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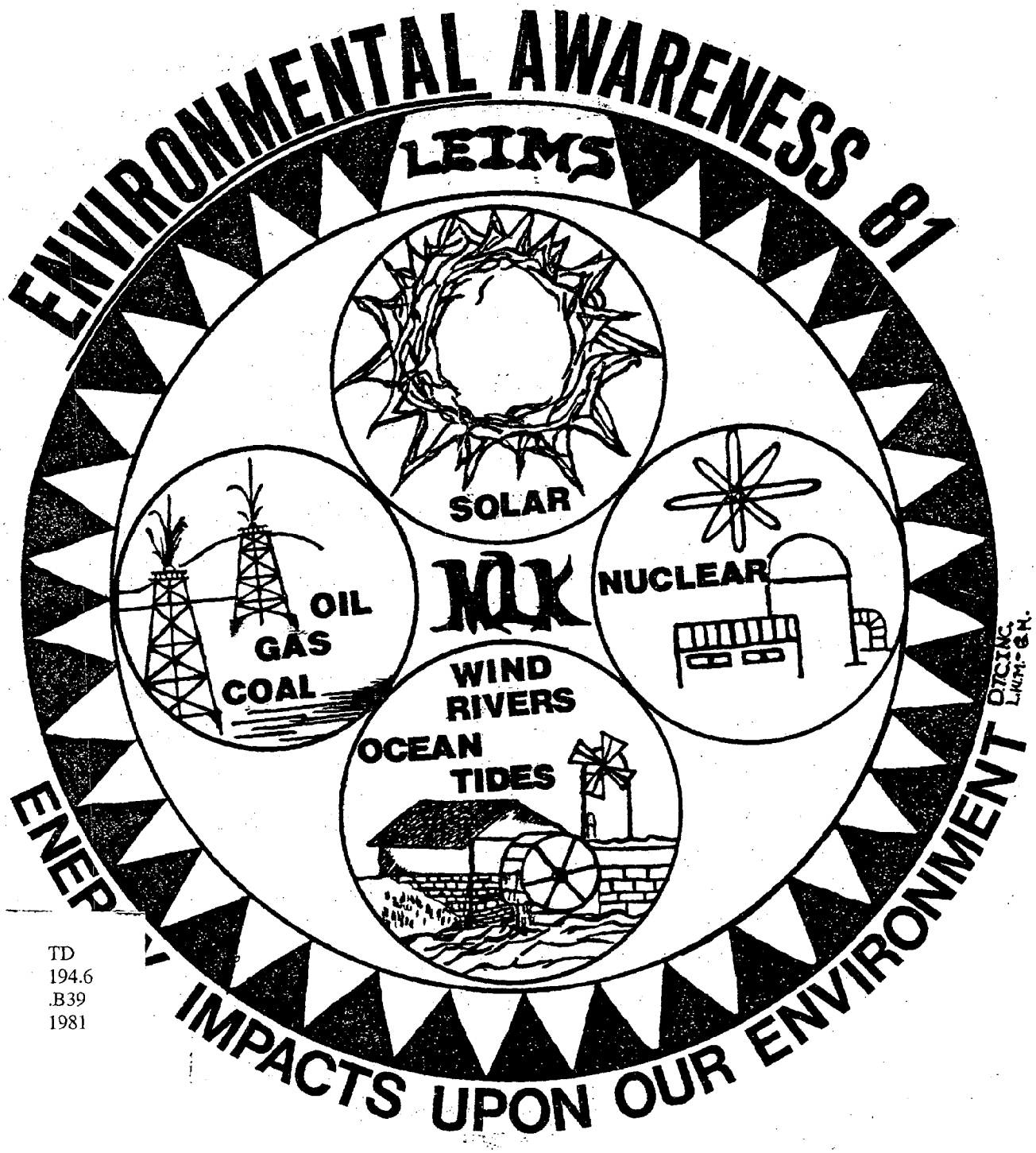


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BAYFRONT NATO MARTIN LUTHER KING CENTER

SUMMER ENVIRONMENTAL AWARENESS PROGRAM 1981

# ENVIRONMENTAL AWARENESS
# THEME: ENERGY IMPACTS UPON OUR ENVIRONMENT

Dr. Armand Lewis
Executive Director
Lake Erie Institute of
Marine Science

Professor Eva Tucker
Coordinator
Summer Environmental
Awareness Program

INSTRUCTORS

32890313

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SECRETARIAL ASSISTANCE

FRANCINE MYERS

*Funded in part by Coastal Zone Management-Department of Environmental Resources

# COASTAL

Funds for this program were furnished in part by a grant from the Coastal Zone Management Program through the Pennsylvania Department of Environmental Resources, County of Erie, and in part by Bayfront NATO Incorporated.

# ZONE

SUMMER ENVIRONMENTAL AWARENESS WORKSHOP
BAYFRONT NATO INCORPORATED
312 CHESTNUT STREET
ERIE, PA 16507

# FINAL REPORT

## OUTLINE


PART I ..... SUMMER ENVIRONMENTAL AWARENESS WORKSHOP SUMMARY

PART II ..... A. Registered Students
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C. Bibliography
D. Introduction and Workshop Objectives
E. Workshop Pre and Post Questionnaire

PART III ..... WORKSHOP'S DAILY AGENDAS, PROJECT BOOKLETS AND ACTION CARDS

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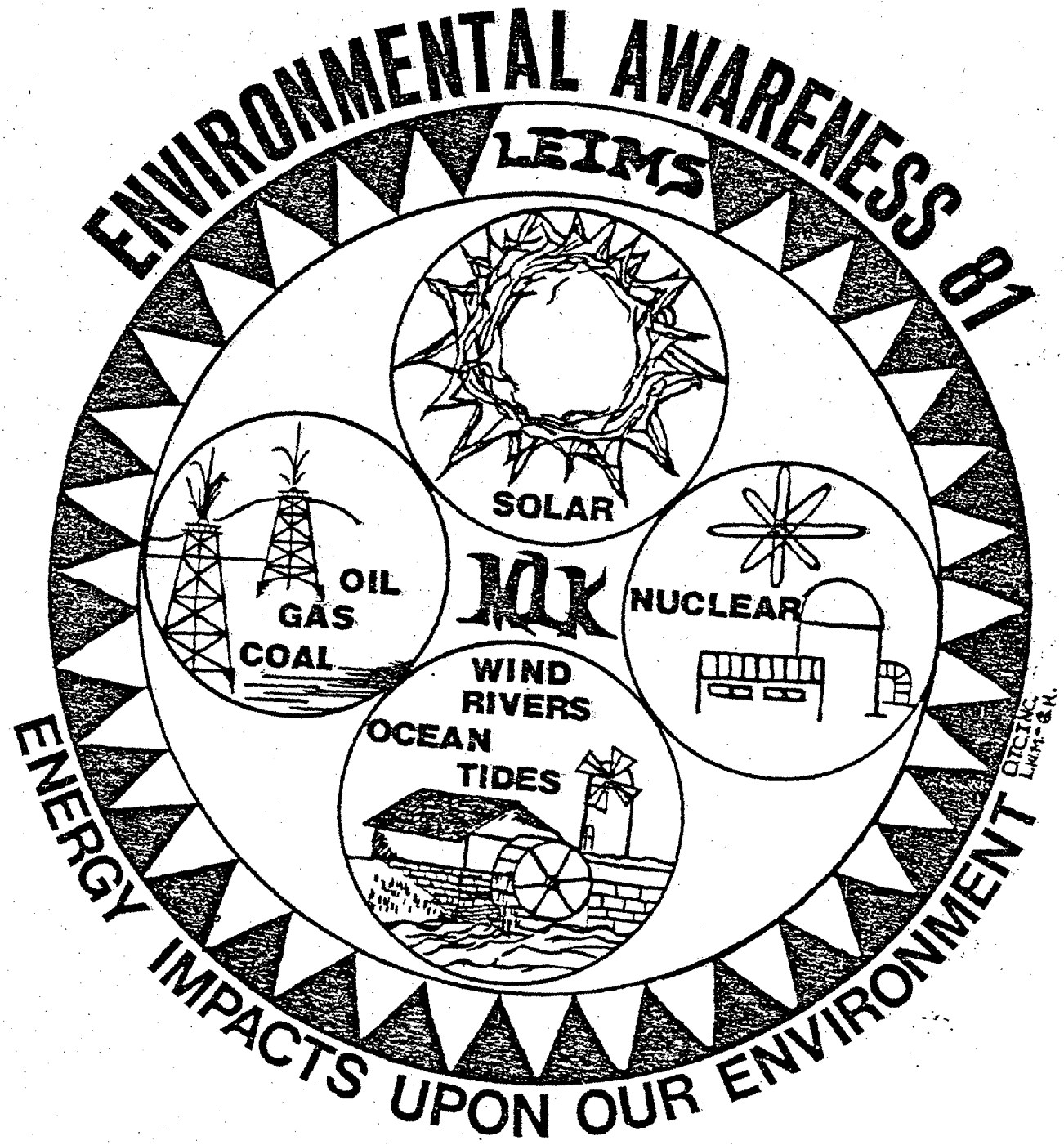
B. Archaeology--Scotts' Park
C. Career Planning
D. Hammermill Paper Company Tour
E. Coastal Erosion: G.E. Park--Shades Beach
F. Presque Isle Project
G. Fairview Fish Station

PART IV ..... PARENTAL AND COMMUNITY INVOLVEMENT

A. Middle School Student Permission Slip Letters
B. Press Release
C. Letters to Harry Lundstrom
D. Scotts' Park Permit for Picnic
E. Final Thank You Letter to Parents

PART V ..... A. Resumés
B. Erie Times Magazine Article

PART I


ENVIRONMENTAL AWARENESS 81
LEIMS
SOLAR
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GAS
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NUCLEAR
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TIDES
ENERGY IMPACTS UPON OUR ENVIRONMENT

# PART I

## SUMMER ENVIRONMENTAL AWARENESS WORKSHOP SUMMARY

BAYFRONT NATO INCORPORATED

SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

## SUMMARY OF THE 1981 SUMMER WORKSHOP

This year's program was designed to enhance the student's Neighborhood Youth Corp Work experience by providing some educational experience about their environment or surroundings. The Theme of this year's program was "Energy Impacts" upon our Environment". Again, we opened up the program to students who were too young to hold an N.Y.C. job and to interested students in the community-at-large. The final count of students registered in the program included 15 middle school students (ages 10-13) 58 N.Y.C. workers (ages 14-17) and 10 students from the community. There was a total of 83 students with 15 of them participating for the second time.

The program started on June 22, 1981 and ended on August 14th. Since the program was a blend of films, film strips, field trips, recreation and instruction, Monday's were used for preparation. Films and equipment had to be picked up and returned, and field trip sites had to be reviewed ahead of time.

Also, the N.Y.C. workers from the Martin Luther King Center got the chance to take part in a community gardening project. They planted peppers, cucumbers, squash, tomatoes, celery, peas, beans, cabbage, mustard greens, and lettuce. They learned how to plant, weed, water, and dust the vegetables. This was the first chance that many of them had to really work with the land and they loved it.

This year's field trips included; Archaeology at Scott's Park, a tour of Hammermill Paper Company, Coastal Erosion at G.E. Park, and Shades Beach, a Presque Isle Project including a pond microscopic study and the Fairview Fish Station. Also included in this year's program was a career planning day during which students learned how to write resumes and fill out job applications.

The last week of the program was used to write this final report and to plan a picnic for the program participants. T-shirts were given to each student as a certificate of participation in the summer program. The design on the T-shirt is the same design that is on the front cover of this report. It was drawn and printed by Danny T. Clark, Program Instructor.

SUMMARY (cont)

Again, as a whole, the students were very receptive to the program and as a result we were able to achieve many of our instructional objectives. A few things stand out:

1. The students became more aware of coastal zone management and why it is necessary.

2. The students became more aware of the environment and the many careers associated with the environment.

3. The students seemed to appreciate more of the simplest forms of life (pond animals) and open green spaces.

4. By going over a weekly energy lesson, the students became more aware of the problems involved in using and developing new energy sources while at the same time keeping a delicate balance in the environment.

5. The students became acquainted with the environmental and energy terminology which will surely become household words in the near future.

In conclusion, we would like to thank the following people for their cooperation and time:

Alexander W. Thompson
Executive Director
Martin Luther King Center

Alex Clemente, Director
Instructional Material Ctr.
Erie School District

Victor Butler, Director
Upward Bound Program
Gannon University

Ms. Rubye Jenkins
Director of Personnel
John F. Kennedy Center

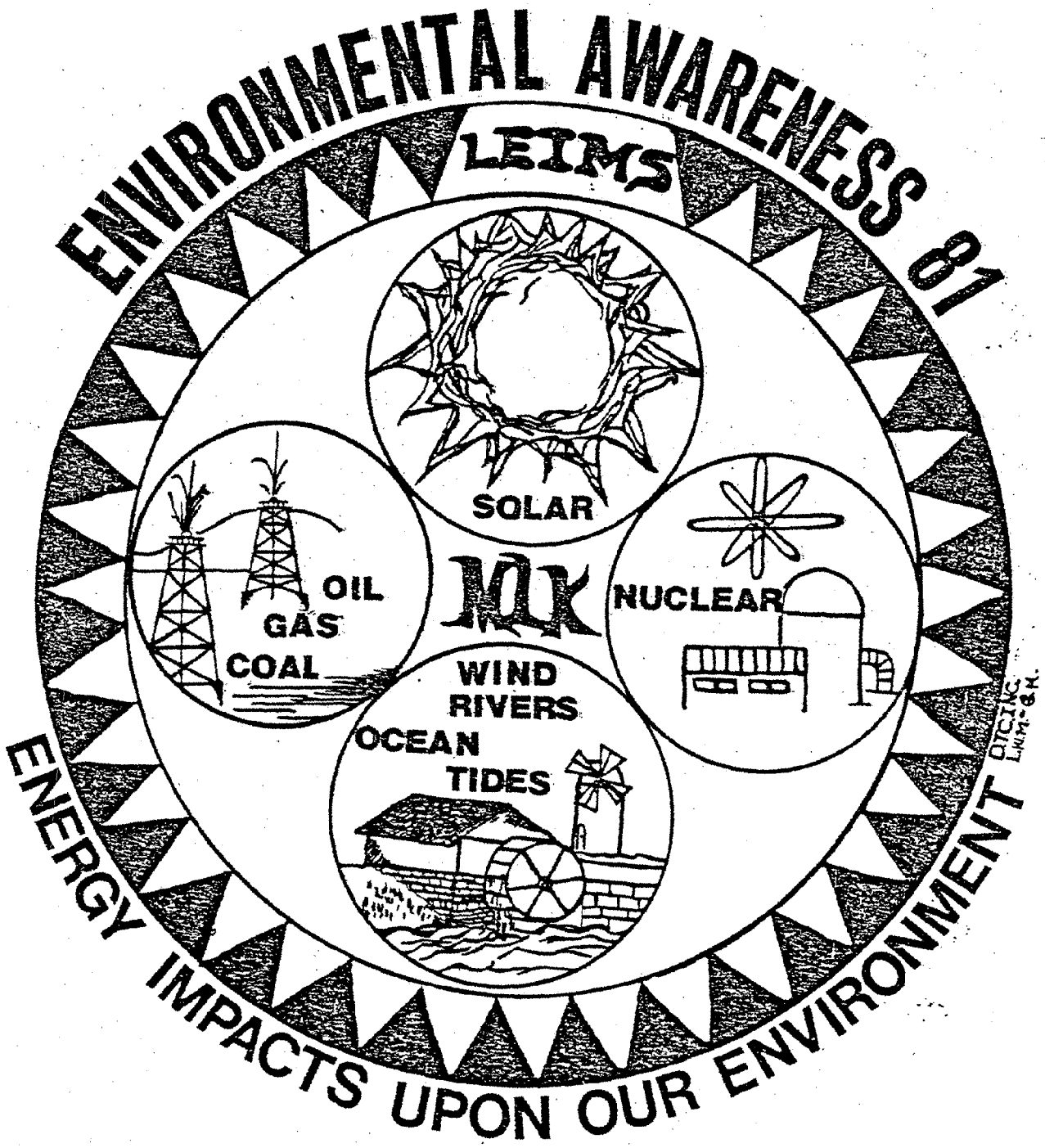
Joe Giles
Associate Director
Martin Luther King Center

Millicent Hartley
Fiscal Director
Martin Luther King Center

Douglas Watson, Director
Employment & Training
G.E.C.A.C.

and - a special thanks to Jean De Stefano of the Martin Luther King Center, who handled most of the press coverage for the program.

PART II


ENVIRONMENTAL AWARENESS 81
LEIMS
SOLAR
OIL
GAS
COAL
NUCLEAR
WIND
RIVERS
OCEAN
TIDES
ENERGY IMPACTS UPON OUR ENVIRONMENT

# PART II

A. REGISTERED STUDENTS

B. INVENTORY OF INSTRUCTIONAL MATERIAL

C. BIBLIOGRAPHY

D. INTRODUCTION AND WORKSHOP OBJECTIVES

E. WORKSHOP PRE AND POST QUESTIONNAIRES

BAYFRONT N.A.T.O. MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS WORKSHOP

STUDENTS REGISTERED IN THE PROGRAM: TOTAL 83

MIDDLE SCHOOL STUDENTS: AGES 10-13 (15)

*Shana Carr
Jameel Gavin
Nicole Jaycox
*Kevin Jones
*Roxanne Lomax
Cheriea Lomax
Dameon Ragland
Myron Lucas
Kim Lucas
*Robert Lomax
*Curtis Naylor
Glenda Perry
*Dantannette Carr
Pasha Carr
Charvay Lomax

GANNON - UPWARD BOUND: AGES 14 .. (28)

Sebrina Fleming
Jeffrey Johnson
Sandra Tate
Curtis Haraway
Victor Fowler
Maurice Williams
Gregg Thompson
Sandy Woodard
Terry Manus
Margaret Stepheny
Stacey Hitt
Kimberly Hobson
Kevin Cooper
Tony Mickens
Sean Horton
Marvin Ridgeway
*Chanel Easter
Felicia Lindsey
Gloria Saunders
JoCathy Martin
Rochelle Horton
Tina Turk
Ron Flemings
Monica Turk
Sarah Dancey
Jeffrey Young
Sonya Vaughn
Herlaine Jones

JOHN F. KENNEDY CENTER - NYC WORKERS (15)

Mark Granberry
William McCallum
*Tammie Parker
Aurora Plaza
Patricia Keyes
James Booker
Daryl Moore
Michelle Crockett
Rosslyn Troop
Barry Sherrod
Michael Salter
Anita Meredith
Nadine Ambush
Mignon Clayton
Sonya Lindsey

MARTIN LUTHER KING CENTER - NYC WORKERS (25)

*Kimberly Moody
*Mary Dunkle
Pam Payne
Kim Jordan
Michael Hunter
Randall Crawford
Mark Cabbagestalk
Barbara Beier
Derrick Fillyaw
*Jan Crosby
Angelia Arrington
Dawn Root
*Danny Thomas
Charlene Williams
*Sam Crockett
Joe Oakes
Tammy Beier
*Rebecca Jaycox
Cathy Smith
Christine Rush
*Curtis Jones
Henry Miller
April Byes
Saura Beier
Wendy Morrison

**Denotes second year in program..

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS PROJECT '81

EQUIPMENT INVENTORY

| | |
|---|---|
| 1 | Microscope |
| 1 | Ruler |
| 1 | Stream Net |
| 2 | Measuring Tapes |
| 1 | Water Pitcher (2 lids) |
| 1 | Ivory Soap |
| 1 | Sponge |
| 1 | Package of slides and slide covers |
| 1 | eyedropper |
| 3 | 100 ML Beakers (2 glass, 1 plastic) |
| 3 | 250 ML Beakers (#14000) (3 glass) |
| 1 | 500 ML Beaker (#26500) |
| 5 | Pyrex convex circles (sm) |
| 2 | Pyrex convex circles (lg) |
| 1 | Culture Dish |
| 1 | Pyrex 100 x 50 dish (#3140) |
| 7 | Test Tubes |
| 1 | Test Tube Holder |
| 2 | Plastic Bottles with lids |
| 2 | Plastic bottles with spouts |

BAYFRONT NATO MARTIN LUTHER KING CENTER
SUMMER ENVIRONMENTAL AWARENESS PROGRAM

## REFERENCE BOOK LIST

1. Beaches and Waves by William Bascom

2. Field Guide to Beaches by John H. Hoyt

3. The Geography and Geology of Erie County by The Commonwealth of Pennsylvania

4. Aquatic Organisms of Erie County by The Erie County Health Department

5. Ground Water in Pennsylvania by A. E. Becher

6. Pennsylvania's Coastal Zone Management Program (flyer) by Tonya Richter

7. Field Guide to Plutonic and Metamorphic Rocks by William D. Romey

8. A Study of Soil Science by Dr. Henry D. Foth

## BOOKS AND BROCHURES

"The Career Planning Workshop"

"32 Ways You Can Fight Pollution"

"The ABC's of MPG's"

"About Solar Energy"

"How You Can Save Energy Everyday"

"Your Energy Efficient Home"

"How To Conserve Energy At Home"

"Energy Crisis"?

## BORROWED EQUIPMENT & FILMSTRIPS

1 Filmstrip Projector (Cassette included)

1 Movie Projector

1 Take-Up Reel (Blue)

## FILMS

| | |
|---|---|
| S-1396 | "Energy for the Future" |
| S-1190 | "Forest and Range" |

## FILMSTRIPS AND CASSETTES

| | |
|---|---|
| 1784 | "Environmental Crisis: Part 1" |
| 1790 | "Environmental Crisis: Part 7" |
| 1791 | "Environmental Crisis: Part 8" |
| 89 | "Matter and Energy" |
| 2977 | "Electricity" |

BAYFRONT NATO INCORPORATED
SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

312 CHESTNUT STREET
ERIE, PENNSYLVANIA 16507

I.

A. INTRODUCTION

The word "environment" was little known to the general public 10-15 years ago. Presently, this word along with the words "ecology" environmental deterioration", "pollution," "population explosion,", etc. occur frequently in the news media, and are used by our elected and appointed officials at all levels of our government. City, county,state and federal officials are actively engaged in ways and means of preserving and improving the quality of our environment.

But what is the *environment?* The word or term means the relationship between something and its surroundings. Therefore, the environment of any given entity is its *total surroundings*.

In the broadest sense, *entities* of the environment are *things*, any and all things. Entities may be organic or inorganic, animate or inanimate. Plants and animals of earth's community, as well as the minerals and rocks which constitute solid earth, are interacting entities. To be a little more specific, entities may also be geologic processes (earthquakes, volcanism, erosion, etc.), climatic conditions, gravity, buildings, streets, dams, or the attitudes of people, such as love, fear, and hate. All these things plus others of earth make up the *environment*.

Earth is the single total natural environment (geologic) for man and other forms of life.

I.

A. INTRODUCTION (cont)

The geologic environment includes the topography (hills and valleys), the soil and other loose materials, the solid rock below, and the natural processes that modify the landscape.

Earth is and has been a dynamic body throughout its 4.5 billion year history due to the interaction of geologic process of mountain building (plate tectonics, earthquakes, volcanism, uplifting) and erosion. Humans appeared on earth approximately 2 million years ago, and rapidly became the most influential entity in the environment. The human brain and our large numbers (4 billion people live on earth today) have given us enormous power to interact with and change geological processes. Human brain power led to the development of our cultures, our societies, and our civilizations, based on mineral resources taken from earth, energy obtained from both earth and sun, and water from the earth and atmosphere. Therefore, as man evolved from one stage of development to another the geological environment was affected in one way or another.

The first time humans began seriously to alter their environment geologically was when they began to cultivate the soil in order to grow food (agriculture). Farming destroys the original ground cover by turning the earth (soil) and exposing it to the elements of water and wind unprotected. As human technology for the production of food improved, conservation attitudes and practices did not keep pace. Therefore, much unneccessary erosion and pollution has resulted from farming activities.

Industrialization has had the most serious effects on the geological aspects of human cultures. The industrial activities which cause the most

I.

A. INTRODUCTION (cont)

damage to the environment are the obtainment of raw materials and manufacturing. The obtainment of raw materials involves the removal or mining of thousands of tons of minerals, and millions of barrels of oil and gas from earth each day. Most minerals, oil, and gas are *nonrenewable resources* because once they are removed from the ground all that remains is a hole. Resources are nonrenewable because in most cases millions of years are involved in their formation. Some of the possible environmental effects of the removal or mining of earth materials are scarcification of the land, increased erosion, pollution of waters, and subsidence.

The manufacturing aspect of industrialization may result in pollution of atmosphere, waters, and soils. Some manufacturing and mining activities or processes create serious health hazards for people.

The geologic environment was and presently is affected by the development of communities or cities--urbanization. Urbanization brings about the crowding of large numbers of people in areas of probable hazards, such as earthquake, flood, tidal wave, erosion, and landslide areas. The crowding of large numbers of people in small areas also produces huge local concentrations of garbage, trash, human waste, and other man-made pollutants.

*How does urbanization affect the geologic environment?*

In summary, the geologic environment has a profound effect upon humans,

I.
A. INTRODUCTION (cont)

and likewise, humans with their brain power and numbers have been able to bring about profound changes in the geologic environment. Hopefully, the results from studies in *ecology* will enable us to live in greater harmony with our environment. Ecology is the interrelationship of organisms and the environment, involves earth's lands, waters, and air and the myriad organisms, including man, which inhabit these realms.

This summer our task is to complement our work and recreational experiences with investigations of our *environment*.

# SUMMER ENVIRONMENTAL WORKSHOP

I.

## B. OBJECTIVES

The Environmental Awareness Summer Program is being conducted by the Lake Erie Marine Science Center (LEMSC) in conjunction with the Martin Luther King Center and the Greater Erie Community Action Committee (GECAC). Other participating organizations are John F. Kennedy Center, Booker T. Washington Center and Gannon University Upward Bound Program.

The program activities are designed to enhance the Students' Neighborhood Youth Corps' work experience by providing some educational experiences about their environment or surroundings. Hopefully, these experiences will give students a new sense of responsibility to themselves, their loved ones, and fellow citizens because environmental problems and concerns are everybodys business to some degree or another.

More specifically, the objectives of the Environmental Awareness Program are to:

1. Create an awareness for problems created by our urbanized and industrial society such as:
   a. Water and air pollution;
   b. Solid waste pollution;
   c. Conservation of natural resources;
   d. Control of harmful chemicals;
   e. Balance between energy development and environmental management.

I.

B. OBJECTIVES (cont)

2. Become aware of the necessity of environmental planning and management at various levels.
3. Create an awareness, and interest in environmental careers.
4. Become familiar with geological processes such as erosion and sedimentation.
5. Develop attitudes which will lead to an appreciation of life within the ecosystem:
   a. To appreciate even the simplest life forms;
   b. Create an awareness for natural settings, and their interrelationships such as:
      (1) Flora
      (2) Fauna
      (3) Physical environment
6. Develop an awareness and appreciation for the relationships between geological formation, such as soil, rocks and minerals, and the various forms of life,

*AND MOST IMPORTANTLY:*

7. *We want to have fun learning about our environment. Learning and achieving makes life more enjoyable.*

# ENVIRONMENTAL AWARENESS WORKSHOP

## PRE AND POST TEST ASSESSMENT QUESTIONS

### SUMMARY

This year we decided to use the same questions for the pre and post tests. The students responded very well on the post tests; especially those who have been in the program for two years. The students also responded well to the energy questions which corresponded to the weekly energy lessons. The answers to the tests that follow are a summary of the student responses.

Pre-test

# ENVIRONMENTAL AWARENESS WORKSHOP

## PRE-PROGRAM ASSESSMENT QUESTIONS

Ages 10 to 14

TO THE PARTICIPANTS: THIS IS NOT A TEST.. You cannot pass nor fail. The purpose of these questions is to give your instructor some information about your background.

**The answers below are a summary of middle school student responses.

1. WHAT DOES THE WORD POLLUTION MEAN TO YOU?

   ans: To dirty things around you with debris

2. HOW CAN YOU AS A YOUNG STUDENT PREVENT OR CUT DOWN POLLUTION?

   ans: Clean up your neighborhood

3. WHAT DOES THE WORDS "SOIL EROSION" MEAN TO YOU?

   ans: (Basically they didn't know)

4. HOW DOES MAN FIGHT SOIL EROSION?

   ans. (Basically they didn't know)

5. HOW CAN WE PREVENT AND/OR MINIMIZE POLLUTION?

   ans: Pick up dirt

6. MAKE A LIST OF THINGS THAT SHOULD BE DONE TO IMPROVE THE QUALITY OF THE ENVIRONMENT IN OUR NEIGHBORHOODS.

   ans: Clean our Yards

7. WHAT OPPORTUNITIES DO WE HAVE TO EXPRESS OUR OPINIONS AND CONCERNS ABOUT OUR NEIGHBORHOOD PROBLEMS?

   ans: Tell our Parents.

8. WHAT INFLUENCES DO SOME OF THE PROCESSES OPERATING IN NATURE, SUCH AS, EROSION AND SEDIMENTATION, HAVE ON HUMANS?

   ans: (Basically they didn't know)

9. HOW DO HUMAN ACTIVITIES DISRUPT AND/OR INFLUENCE THE PROCESSES OF EROSION AND SEDIMENTATION?

   ANS: (Basically they didn't know)

PRE-PROGRAM ASSESSMENT QUESTIONS (cont)

10. BOTH THE CITY AND COUNTY OF ERIE HAVE PEOPLE WORKING AS "PLANNERS". WHAT IS THE ENVIRONMENTAL IMPORTANCE OF THESE POSITIONS?

    ans: They plan what cities look like.

11. WOULD YOU LIKE TO PURSUE A CAREER IN SCIENCE? IF YOUR ANSWER IS "NO" EXPLAIN WHY.

    ans: No, It seems boring.

12. WHAT IS ENERGY?

    ans: (Basically they didn't know)

13. WHERE DOES MOST OF THE ENERGY WE USE TODAY COME FROM?

    ans: From electricity.

14. WHAT IS ENERGY CONSERVATION?

    ans: (Basically they didn't know)

15. IT IS A KNOWN FACT THAT THE WORLD IS RUNNING OUT OF OIL AND GAS TO SUPPLY OUR ENERGY. NAME TWO NEW SOURCES OF ENERGY THAT SCIENTISTS ARE WORKING ON TO KEEP OUR HOMES HEATED AND OUR CARS RUNNING IN THE FUTURE.

    ans: (Basically they didn't know)

16. HOW CAN YOU SAVE ENERGY AROUND YOUR HOME?

    ans: Turn off lights.

17. BY CONSERVING ENERGY, WHAT ELSE IS CONSERVED AND SAVED?

    ans: (Basically they didn't know)

18. WHAT IS SOLAR ENERGY?

    ans: Energy from the sun.

19. NAME THREE THINGS DONE TO PROPERLY TAKE CARE OF A GARDEN.

    ans: Water, weed

20. WHY DO PEOPLE HAVE GARDENS?

    ans: To grow food.

Post-test

# ENVIRONMENTAL AWARENESS WORKSHOP

## PRE-PROGRAM ASSESSMENT QUESTIONS & ANSWERS

TO THE PARTICIPANTS: THIS IS NOT A TEST..You cannot pass nor fail. The purpose of these questions is to give your instructor some information about your background.

** The answers below are a summary of middle school students responses.

1. WHAT DOES THE WORD POLLUTION MEAN TO YOU?

   Ans: It means chemical, nuclear, smoke, waste in the air, land, water.

2. HOW CAN YOU AS A YOUNG STUDENT PREVENT OR CUT DOWN ON POLLUTION?

   Ans: Have clean parties, community pickup, pick up around the house.

3. WHAT DOES THE WORDS "SOIL EROSION" MEAN TO YOU?

   Ans: Taking away top soil - important to growing plants.

4. HOW DOES MAN FIGHT SOIL EROSION?

   Ans: Rock placement and planting trees to keep top soil from washing away.

5. HOW CAN WE PREVENT AND/OR MINIMIZE POLLUTION?

   Ans: Going to City Hall in support of pollution laws.

6. MAKE A LIST OF THINGS THAT SHOULD BE DONE TO IMPROVE THE QUALITY OF THE ENVIRONMENT IN OUR NEIGHBORHOODS.

   Ans: Clean yards, neighborhood pick-ups, paint houses

7. WHAT OPPORTUNITIES DO WE HAVE TO EXPRESS OUR OPINIONS AND CONCERNS ABOUT OUR NEIGHBORHOOD PROBLEMS?

   Ans: Write our City officials and congressman

PRE-PROGRAM ASSESSMENT QUESTIONS (cont.)

8. WHAT INFLUENCES DO SOME OF THE PROCESSES OPERATING IN NATURE SUCH AS, EROSION AND SEDIMENTATION HAVE ON HUMANS?

   Ans: Erosion destroys the land. Sedimentation fills pond and creek beds killing fish, etc.

9. HOW DO HUMAN ACTIVITIES DISRUPT AND/OR INFLUENCE THE PROCESSES OF EROSION AND SEDIMENTATION?

   Ans: mining, farming, planting trees.

10. BOTH THE CITY AND COUNTY OF ERIE HAVE PEOPLE WORKING AS "PLANNERS". WHAT IS THE ENVIRONMENTAL IMPORTANCE OF THESE POSITIONS?

    Ans: They plan cities so factory pollution does not effect housing areas.

11. WOULD YOU LIKE TO PURSUE A CAREER IN SCIENCE? IF YOUR ANSWER IS "NO" EXPLAIN WHY?

    Ans: Yes - To help others if I can.

12. WHAT IS ENERGY?

    Ans: The power to do work.

13. WHERE DOES MOST OF THE ENERGY WE USE TODAY COME FROM?

    Ans: Gas, electrical

14. WHAT IS ENERGY CONSERVATION?

    Ans: Saving energy

15. IT IS A KNOWN FACT THAT THE WORLD IS RUNNING OUT OF OIL AND GAS TO SUPPLY OUR ENERGY: NAME TWO NEW SOURCES OF ENERGY THAT SCIENTISTS ARE WORKING ON TO KEEP OUR HOMES HEATED AND OUR CARS RUNNING IN THE FUTURE.

    Solar energy - Nuclear energy - electrical energy.

16. HOW CAN YOU SAVE ENERGY AROUND YOUR HOME?

    Ans: Cut off lights, turn heat down, keep doors and windows closed on cold days.

17. BY CONSERVING ENERGY, WHAT ELSE IS CONSERVED AND SAVED?

    Ans: We save energy and money.

18. WHAT IS SOLAR ENERGY?

    Ans: Energy from the sun.

19. NAME THREE THINGS DONE TO PROPERLY TAKE CARE OF A GARDEN?

    Ans: Weed, fertilize, water.

20. WHY DO PEOPLE HAVE GARDENS?

    Ans: To have food at a cheaper price.
    To have food on hand.
    To have fresh vegetables.

Pre-test

# ENVIRONMENTAL AWARENESS WORKSHOP

## PRE-PROGRAM ASSESSMENT QUESTIONS & ANSWERS

Agest 14 to 17

TO THE PARTICIPANTS: THIS IS NOT A TEST.. You cannot pass nor fail. The purpose of these questions is to give your instructor some information about your background.

** The answers below are a summary of student responses.

1. WHAT DO THE FOLLOWING WORDS MEAN TO YOU?

   Ans: a ENVIRONMENT: Things that are around me.

   b ECOLOGY: The study of our environment

   c SCIENCE: (Basically they didn't know)

2. A. STATE SEVERAL REASONS AS TO WHY WE SHOULD BE CONCERNED ABOUT OUR ENVIRONMENT.

   Ans: To save for future generations.

   B. WHEN AND WHERE SHOULD THIS CONCERN BEGIN?

   Ans: Now

3. WHAT IS POLLUTION?

   Ans: Dirt in the air, water.

4. LIST WAYS AND MEANS BY WHICH HUMANS POLLUTE THE ENVIRONMENT. (try to list six ways)

   Ans: Cars, littering, smoke.

5. HOW CAN WE PREVENT AND/OR MINIMIZE POLLUTION?

   Ans: (Basically they didn't know)

6. MAKE A LIST OF THINGS THAT SHOULD BE DONE TO IMPROVE THE QUALITY OF THE ENVIRONMENT IN OUR NEIGHBORHOODS.

   Ans: Pick up litter, fix up housing.

PRE-PROGRAM ASSESSMENT QUESTIONS & ANSWERS (cont.)

7. WHAT OPPORTUNITIES DO WE HAVE TO EXPRESS OUR OPINIONS AND CONCERNS ABOUT NEIGHBORHOOD PROBLEMS?

   Ans: Go to City Hall.

8. WHAT INFLUENCES DO SOME OF THE PROCESSES OPERATING IN NATURE, SUCH AS EROSION AND SEDIMENTATION?

   Ans: (Basically they didn't know)

9. BOTH THE CITY AND COUNTY OF ERIE HAVE PEOPLE WORKING AS "PLANNERS". WHAT IS THE ENVIRONMENTAL IMPORTANCE OF THESE POSITIONS?

   Ans: (Basically they didn't know)

10. WHAT ARE THE DIFFERENT ENERGY SYSTEMS THAT EXIST IN THE HOME?

    Ans: Gas, Electricity, coal.

11. HOW CAN ENERGY BE CONSERVED IN THE HOME?

    Ans: Turn lights off.

12. NAME AS MANY NEW TYPES OF FUEL SYSTEMS AS YOU CAN.

    ANS: Solar, Electric.

13. CARS USE 12% OF TOTAL ENERGY SUPPLY. HOW CAN ONE SAVE ENERGY WHEN THEY DRIVE?

    Ans: Walk more.

14. SOLAR ENERGY CAN BE USED IN WHAT WAYS?

    Ans: (Basically they didn't know)

15. WHY SHOULD WE CONSERVE ENERGY?

    Ans: For the future.

16. WHY DO PEOPLE HAVE GARDENS?

    Ans: To eat the food.

17. NAME THREE THINGS DONE TO PROPERLY TAKE CARE OF A GARDEN?

    Ans: Weed, water, time

18. HAVE YOU EVER CONSIDERED A CAREER IN SCIENCE OR CONSERVATION?

    Ans: No... As instructors we feel many answers were no because the students weren't too familiar with jobs related to the environment!

Post-test

# ENVIRONMENTAL AWARENESS WORKSHOP

## PRE-PROGRAM ASSESSMENT QUESTIONS

AGES 14 to 17

TO THE PARTICIPANTS: THIS IS NOT A TEST.. You cannot pass nor fail. The purpose of these questions is to give your instructor some information about your background.

**The answers below are a summary of NYC student responses.

1. WHAT DO THE FOLLOWING WORDS MEAN TO YOU?

   A. Environment: Ans: Your surroundings, things that are around you.

   B. Ecology: Ans: The study of our environment.

   C. Science: Ans: The study of testing facts in life and environment.

2. A. STATE SEVERAL REASONS AS TO WHY WE SHOULD BE CONCERNED ABOUT OUR ENVIRONMENT.

   Ans: Because we live in it. Protect it against abuse.

   B. WHEN AND WHERE SHOULD THIS CONCERN BEGIN?

   Ans: Before pollution gets out of hand - before people start dieing more because of pollution.

3. WHAT IS POLLUTION?

   Ans: Dirt and waste being thrown away by people and factories that is harmful to the environment.

4. LIST WAYS AND MEANS BY WHICH HUMANS POLLUTE THE ENVIRONMENT

   Ans: Factories, car, noise, garbage, smoking, chemicals.

5. HOW CAN WE PREVENT AND/OR MINIMIZE POLLUTION?

   Ans: Going to City Hall. Factories to use pollution controls and pollution laws.

PRE-PROGRAM ASSESSMENT QUESTIONS (cont.)

6. MAKE A LIST OF THINGS THAT SHOULD BE DONE TO IMPROVE THE QUALITY OF THE ENVIROMENT IN OUR NEIGHBORHOODS

   Ans: Fix up housing, pick up papers, clean yards.

7. WHAT OPPORTUNITIES DO WE HAVE TO EXPRESS OUR OPINIONS AND CONCERNS ABOUT NEIGHBORHOOD PROBLEMS?

   Ans: Going to City Hall and express our concerns to local congressmen.

8. WHAT INFLUENCES DO SOME OF THE PROCESSES OPERATING IN NATURE SUCH AS EROSION AND SEDIMENTATION HAVE ON HUMANS?

   Ans: Erosion destroys farm lands, and coastal regions. Sedimentation fills ponds and creek beds killing fish, etc.

9. BOTH THE CITY AND COUNTY OF ERIE HAVE PEOPLE WORKING AS "PLANNERS". WHAT IS THE ENVIRONMENTAL IMPORTANCE OF THESE POSITIONS?

   Ans: They plan cities and put factories and housing opposite from each other.

10. WHAT ARE THE DIFFERENT ENERGY SYSTEMS THAT EXIST IN THE HOME?

    Ans: Gas, Electricity, Heating Oil.

11. HOW CAN ENERGY BE CONSERVED IN THE HOME?

    Ans: By cutting off lights not in use. By cutting off T.V. when not in use. Keeping doors closed on cold days

12. NAME AS MANY NEW TYPES OF FUEL SYSTEMS AS YOU CAN.

    Ans: Solar, Nuclear, Geo-thermal, Tides (power from waves) Wind.

13. CARS USE 12% OF TOTAL ENERGY SUPPLY. HOW CAN ONE SAVE ENERGY WHEN THEY DRIVE?

    Ans. Walk, ride bikes, use mopeds, drive only when necessary.

14. SOLAR ENERGY CAN BE USED IN WHAT WAYS?

    Ans: To heat and cool homes.

15. WHY SHOULD WE CONSERVE ENERGY?

    Ans: Because one day it will be all gone.

PRE-PROGRAM ASSESSMENT QUESTIONS (cont.)

16. WHY DO PEOPLE HAVE GARDENS?

Ans: To get food cheaper, have food on hand.

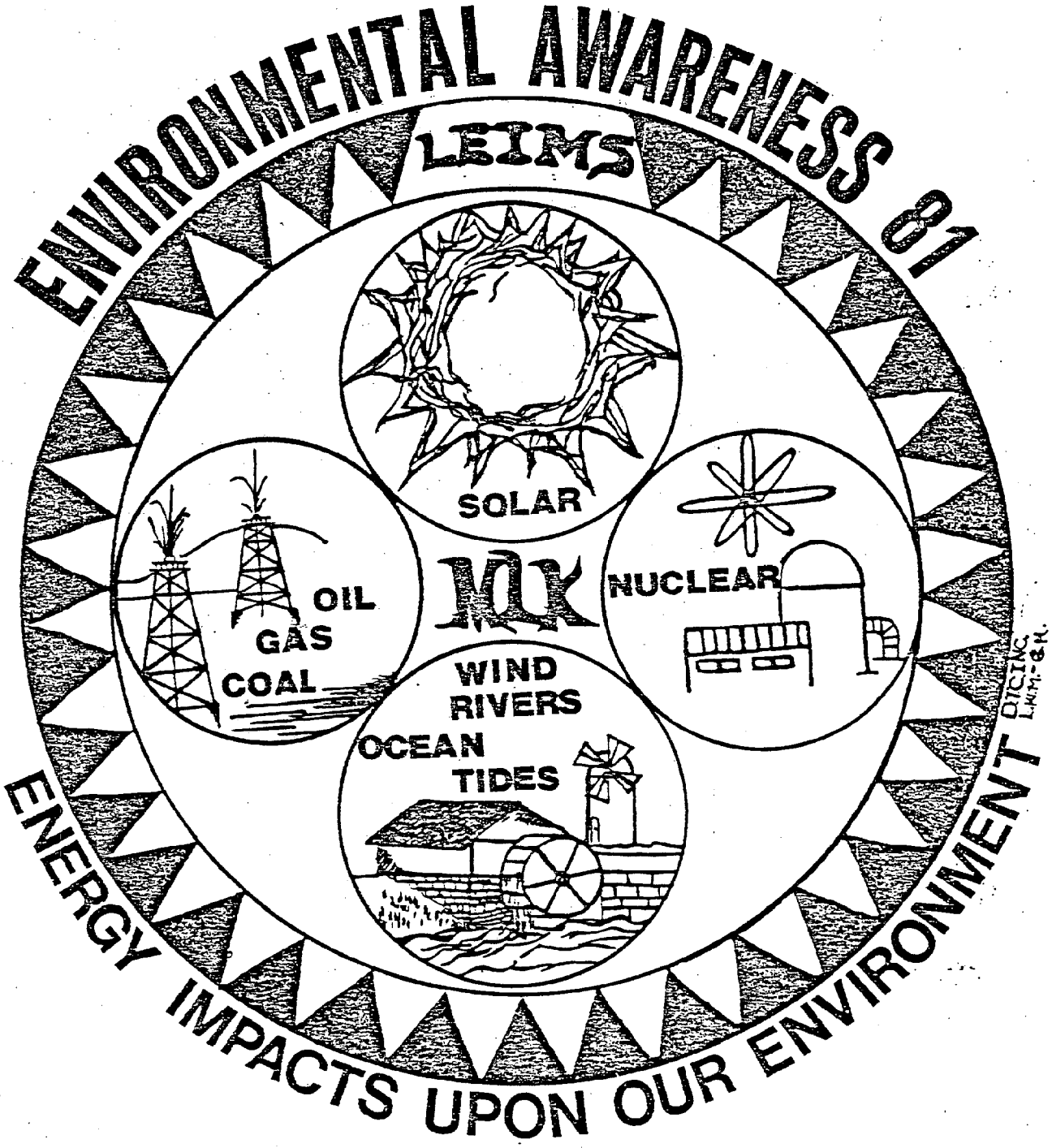
17. NAME THREE THINGS DONE TO PROPERLY TAKE CARE OF A GARDEN?

ANS: Pull weeds, water, fertilizer.

18. HAVE YOU EVER CONSIDERED A CAREER IN SCIENCE OR CONSERVATION? IF YOUR ANSWER IS NO, EXPLAIN.

Ans: Many said yes - in the medical field because they like helping people. However at the beginning of the program most of the answers were no. But after showing them new and rewarding careers, many said they wouldn't mind being an Ecologist or a Fish Culturist if the pay was right for the job.

PART III


ENVIRONMENTAL AWARENESS 81
LEIMS
SOLAR
OIL
GAS
COAL
NUCLEAR
WIND
RIVERS
OCEAN
TIDES
ENERGY IMPACTS UPON OUR ENVIRONMENT

# PART III

## WORKSHOP'S DAILY AGENDAS, PROJECT BOOKLETS AND ACTION CARDS

A. GARDEN PLANTING, "CONSERVING ENERGY AT HOME"

B. ARCHAEOLOGY: SCOTTS' PARK, "YOUR ENERGY EFFICIENT HOME"

C. CAREER PLANNING, "SOLAR ENERGY"

D. HAMMERMILL PAPER COMPANY TOUR,
"32 WAYS YOU CAN FIGHT POLLUTION"

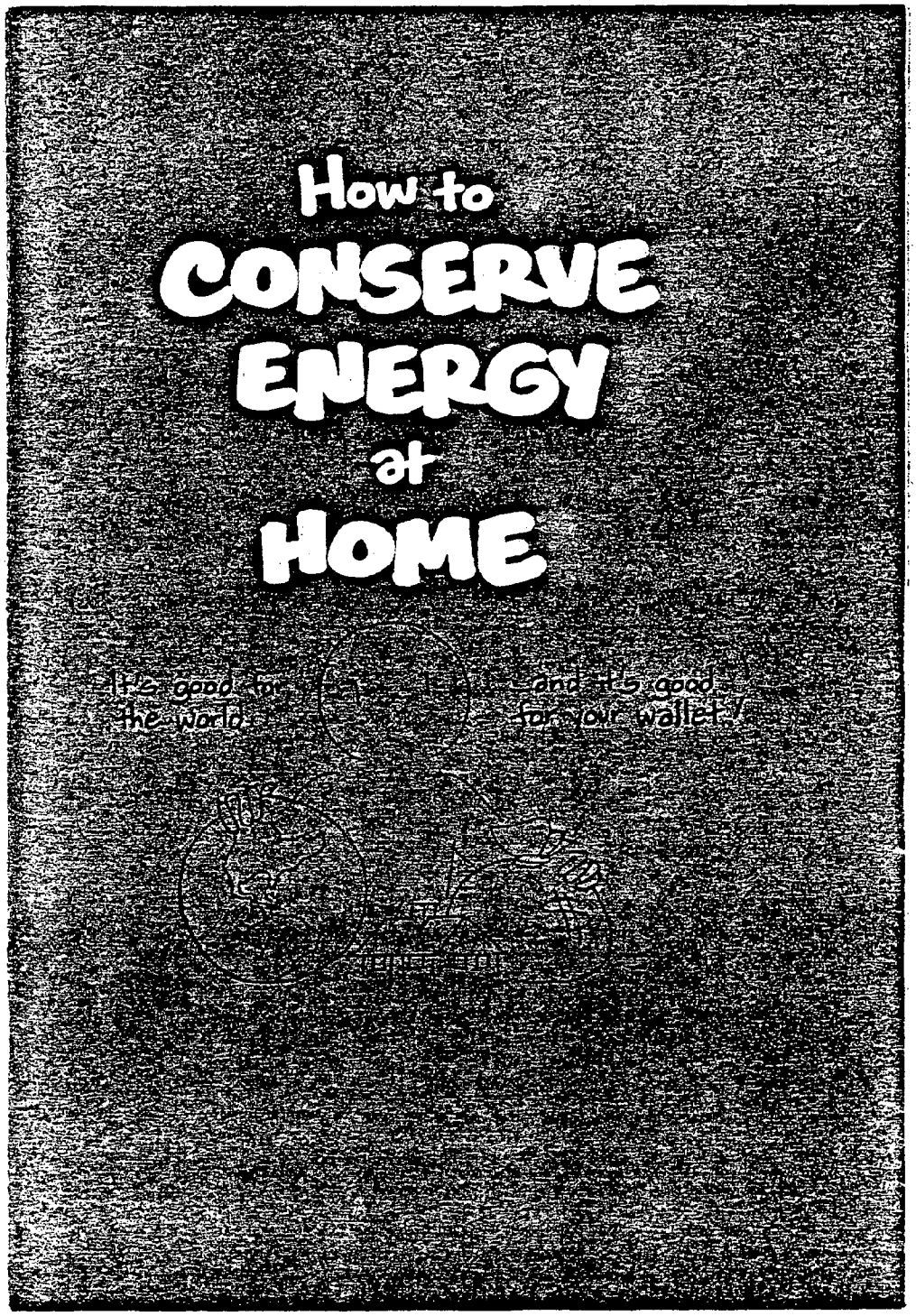
E. COASTAL EROSION: G.E. PARK--SHADES BEACH
"ENERGY CRISIS--IS THE EARTH RUNNING OUT OF ENERGY?"

F. PRESQUE ISLE PROJECT, "HOW YOU CAN SAVE ENERGY EVERY DAY"

G. FAIRVIEW FISH STATION--A CAREER AS A FISH CULTURIST,
"THE ABC's OF MPG's"

WEEK ONE: ORIENTATION

GARDEN PLANTING
STUDENT DATA SHEETS
PRE-PROGRAM ASSESSMENT QUESTIONS



# ENVIRONMENTAL AWARENESS WORKSHOP

## 1981 SUMMER WORKSHOP SCHEDULE

WEEK ONE:

June 22 to June 26 ..... Orientation
Garden Planting
*Conserving Energy at Home

WEEK TWO:

June 29 to July 3 ..... Archaeology
Scotts Park
*Your Energy Efficient Home

WEEK THREE:

July 6 to July 10 ..... Career Planning
(Resume and Job Applications)
*Solar Energy

WEEK FOUR:

July 13 to July 17 ..... Hammermill Paper Company Tour
*32 Ways You Can Fight Pollution and Protect the Environment

WEEK FIVE:

July 20 to July 24 ..... Coastal Erosion
G.E. Park and Shades Beach
*Energy Crisis - "Is the Earth Running Out of Energy?"

WEEK SIX:

July 27 to July 31 ..... Presque Isle Project (Including Pond Microscopic Study and Fishing Techniques)
*How You Can Save Energy Every day

1981 SUMMER WORKSHOP SCHEDULED (cont)

WEEK SEVEN:

| | | |
|---|---|---|
| August 3 to August 7 | ..... | Fairview Fish Station<br>*The ABC's of MPG's |

WEEK EIGHT:

| | | |
|---|---|---|
| August 10 to August 14 | ..... | Picnic<br>Report Writing and Program Wrap Up<br>*Energy Review and Post Test |

*WEEKLY ENERGY LESSON

# ENVIRONMENTAL AWARENESS WORKSHOP

## TUESDAY, JUNE 23, 1981

## AGENDA

MORNING:

Martin Luther King Center Project
Gardening - Instructors layout

AFTERNOON: UPWARD BOUND STUDENTS - GANNON UNIVERSITY

1. Work on Student Personal Data Sheets

2. Take Attendance: discuss conduct and rules for Martin Luther King Center

3. Discuss Program and Project, list activities which include:

   Introduction of Gardening

   Career Planning Day

   Hammermill Tour

   Presque Isle Project

   Archaeology
   Coastal Erosion
   Metrics
   The simplest forms of life-ponds
   Career in Conservation - Fish Culturist
   Water - Natural Resource
   A weekly energy lesson

4. Pre-Program Assessment Questions

5. Lecture on Home Energy

6. Questions on Home Energy

7. Film strip on electricity if time permits

ENVIRONMENTAL AWARENESS WORKSHOP

JUNE 24, 1981

A G E N D A

MORNING: MIDDLE SCHOOL STUDENTS ALL DAY - 6TH TO 8TH GRADE

1. Work on Students Personal Data Sheets
2. Take attendance discuss conduct rules for the Martin Luther King Center
3. In short, discuss the Environmental Program and its projects which include:
    - An introduction to Basic Gardening (garden trip)
    - Career Day
    - Hammermill Paper Co. (Tour)
    - Presque Isle Project (rock collection)
    - Archeaology
    - Metrics
    - Costal Erosion
    - The simplest form of life - Ponds
    - Career in Conservation - Fish Culturist
    - Water - Natural Resources
    - Weekly energy lesson
4. Pre-Program Assessment Questions

AFTERNOON:

6. Question on Home Energy
7. Film on Electricity

ENVIRONMENTAL AWARENESS WORKSHOP

JUNE 25, 1981

A G E N D A

MORNING:

MARTIN LUTHER KING CENTER PROJECT - GARDENING

AFTERNOON: JOHN F. KENNEDY CENTER - NYC WORKERS

1. Work on Student Personal Data Sheets
2. Take attendance; discuss conduct and rules of the Martin Luther King Center
3. Discuss Program and Projects, list activities which include:
    - Introduction to Gardening
    - Career Planning Day
    - Hammermill Tour
    - Presque Isle Project
    - Archaeology
    - Coastal Erosion
    - Metrics
    - The simplest forms of life - Ponds
    - Career in Conservation = Fish Culturist
    - Water - Natural Resource
    - A weekly energy lesson
4. Pre-Program Assessment Questions
5. Lecture on Home Energy
6. Question on Home Energy
7. Film on electricity

# ENVIRONMENTAL AWARENESS WORKSHOP

JUNE 26th, 1981

## A G E N D A

MORNING: Martin Luther King Center - NYC Students  Workers all day

1. Student Personal Data Sheet
2. Take Attendance; discuss conduct and rules for the Martin Luther King Center
3. Discuss Program and Project, list activities which include:
   - Introduction to Gardening
   - Career Planning Day
   - Hammermill Tour (July)
   - Presque Isle Project (Beach Morphology)
   - Archaeology
   - Coastal Erosion
   - Metrics
   - The Simplist forms of life - Ponds
   - Career in Conservation - Fish Culturist
   - Water - Natural Resource
   - A weekly lesson on Energy
4. Pre-Program Assessment Questions

(LUNCH BREAK)

AFTERNOON:

5. Lecture on Home Energy
6. Questions on Home Energy
7. Film on Electricity
8. Martin Luther King Center Growth and Development Garden Project.

"HOW TO CONSERVE ENERGY AT HOME"

1. LIST THREE WAYS LIFE WOULD BE DIFFERENT IF ALL ENERGY WAS CUT OFF INTO YOUR HOME.

2. DOES POLLUTION INCREASE AS MORE ENERGY IS USED?

3. EXPLAIN HOW CONSERVATION OF ENERGY SAVES MONEY?

4. WHAT ARE THREE THINGS THAT CAN BE DONE TO THE HOME TO KEEP IT WARM IN THE WINTER, COOL IN THE SUMMER AND CONSERVE ENERGY AT THE SAME TIME?

5. GIVE AN EXAMPLE OF SAVING ENERGY WHILE COOKING

6. IT TAKES MORE ENERGY TO KEEP SOMETHING COLD THAN TO KEEP SOMETHING WARM, SO WITH THE REFRIGERATOR IT IS EXTREMELY IMPORTANT TO...

7. WHAT SOURCE OF ENERGY IS USED MOST OFTEN IN YOUR HOME?

8. NAME ALL THE ELECTRICAL APPLIANCES IN YOUR HOME WHICH ARE A NECESSITY TO LEAD A NORMAL LIFE.

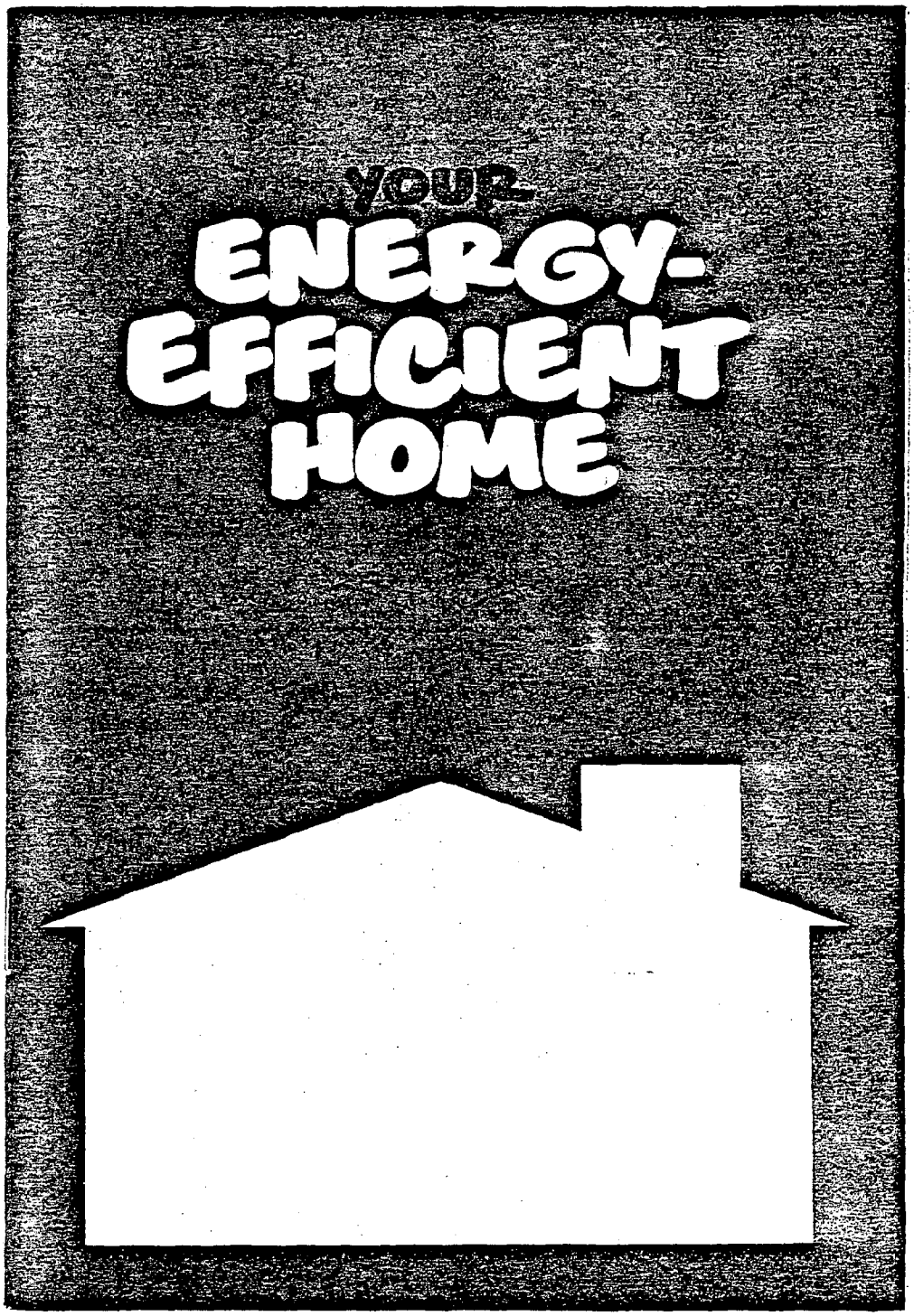
9. NAME ALL ELECTRICAL APPLIANCES IN YOUR HOME.

(PLEASE USE A SEPARATE SHEET OF PAPER FOR YOUR ANSWERS)

COASTAL EROSION

WEEK TWO: ARCHAEOLOGY

SCOTT'S PARK



ENVIRONMENTAL AWARENESS WORKSHOP

TUESDAY, JUNE 30, 1981

A G E N D A

MORNING:

MARTIN LUTHER KING CENTER PROJECT - Gardening Instructors Layout

AFTERNOON:

UPWARD BOUND STUDENTS - Gannon University

1. Field Trip to Scott's Park, Archaeological digging site for Gannon University

2. At Park, review techniques learned and lecture on "Your Energy Efficient Home"

3. Questions relating to archaeology and Energy Conservation

ENVIRONMENTAL AWARENESS WORKSHOP

WEDNESDAY-JULY 1, 1981

A G E N D A

MORNING:

MIDDLE SCHOOL STUDENTS-ALL DAY-6 THRU 8 GRADES

TAKE ATTENDANCE

MARTIN LUTHER KING CENTER PROJECT - GARDENING

LUNCH AT MARTIN LUTHER KING CENTER

AFTERNOON:

1. Trip to Scotts Park - Archaeological Digging Site Supervised by Gannon University

2. AT THE PARK: Brief Introduction to Archaeology by Dr. Kirkpatrick Archaeologist at Gannon University

3. Cover booklet discussion on Archaeology, and answer the questions

4. Pass out booklet and answer questions on "Your Energy Efficient Home"

5. Return students to Center for class dismissal

BAYFRONT NATO MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS PROJECT '81

THURSDAY JULY 2, 1981

# A G E N D A

MORNING:

Martin Luther King Center Project - Gardening

L U N C H

AFTERNOON:

John F. Kennedy Center NYC Students

1. Take Attendance
2. Trip to Scott's Park
3. Archaeological Digging Site - Supervised by Gannon U.
4. AT THE PARK: Introduction to Archaeology by Dr. Kirkpatrick, Archaeologist at Gannon University
5. Cover booklets - discussion on Archaeology
6. Work on booklet and answer - question about "Your Energy Efficient Home"
7. Return student to MLKC and work on Garden Project

BAYFRONT NATO MARTIN LUTHER KING CENTER '81

ENVIRONMENTAL AWARENESS PROJECT

FRIDAY JULY 3, 1981

A G E N D A

MORNING: Martin Luther King Center NYC Workers - ALL DAY

1. Field Trip to Scott's Park Archaeological Digging Site - supervised by Gannon University

2. AT THE PARK: Introduction to Archaeology by Dr. Kirkpatrick Archaeologist - Gannon University

   Cover Booklets on Archaeology and discuss and answer questions

3. Present booklets on "Your Energy Efficient Home", discuss and answer questions

L U N C H

AFTERNOON:

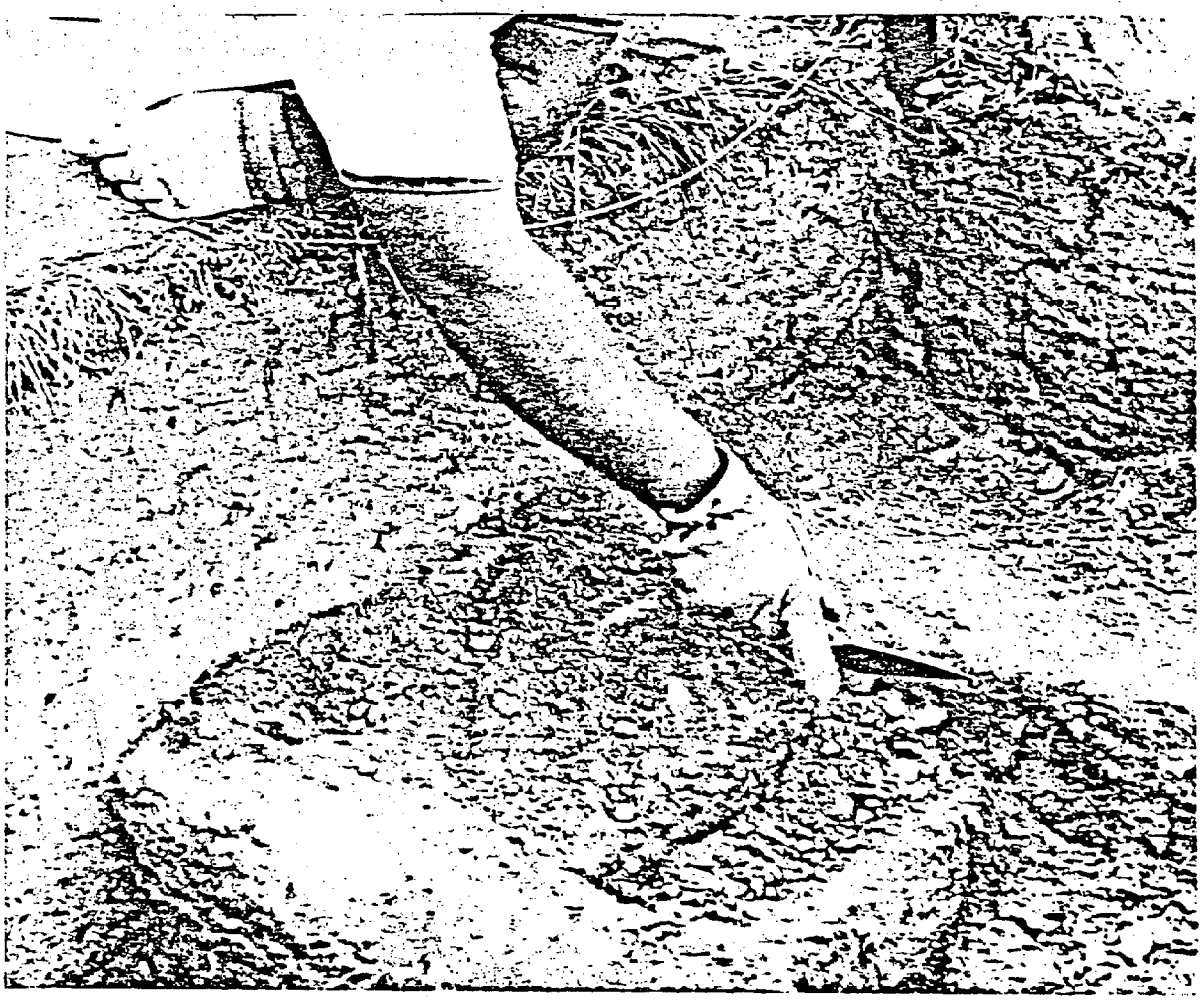
1. Martin Luther King Center Gardening Project

2. Cassette Film Strips

   a. The Environmental Problem: Part I

   b. The Energy Crisis: Part VIII

SUMMER ENVIRONMENTAL AWARENESS PROJECT
BAYFRONT NATO INCORPORATED
312 CHESTNUT STREET
ERIE, PENNSYLVANIA 16507



# ARCHAEOLOGY

Danny T. Clark Gregg L. Hallam Larry W. Moore

BAYFRONT NATO INCORPORATED
SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

312 Chestnut Street
ERIE, PENNSYLVANIA 16507

# ARCHAEOLOGY

## OBJECTIVES:

1) To familiarize the students with the activities surrounding archaeology

2) To note the importance of archaeology in our present time

3) To become familiar with soil coloration and site formation associated with archaeological digs.

4) To increase the students appreciation of the aesthetic value of "green spaces" and open spaces

5) To stimulate students awareness of possible environmental careers

6) To introduce the student to the different methods used for archaeological digs and dating

7) To increase the students knowledge of rock formation and soil layering associated with archaeological sites

BAYFRONT NATO INCORPORATED
SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

312 Chestnut Street
ERIE, PENNSYLVANIA 16507

# ARCHAEOLOGY

Man has been able to uncover and reconstruct to some degree, his past through the science of Archaeology. The Archaeologist collects and studies old material to explain facts about men who who lived long ago.

The term "Archaeology" is the science of collecting, studying and explaining facts about men who lived before history was written. This is one of the most essential ways of studying the lives and activities of men who lived in the past in old cities and villages. They also study the weapons and ornaments found in older structures such as the pyramids and cave dwellings.

Archaeology has also been one way of determining the history of a given area.

Most prehistoric camp sites are being found near good hunting and water supply areas usually on high ground so one could spot his enemies, and so water could, in case of a storm, drain more readily from the camp site to prevent flooding.

The climatic conditions in a given area could play an important part in the amount of decay found on old artifacts. The rocks, soil and other material react and change physically and chemically,

reacting with the atmosphere, $H_2O$, carbon dioxide and oxygen.

In the past, human activities such as, building home sites or villages are all affected by climatic conditions.

When the archaeologist digs up a certain area it is referred to as "excavation site". The archaeologist digs and investigates many clues which have been covered over by thousands of years of dirt. When uncovered these clues unveil prehistoric villages, cities and burial sites. This is where prehistoric man lived, worked and died.

Much of the prehistoric man's life depended upon hunting and fishing. Many of the tasks carried out by prehistoric man needed the use of tools and hunting gear to insure his food and shelter.

It has been through "excavation" that modern man has uncovered these ancient treasures of the past. The use of "spears, "arrow-heads", and the "bola stone" helped prehistoric man to live in a wilderness environment.

BOLA STONE - A stone or stones on a string; thrown could catch a bird in flight or catch a small animal by the legs.

Tools such as the Hammer stone and the axe were used to build campsites and villages. Other artifacts such as pottery knives and stone are also found in prehistoric villages and campsites.

The archaeologist's main job is uncovering artifacts (pottery, tools, and weapons) to reconstruct past history and behavior patterns of ancient man. You'll be surprised at the things that are dug up right here in Erie. Maybe one of you will learn to love the forests and green spaces and become an archaeologist.

ENJOY YOUR TRIP TO SCOTT'S PARK!

# ENVIRONMENTAL AWARENESS WORKSHOP

Week 2 - Gannon University Archaeological Field School - Scott's Park

NAME _____

GROUP REPRESENTED _____

DATE _____

1. You should have noticed in the woods that many trees are lying on their sides like in the dunal areas of Presque Isle. What do you think caused this to happen?

2. Describe the method of digging for old relics.

3. What do the Archaeologists look for?

4. From what time periods have they found things?

5. Do you think (if the pay was right) that you could make a career out of working in and around a large green forest (which includes insects, animals, and ponds)? Explain Why?

ENVIRONMENTAL AWARENESS WORKSHOP

WEEK TWO: ARCHAEOLOGY AND "YOUR ENERGY EFFICIENT HOME"

1. What is Archaeology?

2. What is an Artifact?

3. Describe the method used in digging for relics and artifacts

4. What do Archaeologists look for?

5. From what time period has artifacts been discovered at this site?

6. Energy Prices are rising due to... (2 reasons)

7. Insulation can cut heating and cooling costs by up to _____percent

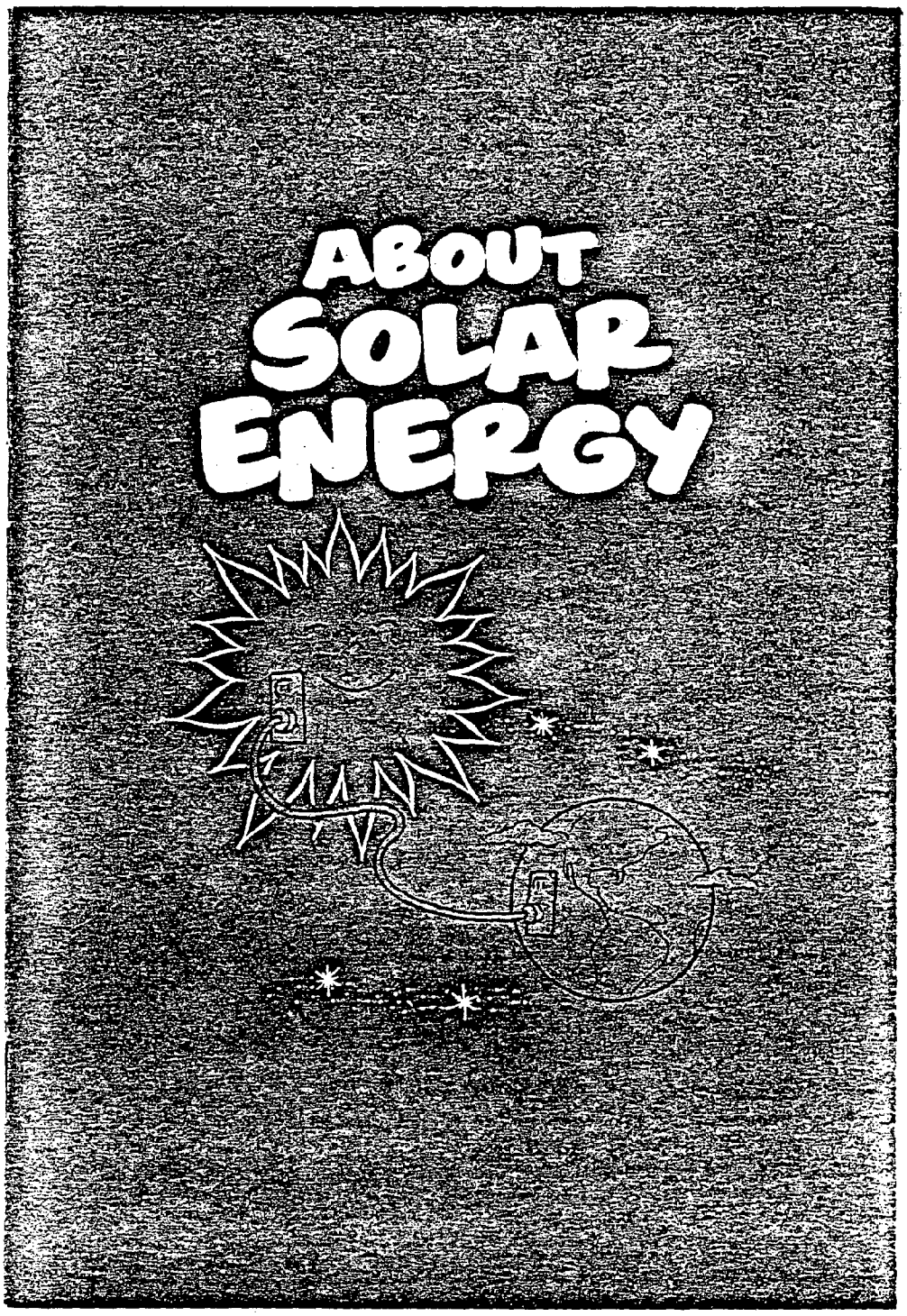
8. Poor wiring, and overloading of extension cords can cause two major problems. Name them.

9. What 2 ways can nature work for you in: (1) Heating your home, (2) protecting your home against cold winds.

10. What 3 methods are used for increasing energy efficiency in the home?

WEEK THREE: CAREER PLANNING

(RESUMES AND JOB APPLICATIONS)



BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

TUESDAY, JULY 7, 1981

A G E N D A

MORNING:

Martin Luther King Center Project - Gardening
Instructors Layout

L U N C H

AFTERNOON:

UPWARD BOUND STUDENTS - GANNON UNIVERSITY

1. Students arrive at 1:00 and attendance is taken
2. Discuss careers and what is involved in obtaining the "Careers of Your Choice"
3. Read and discuss "The Career Planning Workshop" Manual.
4. Students will then write up a resume' on themselves
5. Work on booklet and answer questions on "Solar Energy"
6. Show movie, "Energy for the Future" - (TIME PERMITTING)
7. Students return to Gannon at 3:00

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

WEDNESDAY JULY 8, 1981

A G E N D A

MORNING:

Middle School Students - all day - 6th thru 8th grade
Take Attendance

9:30 to 11:00 - Martin Luther King Center Project - Gardening

11:00 to 12:00 Talk about careers and obtaining the "career of your choice"

L U N C H

AFTERNOON:

1. Look over and discuss "The Career Planning Workshop"Manual

2. Instructors will help students write up their own personal resume'.

3. Discuss booklet on "Solar Energy"

4. Show the movie, "Energy for the Future"

5. Students leave Martin Luther King Center at 3:00 P.M.

BAYFRONT NATO MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS WORKSHOP

THURSDAY, JULY 9, 1981

A G E N D A

MORNING:

Martin Luther King Center Project - Gardening

Return used filmstrips and films to Education Department and acquire new materials.

L U N C H

AFTERNOON:

JOHN F. KENNEDY CENTER - NYC STUDENTS

1. Arrive at John F. Kennedy Center at 1:00 P.M.
2. Take Attendance
3. Read and Discuss "The Career Planning Workshop" Manual.
4. Students will write up a resume' on themselves
5. Read booklet and answer questions on "Solar Energy"
6. Return to Martin Luther King Center at 3:15 P.M.

BAYFRONT NATO MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS WORKSHOP

FRIDAY, JULY 10, 1981

A G E N D A

MORNING:

MARTIN LUTHER KING CENTER - NYC Workers all day

TAKE ATTENDANCE

9:00 - 11:00 A.M. Gardening

11:00 - 12:00 N Talk about career planning

AFTERNOON:

1. Discuss "The Career Planning Workshop" Manual
2. Students write up a personal resume'
3. Work on Energy booklet and answer questions on "Solar Energy"
4. Present movie, "Energy for the Future"
5. Students leave at 3:00 P.M.

# ENVIRONMENTAL AWARENESS WORKSHOP

WEEK THREE: "Solar Energy"

1. What is Solar Energy?

2. How old is the Sun?

3. What is the temperature of the Sun's surface?

   a) 10,000 °F b) 5,000 °F c) 1,000 °F

4. What is the temperature at the Sun's Center?

   a) 9,000,000 °F b) 18,000,000 °F c) 27,000,000 °F

5. Why is Solar energy important?

6. How does the Sun make energy?

   a) Nuclear Fission b) Unknown to Man c) Nuclear Fusion

7. How is the sun and solar energy related to the turning of windmills?

8. Explain the differences between "active systems" and "passive systems" of solar energy.

9. Name three advantages of solar energy.

# ENVIRONMENTAL AWARENESS WORKSHOP

WEEK THREE: "Writing a Resume"

Follow this format in presenting yourself to a possible employer:

NAME:

ADDRESS:

TELEPHONE: (HOME) (WORK)

Date of Birth:

Marital Status:

Education:

Objective:

EXPERIENCE:

Extracurricular:

References:

NOTE:

# SAMPLE STUDENT RESUME'

NAME: Barbara M. Beier

ADDRESS: 3115 Holland Street; Erie, Pennsylvania 16504

TELEPHONE: (814) 459-2322

DATE OF BIRTH: July 8, 1981

MARITAL STATUS: Single

PARTICULARS:

Height: 5'5" ..Weight 130 lbs...blue eyes
Brown Hair

EDUCATION: Jefferson Grade School
Wilson Middle School

OBJECTIVE:

Seeking permanent employment starting after
I finish college or in five years.

EXPERIENCE

I have 2 brothers and 2 sisters

EXTRACURRICULAR ACTIVITIES

Softball, chorus

REFERENCES (have none - unless you want to call my mom)

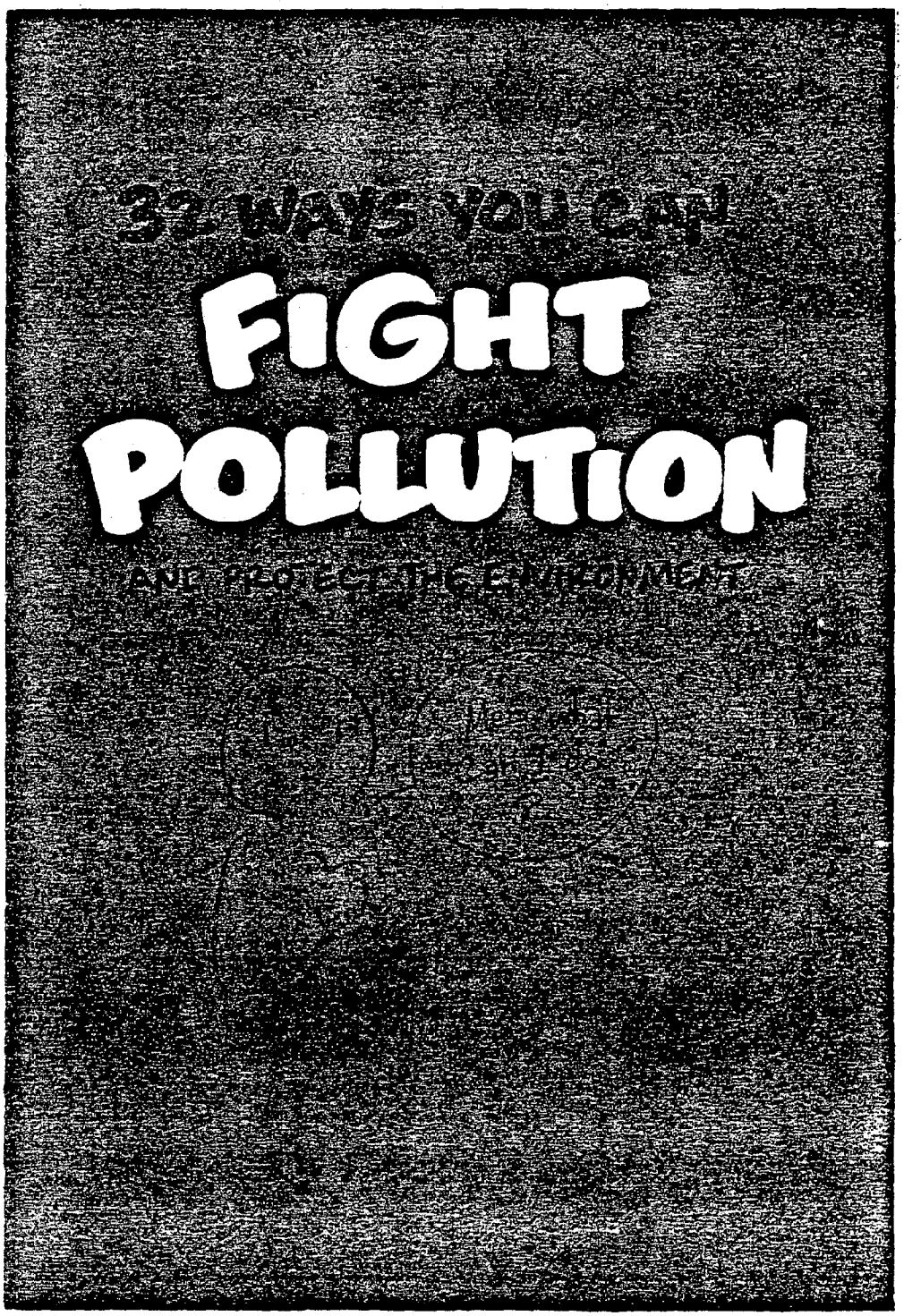
Mr. Maraden
Wilson Middle School
Erie, Pennsylvania

Mr. Mike
Wilson Middle School
Erie, Pennsylvania

Wendy Morrison
3101 Holland Street
Erie, Pennsylvania

*NOTE: I am very interested in becoming a Psychiatrist

WEEK FOUR: HAMMERMILL PAPER COMPANY TOUR



BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

JULY 13, 1981

# A G E N D A

MORNING: Program Preparation and Gardening

AFTERNOON: Hammermill Paper Co. Tour
Martin Luther King Center - NYC Workers

* EMPHASIS ON SAVING ENERGY AND POLLUTION CONTROL

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

JULY 14, 1981

A G E N D A

MORNING: Return used films to IMC Unit

Pick up new films on Energy and Environment; Preview films for potential question and answer session

AFTERNOON: Hammermill Paper Company - Tour

Gannon College Upward Bound Students and NYC Workers

Energy Lesson - *32 Ways You Can Fight Pollution

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

JULY 15, 1981

MIDDLE SCHOOL STUDENTS ALL DAY - 6 THRU 8 GRADES..

MORNING:

1. Take Attendance and Welcome new Students

2. Go over energy lesson * 32 Ways You Can Fight Pollution

3. Cassette Film Strips

   * Matter and Energy
   * The Environmental Crisis - The Energy Crisis Part B

LUNCH AT McDONALD'S

AFTERNOON:

1. Hammermill Paper Co. Tour

   * Emphasis on Saving Energy and Pollution Control

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

JULY 16, 1981

MORNING:

Garden - MLKC Project
Program Preparation
Take Attendance

JOHN F. KENNEDY CENTER NYC STUDENTS

AFTERNOON:

1. *Emphasis on Saving Energy and Pollution Control
2. Energy Lesson - * 32 Ways You Can Fight Pollution
3. Work on Program Assistance List

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

# A G E N D A

JULY 17, 1981

MORNING:

MLK Center Gardening Project - King Center NYC Workers

Energy Lesson - *32 Ways you can fight Pollution

Cassette Film Strips

* Matter and Energy
* The Environmental Crisis - The Energy Crisis Part B

L U N C H

AFTERNOON:

Resume Work for Martin Luther King Center

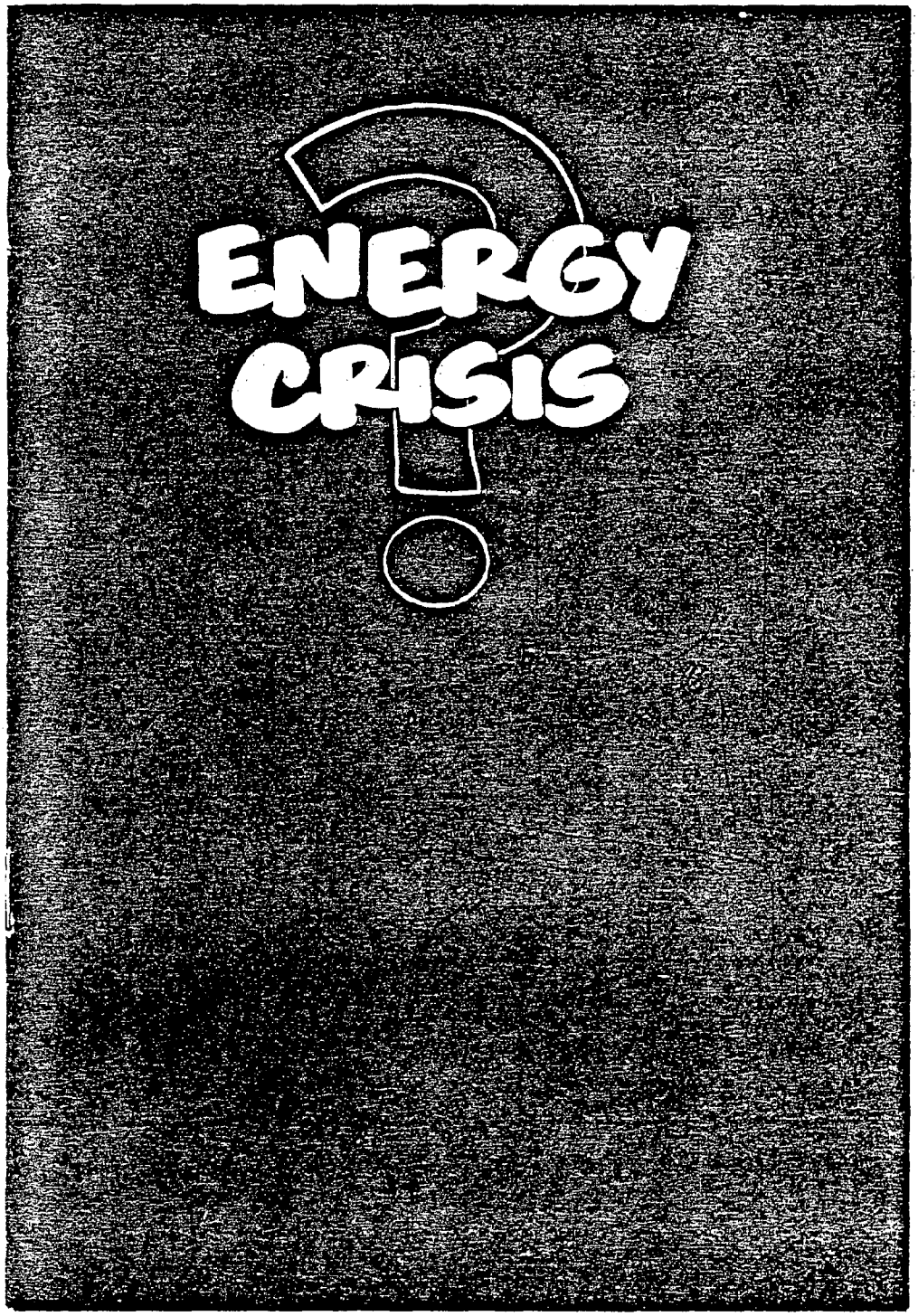
# ENVIRONMENTAL AWARENESS WORKSHOP

WEEK FOUR: Hammermill Tour and "32 Ways You Can Fight Pollution and Protect the Environment"

1. Where is most of the wood obtained that is used in the Hammermill Factory?
2. What type of wood is mostly used?
3. What is "broke"?
4. What is done with the "broke" that is accumulated?
5. How far does Hammermill paper travel?
6. Explain how personal attitutdes can help fight pollution.
7. Name three things which can be recycled.
8. What political organization can you write to in order to protect your right to a clean world?
9. Name five ways to fight pollution at home.
10. Name three ways to lessen pollution of cars.

WEEK FIVE: COASTAL EROSION

G.E. PARK AND SHADES BEACH



BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

Tuesday-July 21, 1981

MORNING:

M.L.K. Center - Gardening Project

JOHN F. KENNEDY CENTER NYC STUDENTS

AFTERNOON:

Gannon University Upward Bound Students.

1. Field trip to Shades Beach and G.E. Park
2. Students fill in Coastal Erosion questionaire
3. Energy lesson - * Enery Crisis - Is the Earth Running Out of Energy?

** Each student is to receive a coastal erosion hand out.

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

Wednesday July 22, 1981

MORNING:

Middle School Students 6-8 grades
Take Attendance

1. M.L.K. Gardening Project

2. Trip to shades Beach note: Costal Erosion around Erie Beach areas.

3. Fill in question an Erosion

4. Review: Special Energy Package Energy Crisis - * Is the Earth running out of Energy?

AFTERNOON:

Lunch

G.E. Park * note and compare Erosion around Beach area.

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

Thursday July 23, 1981

MORNING:

M.L.K. Center Gardening Project

AFTERNOON:

J.F.K. Center - NYC program

1. Take Attendance
2. Review energy booklet on: "Energy Crisis - Is the Earth running out of energy?"
3. Students will then answer question on booklet.
4. Drive out to G.E. Park and shades Beach and observe coastal erosion.
5. Discuss causes and problems of Erie coastline erosion.
6. Students will then answer questions on erosion and return to J.F.K. Center.

BAYFRONT NATO MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

Friday July 24, 1981

MORNING:

M.L.K. - NYC Students

1. M.L.K. Gardening Project

2. Trip to shades Beach to study coastal Erosion around Erie Beach Area.

3. Fill in question on Erosion

4. Special Energy Package Energy Crisis - Is the Earth running out of Energy.

Lunch

AFTERNOON:

G.E. Park

5. * Compare G.E. Park and shades Beach using prepared booklets.

# ENVIRONMENTAL AWARENESS WORKSHOP

Week Five: "Energy Crisis: Is the Earth Running Out of Energy?

1. What exactly is energy?

2. Most of the energy we use today comes from the Earth in the form of _____.

3. Briefly explain the origin of coal, oil and natural gas.

4. Explain the term "domestic supplies."

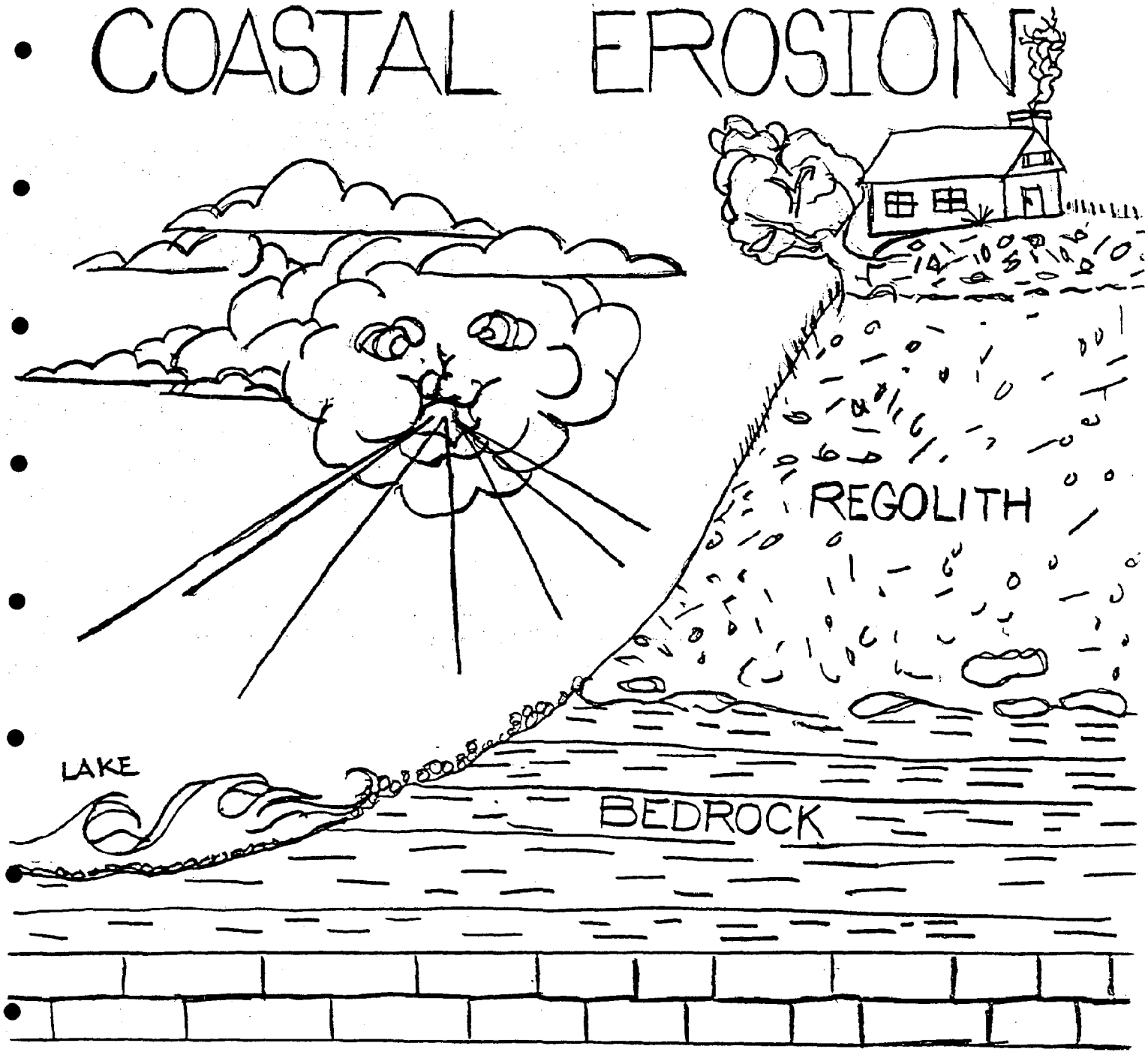
5. Name two synthetic fuels being experimented with today.

6. Harnessing natural steam to convert the heat from inside the Earth into electricity is _____energy.

7. Splitting the atom to produce heat which is converted into electrical energy is _____power.

8. The best short-range solution to the energy crisis is conservation. Explain why.

# COASTAL EROSION




INSTRUCTORS

DANNY T. CLARK LARRY W. MOORE GREGG L. HALLAM

# COASTAL EROSION

OBJECTIVES:

- To become familiar with shoreline erosion and its impact on human activity
- To realize the necessity or importance of coastal zone management
- To become somewhat familiar with the impact of humans on streams and vice versa.

# COASTAL EROSION

The common landforms are slopes, and although most slopes appear stable and static, they are actually unstable. Slopes are produced by differential erosion and deposition by streams, waves and other geologic agents. Those slopes adjacent to the shoreline of lakes are called lake cliffs.

Selective beach erosion and deposition was observed and investigated on Presque Isle. Lake cliffs experience selective erosion elsewhere along the southern shore of Lake Erie, and some of the derived sediment becomes potential beach material. Property located adjacent to the lake, experiences thousands of dollars of damage and destruction each year due to lake cliff erosions. Cliff erosion is so severe along many coastal areas that the federal and state governments have funded a program dealing with Coastal Zone Management. The primary purpose of the coastal zone management program is to either minimize or eliminate damage and destruction of property due to cliff erosion and retreat by better land use planning.

Lake waves together with plants and animals (biological erosion), rain wash, weathering, landslides, and artificially induced erosion are the processes attacking the lake cliff. The type of earth material, and the steepness of the slope along with other factors determine the rate and effectiveness of the preceding process. For example, solid rock (bedrock) is more resistant to wave erosion and other processes than unconsolidated material (regolith).

COASTAL EROSION (cont)

Trees on top of the lake cliff and along its slope facilitate and cause biological erosion as their roots penetrate the rocks and break them into smaller pieces. Rocks, and other materials change chemically and physically as they react to the elements of the atmosphere such as water, carbon dioxide, and oxygen; these changes are called weathering. Weathering processes aid cliff erosion by creating rock fragments, which are transported down the slope and some parts of rocks are put into solution by chemical activity.

A variety of human activities, such as, building homes (urbanization) and related structures can induce lake cliff erosion because the stability of the cliff is decreased. The weight of the slope material, including anything superimposed on the slope, such as vegetation, fill material, or buildings provide the most common deriving force for downslope movement.

Most unsafe construction is now forbidden in many areas of the coastal zone by strict regulation of development. However, we must continue to live with many of our past mistakes. In some areas recreational use of the lake cliff is superior to residential and should be encouraged.

The Action Cards are designed to aid you in understanding some of the problems of the coastal zone.

HAVE FUN!

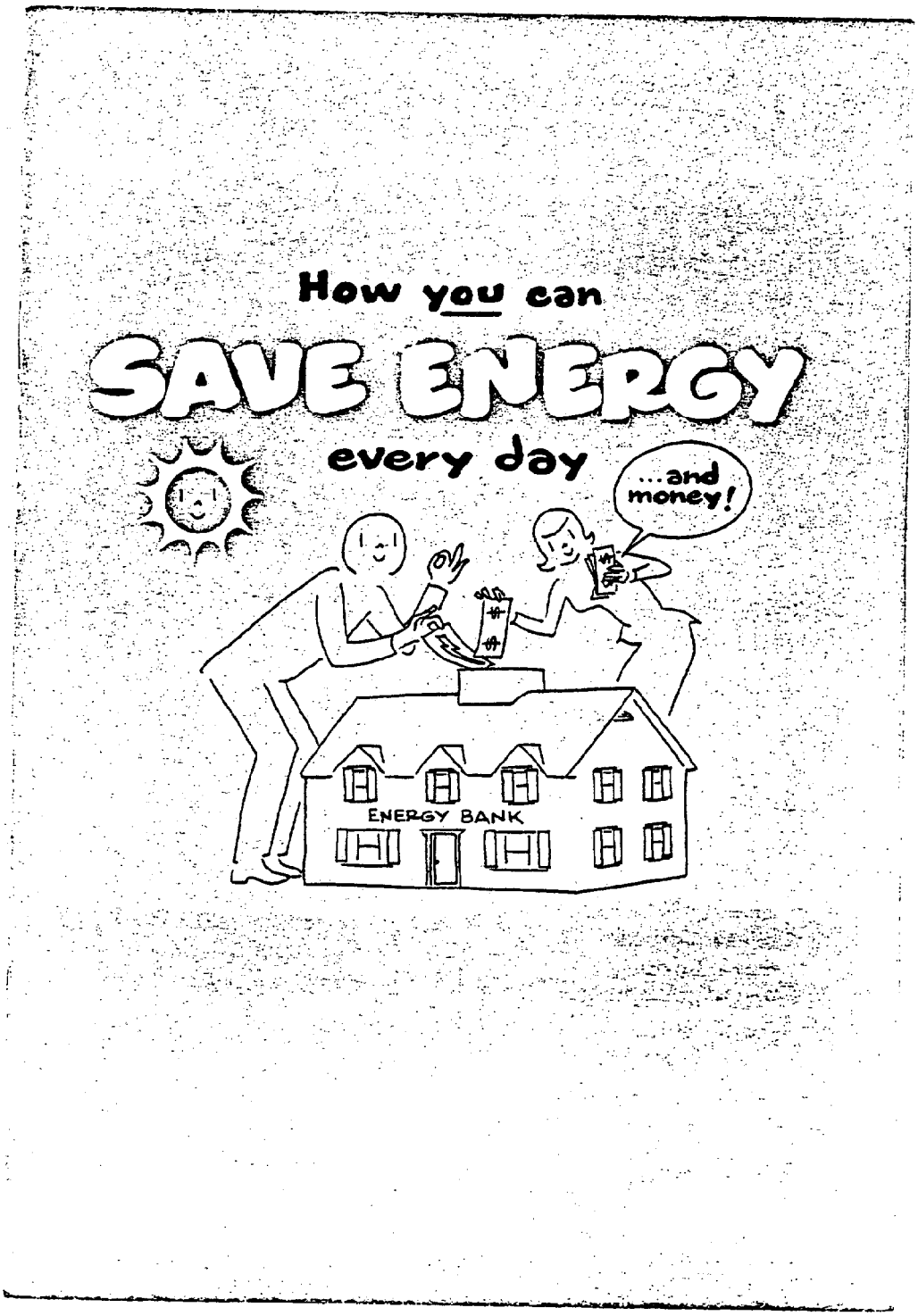
# COASTAL EROSION - G.E. PARK AND SHADES BEACH

| G.E. PARK | SHADES BEACH |
|---|---|
| 1. Thickness of Bedrock? | 1. |
| 2. Thickness of Regolith? | 2. |
| 3. Type of Bedrock? | 3. |
| 4. What Agent is causing most of the erosion in this area? | 4. |
| 5. Would it be wise to construct a home within 200 feet of this cliff? | 5. |
| 6. What is this area being used for? | 6. |
| DRAW AND LABEL G.E.'S CLIFF | DRAW AND LABEL SHADES CLIFF |

GARDENING AND APPRECIATING OPEN, GREEN SPACES

WEEK SIX: PRESQUE ISLE PROJECT

POND MICROSCOPIC STUDY



ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

TUESDAY - JULY 28, 1981

MORNING:

MARTIN LUTHER KING CENTER GARDENING PROJECT

Prepare Silk Screen for desing of Environmental Awareness 1981 T-Shirts.

AFTERNOON: L U N C H

GANNON UNIVERSITY UPWARD BOUND STUDENTS

1. Movies at Gannon - "A is for Atom"-15 minutes
2. Intro to Gardening - 12 minutes
3. Read and discuss energy impact booklet on "How You Can Save Energy Every Day"
4. Answer questions on films and booklet
5. Drive out to Presque Isle and discuss formation of the Peninsula, long-shore currents and sand movement.
6. Observe ponds on the peninsula. Discuss formation of ponds and habitat which subsists on these ponds. Take water sampels of the pond back to Gannon
7. At Gannon: Read and discuss MLK booklet on "Ponds": An Appreciation of the Simplest Forms of Life"; Prepare slides and observe life forms living in the pond water through a microscope.
8. Closing discussion and return to Martin Luther King Ctr.

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

WEDNESDAY - JULY 29, 1981

MORNING: MIDDLE SCHOOL STUDENTS - GRADES 6-8

MARTIN LUTHER KING CENTER GARDENING PROJECT

Movies - "A is for Atom"
Intro to Gardening

Read and discuss energy impact booklet on "How You Can Save Energy Every Day"

Answer questions on films and booklet

L U N C H

AFTERNOON:

1. Read and Discuss MLK booklets on, "Ponds: An Appreciation of the Simplest Forms of Life"

2. Drive to Presque Isle and discuss formation of the Peninsula, long shore currents and sand movement.

3. Observe the ponds on the peninsula and the habitat which depends on these ponds for survival. Take water samples back to MLK Center

4. Prepare slides and, through a microscope observe life forms living in the pond water.

5. Closing discussion

ENVIRONMENTAL AWARENESS WORKSHOP

A G E N D A

THURSDAY - JULY 30, 1981

MORNING:

MARTIN LUTHER KING CENTER GARDENING PROJECT

Make final arrangements on Silk-screen before printing shirts

L U N C H

AFTERNOON: JOHN F. KENNEDY CENTER - NYC PROGRAM

1. Movies at J.F.K. - "A is for Atom"
   Intro to Gardening

2. Read and discuss energy impact booklet on "How You Can Save Energy Every Day"

3. Answer questions on films and booklets

4. Drive out to Presque Isle and discuss formation of the Peninsula, long-shore currents and sand movement

5. Observe ponds on the peninsula and the habitat which subsists on these ponds. Bring water samples of the pond back to MLK Center

6. At MLK Center, read and discuss MLK booklet on "Ponds: An Appreciation of the Simplest Forms of Life". Prepare and observe slides of the pond water through a microscope

7. Closing discussion and return students to JFK Center

# ENVIRONMENTAL AWARENESS WORKSHOP

## A G E N D A

## FRIDAY - JULY 31, 1981

MORNING:

MARTIN LUTHER KING CENTER - NYC STUDENTS

Mlk Gardening Project

Movies - "A is for Atom" - Intro to Gardening

Read and discuss energy impact booklet on, "How You Can Save Energy Every Day"

Answer questions on films and booklet

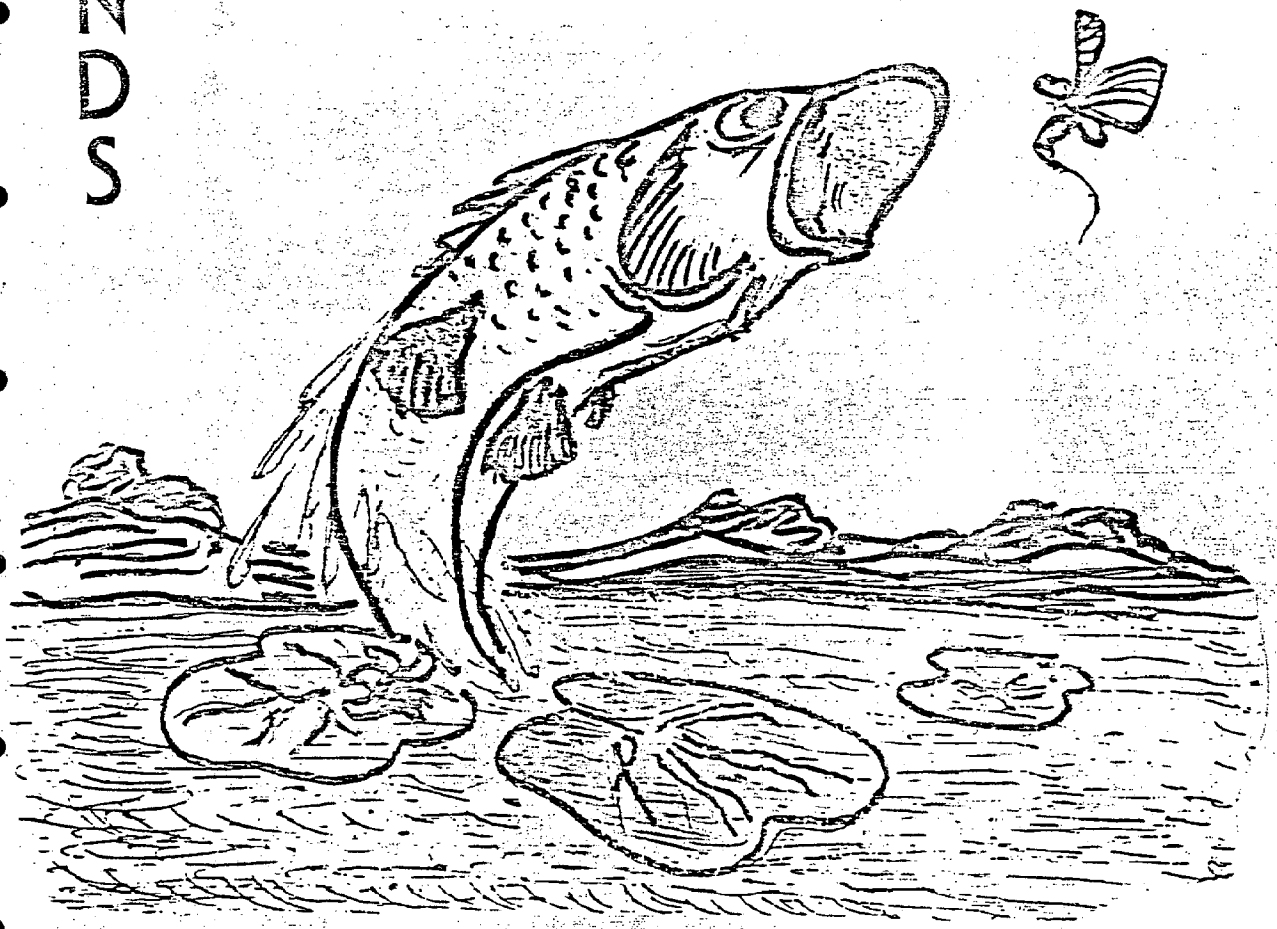
L U N C H

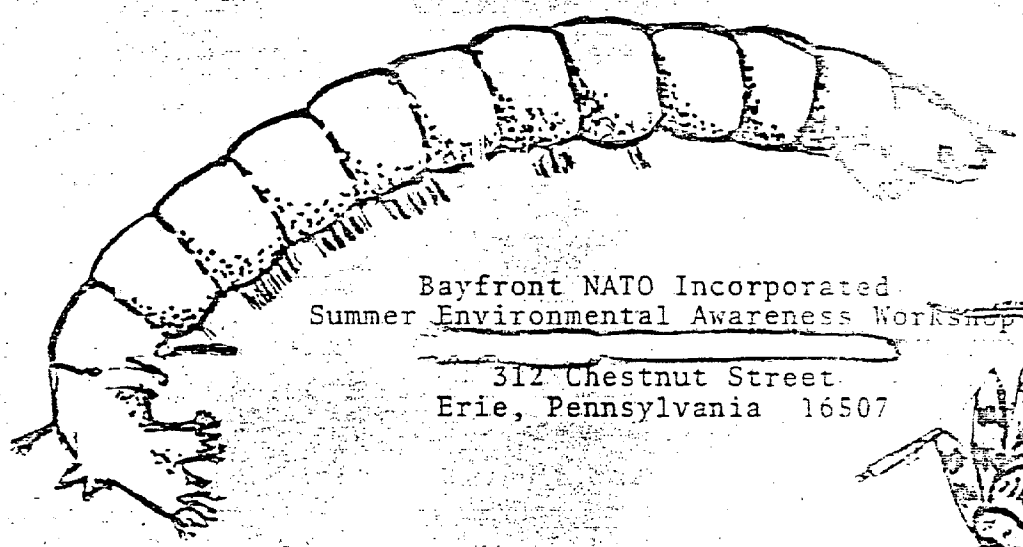
AFTERNOON:

1. Read and discuss MLK booklet on, "Ponds: An Appreciation of the Simplest Forms of Life."
2. Drive to Presque Isle and discuss the formation of the Peninsula, long-shore currents and sand movement.
3. Observe the ponds and the habitat which lives off these ponds. Take water samples back to MLK Center
4. Prepare slides and observe life forms living in the pond water
5. Closing discussion

# PONDS

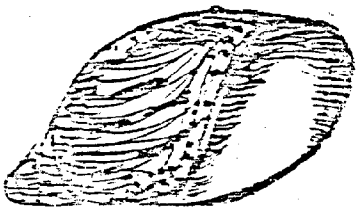
## An Appreciation of the Simplest Forms of Life





Bayfront NATO Incorporated
Summer Environmental Awareness Workshop

312 Chestnut Street
Erie, Pennsylvania 16507



Presented By:
Danny Clark - Larry Moore

BAYFRONT NATO INCORPORATED
SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

312 CHESTNUT STREET
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# PONDS

## AN APPRECIATION OF THE SIMPLEST FORMS OF LIFE

OBJECTIVES:

1. To develop the students conscious awareness of his local environment.
2. To stimulate the students interest toward aquatic organisms.
3. To note the relationship between aquatic organisms and their dependence upon each other.
4. To familiarize the student with different roles of aquatic morphology (including pond morphology)
5. To introduce the student to techniques and equipment used in the study of microscopic organisms and pond life.
6. To introduce terms associated with pond and microscopic study.
7. To promote the students overall appreciation of the simplest forms of life.
8. To promote the students overall interest in environmental sciences.

# PONDS

## AN APPRECIATION OF THE SIMPLEST FORMS OF LIFE

### TERMS

1. Compound Microscope
2. Dissecting Microscope
3. Microtone
4. Morphology
5. Pond Morphology

This Pond Project booklet has a Aquatic Organism Identification booklet with it. This will help identify some of the more common pond insects.

Provided by the Erie County Health
& Pennsylvania Health Departments..

# PONDS

## AN APPRECIATION OF THE SIMPLEST FORMS OF LIFE

Everyone has an idea of what a pond is. It is a small quiet body of water that resembles a shallow lake. Most ponds are shallow enough for sunlight to reach the bottom. Ponds have been seen in parks, forest, and beach areas throughout the country and in areas not far from your home.

The sunlight that enters the pond water enables different kinds of seeds to root. The plant life that exists in a pond comes from seeds which have been carried by winds and streams over long distances. This gives the pond a wide variety of plant life. There are two basic types of plants associated with pond life. One type is Surface Plants. These plants have thick leaves which float on top of the water. The other type is Subsurface Plants. Many of these plants grow across the pond bottoms from shore to shore.

Ponds also have a great variety of animal life which includes birds, crayfish, fish, frogs, and turtles. The pond is also home for animals, plants and insects we can't see with our eyes. These invisable creatures are referred to as Microscopic Organisms.

All pond life are dependent upon one another in some way. When animals and plants depend upon each other, it is referred to as a Food Chain. For example, microscopic plants, such as certain forms of algae, serve as a primary producer of food. The primary consumer of this food is the tadpole and snail (they eat the plants). The secondary consumer is fish which eat the tadpoles and snails.

Next, the Tertiary Consumer, such as a bird or man, may eat fish.

Finally, bacteria and other microscopic creatures called Decomposers act on animal waste and plants that have died. These plants and wastes are converted to a chemical which is used for microscopic plants to make food (thus the cycle begins again).

Ponds have a variety of surface and underwater animals. For instance; pond beetles which dart and whirl around on and under the water's surface. Water spiders are also common in ponds. The mosquito larva spends much of its early life cycle under water. The mosquito larvae breathe through air tubes which are extended from their bodies to the water's surface.

The Dragon Fly's early life cycle is also spent under water. In the dragon fly's early development it is called a larvae or nymph. These insects are very vicious at this stage and are known to attack and feed on small fish and mosquito larvae.

Different parts of the country have different types of ponds. There are about six different types of ponds. Some are formed by natural conditions and others are man made. We will only be concerned with three of those types. One type of pond that is found in the farming regions of the northern hemisphere is the Farm Pond.

The Farm Pond controls floods, provides a water supply, and is used as a recreational spot. Another type of pond is the Bog Pond. These ponds are located in low lying places in cooler regions and has heavy vegetation. The third type of pond is formed where a slowly moving stream widens and flows over gently sloping landscape. These ponds have an abundance of life, they are called the Meadow Stream Pond.

The many wonders of pond life is awaiting your investigation. Perhaps your group will study some pond that is near or around your home. Good luck and have fun studying ponds and their aquatic organisms.

# PONDS

## AN APPRECIATION OF THE SIMPLEST FORMS OF LIFE

### QUESTIONS

1. WRITE THE DEFINITION FOR EACH OF THE FOLLOWING TERMS.

   a. Compound Microscope

   b. Dissecting Microscope

   c. Microtone

   d. Morphology

   e. Pond Morphology

2. NAME AND IDENTIFY THE MICROSCOPE THAT CONTROLS THE AMOUNT OF LIGHT PASSING THROUGH THE SPECIMEN

3. WHAT DID YOU SEE UNDER THE MICROSCOPE? PLANT OR ANIMAL? EXPLAIN WHY IT IS ONE OR THE OTHER.

SUMMER ENVIRONMENTAL AWARENESS PROJECT

WORKSHOP QUESTIONS

PRESQUE ISLE

1. Make a drawing of beach profile, with the instructors aid, and label the foreshore, backshore, and dunal area.

2. Why are the pebbles and cobbles sub-round to round in shape?

3. Sketch 3 major rock fragments and their textures.

4. Label rock fragments according to their textures.

5. What 3 major rock types are present on Presque Isle?

6. What are the potential sources for phosphates, and nitrates in lake Erie?

(use a separate sheet of paper for your answers)

# ENVIRONMENTAL AWARENESS WORKSHOP

WEEK SIX: "HOW YOU CAN SAVE ENERGY EVERY DAY"

1. WHY IS IT IMPORTANT TO SAVE ENERGY?

2. BY USING ENERGY MORE EFFICIENTLY, WE CAN SAVE...
(name two things)

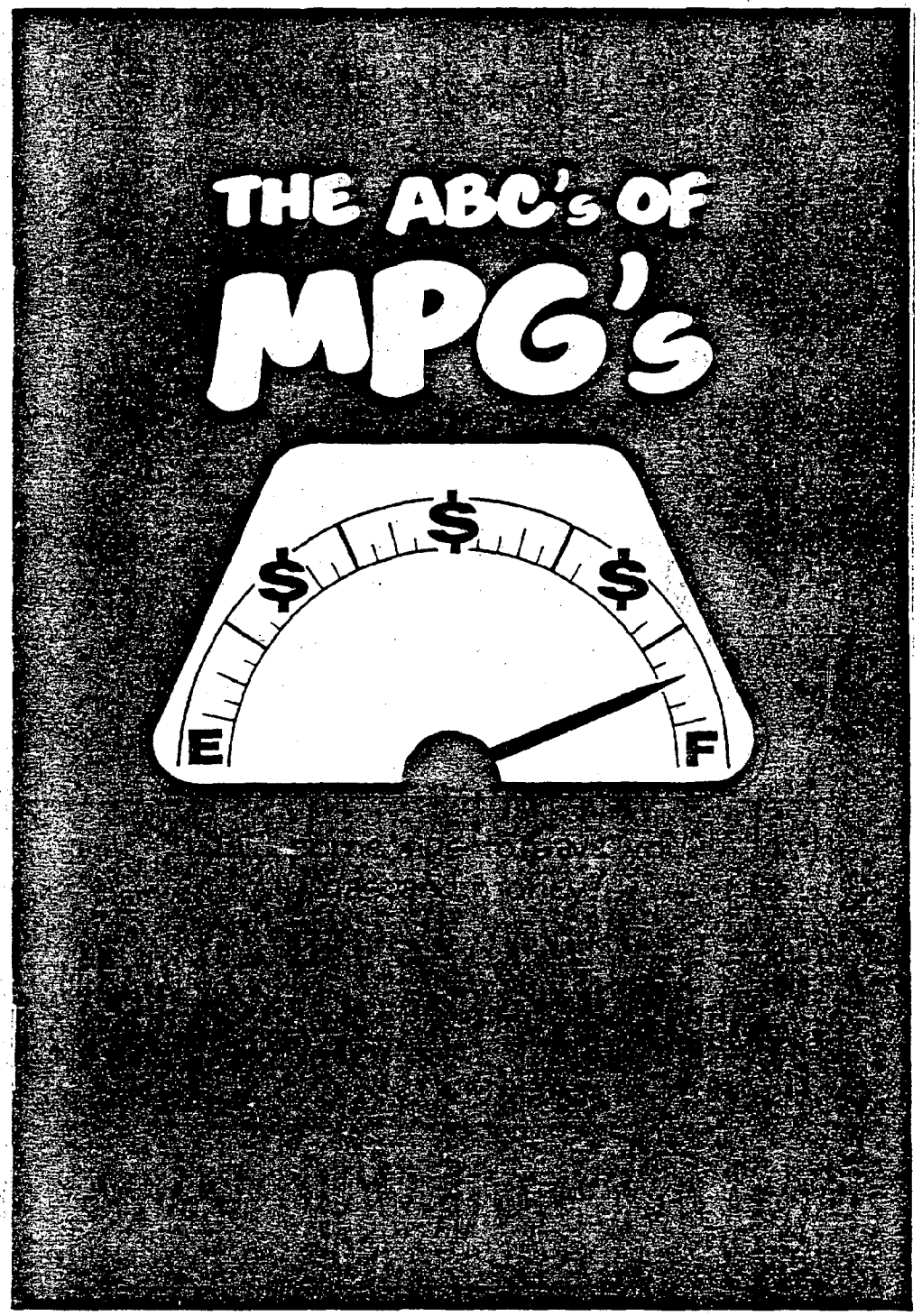
3. NAME AT LEAST ONE WAY TO SAVE ENERGY IN EVERY ROOM AT HOME. (kitchen, bedroom, etc.)

4. FLUORESCENT LIGHTS USE MORE ENERGY THAN REGULAR LIGHT BLUBS? (True or False?)

5. CARS REGISTERED IN THE UNITED STATES USE _____% OF TOTAL ENERGY CONSUMPTION.

WEEK SEVEN: FAIRVIEW FISH STATION

A CAREER AS A FISH CULTURIST



BAYFRONT N.A.T.O. MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS WORKSHOP

TUESDAY, AUGUST 4, 1981

# A G E N D A

MORNING: Martin Luther King Center Gardening Project

L U N C H

AFTERNOON: Gannon University Upward Bound Students

1. Field Trip to Fairview Fish Station
2. Cover Booklets on Fish Culturist
3. Energy Lesson on the ABC's of MPG's
4. *Environmental Awareness Post-Assessment Questions
5. Present Program Participation Shirts

BAYFRONT N.A.T.O. MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS WORKSHOP

WEDNESDAY, AUGUST 5, 1981

# A G E N D A

MORNING: Middle School Students All day 6th-8th grade..

1. Martin Luther King Center Gardening Project
2. The ABC's of MPG's - The Weekly Energy Lesson

L U N C H

AFTERNOON:

4. Trip to Fairview Fish Station
5. Cover Booklets on Fish Culturist
6.* Environmental Awareness Post-Assessment Questions
7. Present Program Participation Shirts

BAYFRONT N.A.T.O. MARTIN LUTHER KING CENTER
ENVIRONMENTAL AWARENESS WORKSHOP

THURSDAY AUGUST 6, 1981

A G E N D A

MORNING: Martin Luther King Center Gardening Project

L U N C H

AFTERNOON: John F. Kennedy Center - N.Y.C. Workers

1. Trip to Fairview Fish Station
2. Cover booklets on Fish Culturist
3. Energy Lesson on the ABC's of MPG's
4. *Environmental Awareness Post-Assessment Questions
5. Present Program Participation Shirts

BAYFRONT N.A.T.O. MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

FRIDAY, AUGUST 7, 1981

A G E N D A

MORNING: Martin Luther King Center Students - All day - NYC Workers

Martin Luther King Center Gardening Project

L U N C H

AFTERNOON:

1. Trip to Fairview Fish Station
2. Cover Booklets on Fish Culturist
3. Energy Lesson on the ABC's of MPG's
4. *Environmental Awareness Post-Assessment Questions
5. Present Program Participation Shirts

# ENVIRONMENTAL AWARENESS WORKSHOP

Week Seven: "The ABC's of MPG's"

1. Nationwide, each day, Americans use over: a) 50 million gallons of gasoline; b) 300 million gallons of gasoline; c) 1 billion gallons of gasoline?

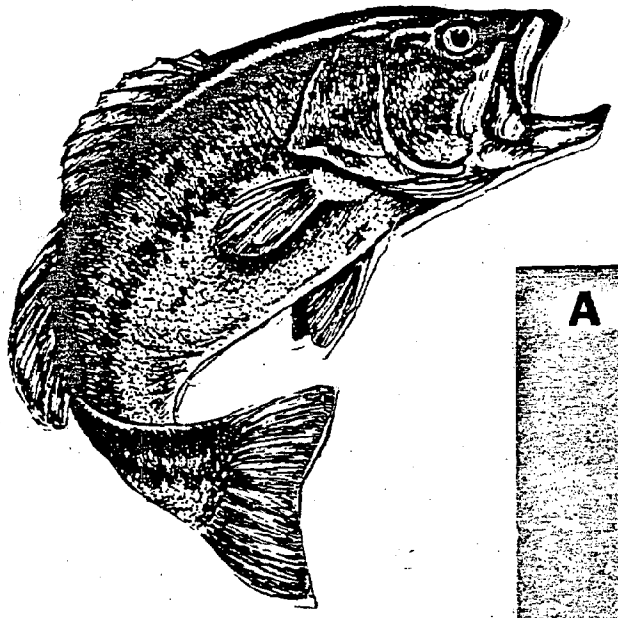
2. The average car uses about _____gallons of gas per year.

3. Name the two essential savings that are made by using less gas in your car.

4. Explain how to compute your car's mpg's.

5. List five good habits to remember when driving in order to get better gas mileage.

6. List five ways to mechanically get better gas mileage out of your car.



Fishing is fun, but theres more to Fishing than just CATCHING FISH!!!!!

presented by;

*Danny T. Clark*

*Larry W. Moore*

*Gregg L. Hallam*

BAYFRONT NATO INCORPORATED
SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

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SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

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# CAREER IN CONSERVATION AS A FISH CULTURIST

## OBJECTIVES:

1. To develop and increase the student's awareness of careers in conservation
2. To stimulate the interest of students in aquatic careers
3. To become familiar with activities surrounding Fish breeding
4. To note the importance of fish placement in the food chain
5. To promote the understanding and importance of a career as a Fish Culturist
6. To increase the student's awareness of conservation measures that are going on right here in Erie county concerning the breeding and catching of fish

BAYFRONT NATO INCORPORATED
SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

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## A CAREER IN CONSERVATION AS A FISH CULTURIST

Many of you probably don't realize that fish can be spawned (reproduced in large numbers) in a special laboratory-like set up called a fish hatchery or a fish cultural station. Many of the fish in Lake Erie that are now 24 inches long were at one time a recently hatched fingerling or fry that was spawned in a culture station.

Coho salmon are raised at the hatchery in Fairview. In the fall of the year salmon move in from the deep waters of Lake Erie to the tributary streams. Natural instinct tell these fish to return to the streams where they spent their youth to lay eggs. The fish are captured in weirs (wooden racks that they can't swim through) upstream and Fish Commission personnel take ripe eggs from adult salmon.

The eggs are shipped to several of the commissions fish cultural stations where they are hatched and incubated over winter. Temperature is a critical issue in a cultural station. The eggs are hatched at precise temperatures, and for this reason, many hatcheries are not cultural stations.

Hatcheries are located on various tributary streams. When the fish are big enough, they are let go. Then they swim down the creek to the lake and are on their own. When they are let go they are about 6 inches long. Within a year they become 16 inches long. These salmon eat other fish for food (smelt, etc). In three years, by some yet unexplained

instinct, these coho return to the streams of their youth to spawn and die. This is where the fish are captured and the eggs are gathered.

Most of the people handling the fish are trained and are special state and government workers. Yes, there are careers in conservation . . . a fish culturist is one.

Fishing is fun, but there's more to fishing than just catching fish.

# SUMMER ENVIRONMENTAL AWARENESS WORKSHOP

## FAIRVIEW FISH CULTURAL STATION

1. WHY DO YOU THINK IT IS IMPORTANT TO CONTROL THE NUMBER OF FISH CAUGHT AND/OR BRED EACH YEAR?

2. THE PENNSYLVANIA FISH COMMISSION HAS WRITTEN MANY RULES FOR SAFE BOATING AND FISHING. CAN YOU THINK OF ONE?

3. WHY DO SALMON RETURN TO THE STREAMS WHERE THEY GREW UP?

4. IN YOUR OWN WORDS DESCRIBE A SALMON'S LIFE CYCLE FROM THE TIME IT IS BORN TO THE TIME IT DIES. (THREE (3) YEARS)

5. DO YOU THINK (if the pay was good) THAT YOU COULD BECOME A FISH CULTURIST? WHY? WHY NOT?

(if you need additional space-use reverse side)

BAYFRONT N.A.T.O. MARTIN LUTHER KING CENTER

ENVIRONMENTAL AWARENESS WORKSHOP

MONDAY AUGUST 10, 1981 through FRIDAY AUGUST 14, 1981

FINAL AGENDA

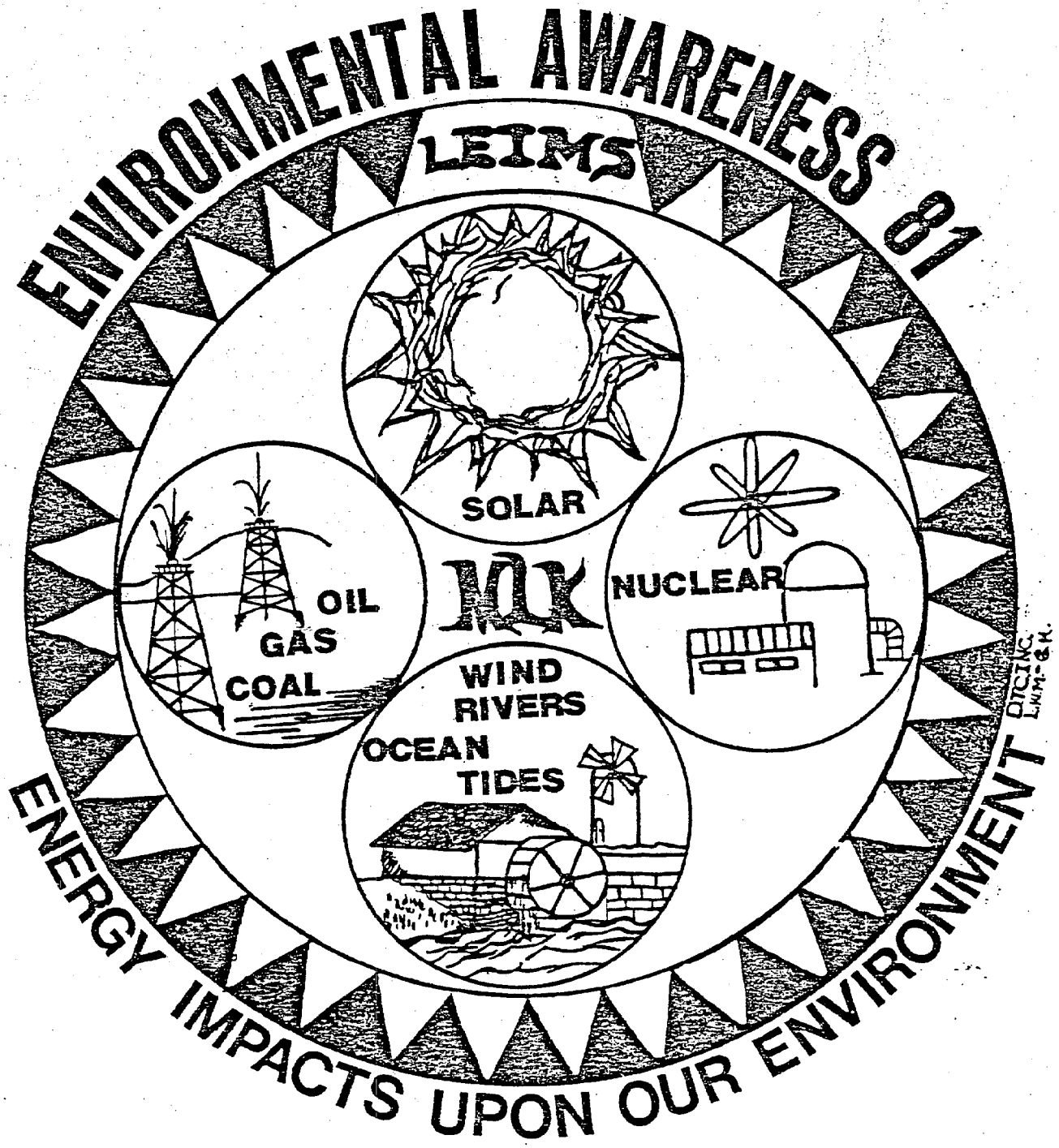
I. WORK ON FINAL REPORT (due August 14, 1981)

II. Tabulate Student Program Assessment Question and suggestions for Final Report

III. Plan Picnic for Scotts Park - August 14, 1981

IV. Special Thanks to the individuals who helped with the Environmental Awareness Workshop and the L.E.I.M.S. Program in general

PART IV


ENVIRONMENTAL AWARENESS 81
LEIMS
SOLAR
OIL
GAS
COAL
NUCLEAR
WIND
RIVERS
OCEAN
TIDES
ENERGY IMPACTS UPON OUR ENVIRONMENT

# PART IV

## PARENTAL AND COMMUNITY INVOLVEMENT

A. MIDDLE SCHOOL STUDENT PERMISSION SLIP LETTERS

B. PRESS RELEASE

C. LETTERS TO HARRY LUNDSTRUM

D. SCOTTS' PARK PERMIT FOR PICNIC

E. FINAL THANKYOU LETTER TO PARENTS

A BRIDGE TO A BRIGHTER FUTURE

Bayfront N.A.T.C. Inc. Martin Luther King Center

Alex W. Thompson
Executive Director

A Multi-Service Center

June 2, 1981

DEAR PARENT:

The Martin Luther King Center would like to invite your child, who is presently participating in some of the Center's Programs, to participate in a Summer Environmental Awareness Workshop. This workshop will be held each Wednesday for eight (8) consecutive weeks commencing June 24, 1981. The activities of the Workshop are designed to have students investigate; (1) Environmental impacts which presently exist in their neighborhoods and to predict future impacts (2) some of the processes of erosion and sedimentation and the impact of these processes on humans; (3) the nature materials (i.e., water, rocks, soils, and other sediments) and how they can be used by humans, and; (4) activities dealing with energy usage and conservation and impacts upon the environment.

If you would like your child to be a part of this program, please sign your name on the line below which gives your child permission to participate. Have your child drop this letter off at the King Center as soon as possible. Each student will be fed at the Center on the day that he/she participates.

---

STUDENTS NAME:_____ADDRESS_____PHONE_____

I,_____Parent of_____hereby give my permission for my son/daughter to participate in the Summer Environmental Awareness Program sponsored by the Lake Erie Institute for Marine Science and the Martin Luther King Center. It is my understanding that my child will be fed during the one day per week sessions which will commence on June 24, 1981 from 9:30 A.M. to 3:30 P.M.

_____ _____
PARENT/GUARDIAN DATE

PLEASE RETURN COMPLETED FORM TO MRS. FRANCINE MYERS AT THE KING CENTER MONDAY THROUGH FRIDAY - 8:30 A.M. TO 5:00 P.M....

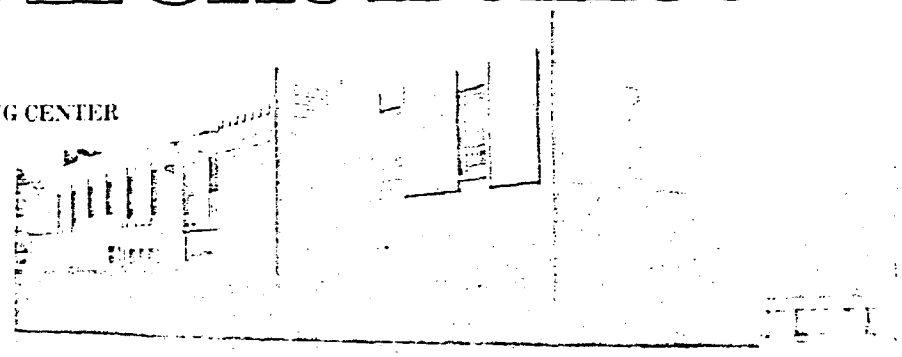
312 Chestnut Street Erie, Pennsylvania 16507

Telephone 459-2761

# The Bayfront Bulletin

Published by:
BAYFRONT NATO MARTIN LUTHER KING CENTER

VOL. 2, NO. 3
JULY 1981



## Summer Environmental Awareness Program

About 80 young people from the Neighborhood Youth Corps, J.F. Kennedy Center, Gannon University's Upward Bound, Martin Luther King Center and middle school children from the Bayfront area are participating in the Summer Environmental Awareness Program being held at the MLK Center from June 22 to August 10.

The program is coordinated by Mr. Eva Tucker, assistant professor of Geoscience at Behrend College and board member of Lake Erie Institute of Marine Science. The instructors are: Mr. Larry Moore of McDowell High School; Mr. Danny Clark, biology graduate of Edinboro State College; and Mr. Greg Hallam, a senior at Edinboro State majoring in geography and environmental planning.

The Environmental Awareness Program has activities designed to familiarize young people with all the elements of their environment. This summer an added theme will be "Energy Impacts Upon Our Environment." The activities scheduled to be included in this summer's program are: Career Planning, Hammermill Tour, Presque Isle Project, Archaeology, Coastal Erosion, Metrics, studying the simplest forms of life-ponds, Careers in Conservation - Fish Culturist, Water-Natural Resources, and a Weekly Energy Activity.

The program is operated by the MLK Center in conjunction with the Greater Erie Community Action Committee (GECAC), and the Lake Erie Institute of Marine Science (LEIMS), and funded through the Coastal Zone Management Program.

Young people in grades 5 through 12 who would like to participate may come to the Center for registration forms of call Fran Myers at 459-2761.

*Students from the Summer Environmental Awareness Program study the effects of beach erosion and identify different rock types associated with Presque Isle.*

## Environmental Awareness Program Being Held

About 80 young people are expected to participate in the Summer Environmental Awareness Program now through Aug. 10 at the Martin Luther King Center, 312 Chestnut St.

The theme of this year's program is "Energy Impacts Upon Our Environment." Scheduled activities will include career planning; a tour of Hammermill Paper Co.; special projects at Presque Isle State Park; archaeology, coastal erosion: metrics; study of life-ponds; careers in conservation; a weekly energy activity and more.

Coordinated by Eva Tucker, assistant professor of geoscience at Behrend College and a board member of the Lake Erie Institute of Marine Sciences.

Young people in grades five through 12 are encouraged to participate. Call Fran Myers at 459-2761 for registration.

A BRIDGE TO A BRIGHTER FUTURE

Bayfront N.A.T.O. Inc. Martin Luther King Center

Alex W. Thompson
Executive Director

A Multi-Service Center

July 15, 1981

Mr. Harry Lundstrom
Supervisor of Plant Security
and Public Relations
Hammermill Paper Company
P.O. Box 1440
Erie, Pennsylvania 16533

Dear Mr. Lundstrom:

This letter is to thank you for the week long tour of your facilities which I know took at least seven hours of your time. I also want to thank you for scheduling the tour so that it fit so nicely into our previously planned Environmental Awareness Summer Workshop. The sixty students that went on tour did not get a chance to see the pulp mill operation but they did get a chance to see the papermill which includes the actual paper-making, the finishing room, and the warehouse operations.

The theme of our Workshop this summer is Energy Impacts upon the Environment. The tour helped the students realize the volume of energy needed to run a large plant such as Hammermill. Energy consciousness is everyone's business whether it involves running a paper mill 24 hours a day or being energy conscious in your own home.

Thank you again for your time, and we hope to work with you during future summer workshops.

Respectfully,

BAYFRONT NATO MARTIN LUTHER KING CENTER

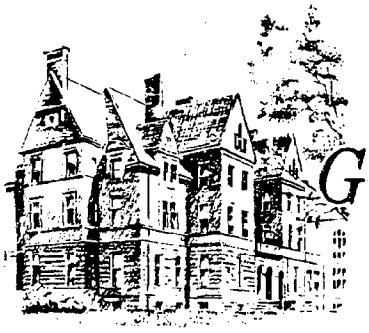
Larry W. Moore

Larry W. Moore, Instructor
Summer Environmental Awareness Workshop

312 Chestnut Street

Erie, Pennsylvania 16507

Telephone 459-2701



# Gannon University

PERRY SQUARE • ERIE, PENNSYLVANIA • 16541 • (814) 871-7278

March 13, 1981

*Upward Bound Program*

Mr. Alexander W. Thompson
Executive Director
Bayfront NATO Inc.
312 Chestnut Street
Erie, PA 16507

Dear Mr. Thompson:

The Upward Bound Program of Gannon University gladly accept your invitation to participate in your summer program on environmental awareness. We are looking forward to working with your program this summer.

Thank you for your invitation and interest in the Upward Bound Program.

Sincerely,

Victor Butler

Victor Butler
Director
Upward Bound
Gannon University

VWB/arf

COUNTY OF ERIE
Department of Recreation and Cultural Affairs
Erie County Court House, Room 5A, 1st Fl.
Erie, Pennsylvania 16501
814/452-3333 — Ext. 328 & 273

RUSSELL D. ROBISON
COUNTY EXECUTIVE

PETER J. RUSSO
DIRECTOR

# SPECIAL PERMIT

DATE ISSUED: July 20, 1981

PERMISSION IS GRANTED TO: Larry Moore

REPRESENTING: Environmental Awareness Workshop
Martin Luther King Center

FIELD: William L. Scott County Park Softball Field **

DATE(S) OF USAGE: Friday, August 14, 1981

TIME: 10:00 AM - 3:00 PM

ACTIVITY: Softball

D. E. Higley

NOTE: This permit may be revoked should it be necessary to use the above facility for County purposes.

GENERAL INFORMATION: All groups are to obey the park rules.

Any group will be denied use of the field if they are responsible for misuse or destruction of park property.

County is not liable or responsible for any injuries or claims.

Park closes at 10:00 PM - NO EXCEPTIONS

** Please leave area in good condition for regularly scheduled league.

PJR:fja

A BRIDGE TO A BRIGHTER FUTURE

# Bayfront N.A.T.O. Inc. Martin Luther King Center

Alex W. Thompson
Executive Director

A Multi-Service Center

AUGUST 11, 1981

Dear Parent:

It was indeed a pleasure to have had your child(ren) in our Lake Erie Institute of Marine Science Summer Program 1981. We hope that your child enjoyed the program as much as we enjoyed teaching some of the basic principles of our environment.

If your child is interested in more after school educational and recreational activities, there will be art classes, dance classes (ballet, jazz, and rythmics), photography, ceramics, silk screening, and general gymnasium recreation offered at the Martin Luther King Center this fall.

Please, do not hesitate to contact Mr. Bruce Morton Wright, Project Director of the Cultural Program or Mr. Alan Poole, Recreation Supervisor at 459-2761 if you desire further information.

Enclosed is a pamphlet which will inform you of other programs available at the Center, such as, Medical, Dental, Social Services and Daycare.

Thank you for being a parent who cares.

Sincerely,

BAYFRONT NATO MARTIN LUTHER KING CENTER

Larry W. Moore

Gregory L. Hallam

Danny T. Clark
Instructors - Summer Environmental Awareness Workshop

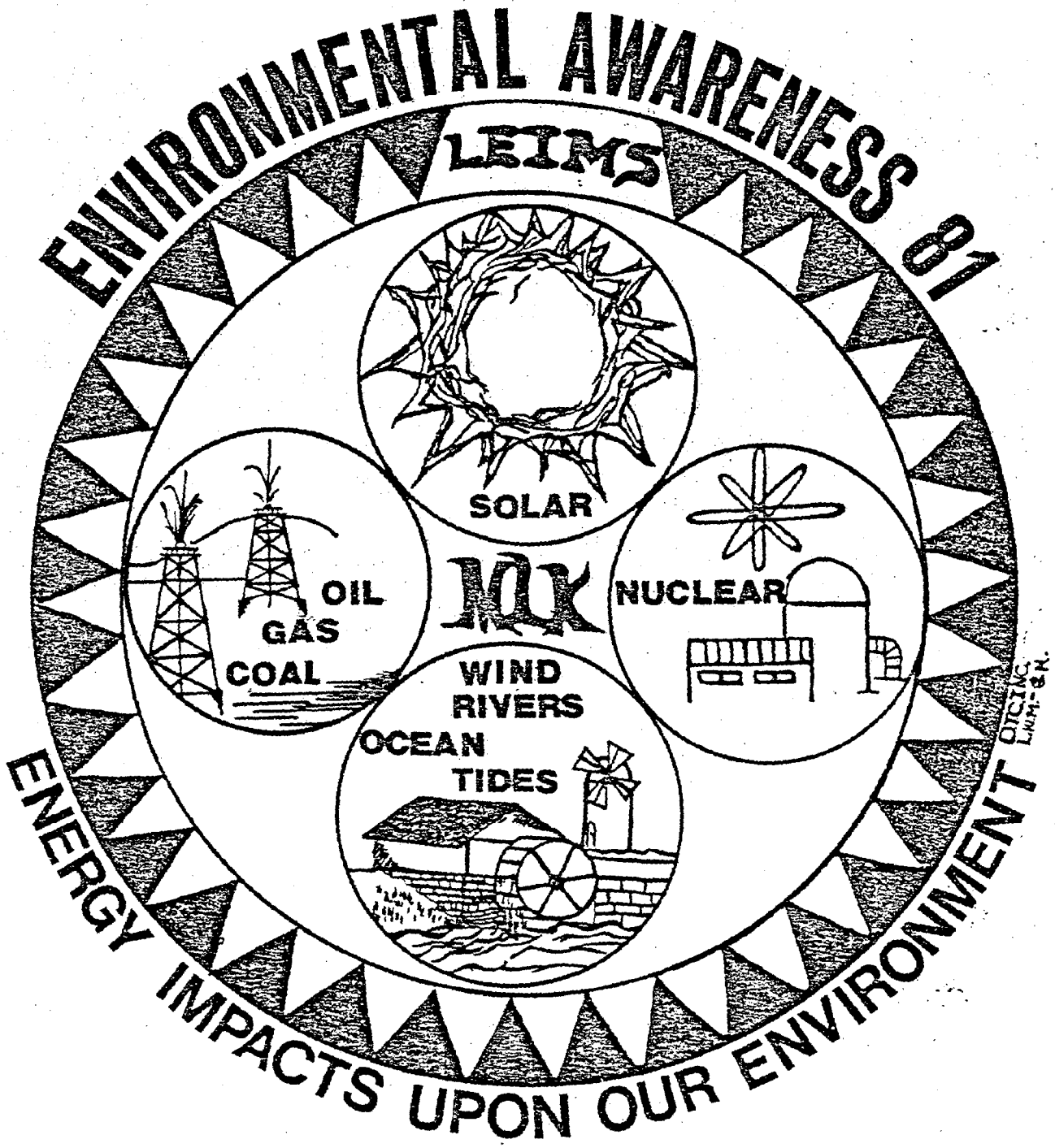
jm

312 Chestnut Street

Erie, Pennsylvania 16507

Telephone 459-2761

PART V


ENVIRONMENTAL AWARENESS 81
LEIMS
SOLAR
OIL
GAS
COAL
NUCLEAR
WIND
RIVERS
OCEAN
TIDES
ENERGY IMPACTS UPON OUR ENVIRONMENT

# PART V

A. RESUMÉS

B. ERIE TIMES MAGAZINE ARTICLE

# R E S U M E'

LARRY WAYNE MOORE
1326 German Street
Erie, Pennsylvania 16503

(814) 454-1364 (Home)
838-9611 (Office)

## Education:

| | |
|---|---|
| 1978 | Gannon University - Master of Arts Degree in English |
| 1976 | Bachelor of Arts - English<br>Gannon University - Major-English<br>Minor-Science |

## Current Employment

| | |
|---|---|
| Sept/1979 to Present | Millcreek School District - McDowell High School Teacher - Eleventh Grade English |
| Sept/1977 to Present | English Coordinator - Gannon University's Upward Bound Program |
| Sept/1976 to Present | Gannon University - English Instructor (Lecturer) Courses Taught: Rhetoric and Communication - Research into Mass Media |
| June 1980 to Present | Lake Erie Institute of Marine Science - Martin Luther King Center: Instructor of Environmental Awareness Summer Project. |

## Past Employment

Mercyhurst College - Instructor Freshman English
Martin Luther King Center - Tutor, ESAA Program
Wilson Middle School - Director Learning Lab and Lab Technician
Hammermill Paper Company (Central Research for 7½ years - 1969-1976)

## Military Experience

1966 - 1968

U.S. Army. Rank: SP5 JOBS: Hospital Lab Technician and Food Chemist Technician.

## Community Involvement

American Legion Post 700 - Public Relations Director
Elks Club - Historian; NAACP - Historian; American Legion Post 700 - Historian.

## Special Awards

Academy High School - National Honor Society
Gannon University - Dean's List
Booker T. Washington Scholastics Award
Gannon Upward Bound Program - four special awards for youth involvement.

## Hobbies

Table Tennis, Bowling, Baseball, Tennis, Music and Writing.

## References

References will be furnished upon request

# R E S U M E'

NAME: Gregory Lynn Hallam
716 West Ninth Street
Erie, Pennsylvania 16502

TELEPHONE: (814) 456-2251

BIRTHDATE: August 26, 1958

MARITAL STATUS: Single

EDUCATION:

Edinboro State College - Will graduate in the Fall of 1981 with a Bachelors Degree in Geography and Environmental Planning.

OBJECTIVE:

To live in New York City for five (5) out of my next ten (10) years..

EXPERIENCE:

For the past five years of my life, I've been going on and off to college and taking classes relating to Geography, the Earth, the Oceans, Rural and Urban Planning, conservation, Field Method Techniques, etc.

I have worked with Paul Knuth from Edinboro State College on projects monitoring Erie Coastline Erosion and control experiments.

EXTRACURRICULAR:

I've been Vice President, Treasurer, Secretary and Social Chairman of an Edinboro Fraternity. Enjoy fishing and take an interest in fish and wildlife protection of my county (Erie County)

REFERENCES:

Paul Knuth
Professor - Edinboro State College
Hendricks Hall
Edinboro, PA 16444

Barry Majeske, Manager
Executive Smoke Shop
Erie Hilton - 16501

Dan Hawthorne, Assistant Manager
Avco Finance Company
West 38th Street
Erie, Pennsylvania 16504

# R E S U M E'

Danny Thomas Clark
356 Lawrence Tower B
Edinboro State College
Edinboro, Pennsylvania 16444
(814) 732-4015

7142 Lemington Avenue
Pittsburgh, PA 15206
(412) 441-2224

PERSONAL: Height - 6'0 Weight - 173 Birthdate: May 25, 1957

MARITAL STATUS: Single

PROFESSIONAL OBJECTIVES: Application of knowledge and skills acquired in the fields of Biology, Anatomy, Physiology, and Art. The Course experiences have provided me with scientific and visual skills needed to solve the problems encountered in the field of Dentistry. Throughout my undergraduate studies, I have worked with people on a close and often personal level. It involved solving problems relating to organizational and academic situations. While pursuing Dentistry as a career, I feel all of these attributes will play a very important role in achieving my goal.

EDUCATION:

May 1981

Received Bachelor of Arts in Specialized Studies
Edinboro State College - Edinboro, Pennsylvania

Major: Biology/Art

Courses: Taken specifically relevant to Dentistry as a Career. Basic Physics, Chemistry, Cell Biology, Human Anatomy/Physiology I, II, Histology, Embryology, Vertebrate Anatomy, Head/Neck Anatomy, Genetics, all including laboratory study. Medical Terminolgy, Technical Writing.

Skills Relevant to Laboratory Studies: Dissecting, feeding and styding laboratory animals, preparing bacteria cultures, radiation exposure to animals.

EMPLOYMENT:

Summer 1976/77 House Painter Pittsburgh area

Sept./May 1978 Resident Assistant (one year)

EMPLOYMENT (cont.)

| | |
|---|---|
| May/September 1979 | Assistant Head Resident, Rose Hall: Worked with special groups such as visual and physically handicapped students. |
| May/August 1980/1981 Summer | Instructor for Environmental Awareness Program - Martin Luther King Center, Erie, Pennsylvania: Inner City Youth, Junior and Senior High School broaden scope of jobs related to the environment provided through lectures, field trips multimedia aids, projector, charts, and personal creativity |
| Sept/Sept. 1980/81 | Resident Assistant |
| HONORS & ACTIVITIES | Outstanding Omega Psi Phi Fraternity Man of the Year 1979 (Graduate Award Presentation) |
| ADMINISTRATIVE | President of Omega Psi Phi Fraternity |
| | Vice President-Association of Concerned Collegians |
| | Assistant Head Resident-Rose Hall Dormitory 2nd in Position of a 400 person male dormitory |
| | Super Resident Assistant. Super refers to having complete charge over a floor of 50 male students. Resident Assistant position is shared with a partner monitor over 50 male students. |
| | Elected to Resident Assistant Dismissal Board: Reviewed charges against Resident Assistants and probation appointments. |
| | Interfraternity Council Representative |

Administrative (cont)

Fraternity Hazing Committee

Dormitory Social Chairman

Reporter Representative for Association of Concerned Collegians: Reported State-wide activities concerning students.

INTERESTS

Enjoy skiing, swimming, tennis, basketball and weightlifting

REFERENCES

Will be furnished upon request

Career Counseling and Placement Office
Edinboro State College
Edinboro, Pennsylvania 16444

## *ENVIRONMENTAL AWARENESS PROGRAM*

# Summer Project Termed Huge Success

The eight-week Summer Environmental Awareness program, which concluded last Friday, has accomplished it's goal, according to program coordinator Eva Tucker.

"It has reached out to the youth of Erie, encouraging them to discover the environment around them and taught them to see and appreciate the Lake, the Peninsula and the Coast. It has made them realize that Erie's greatest asset is more than just a recreational spot -- it is a treasure full of history, geography and science," Tucker said.

### *80 Students*

Nearly 80 young people from Middle School through Senior High School in age participated in the program which was held at and operated by the Martin Luther King Center in conjunction with the Greater Erie Community Action committee (GECAC) and the Lake Erie Institute of Marine Science (LEIMSC) and funded through the Coastal Zone Management Program. Middle school participants were from the Bayfront area and others from GECAC's NYC, the Martin Luther King and J. F. Kennedy Centers and Gannon University Upward Bound Program.

### *Activities*

As before, the program's activities were designed to familiarize young people with all the elements of their environment. However, this summer had an additional theme -- "Energy Impacts Upon Our Environment." Among the activities scheduled which allowed the participants to explore, discover, question and learn were:

Career Planning, Hammermill Tour, Presque Isle Project, Archaeology, Coastal Erosion, Metrics, Studying the simplest forms of life-ponds, Careers in Conservation-Fish Culturist and Water Natural Rescources. Each week there was also an Energy activity such as "Conserving Energy at Home"; "Solar Energy"; "Fighting Polution and Protecting the Environment"; and "How You Can Save Energy Every Day."

### *Program Better*

Tucker, assistant professor of Geoscience at Behrend College and board member of the Lake Erie Institute of Marine Science, pointed out that the program develops and improves each year. He feels this is chiefly due to improvements in the program's curriculum, its activities and participation from the people in the agencies who encourage and help in promoting the program. He also lauds the instructors who are sincerely interested in the program and the young people they work with throughout the entire course of the summer as well as the participants who are so responsive to the program.

### *Benefits*

Gregory Hallam, an instructor, feels that one of the main benefits of the program is the learning atmosphere -- it introduces Science, Geography, and Environmental Conservation from a different angle. "We actually take the students into the field and give them a first hand approach on environmental happenings and problems in the Erie County area," he explains. "This is what makes our program successful. It relates education with the actual, real world around them." Hallam is an Edinboro State College senior, majoring in Geography and Environmental Planning.

Another instructor, Danny Clark, a graduate student, Edinboro State College, expressed great satisfaction at having worked with these students, describing them as enthusiastic, interested, observant and eager. "The importance of what the students learned," he said, "is only equal to the long range benefits of new job opportunities,

*Eva Tucker, Jr.*

CURTIS JONES

(LEFT) --

Gregg Hallam, instructor, works with Jeff Young and Marvin Ridgeway, as he points out coastal erosion on one of the many field trips.

parental gratification, and social rewards of a young adult interested in improving himself or herself and the things that are around them. Thus creating an 'environment' suitable for all."

## *Involvement*

Larry W. Moore, an English instructor, McDowell High school, adjunct faculty-Gannon University, was also an instructor in the Summer Environmental Awareness Program. Moore pointed out that parents are becoming more involved in their childrens' cultural development. He noted that parental response to this year's program was tremendous and, in conjunction with this, more student handouts were finding their way home and into the hands of the parents who are also eager to learn more about the environment.

Curtis Jones, 16, was a participant in the Environmental Awareness Program. Curtis, who attends Strong Vincent High, said that he had learned things about the environment that he hadn't learned in school.

"I liked the movies and the field trips," he said, "and I also enjoyed the advisors whose personalities made it fun to have them teaching us things." In commenting on the general attitude of the other students, Curtis said, "I know they really enjoyed and were interested in the field trips where they actually had the opportunity to be a part of the learning."

MARY DUNKLE

Mary Dunkle, 15, was among the nearly 80 students who participated in the summer program. Mary, who will attend Tech High this fall, had this to say about the project.

"The program has taught me a lot during the last two summers that I have participated, more than I would have learned in a school classroom. I believe the reason for this is that when the Environmental Awareness Program instructors are teaching us our material they explain things that we do not understand. They also let us enjoy the time we are learning."

Participants in the Summer Environmental Awareness Program and instructors move to the lake shore for studies in coastal erosion. Among other activities were a Hammermill Tour, Presque Isle Project, Archaeology, and Metrics, to name a few.

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