monitor and sample surface water, groundwater, soil and air.

Environmental Law

This course will prepare students for dealing with all the laws and regulations governing environmental actions and cases. This course will make the student fully aware of all the new laws up for reauthorization and how they are effected by them.

Technical Writing

Technical writing is a key element in environmental problems. Most clean-up sights are funded by grants and someone has to write technical proposals for the funds. In this course, the student will be introduced to formal written language and how to communicate through writing. All aspects of technical reports, proposals, and even the resume will be discussed.

Computer Literacy

This course will provide students with basic word processing skills, proper formatting skills, and document preparation. The course will provide an overview of the components of microcomputer systems and introduce the concepts of using an operating system.

Upper Cape Cod Regional Technical School

220 SANDWICH ROAD, BOURNE, MASSACHUSETTS 02532

David P. Sampson
Superintendent - Director

Telephone: Area 508
759-7711 - 295-1320 - 563-5515
FAX: 508-759-7208

JOB PROFILE

Environmental Technicians

Environmental Technicians conduct tests and field investigations to obtain data for use by environmental, engineering and scientific personnel in determining sources and methods of controlling pollutants in air, water and soil utilizing knowledge of agriculture, chemistry, meteorology, engineering principles and applied technologies. They conduct chemical and physical laboratory and field tests according to prescribed standards to determine characteristics or composition of solid, liquid, or gaseous materials and substances and collect samples of gases, solids and liquids. They prepare samples for testing, record data and prepare summaries and charts for review. They set up monitoring equipment to provide flow of information and install, operate and perform routine maintenance on {environmental} equipment and other test instrumentation.

Additional Job Titles

- Environmental Analyst
- Environmental Field Service Technician
- Instrument Technician
- Hazardous Materials Drivers
- Wastewater Operators



BOURNE - FALMOUTH - MARION - SANDWICH - WAREHAM

ENVIRONMENTAL/AQUACULTURE ADVISORY COMMITTEE

David Jacobson
Camp Edwards
Environmental Office
Building 1254
Camp Edwards, MA 02542-5003
508-968-5834

Leonard J. Pinaud
Chief, Federal Facilities Section
Mass. Department E.P.
Southeast Region
20 Riverside Drive
Lakeville, MA 02347
508-946-2871

Bob Mosher
P.O. Box 274
Cataumet, MA 02534
508-564-6607

William Burt
Regional Marine Resources Specialist
P.O. Box 367
Barnstable, MA 02630
508-362-2511, Ext. 585

Dale F. Leavitt, Ph.D.
Research Associate
Coastal Research Laboratory
Woods Hole Oceanographic Institution
Woods Hole, MA 02543
508-457-2000, Ext. 2997

Mike Hickey
Chief Marine Fisheries Biologist
Division Marine Fisheries
18 Route 6A
Sandwich, MA 02563
508-888-4043

George A. Zoto, Ph.D.
The Commonwealth of Massachusetts
Department of Environmental Protection
Division of Water Supply
One Winter Street
Boston, MA 02108
617-292-5966 - 292-5696 FAX

Stan Alger
Site-Based Tech Prep Coordinator-
Upper Cape Cod Regional Technical School
220 Sandwich Road
Bourne, MA 02532

Margaret M. Wise
Coordinator of Extension Programs
Upper Cape Cod Regional Technical School
220 Sandwich Road
Bourne, MA 02532

David P. Sampson
Superintendent/Director
Upper Cape Cod Regional Technical School
220 Sandwich Road
Bourne, MA 02532
508-759-7711

Mary Jane Curran
Environmental Technology Coordinator
Cape Cod Community College
2240 Route 132
West Barnstable, MA 02668-1599
508-362-2131

UPPER CAPE COD REGIONAL TECHNICAL SCHOOL

EVALUATION OF STUDENT INTERN

Student Intern's Name: _____

Company's Name/Address: _____

Name of Supervisor: _____

Supervisor's Title: _____

I. Please rate the student intern according to the following criteria:

A = Strong

B = Meets Expectations

C = Needs Improvement

Circle the appropriate rating for each item.

- | | | | |
|--|---|---|---|
| 1. Knowledge in the field. | A | B | C |
| 2. Skills to function effectively on the job. | A | B | C |
| 3. Ability to acquire new knowledge and job skills. | A | B | C |
| 4. Recognizes the need for growth. | A | B | C |
| 5. Positive attitude and enthusiasm. | A | B | C |
| 6. Ability to deal with the public in person or phone. | A | B | C |
| 7. Ability to work with others in a "team effort." | A | B | C |
| 8. Punctuality. | A | B | C |

II. What do you consider to be this student's greatest strengths as they pertain to the working situation?

Upper Cape Cod Regional Technical School

220 SANDWICH ROAD, BOURNE, MASSACHUSETTS 02532

David P. Sampson
Superintendent - Director

Barry J. Motta
Assistant
Superintendent-Director

Telephone: Area 508
759-7711 - 295-1320 - 563-5515
FAX: 508-759-7208

Date

Company

To Whom It May Concern:

Upper Cape Cod Regional Technical School implemented a new post-secondary program in Environmental Technologies in March, 1996. The program is thirteen months in length and is designed to instruct students in the area of Industrial and Municipal Wastewater, OSHA 40, water distribution and treatment, instrumentation and environmental science.

As part of the program, students are expected to participate in an internship placement. These positions are *unpaid* and *the school liability insurance covers the students while they are out in these placements*.

This part of the program is an important aspect of their education and training as it enables students to gain valuable on-the-job experience which better prepares them for future employment.

We would greatly appreciate your participation in this aspect of our program and look forward to working with you.

Sincerely,

Margaret M. Wise
Coordinator of Extension Programs

MMW:mad



BOURNE - FALMOUTH - MARION - SANDWICH - WAREHAM



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

February 12, 1999

MEMORANDUM FOR: Harold C. Meers

FROM: William L. Michaels 
Wendy Gabriel 

SUBJECT: Report Review

The report on "Testing the Feasibility of Using Commercial Fishing Vessels to Conduct Acoustic Surveys of Atlantic Herring" by D. Stevenson et. al. is acceptable for distribution.

This document is considered a comprehensive and useful data report showing the advantage and disadvantages of using commercial vessels to supplement fisheries acoustic surveys.

One recommendation for the authors is to consider adding a paragraph describing the limitations of using commercial vessels in regard to the hyperstability problem in herring assessment. In other words, the CPUE (and acoustic abundance estimates) from a commercial vessel may not be sensitive to a change in pelagic fish abundance with fine-scale targeted sampling designs (refer to Hilborn and Walters 1992, and MacCall 1990). The authors should provide advice to help resolve the hyperstability problem by indicating the importance of commercial vessels implementing a systematic design during an acoustic survey rather than relying solely on a targeted fishing design.

