

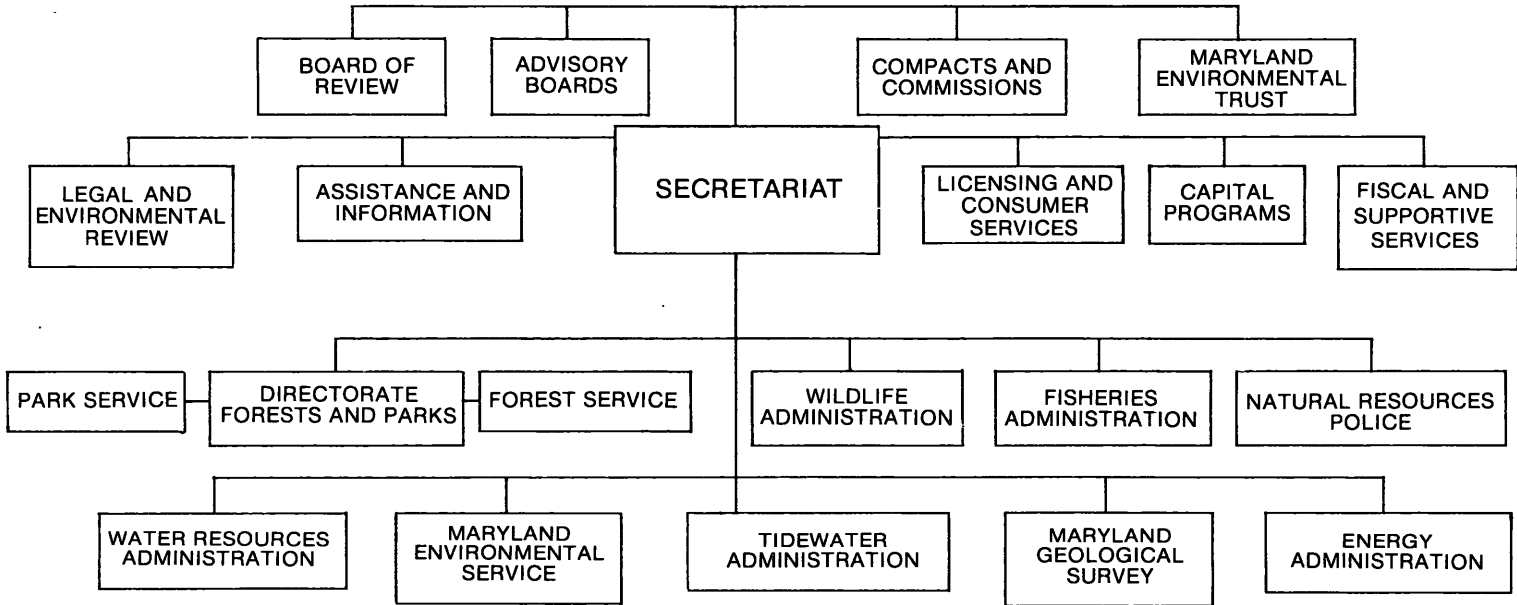
DEPARTMENT OF NATURAL RESOURCES
INFORMATION RESOURCE CENTER
NON-CIRCULATING

Maryland Department
of
Natural Resources

ANNUAL ACTIVITIES REPORT
FISCAL YEAR 1980

HC
107
.M3
M263A
MDNR

MARYLAND DEPARTMENT OF NATURAL RESOURCES TABLE OF ORGANIZATION



Approved: November 17, 1980

MARYLAND DEPARTMENT OF NATURAL RESOURCES BUDGET

TOTAL DNR BUDGET — \$55,982,644

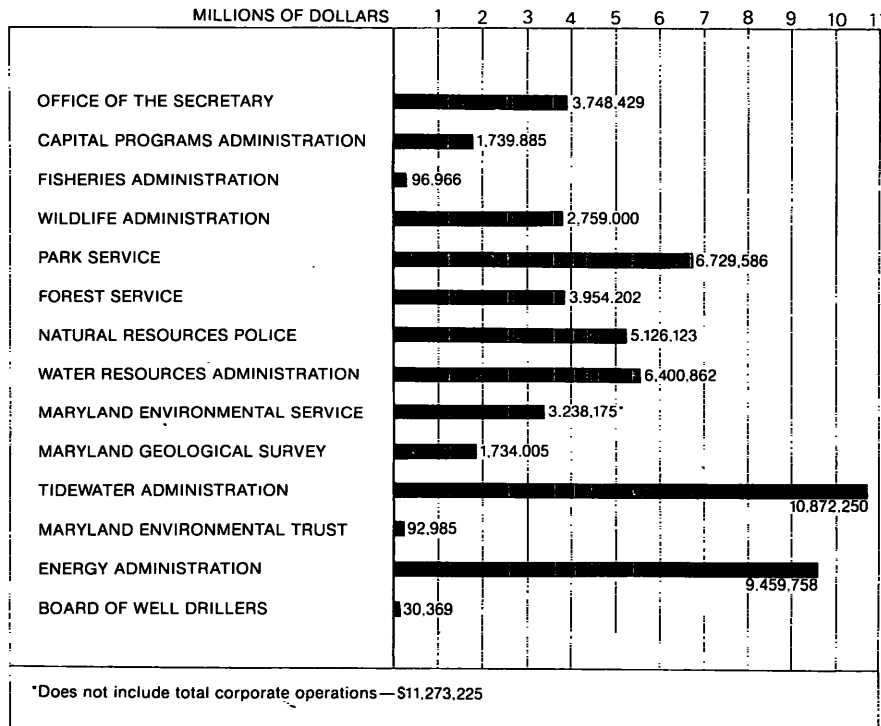


TABLE OF CONTENTS

<p>OFFICE OF THE SECRETARY 1</p> <p>Secretariat 1</p> <p>Fiscal and Supportive Services 3</p> <p>Assistance and Information 5</p> <p>Contributions to Interstate Agreements 8</p> <p>Licensing and Consumer Services 8</p> <p>CAPITAL PROGRAMS ADMINISTRATION 9</p> <p>Land Planning Services 9</p> <p>Program Open Space 11</p> <p>Shore Erosion Control 13</p> <p>FISHERIES ADMINISTRATION 16</p> <p>Office of the Administrator 16</p> <p>Interstate Fishery Liaison 16</p> <p>State/Federal Striped Bass Program 16</p> <p>WILDLIFE ADMINISTRATION 16</p> <p>General Direction 16</p> <p>Wildlife Management Services Program 17</p> <p>Wildlife Field Services Program 18</p> <p>Fish and Wildlife Technical Services Program 18</p> <p>Non-Tidal Fisheries Program 18</p> <p>MARYLAND PARK SERVICES 20</p> <p>State Park Management 20</p> <p>Federal Programs 22</p> <p>MARYLAND FOREST SERVICE 22</p> <p>State Forest System 22</p> <p>Forest Resource Protection 23</p> <p>Urban and Community Forestry 24</p> <p>Cooperative Forest Management 24</p> <p>MARYLAND ENVIRONMENTAL TRUST 26</p> <p>General Direction 26</p> <p>MARYLAND BOARD OF WELL DRILLERS 27</p> <p>Licensing of Well Drillers 27</p>	<p>NATURAL RESOURCES POLICE FORCE 28</p> <p>General Direction 28</p> <p>Inland Enforcement 28</p> <p>Marine Enforcement 28</p> <p>WATER RESOURCES ADMINISTRATION 29</p> <p>General Direction 29</p> <p>Enforcement 29</p> <p>Waterway Construction 30</p> <p>Planning and Evaluation 31</p> <p>Water and Waste Management 32</p> <p>MARYLAND ENVIRONMENTAL SERVICE 33</p> <p>General Direction 34</p> <p>Operating Programs 34</p> <p>MARYLAND GEOLOGICAL SURVEY 35</p> <p>General Direction 35</p> <p>Hydrogeology and Hydrology 36</p> <p>Environmental Geology and Mineral Resources 37</p> <p>Coastal and Estuarine Geology 38</p> <p>Division of Archeology 39</p> <p>TIDEWATER ADMINISTRATION 40</p> <p>General Direction 40</p> <p>Waterway Improvement Program 40</p> <p>Coastal Zone Management Program 42</p> <p>Tidal Fisheries 44</p> <p>Analyses and Verification 44</p> <p>Technical Assistance Program 45</p> <p>Shellfish Program 46</p> <p>Tidewater Finfish Program 47</p> <p>ENERGY ADMINISTRATION 49</p> <p>Power Plant Siting 49</p> <p>Bureau of Mines 50</p> <p>Maryland Energy Office 50</p>
---	--

The facilities and services of the Department of Natural Resources are available to all without regard to race, color, sex, age religion, national origin, physical or mental disability.

OFFICE OF THE SECRETARY

Budget

General Funds	\$2,895,618
Special Funds	792,618
Federal Funds	10,618
Reimbursable Funds	50,067
TOTAL	3,748,429
Number of Staff	156

SECRETARIAT

The Secretariat program includes two projects: Executive Direction, and the Board of Review. Executive Direction is responsible for natural resources administration, management, research and development; for the development of coordinated policies for the conservation, enhancement, wise use, and perpetuation of the natural resources of the State; and the coordination and direction of comprehensive planning in the area of natural resources. Personnel in the Executive Direction project assist the Secretary in the discharge of his duties and responsibilities, particularly in matters pertaining to the provision of a forum for communication among natural resources units; review of federal statutes, policies, programs and activities affecting the natural resources of the State; representation on interstate commissions, compacts, and advisory bodies; and the study of the natural resources activities of the subdivisions of the State. An important part of the Secretariat program is the administrative staff and related support services provided to all units, programs, projects and activities of the Department. This program also includes the Board of Review of the Department and an eighteen (18) member Advisory Board.

In fiscal year 1979 the General Administration program of the Office of the Secretary was abolished as a separate program. Several administrative positions were assigned to the Secretariat; the balance comprised the newly created Fiscal and Supportive Services Program.

The program comprises nineteen (19) positions with a total general fund budget of \$539,435.

Legal

The Legal Section comprises six Assistant Attorneys General, one of whom acts as Counsel to the Secretary of Natural Resources and is responsible to the Attorney General for the direction and supervision of the entire section. The

legal staff not only represents all of the agencies within the Department when they become involved in litigation, but also supplies all legal advice and approvals inherent in the normal functioning of the Department, such as contracts and regulations approval, interpretation of statutes and regulations, and representation of agency units at administrative hearings.

During Fiscal Year 1980, the attorneys assigned to the Department continued their active role in the formulation and enforcement of laws protecting and preserving the natural resources of the State. The staff handled 11 cases in the federal courts, initiated 21 cases at the State Circuit Court level and closed 20 other cases; and prosecuted 67 violations in the State District Courts. Assistance and advice was rendered in numerous administrative proceedings at the federal and state levels.

Highlights among the year's litigation included the continuing effort to halt ocean disposal of wastes off Maryland's coast, challenging the federal delimitation of offshore mining areas adjacent to the State for purposes of federal assistance, and successfully defeating attempts to block the State's clean-up and removal of dangerous PCB's from the banks of the Nanticoke River in Sharptown, Maryland.

Board of Review

There were no changes in the membership of the Board during the fiscal year.

At the end of fiscal year 1979, Vice Chairman Philip S. Thompson and Mr. W. Dorsey Hines completed their terms on the Board. Governor Hughes reappointed Vice Chairman Thompson to an additional three year term. Mr. William H. Corkran, Jr., of Easton, was appointed to replace Mr. Hines.

During fiscal year 1980 the membership of the Board consisted of:

Chairman - John W. Neumann	1981
Vice Chairman - Philip S. Thompson	1982
William H. Corkran, Jr.	1982
Stanley E. Fine	1981
Edward H. Higgins	1980
Lem E. Kirk	1980
Calman J. Zamoiski, Jr.	1981

During the General Assembly session of 1980, Governor Hughes reappointed members Higgins and Kirk to additional three year terms to serve until June 30, 1983.

Meetings

The Board conducted six meetings during fiscal year 1980 on the dates indicated. A summary of the business transacted at each meeting is also shown.

October 3, 1979: Ninety Ninth Meeting, Tawes State Office Building, Annapolis, Regular business. Chairman Neumann welcomed a new member, Mr. William H. Corkran, Jr. of Easton, to his first meeting. Contested Case C79-2, Ronald B. Wishard vs. the Water Resources Administration was discussed and the Board was advised that a hearing date for the case was still uncertain. The Annual Report of the Board for fiscal year 1979 was adopted. Contested Case C79-3, EZCRUZ, Inc. vs. Licensing and Consumer Services was set for hearing on November 16, 1979. The date for meeting 101 was set for December 6, 1979.

November 16, 1979: One Hundreth Meeting, Tawes State Office Building, Annapolis. Regular business and the hearing of Contested Case C79-3, EZCRUZ, Inc. vs. Licensing and Consumer Services. Contested Case C79-2, Roland B. Wishard vs. Water Resources Administration was set for hearing on December 17, 1979.

December 6 1979: One Hundred First Meeting, Harrah Farm, Oxford. Contested Case C79-2, Roland B. Wishard vs. Water Resources Administration was discussed and the Board was advised that the hearing of this case set for December 17, 1979 would probably be cancelled. Contested Case C79-3, EZCRUZ, Inc. vs. Licensing and Consumer Services was decided.

June 1, 1980: One Hundred Second Meeting, Sheraton-Fountainbleau Hotel, Ocean City. The board visited the site of the dispute to "view the affected land" in contested Case C80-1, Shoreline Associates vs. the Water Resources Administration. Contested Case C79-2, Roland B. Wishard vs. Water Resources Administration was discussed. The Opinion and Order for Contested Case C79-3, EZCRUZ, Inc. vs. Licensing and consumer Services was formally approved and adopted.

June 2, 1980: One Hundred Third Meeting, Tawes State Office Building, Annapolis. Regular business. The Board heard and decided Contested Case C80-1, Shoreline Associates vs. Water Resources

Administration.

June 19, 1980: One Hundred Fourth Meeting, Tawes State Office Building, Annapolis. Regular business. The Board considered, approved and adopted an Opinion and Order for Contested Case C80-1, Shoreline Associates vs. Water Resources. The appeal by Robert M. Leatherby, III was discussed and tentatively set for hearing on July 28, 1980.

Hearings of Contested Cases - Opinions and Orders

During fiscal year 1980, the Board conducted hearings on two Contested Cases and rendered Opinion and Orders in these cases. A resume of these cases follows.

A. Contested Case C79-3, EZCRUZ, Inc. vs. Licensing and Consumer Services

The Board heard the case at the One Hundredth Meeting of the Board on November 16, 1979. The case was decided at the One Hundred First Meeting of the Board on December 6, 1979 and an Opinion and Order for the case was approved and adopted by mail vote of the members following the cancellation of the One Hundred Second Meeting scheduled for December 17, 1979.

The case involved an appeal by an out-of-state boat dealer, Mr. Robert B. Hart, President of EZCRUZ, Inc., of Woodbridge, Virginia. Licensing and Consumer Services revoked the Maryland Boat Dealer License issued to Mr. Hart after the Appellant failed to appear at an administrative hearing before the service and to answer charges regarding delinquencies in transmitting to the Department for processing certain applications for Maryland boat titles, boat title taxes and applications for boat registrations on watercraft sold to Maryland residents.

After hearing the case, it was the opinion of the Board that there was reasonable doubt that the Appellant fully understood Maryland law and regulations governing boat dealers. The Board, therefore, remanded the case to the service for further action and an attempt to resolve any problems between the Department and the Appellant.

(Mr. Hart did not apply for a boat dealer license in calendar year 1980.)

B. Contested Case C80-1, Shoreline Associates vs. Water Resources Administration

The Board heard and decided the case at the One Hundred Third Meeting of the Board on June 2, 1980. The Opinion and Order for the case was approved and adopted at the One Hundred Fourth

Meeting of the Board of June 19, 1980.

The case results from an appeal of an action by Thomas C. Andrews, Director of Water Resources, wherein a permit to fill private wetlands owned by Shoreline Associates was denied. The Wetlands in question are situated on the east shoreline of Assawoman Bay in the vicinity of 94th Street, Ocean City, Maryland.

The Board remanded the case to Water Resources for a further hearing at the administrative level.

Additional Action on a Prior Case

Contested Case C79-1, Vera L. Reiner et al vs. the Department of Natural Resources was heard by the Board at the Ninety Fifth Meeting on March 5, 1979. The case involved an appeal of an action by the Water Resources Administration wherein a waterway construction permit to change the cross-section of the Big Gunpowder River was issued to the Flintkote Company.

The Board affirmed the action of Water Resources in issuing the permit. The Appellants appealed the decision of the Board to the Circuit Court for Baltimore County and the case was argued before Judge Marvin J. Land on September 19, 1979. Judge Land upheld the decision of the Board. Upon receipt of Judge Land's decision, the Appellants noted an appeal to the Court of Special Appeals. The appeal was subsequently dropped allowing the permit to Flintkote to stand as originally issued.

FISCAL AND SUPPORTIVE SERVICES

This program serves the financial needs of the fourteen (14) separate and fiscally independent agencies within this department. In order to accomplish this charge efficiently and economically, the program is further divided into five projects. They are (1) General Accounting, (2) Special, Federal and Capital Fund Management, (3) Supportive Services, (4) Internal Auditing, and (5) Wage and Hour.

General Accounting Section - The primary responsibility of this project is to record the annual budgetary appropriation; authorize the Comptroller to disburse funds; receipt and allocate revenues attained; maintain fiscal controls over the operating budget; and provide fiscal information to the unit directors.

During the 1980 fiscal year the operating budget reflects an expenditure of approximately \$56 million. During the same fiscal year approximately

\$32 million was receipted and allocated to the various units.

Accounts receivable documentation was provided on approximately 1,400 individual accounts in the total amount of \$1,850,00.

Special, Federal and Capital Fund Management - It is the responsibility of the Special, Federal and Capital Fund Management project to maintain all fiscal and statistical records for each authorized federal or state project.

Detailed fiscal records were maintained on 552 specific projects totaling \$32,960,366. These projects are financed as follows:

Type	No. of Projects	Amount
Shore Erosion	82	\$ 1,670,692
Waterway Improvement	98	2,678,004
Outdoor Recreation Land Loan	171	9,737,568
General Construction Loan	75	5,066,750
Federal Grants Projects	126	13,807,352

Supportive Services Section - The Supportive Services Section has the primary duty to control the real and personal property purchased or otherwise received by each unit within the department. As of June 30, 1980, the value of the land and buildings to which the department holds title exceeds \$173 million with equipment inventory amounting to \$18 million. Included with the equipment are 259 sedans, 710 trucks, 798 boats, and one (1) airplane.

Another responsibility of this section is to purchase or coordinate the purchase of all equipment and supplies. To accomplish this charge, a total of 3,196 out-of-schedule requisitions, capital fund requisitions, warehouse requisitions, and departmental purchase orders were prepared, logged, verified, computed, and processed for payment; in the amount of \$3,157,825.48.

General supervision of the department's mail distribution is given by this section.

Internal Auditing Section - The internal Audit's responsibility is to insure the accountability of all current and fixed assets acquired by the department and to inspect each of its more than 300 regional work and service centers for compliance with all applicable fire and safety codes.

Wage and Hour Section - The Wage and Hour section insures timely salary payments to each of the department's employees, maintains an accurate work and leave record for each employee and prepares the personnel section of the operating budget. The section also coordinates the retirement and the health and accident activities between employees and the respective regulatory agency.

Mail Distribution - The Office of the Secretary oversees the operation of the departmental mail room. During the 1980 fiscal year, it is estimated that this activity handled in excess of 4,500,000 pieces of mail and more than 20,000 parcels. The expenditure for postage alone totaled more than \$152,000.

Data Processing - The Data Processing Section provides computer system design, programming, and maintenance support for over 45 computer applications in the Department. The Section maintains more than 300 COBOL and FORTRAN programs containing an excess of 145,000 lines of computer instructions. There are over 600 cataloged computer runs available to the various DNR users. In addition there are over 425 Query reports generated from the more than 60 computer files of DNR data maintained at the Annapolis Data Center, Comptroller of the Treasury.

The major activities supported include Licensing and Consumer Services, Fiscal and Supportive Services and Personnel in the Office of the Secretary; Tidewater Administration, Wildlife Administration, Forest/Park Services, Maryland Environmental Service, Water Resources and the Maryland Energy Administration.

Approximately 1,500 computer runs are made per month for all activities. Approximately 2,000,000 lines of data are printed each month on the Department's IBM Remote Job Entry computer terminal installed at the Tawes Building, with an additional 1,000,000 lines per month printed at the Annapolis Data Center.

There are ten IBM keypunch machines and eight video display terminals in use in the Department to record approximately 50,000 data transactions each month.

In addition, two video display terminals are used to instantly display boat and commercial fishing license records for Licensing and Consumer Services and the Natural Resources Police, Marine Division and appropriation financial records for Fiscal and Supportive Services.

Personnel Administration

This administration is responsible for all personnel services and transactions including the Office of Equal Employment Opportunity for the Department.

Personnel Administration Activities

Transactions Processed	7,534
Appointments	1,741
Permanent	286
Seasonal	1,455
Reclassifications	542
Promotions	80
Position Actions	330
(Abolish/create; Transfer between units, programs and departments; Fund changes)	
Separations	1,669
Miscellaneous	1,431
(Project, Name, Code, Fund, Class and Status Changes; I.D. Requests; Exemption, Bonds, Address and Beneficiary Changes; EOD Inquiries, etc.)	
<hr/>	
Reclassification Studies	227
Desk audits	8
Specifications Revised	12
Suggestions Processed	10
Cash Awards	1
Pending	6
Blood Program	
Drives	2
Donators	186
Disbursement	555
Interview and Moving	
Expense Requests	4
Examinations Requested	41
Applicant Activity	
Correspondence	800
Walk-Ins	482
Interviews	152
Telephone Inquiries	1,942
Employee Reviews	135
Employee Grievances	18
(4th and 5th Step Hearings)	
Miscellaneous Campaigns	
(I.D. Program, Deferred Compensation, Flu Innoculations)	
Annual Salary Review	
Requested New Classes	16
Requested Salary Adjustments	17
Approved New Classes	3
Approved Salary Adjustments	4
New Employee Orientations	
(4 Regional Service Centers)	
Supervisory Training Sessions	4

Office of Equal Employment Opportunity

Office of EEO consists of 1 EEO Administrator who serves as the Fair Practices Officer for the Department, and 1 secretary. The responsibility for this office is to provide ongoing consultant services to the Department and its agencies in the area of Affirmative Action and Equal Employment Opportunity. The following priorities has been established as EEO activity within the Department:

1. Recruitment and reclassification to include revision of job specs. and the filling of positions;
2. Assisting units in preparing Affirmative Action Plan and the training of personnel in Equal Employment Opportunity/Affirmative Action;
3. Responsible for the proper and expedient investigation of complaints of discrimination.

A summary of activities for the previous fiscal year includes:

Investigation of Complaints	8
Revision of Affirmative Action Plan (approval pending)	
Personnel Referrals	40
Conference and Workshops Attended	8
Career Days	11
Guest Lectures	6
Counseling	80
Technical Assistance	11

ASSISTANCE AND INFORMATION

In 1979, the responsibilities of the Extension Service was incorporated into the Office of Natural Resources Information. Subsequently, to reflect this new duty, and to more closely identify the function of this office, the name was changed to Assistance and Information.

Assistance and Information serves as a public interest center for the Department of Natural Resources. It is the principal department area where the public, including the media, obtains information about Maryland's natural resources activities. It is responsible for public informational and educational materials emanating from all agencies of the Department.

It accomplished its mission during FY 1980 by the use of traditional communications tools - media releases, public service spots on radio and television, publication of brochures and pamphlets, direct mail, telephone responses, circulation of motion pictures and public speeches.

The Assistance and Information unit of the Office of the Secretary consists of these sections: General Direction, Maryland Conservationist Magazine, the Library, Graphic Services, Extension Specialists, and Recreation and Leisure Services.

General Direction - The Office of the Chief of Assistance and Information is responsible for the supervision of the administration of the information unit. Among responsibilities is the processing of all mail addressed to the Secretary of Natural Resources and to the Governor of Maryland when it pertains to natural resources matters. Responsibility for maintenance of contact with news media and officials of other federal, state, county and public agencies is centered in the office which must be aware of current issues and developments in environmental matters.

The office also has specific responsibility for dissemination of information concerning the Tidewater Administration, Maryland Geological Survey, Natural Resources Police Force, Licensing and Consumer Services, and the Office of the Secretary.

The office coordinates the department Print Shop, assuring a steady flow of work and accuracy in billing by the Department of General Services, provides circulation management for the Maryland Conservationist Magazine; coordinates annual Migratory Waterfowl Stamp and the Trout Stamp contests, has responsibility for printing, updating and revising the department directory and the DNR section of the State Marcom directory, prepares and implements the Assistance and Information budget, gives general supervision to secretarial staff, maintains inventory of saleable publications, and compiles the DNR News, an in-house compilation of newspaper clippings

Library - The DNR Library is charged with providing information service to the DNR staff and general public. Activities include maintaining and circulating the agency film collection, organizing the book collection, acting as a repository for agency publications, participating in interlibrary loans, and offering technical and reference assistance whenever possible.

The agency film collection consists of about fifty titles on fish, game and conservations. Films were loaned to the public more than 690 times in FY 80, a 5% increase over last year.

Subject areas covered in the library collection are the biology, fisheries, water quality and geology of Maryland, with special emphasis on the Chesapeake Bay. The library staff processed and catalogued over 5,000 items this year including publications of institutions such as the U.S. Army Corps of Engineers, Chesapeake Bay Institute, and Chesapeake Research Consortium. DNR publications on file number more than 900 and are available to the public to use in-house or on an inter-library loan basis.

Circulation of library materials averaged 90 items per month reflecting an increase of almost 20% over the previous year.

Interlibrary cooperation plays a key role in the librarian's efforts to meet the information needs of the agency. In FY 80, the number of requests made by the staff to borrow materials from universities, research groups and government increased by approximately 25%. Of the 350 requests handled by the library, 90% received a positive response.

Technical assistance offered by the library includes locating bibliographic information for the staff, publishing the library newsletter, processing books ordered by individual departments, posting news releases and publications lists, and referring library users to sources of information.

Maryland Conservationist - The editor of the Maryland Conservationist Magazine published six times a year is responsible for all aspects of the magazine's publication, editing, layout, photos, publicity and contact with writers, photographers and artists.

Graphics Services - Two illustrators provide graphic arts services for the agencies of the Department, producing publications, exhibits, maps, posters and similar elements of communication. During FY80, the Graphics Services Unit produced 25 original brochures, the Natural Resources map, the DNR "consumer wheel", and other folders, pamphlets, banners and booklets.

Extension Specialists - The extension specialists provides the Secretary of the Department with the closest possible contact to the State's citizens and others who are affected by the Department's legal mandate.

The extension specialist is an integral part of Assistance and Information and functions as the Department's liaison to the field.

During FY 80, the four extension specialists participated in a total of 368 meetings with citizen's groups, made 23 speeches, responded to

688 field assistance requests by clubs, schools, landowners, and other groups. Additionally, extension personnel rendered assistance to various Department agencies 576 times, cooperated with local and federal governments on 208 occasions, conducted seminars at 32 events, and represented the Department at various expositions, fair, etc. The extension specialists also maintained close contact with all media.

Recreation and Leisure Services

Approved by the 1974 State Legislature, the office was created by House Bill 1022 (Section 1-104 (a) (7)), sponsored by Delegate Arthur Dorman of Prince George's County. The legislation specified that this office would "provide technical assistance to other state units, counties, municipalities, corporations, organizations, groups, and individuals in planning, organizing, and conducting leisure activities and recreation programs." Funding for the operation became available July 1, 1975.

Since that time, numerous activities have occurred to fulfill the legislative mandate. Some of the ongoing programs include:

Resource Library - an extensive library is maintained for research and study purposes in the recreation, park, and leisure services field. Resources in this library are readily available to requesting groups and individuals.

Personnel Referral Service - a statewide employment assistance program designed to match available recreation and park oriented positions with qualified candidates. Applications are filed directly with this office and reviewed periodically to determine eligibility for listed position vacancies. A letter to the applicant notifies them of position vacancies, qualifications, cut-off dates and the contact information necessary to arrange an interview. It is a policy of this office not to become involved in the hiring process. It operates simply as a "referral" system requiring follow-up by the respective parties.

Field Work Program - the office serves as a training area for volunteers from the various area colleges and universities with recreation and park curriculums. As part of their required course work, a one semester on-the-job training period is required of each student. The office makes itself available for the placement of at least one student a semester. Past efforts of volunteers utilized include a statewide personnel salary and fringe benefit survey.

Recreation Reflections - this publication is sent on a bi-monthly basis to all recreation and park departments, schools with recreation-related curriculms, therapeutic settings, and the directors of the major agencies within the Department of Natural Resources. The specific purpose of this tool is: positive communication between the Department of Natural Resources and local agencies, through the provision of the technical

assistance and grants information as well as legislation updates and sources of valuable professional resources. The positive response to this service has been overwhelming and it is evidenced that the information provided is shared among many staff members of the county and municipal recreation and parks department.

Promotional Displays and Events - a high quality display is designed and set up each year at the Maryland State Conference for Recreation and Leisure Services, the Maryland Association of Counties Annual Meeting, and the yearly meetings of the Maryland Municipal League. These functions provided the maximum exposure to the greatest number of governmental officials the office is responsible to serve.

Other Technical Assistance - numerous trips to local governments were taken in answer to specific requests for service. Past requests include: source of grants, layout and design of recreational areas, acquisition of land, recreation program development, guest lectures and speeches, workshops on specific subjects, organization and establishment of recreation commissions and councils, and referrals to other agencies with specific expertise in a variety of technical areas. To assist the locals in understanding their role in recreation and parks, a brochure was published describing and explaining the State Recreation Enabling Law. This tool proves extremely beneficial in those areas where recreation and park departments on a county or municipal level have yet to be established.

Annual Personnel Survey - through the cooperation and for the use of local recreation and parks departments, an annual survey was conducted to update personnel and budget information. This document when summarized provided an excellent overview of organized recreation and parks departments within the State of Maryland.

Technical Assistance Reports - a number of technical papers were developed to assist local recreation and park departments. Subjects such as attitude surveys, use of consultants, and space standards are covered.

Directory for County and Municipal Recreation and Park Boards or Commissions - lists all departments, whether county or municipal, in the state, all boards and commissions, recreation department directors, administrators, and

chairmans of the recreation and parks advisory board and all board members. Report is completed annually.

Inquiries concerning the activities of the Office of Recreation and Leisure Services can be directed c/o Maryland Department of Natural Resources, Tawes State Office Building (B-3), 580 Taylor Avenue, Annapolis, Maryland 21401, or by calling the Annapolis office at (301) 269-2458 or Salisbury at (301) 749-2461.

Goals and Objectives:

- To study and appraise recreation and leisure needs of the State and to assemble and disseminate information relative to recreation.
- To cooperate in the promotion and organization of local recreation and park systems for counties, municipalities, and other political subdivisions of the state, and to advise them in the planning and financing of recreation programs.
- To cooperate with: State and Federal agencies, private membership groups, and individuals in their recreation interests.
- To aid in recruiting, training, and referring recreators, and to promote leisure institutes and conferences.
- To aid in establishing and promoting approved recreation and park standards.

Assistance Available to:

- State Government
- Municipalities
- Universities & Colleges
- Civic & Service Groups
- Schools
- Churches
- Individuals
- Counties
- Youth Serving Agencies
- Hospitals
- Business Groups
- Industries
- Private Groups

Types of Available Assistance:

- Administration
- Personnel Referral
- Planning
- Studies
- Appraisals
- Training
- Operation
- Organization
- Publications
- Finance
- Legal
- Federal Aid
- Maintenance
- Programming
- Development
- Standards

CONTRIBUTIONS TO INTERSTATE AGREEMENTS

The Assistant Secretary for Environmental Matters represents the Department and the State as a member or officer of interstate commissions, regional councils, national associations and technical work groups dealing with water resources and related environmental management activities at the state, regional, and national level. During F.Y. 1980, he continued as a Commissioner of the *Susquehanna River Basin Commission*, a 100-year Federal/State Compact between the states of New York and Maryland, the Commonwealth of Pennsylvania, and U.S. Government. Recent activities of the SRBC of particular interest to Maryland have focused on relicensing of the Conowingo Dam including issues of fish passage, water supply, flow releases, and debris management; and on amendments to the Comprehensive Plan which will recognize and protect the right of the City of Baltimore to withdraw water from the Susquehanna River to serve the Baltimore Metropolitan area.

He is a past Chairman of the Southern Environmental Resources Conference, which is an affiliate of the Council of State Governments. He is a member of the Interstate Commission on the Potomac River Basin serving as Chairman of its publications committee, and as Vice-Chairman of its Section for Cooperative Water Supply Operations on the Potomac. He is a Maryland member of the Potomac River Basin Advisory Committee and the Ohio River Basin Commission. He is an executive officer of the Interstate Conference on Water Problems serving as its Secretary-Treasurer, and serves as the Governor's representative on the Subcommittee on Water Management of the National Governor's Association. He represents the Department of Natural Resources as a member of the Maryland Committee for Training of Environmental Systems Operators, and as a board member on the Board of Certification of Superintendents for Water, Wastewater, and Industrial Wastewater Works.

For a number of years, he has also served as a scientific advisor and member on national technical boards, such as EPA's Standing Work Group on Water Monitoring. That work group recently produced a guidance manual on "Basic Water Monitoring." A similar EPA manual on "Biomonitoring for NPDES Compliance," produced on another Task Force on which he serves, is in final draft form. He is a member of the program committee of the Water Pollution Control Federation, and Chairman of the Government Affairs Committee of the Chesapeake Water Pollution Control Association.

The Assistant Secretary also coordinates Department review of all projects assessed for environmental impact pursuant to the National Environmental Policy Act and U.S. Office of Management and Budget Circular A-95.

LICENSING AND CONSUMER SERVICES

General Direction

Licensing and Consumer Services is responsible for administration of the State Boat Act, with regard to titling and registering boats; the recordation of security interest in vessels, the administration of the licensing, permits, special tax report and collection requirements of Natural Resources Article. This section is responsible for the sale of the Guide for Cruising Maryland Waters and other department publications.

Operations

The seven Licensing and Consumer Services' offices processed 829,273 transactions, collecting gross revenues of \$9,362,343.49. These transactions included application for 777,571 licenses for conservation, preservation and recreation during fiscal year 1980 collecting \$4,297,240.78 in fees. In processing applications for Maryland Boat Titles \$3,309,549.08 was collected in boat title tax in lieu of 5% sales tax.

The Licensing and Consumer Services staff also processed 6,349 oyster and clam buyer reports, accounting for 3,581,713.63 bushels, collecting \$928,061.86 in severance, import and export taxes.

Validation stickers were mailed free of charge to 29,880 owners of boats registered for three years who were not due for renewals as well as issuing 9,681 original no fee registrations and 5,230 no fee by law commercial seafood licenses (16%). The unit provided liaison and control of 572 boat dealers, 11 hunting and fishing license distributors, 125 consignment agents, 700 cash agents, 147 oyster dealers, 28 clam dealers, 32 non-resident seafood dealers, 179 crab shipper and packers and 24 clerks of the court.

Personnel in the office in Annapolis and in the six regional offices distributed over 1,500,00 information pamphlets dealing with Natural Resources.

A total of 53,322 citizens personally brought their applications to our offices: 23,995 were served at the Tawes Building in Annapolis; 4,265 at the Regional Service Center in Cumberland; 6,932

at the Regional Service Center in Bel Air; 4,266 at the Regional Service Center in Laurel; 5,865 at the Regional Service Center in Salisbury; 4,266 at the Regional Service Center in Centreville and 3,733 at the Regional Service Center in Mechanicsville.

The Licensing and Consumer Services staff at 6 regional service centers continued administrative support to the units of the Department of Natural Resources, reacting to the regional managers and field personnel. Since the creation of the regional service centers concept, six years ago, the demand for service has doubled, either directly from the public or indirectly through the units based in the center or at work station in the region.

Receipts from the special funds collected were utilized to support special activities of the Fisheries Administration, the Wildlife Administration, the Forest Service, Natural Resources Police and the Office of the Secretary, Capital Programs Administration.

A summary of sales and transactions for Fiscal Year 1980 follows:

	No.	Amount
Boat Title and Registration	145,118	622,390.41
Boat Title Tax	25,022	3,309,549.08
**Commercial Fishing		
Licenses	32,037	522,257.20
Wildlife Preservation		
Licenses	1,479	7,403.00
Hunting Licenses	381,225	2,294,409.10
Fishing Licenses	181,693	727,791.47
Publications	15,303	87,094.48
*Potomac River Fisheries	202	10,768.00
Shellfish Tax	6,349	928,061.86
***Miscellaneous	4,826	722,226.29

* Monies collected and deposited for Potomac River Fisheries Commission.

** Includes:
572 Boat Dealers \$14,300.00

*** Includes:
Forest Service, Wildlife and Park Service Monies

CAPITAL PROGRAMS ADMINISTRATION

	Budget
General Funds	1,255,834
Special Funds	267,954
Federal Funds	246,097
TOTAL	1,739,885
Number of Staff	70

The Capital Programs Administration includes four programs: Land Planning Services, Program Open Space, Shore Erosion Control and Land and Property Management. Under the direction of the Assistant Secretary and four program directors, this administration provides planning services for state parks, natural resources management areas and recreational facilities; it administers funds of Program Open Space under provisions of the *Outdoor Recreation Land Loan of 1969*; provides Shore Erosion Control services to public and private landowners.

LAND PLANNING SERVICES

This Section is responsible for the planning related to the acquisition and development of public lands administered by the Department of Natural Resources. It is also responsible for the implementation of the Wild and Scenic Rivers Act, Title 8, Natural Resources Article. It also performs environmental evaluation of all Department of Natural Resources capital projects in compliance with the Maryland Environmental Policy Act. Finally, it performs numerous coordinating functions that relate to DNR lands in county plans, transportation plans, disposal of surplus federal lands, designation of critical areas under the Land-use Act, and administration of the Wildlands Act.

The work of this Section is divided into four major activities, which are: park master planning; Scenic Rivers Program; acquisition mapping, environmental review projects. The production of State Park Master Plans involves extensive field study, design planning, public participation in planning (through advisory committees, public meetings and workshops), recreation demand assessment and coordination with other units of

government. The products are plans that are broadly acceptable to the community, that are compatible with the environment, that provide useful and attractive parks of good design, and that make reasonable and efficient use of public monies for capital development.

The Scenic Rivers Program involves the preparation of management plans for the nine designated wild and Scenic Rivers. These plans are also prepared with public participation. The acquisition mapping involves the preparation and revision of acquisition maps for acquiring all D.N.R. properties. Environmental review includes the review of plans produced by Land Planning Services, as well as development and land acquisition projects prepared by Program Open Space.

Park Master Planning

Calvert Cliffs State Park

The Revised Development Plan was completed and approved in fiscal 1980. The plan was presented to the Calvert County Commission.

The Gunpowder Falls State Park

The Draft Master Plan for Gunpowder is now nearing completion, although progress was slowed during the year by controversy over development of two specific areas of the park. The Citizens Advisory Committee met a total of 12 times and at least 6 other meetings were held by LPS with several local citizen groups. It is expected that Public Meetings on the Draft Master Plan will be held early in 1981.

Fort Frederick State Park

The Revised Development Plan was completed in fiscal 1980. The final review and approval of the Plan should occur in fiscal 1981.

Hart-Miller Island State Park

The site description report is 90% complete, and the draft concept plan is 30% complete. A slide presentation on the technical aspects of the project is completed.

Monocacy Natural Resources Management Area

The preliminary draft interim land use plan was prepared and reviewed in Land Planning Services.

Rocky Gap State Park

A feasibility study for the development of a golf course was completed. This study combined with a market analysis for the region will give general guidance for the potential of a golf course at this park.

Base Map Update

Preparation and updating of base maps for state parks was completed in fiscal 1980. These maps will show current developed facilities and topographic features of many existing state parks; and will be used for future planning needs. Ten maps were completed in fiscal 1979; and an additional 10 maps were completed in fiscal 1980.

Scenic and Wild River Plan

Deer Creek

- A. Status: Plan completed May 1878
Revised plan completed August 1979
Local Harford County ordinance passed

- B. Future Work: Continue support of management plan

Severn River

- A. Status: Management plan in draft form.
- B. Future Work: Review, rewrite and publish by Advisory Board, County Planning and Zoning and DNR agencies.

Anacostia

- A. Status: First draft has been completed.
- B. Future Work: Review by local advisory board, Montgomery and Prince Georges counties, MNCPPC and WSSC, rewrite and publish.

Monocacy

- A. Status: University of Maryland, graduate recreation program has completed two surveys; of recreation users and land owners on the values and use of the river. The data is being analyzed. Scenic River staff is developing the management recommendations.

- B. Future Work: Continued coordination with University of Maryland and the local advisory board. Complete management plan.

Youghiogheny

- A. Status: Wild and Scenic River Regulations are in effect

- B. Future Work: Continue management of the regulations. Continue coordination with Advisory Board to determine future planning on the river.

Pocomoke

- A. Status: First draft of management plan complete. Review by SCS and local Advisory Board.

- B. Future Work: Continue coordination with SCS. Continue review, rewrite and publish.

General

Four local advisory boards have been functioning throughout the year. These boards have met from 6-12 times each during the past year.

Acquisition Mapping

Greenridge	51,825 ac.	95%	Complete
South Mountain	9,000 ac.	100%	Complete
Greenbrier	1,683 ac.	100%	Complete
Patapsco	15,200 ac.	75%	Complete
Pocomoke	1,420 ac.	15%	Complete
Susquehanna	2,846 ac.	95%	Complete
Gambrill	1,136 ac.	100%	Complete

Work was initiated for aerial photography and topographic mapping of the following areas:

Fair Hill Natural Resources Management Area
New Germany State Park
Dans Mountain State Park

Environmental Review

Many referrals were made to Land Planning Services for review including coordination with D.N.R. agencies, Clearinghouse review, and other government and public responses. The Patapsco Valley State Park Final Environmental Statement was completed in cooperation with the Heritage Conservation and Recreation Service.

In addition, on-going Land Planning Services review was provided for permit applications, State Highway Administration projects, and county zoning notices; and about ten proposed new units were reviewed.

The Natural Heritage Program

The Natural Heritage Program was established by the Board of Public Works on November 7, 1979 when the Board approved a two year contract between the Nature Conservancy and the State of Maryland. The work by the Nature Conservancy is proceeding on schedule and should be completed in October 1981. When the contracted work is completed, the administration and maintenance of the Natural Heritage Program will become the full responsibility of the Department of Natural Resources.

PROGRAM OPEN SPACE

The mission of Program Open Space is to provide public recreational and open space opportunities within the State of Maryland.

Program Open Space coordinates the purchase of Natural Resources lands, and coordinates the design and development of Natural Resources facilities. Program Open Space also obtains federal grants to assist funding land acquisition and development, administers state and federal grants to Maryland's subdivisions for local recreation and open space, and coordinates development and maintenance of the Helen Avalynne Tawes Garden.

The accompanying charts compare fiscal year 1980 accomplishments with fiscal year 1979 activities and they highlight the numbers and varieties of projects that were approved during fiscal year 1980. Only two States, Maryland and Missouri achieved the 100 percent obligation rate for Federal Land and Water Conservation Funds.

Engineering and Design

The agency is responsible for the design of the capital projects for the Department. Activities include writing design programs, serving as agency member on the General Professional Services Selection Board, participation in meetings with consultants, review of plans and specifications, and doing in-house design work.

In addition to normal duties the Department started a major review of historic building and sites with the intention of developing a plan for future preservations, adaptive reuse or other disposition in cooperation with the Maryland Historic Trust.

During fiscal year 1980 designs were started on 19 projects costing an estimated \$465,000 in fees. The major projects includes the following:

Calvert Cliffs Day Use Area	\$50,000
Greenwell Phase I	\$80,000
Rosaryville Phase I	\$90,000
Tuckahoe Day Use Area	\$50,000

Acquisition and Development

The agency is responsible for the acquisition and development of capital projects for the Department. In fiscal year 1980 the Department acquired 3,743 acres. Also during fiscal year 1980 the Department started work on 21 projects with a construction cost of \$3,209,515.00.

Acquisition - State Property

Program Open Space has acquired an additional 3,743 acres of State land holdings during fiscal year 1980. These lands have been purchased under the State apportionment of the annual Program Open Space funds. The State portion is not to be confused with the local portion of Program Open Space money.

The Department of Natural Resources presently owns 306,461 acres of land, apportioned as follows:

State Parks	70,269
State Forests	120,692
Natural Environment Areas	12,770
Natural Resources Management Areas	13,559
Wildlife Management Areas	78,416
Energy and Coastal Zone	1,045
Maryland Environmental Trust	8,254
Miscellaneous	337
Fish Management Areas	1,100
Maryland Environmental Services	9
Maryland Historic Trust	10

At present, under the Outdoor Recreation Land Loan, the Department is receiving approximately \$12,000,000.00 a year for the acquisition of land.

Construction Projects - State Property

The following projects are under construction or should be under construction by the end of fiscal year 1980.

Cedarville Office	\$ 209,600
Deep Creek Storage Building	104,774
Elk Neck Bathon Renovation	58,330
Elk Neck Picnic Shelter	68,440
Fort Frederick Entrance Road	674,296
Herrington Manor Shop	13,400
Harrington Manor Shop	192,857
Manning Hatchery - Six Ponds	198,686
Martinak Fencing	6,174
Matapeake Shore Erosion	373,434
Matapeake Heat Storage Building	13,324
Milburn Landing Office	51,822
Patapsco Avalon Shelter	248,000
Point Lookout Exhibits	75,000
Rocks Water System	4,593
Rocks Picnic Shelter	33,875

Rocky Gap Storage Building	87,900
Seneca Telemetering System	24,500
Seneca Schoolhouse	44,800
Susquehanna Repair Lyle Barn	15,110
Tuckahoe Arboretum Phase I	710,600

Total	<u>\$3,209,515</u>
-------	--------------------

Construction Crew - During fiscal year 1980, Program Open Space continued with one construction crew. The purpose of the construction crew is to perform the type of light work that the operating agencies would normally contend with. The types of work which the crew is doing is as follows: demolition of buildings, erection of prefabricated pavilions, installation of underground utilities, repair of dams, and maintenance of rental properties.

Property inventory has also been reassigned to the Land and Property Management Program during fiscal year 1980.

Fiscal Administration

Grants

Since 1966, the Department has administered Maryland's apportionment of Federal Land and Water Conservation Funds totaling \$52,408,085. In 1969, the Maryland General Assembly passed the Outdoor Recreation Land Loan of 1969, "Program Open Space". The Department has administered \$122,200,000 in local Program Open Space funds to Maryland's counties, cities, and towns. The Program Open Space staff has also administered other smaller grants from the Federal Departments of Housing and Urban Development, the Office of Economic Development Assistance and the Appalachian Regional Development Commission.

The Grants staff objective is two-fold: (1) to obtain Federal Grants to supplement State Natural Resources acquisition and development program and (2) to administer State and Federal grants to Maryland's twenty-three counties and 160 municipalities. Supporting work involves project approval review, and processing of applications, publishing manuals and informational brochures, assisting applicants with applications, processing reimbursements, and maintaining records.

A full-time application control specialist has continued for the fourth year to assist in bringing uniformity to the Federal Land and Water Conservation Fund grant applications. The obligation rate for the Federal funds was 100% in fiscal year 1980, the highest in the nation. A major

goal has been obtained in meeting this objective. While maintaining the obligation rate, a continued emphasis was directed toward the recovery of the Federal funds that are approved.

During fiscal year 1979 the General Assembly, adjourned without approving Program Open Space funds for fiscal year 1980. An effort to regain the lost fiscal year 1980 Program Open Space allocation was undertaken during fiscal year 1980 and both fiscal year 1980 and 1981 Program Open Space allocations were approved as follows:

Fiscal Year 1980	\$22,000,000
Fiscal Year 1981	\$24,000,000
<hr/>	
Total	\$46,000,000

"79 Account" Record System

Land and Water Conservation Fund monies reimbursed to the State are deposited in the "79 Account". This non-budgeted account supplies funding for State and local projects. The recovered funds are divided in half with 50 percent allocated to the State and 50 percent allocated to the local subdivisions. A prenegotiated surcharge is deducted from the recovered funds prior to the 50/50 split. During fiscal year 1980 efforts were made to establish a record keeping system to closely scrutinize the use of the "79 Account". Through this close scrutiny the recovered funds will be available to meet local obligation as well as enable the State to realize the full utility of the cash balance on hand.

Reimbursement

Federally Assisted State Projects - In fiscal year 1980 the State of Maryland was reimbursed \$4,209,212.93 from the Department of the Interior, Heritage Conservation and Recreation Service. Of this amount, \$66,624.31 went directly to Washington County as reimbursement on the Clearspring Outdoor Education School. Baltimore City received \$102,166.07 for the acquisition of Clyburn Park; the Department of State Planning received \$17,258.42 to prepare the State Comprehensive Outdoor Recreation Plan; and the Nature Conservancy received \$17,348.61 for the developing of the Maryland Heritage Program. the balance of receipts totaling \$4,005,815.52 represents 50 percent of costs incurred to acquire and develop Maryland's State Parks.

One-half of the reimbursed funds are made available to the local subdivisions; the other half is used for the further acquisition and development of State facilities.

The funds reimbursed on projects in a given fiscal year may have been approved in several previous allocation years. Projects are not always completed in the same year in which they are approved. For this reason, the amount of funds reimbursed in a given fiscal year can greatly differ from that year's allocation.

State Assisted Local Projects - Program Open Space also administers the Outdoor Recreation Land Loan (see section E numeral 1- Program Open Space Grants). In fiscal year 1980 the State reimbursed \$9,878,626.38 to the local subdivisions for costs incurred on local parks, acquisition and development projects.

The local subdivisions were also reimbursed \$2,057,118.80 from the recovered Land and Water Conservation Funds. \$1,921,677.09 of the above amount was reimbursed from Federal funds recovered on State Parks projects. The remaining \$135,441.71 were direct Federal grants to the local subdivisions through the Land and Water Program, and the Appalachian Regional Council.

SHORE EROSION CONTROL

The Shore Erosion Control program, staffed by twelve full-time employees, is responsible for providing financial and technical assistance to water-front property owners with shore erosion problems on the Chesapeake Bay, its tributaries and the Atlantic coastal region.

Financial assistance through the Shore Erosion Control Construction Loan Fund is provided to qualified property owners for the construction of shore erosion control structures. Under this program interest-free loans are provided for a period up to 25 years.

Technical assistance is available to property owners who do not qualify for financial assistance. Aid is rendered in the form of site inspections, technical and permit information, and recommendations on possible solutions and courses of action to resolve specific shore erosion problems.

In conjunction with design and construction tasks, program personnel obtain topographic and hydrographic data at proposed sites for use during the project design phase. During the construction phase an inspector visits the project site frequently to ensure that all work is performed as specified. In addition, program personnel also performs administrative functions in the management of design and construction contracts and have overall responsibility for the operation of Shore Erosion Control Revolving Loan Fund.

**SHORE EROSION CONTROL
ACCOMPLISHMENTS - FY 80**

Technical Assistance Actions	207
S.E.C. Loan Applications Processed	123
Engineering Contracts Issued	32
Construction Projects Bid	32
Construction Contracts Issued	31
S.E.C. Loan Agreements Processed	44
Buyer's Agreement & Releases Processed	18
Length of Shoreline protected by:	
Timber Bulkheads	5,050'
Aluminum Bulkheads	2,925'
Steel Bulkheads	309'
Stone Revetments	5,066'
<hr/>	
Total 13,358'	Or 2.53 miles
Number of Projects Completed	35
Number of Property Owners Served	68
Total Amount of S.E.C. Loans	
Granted	\$1,607,276.17
Total Cost of Construction	
Completed	\$1,793,925.98

Land and Property Management

Effective July 1, 1979, the Land and Property Management Program was created within the Capital Programs Administration. This Program consists of six (6) projects: (1) General Direction; (2) Real Property Control and Maintenance; (3) Fair

Hill Natural Resources Management Area; (4) Wye Island Natural Resources Management Area; (5) Monocacy Natural Resources Management Area; and (6) Deep Creek Lake Natural Resources Management Area. The goals of the Land and Property Management Program are (1) to maintain an up-to-date record of all Department of Natural Resources properties and (2) management of certain lands in a "land bank" status until master plans are prepared and their ultimate use is determined.

General Direction is responsible for the overall coordination of the Land and Property Management Program which includes the budget preparation and administration as well as the planning function.

In addition to Fair Hill, Wye Island, and Monocacy which are managed in the "land bank" status this Program manages the Deep Creek Lake under an agreement with the PENELEC Company to provide recreational opportunities on Deep Creek Lake. The Real Property Control and Maintenance Project is responsible for all record keeping associated with the Department of Natural Resources owned land. This includes deeds, leases, easements, right-of-way, etc. This Program also administers Camp Echo Lake, represents the Department on the C & O Canal National Historical Park Advisory Commission, and aids in the administration of the Tawes Garden at the Tawes State Office Building Complex in Annapolis.

SUMMARY OF GRANT PROGRAMS SINCE EACH PROGRAM'S BEGINNING

Grant Program	Number of Project Applications	Total Allocations	Amount of Allocation Obligated for Projects	Unencumbered Balance of Allocation	% of Allocation Obligated	Amount of Allocation Reimbursed
Local POS FY 70-80	1,454	\$122,200,000	\$107,183,668	\$15,016,332	88%	\$92,301,398
Federal LWCF FY 65-80	323	52,408,085	52,408,085	0	100%	31,821,636
Totals	1,777	\$174,608,085	\$159,591,753	\$15,016,332	91%	\$124,123,034

**GRANT STATUS
PROGRAM OPEN SPACE (Local Side) &
THE LAND AND WATER CONSERVATION FUND**

Grant Program	Fiscal Year	Acq. Projs. Received	Dev. Projs. Received	Acq. Projs. Approved	No. of Acres Approved	Dev. Projects Approved	Total Funds Approved	Total Funds Reimbursed	Unencumbered Balance as of June 30, 1980
Local POS	FY 79	37	84	41	960.1	110	\$13,816,023	\$ 9,357,113	\$ 8,190,663
	FY 80	39	74	27	1,094	100	\$12,738,497	\$ 9,878,626	\$15,016,332
Federal LWCF	FY 79	7	13	7	1,894.0	11	\$ 5,045,171	\$ 7,355,306	\$ 0
	FY 80	4	6	4	6,318	4	\$ 8,530,920	\$ 4,209,213	\$ 0
Totals	FY 79	44	97	48	2,854.1	121	\$18,861,194	\$16,712,419	\$ 8,190,663
	FY 80	43	80	31	7,412	104	\$21,269,417	\$14,087,839	\$15,016,332

**SHORE EROSION CONTROL PROJECT STATUS
AS OF JUNE 30, 1980**

No. of Projects	Project Status	Property Owners Served	SEC Loans	Other Funds*	Total Construction Cost
35	Completed	68	\$1,607,276.12	\$186,639.81	\$1,793,915.98
16	Under Construction	16	\$567,328.26	\$891,489.56	\$1,458,817.82
3	Construction Pending	4	\$111,032.70	\$280.00	\$111,312.70
4	Contracts Pending	6	\$436,381.73	\$45,880.51	\$482,262.24
10	Scheduled for Bid	11	\$606,720.00**	\$186,680.00**	\$793,400.00**
29	Under Design	74	\$1,876,405.00**	\$997,075.00**	\$2,873,480.00**
97		179***	\$5,205,143.86	\$2,308,044.88	\$7,513,188.74

* Special appropriations and property owner contributions

** Estimated

*** Includes projects for the Town of Chesapeake Beach, the community of Fairhaven, three S.E.C. Districts serving numerous property owners and five projects on state owned property.

FISHERIES ADMINISTRATION

	Budget
General Funds	\$41,083
Special Funds	0
Federal Funds	55,883
TOTAL	96,966
Number of Staff	4

The Fisheries Administration is the principal unit of the Department with overall responsibility for both fresh water and marine fisheries. The management program activities are concerned with all aspects of preservation, enhancement, development, and use of Maryland fishery resources, tidal and non-tidal, sport and commercial fish and shellfish species.

The Fisheries Administration operates through three programs; the Office of the Administrator, the Interstate Fisheries Liaison, and the State/Federal Striped Bass Program. These activities are supported by a staff of three specialized professionals and one secretary.

OFFICE OF THE ADMINISTRATOR

The Office of the Administrator is responsible for the overall direction, supervision and coordination of fisheries activities within the Maryland Fisheries Administration.

INTERSTATE FISHERY LIAISON

The Interstate Fishery Liaison program is responsible for Maryland Marine Fisheries Management functions. The enactment of the Fisheries Conservation and Management Act of 1976 (200 mile limit law) requires the preparation of regional fishery management plans for fishery resources within the Fishery Conservation Zone adjacent to the respective states. In our area, the Mid Atlantic Fisheries Management Council has been established, consisting of the states of New York, New Jersey, Pennsylvania, Delaware, Maryland and Virginia, with the responsibility of preparing fishery management plans to be implemented by the Secretary of Commerce. The Fisheries Liaison Program is responsible for aiding in the development and review of these management plans, environmental impact statements and future amendments. The plans incorporate regulations governing fishery allocations and fishing restrictions on foreign, domestic, and recreational fishermen, to achieve

and maintain optimum stocks for future recruitment, prevent destructive exploitation, achieve efficiency with marine management and enforcement practices at the State level.

STATE/FEDERAL STRIPED BASS PROGRAM

Declining commercial landings, increasing fishing pressure, and modest recruitment have contributed to mounting public concern over the status of the East Coast stocks of the striped bass (*Morone saxatilis*). Management jurisdiction for striped bass resides with the States rather than the Federal government, because the species and its fisheries occur predominantly within three miles of the coast. The State/Federal Fisheries Management Program was organized in 1972 to coordinate interstate management of inshore species which are of concern to more than one state. In early 1978 a program was organized to develop a management plan addressing the species supported by the National Marine Fisheries Service through its State/Federal Fishery Management Program and facilitated by the Atlantic States Marine Fisheries Commission. Under contract with the NMFS, the Maryland Fisheries Administration has provided for the services of the Striped Bass Program Coordinator.

In cooperation with State and Federal fishery administrators and managers, the Striped Bass Program Coordinator is responsible for assessing the current status of the stocks, initiating and coordinating needed research, and recommending management measures through the preparation of a fishery management plan for striped bass.

WILDLIFE ADMINISTRATION

Budget

Total General Funds	\$233,311
Total Special Funds	5,709
Total Federal Funds	919,596
Total personnel	120

GENERAL DIRECTION

The wildlife resources of Maryland are widely used by citizens who spend millions of dollars each year in pursuit of wildlife related recreation. Approximately 200,000 sportsmen pursue game animals and thousands more enjoy the aesthetic values of wildlife.

The Wildlife Administration's goal is "the enhancement of wildlife populations to meet the demand of wildlife oriented recreation and to ensure the continued survival of wildlife in the state."

Maryland's inland fish and wildlife management and research efforts are financed almost entirely by hunters and fishermen; thus the the major emphasis of management is directed toward game animals and non-tidal fish. However, all wildlife species are considered in management decisions with the result that non-game animals and fish benefit from wildlife management practices.

Responsibilities of the Wildlife Administration include regulating seasons, bag limits, and methods of taking game animals and fish, assisting other state agencies and private landowners in land management and wildlife planning, issuing permits and licenses for activities that directly affect wildlife, providing technical assistance for nuisance wildlife control, and managing areas for public wildlife enjoyment, including hunting, fishing, trapping, field trials, nature study and photography.

Five agency programs comprise the Wildlife Administration. They are: General Direction, Wildlife Management Services, Wildlife Field Services, Fish and Wildlife Technical Services and Non-tidal Fisheries.

During fiscal year 1980 each program monitored distribution abundance and the habitat changes affecting their respective wildlife species. Information was presented to the public through correspondence, reports, news releases, and public meetings.

WILDLIFE MANAGEMENT SERVICES PROGRAM

This program is comprised of five staff biological projects. These staff projects are responsible for planning, conducting and evaluating all wildlife surveys, developing and applying management technique; preparing annual status reports, developing recommendations for regulating public use, and restoring wildlife species.

Forest Wildlife Project This project is responsible for management of wild turkey, white-tailed deer, sika deer, ruffed grouse, gray squirrel, eastern fox squirrel and red (Piney) squirrel species. These wildlife species currently provide over one million hunters days of recreation afield.

Ongoing investigations are being conducted to determine mortality rates for the white-tailed deer and gray squirrel. Also, the third year of a life history study on the sika deer was conducted. The study provided useful data of the home range and

habitat preferences of these animals. Population trend surveys on deer, grouse, squirrels, and turkeys were also conducted.

Furbearer and Marine Mammal Project This project is primarily responsible for the management of eighteen species of furbearers in Maryland. In recent years, furbearer pelt sales have generated an estimated income of over \$3,000,000 to Maryland's fur harvesters.

In cooperation with Nongame and Endangered Species Project personnel, a computerized inventory of statewide bobcat habitat was developed and evaluated. Winter track count surveys designed to determine the status of Maryland's bobcat population were also designed and implemented. Additional field survey techniques to annually monitor statewide populations of foxes, raccoon as well as bobcat through scent station transects have also been developed and will undergo operational testing during October, 1980.

Project staff continued to evaluate and administer several furbearer research projects with the Appalachian Environmental Laboratory as well as to participate extensively with AEL personnel in the planning and organization and conduct of the first Worldwide Furbearer Conference held in Frostburg in August, 1980.

Waterfowl The wetland wildlife species considered in the Migratory Waterfowl Program include eight species of dabbling ducks, eleven species of diving ducks, five species of seaducks, three species of geese, two species of swans, and the American coot, combined into a category termed waterfowl; plus the Florida gallinule, six species of rails and the jacksnipe.

January 1980 waterfowl surveys indicated that total waterfowl - 664,900 - in Maryland decreased in comparison to the January 1979 estimate of 873,400. Decreases were noted in most species. Mild weather caused delays in bird migration into mid January.

About 6,700 waterfowl were banded in Maryland during the year. Funding for cooperative banding of ducks in eastern Canada was continued.

Surveys of the changes and conditions in waterfowl habitat indicated a continued decrease in bay grasses from the previous year. Evaluation of penreared mallard releases was continued. Fowl cholera was again detected in seaducks. Analysis of gizzard collection data for the years 1977-79 indicated lead levels to be concerned about were found in mallards, black ducks, scaups and Canada Geese.

Nongame and Endangered Species Project This project includes species of wildlife not legally classified as game birds or mammals and those species threatened or endangered. These include thirty-seven species of amphibians, forty-six species of reptiles, two hundred eighty species of birds, and fifty-one species of mammals.

The coordination of research responsibilities includes planning and project execution for nongame and endangered species. Additional responsibilities include issuing endangered species, bird banding, and scientific collecting permits. The Endangered Species Project of Maryland Wildlife Administration is continuing several studies initiated over the past years. A cooperative agreement for the conservation of endangered species was signed with the U.S. Fish and Wildlife Service in 1976 making the state eligible for matching funds.

Upland Wildlife Project The Upland Wildlife Project is responsible for the management of rabbits, quail, pheasants, doves, woodcock, crows and the recreational use of these species in Maryland.

Research studies were conducted on the nesting success of mourning doves in Maryland and the hunting mortality rates on quail and rabbits on a wildlife management research area. Trend surveys were continued on all upland species.

A hunter-use survey of licensed hunters in Maryland was completed to obtain estimates of numbers of hunters, efforts expended, and harvest for selected game species.

An "Acres for Wildlife" program was continued to: 1) protect, improve, or create upland wildlife habitats on private lands and rights-of-way, and, 2) create an awareness of what upland wildlife habitat actually is and the need for management.

WILDLIFE FIELD SERVICES PROGRAM

As the name implies, this program performs the primary field operations for the Administration. The program carries out wildlife management practices on state forests, state parks and administration-owned properties as well as cooperative lands. It also serves other agency programs by providing the hands-on-work required for the five biological staff projects. The program serves the public directly by dissemination of information regarding policy and regulations, technical assistance in planning wildlife management practices and handling animal problems as well as providing areas on which the interested public can find hunting and other forms of appreciative recreation. The total acreage of State Wildlife Management Areas is 78,338 plus 47,200 of leased land under the Cooperative Hunt Program

FISH AND WILDLIFE TECHNICAL SERVICES PROGRAM

This program conducts the, (1) environmental review and assessment of federal, state and local projects as they affect the wildlife resources of the state. The agency staff is coordinated to have input in particular species information.

The Environmental Review project has concentrated on better coordination and review of wetland projects, roads and bridges, and SCS PL-566 drainage projects.

(2) The state and federal clearinghouse (A-95) projects are all reviewed by this program and action is coordinated between the Wildlife Administration staff and other D.N.R. state and federal agencies.

(3) The Comprehensive Planning project, initiated in 1979, has begun the Strategic and Operational planning for the entire Administration with Federal Aid funding. The first three jobs in Strategic planning has been completed and a projected completion date for all phases is for FY '82.

NON-TIDAL FISHERIES PROGRAM

Non-tidal Fisheries Program is responsible for inland fishery resources. The waters included within this program's management responsibility are all streams, rivers, ponds, lakes and canals publicly or privately owned extending to the tidal boundaries designated by law. The two projects that make up this program are coldwater and warmwater. The warmwater project involves itself with warmwater fisheries development, warmwater fisheries investigations and reservoir fisheries investigations and Potomac River investigations. The coldwater project strives to provide the greatest amount of public trout fishing within existing environmental limitations while at the same time preserving, improving and enhancing the natural trout resources within the state.

Coldwater Fisheries Project

A total of 292,738 catchable size (8-15 inch) trout, weighing a total of 107,113 pounds (53.5 tons) were stocked in 39 streams and 28 impoundments within the State open to public fishing. This was 602 trout less than our all time record set in 1979. The annual stocking of a significant number of 12 to 15 inch trout (2 year old fish) continues to be very popular with the trout fishermen of the State. In addition, approximately 200,000 fingerling trout were stocked in the selected waters of the State in an attempt to provide additional trout fishing for the future.

A record number of trout stamps were sold during Fiscal Year 1980: 42,838. This was a 10% increase over Fiscal Year 1979, which was the

previous all time record.

Field operations of the Cold Water Fisheries Project remained primarily directed towards completion of Federal Aid Project F-26-R, "Survey and Inventory of Maryland Trout Waters". A copy of the final report can be obtained from the Administration. In addition, the Cold Water Fishery Project initiated a new Federal Aid Project, F-36-R, entitled "Survey Inventory and Management of Maryland Cold Water Fishery Resource". This new Federal Aid Project consists of intensive stream studies, monitoring known trout streams, angler surveys, and impoundment studies. Special emphasis has been placed on the studies Beaver Creek, Hunting Creek, Paint Branch, Gunpowder River, Jones Falls, Prettyboy Reservoir, Hunting Creek Reservoir and Greenbrier Lake.

The "Urban Trout Fishing initiative" was continued in Baltimore County and expanded within Montgomery and Carroll County. Plans were formulated to expand this activity for Fiscal Year 1981.

A significant amount of time and effort was expended cooperating with the Water Resources Administration's Permit Section in an attempt to assure greater protection for trout streams affected by proposed development.

Warmwater Fisheries Project During FY 80, Maryland had 140,200 licensed anglers fishing in over 50,000 surface acres of non-tidal waters. Included as part of this figure are 29,000 acres of fishable streams and rivers. An estimate of total production of these non-tidal waters has been calculated to be 10.7 million pounds.

The Joseph H. Manning Warmwater Fish Hatchery and Fisheries Work Center was completed and put into operation in 1980. It has 27 ponds ranging in size from 1/8 to one acre in size. Fish species reared at the Manning Hatchery included large and smallmouth bass, striped bass, walleye, bluegill, American shad, striped bass x white bass hybrids, and forage fish.

Approximately 50 lakes and ponds were checked by program personnel for bass reproduction.

Walleye were stocked for the second consecutive year in the Potomac River and were also introduced into Rocky Gap Lake. Approximately 31,000 shad were stocked in Octoraro and Deer Creeks and 43,000 largemouth bass fingerlings were stocked in the Northeast River.

Assessment of the Conowingo Dam on the resident smallmouth bass population, water

quality, and shad run revealed that temperature and dissolved oxygen levels became critical during July and August. The decline in shad populations is continuing and the smallmouth bass population is remaining constant.

A final report of the channel catfish study in upper Chesapeake Bay was completed and published.

Studies on the Potomac River and largemouth bass in the upper Chesapeake Bay were concluded. Final reports will be completed in late 1980 or early 1981 and made available to the public.

The following numbers of warmwater species were stocked in selected waters of the state in 1980:

Age	Species	Number
Fry	Walleye	2,350,000
Fingerlings	Walleye	52,000
Fingerlings	American shad	31,000
Fingerlings	Striped bass	5,800a
Fingerlings	Striped bass - white bass	500
Advanced		
Fingerlings	Largemouth bass	100,000a
Adult	Channel catfish	9,476 lbs
Fingerlings	Channel catfish	15,000
Fingerlings	Bluegill sunfish	300,000a

a Stocking of these species not completed when these figures were compiled.

Fishing maps of Unicorn, St. Mary's, Urieville, Piney Run, Savage River, and Big Pool Reservoir were prepared and made available to the public.

The second year of the Youghiogheny River Study encompassed 10 sample stations for water quality and fish and benthic macroinvertebrate collections. Water quality was good, except for the Crellin area.

Smithville Lake Dam was rebuilt and the Lake stocked with 20,000 largemouth bass fingerlings.

A statewide stream survey study was initiated in 1980 to provide baseline information on physical-chemical characteristics, species composition, distribution, and relative abundance of benthic macroinvertebrates and fish in the various river basins in Maryland which will provide inventory and utilization information for informed management of the water resources of this state. Streams surveyed in 1980 include the Chester, Patuxent, Monocacy, Antietam, and Conococheague.

MARYLAND PARK SERVICE

Budget

General Funds	\$4,718,508
Special Funds	2,011,078
Federal Funds	—
TOTAL	\$6,729,586
Number of Staff	259
Seasonal Staff	500

STATE PARK MANAGEMENT

Of the nearly 80,000 acres of public land managed by the Maryland Park Service, 73,914 acres remain in their natural state. The remaining 11,309 acres are improved for public recreational enjoyment. Park improvements include roads, parking lots, buildings, utilities, and those facilities which people associate with state parks, namely, campgrounds, picnic areas, playgrounds, trails and water related facilities. There are 98.9 miles of paved roads and paved parking lots for 11,200 cars in the parks. Public buildings include comfort stations, bath houses, concessions, pavilions, nature centers, museums, offices, maintenance buildings, storage buildings, contact stations and visitors centers.

Structures on public lands are rented by Maryland Park Service to tenants who reside there. Efforts have been made to standardize property rentals throughout the state in order to realize an equitable rent from each property. Rental income is earmarked for maintenance to these residences based on health and safety considerations as a first priority. Repairs to sewage systems, electrical systems and boilers are included in maintenance procedures. An annual inspection of all residences is now conducted.

Facilities which provide the general public with a variety of activities are heavily used and in constant demand. The Park Service has 2,438 individual camping sites and a smaller number of sites for organized groups. There are 119 picnic areas and 82 playgrounds. Nature trails and hiking trails extend for 350 miles. Twenty ponds and lakes cover 728 acres. In addition, visitors enjoy the waters of the Atlantic Ocean, the Chesapeake Bay and selected rivers and streams. Boat launching ramps, boat docking slips and rental boats are available at many of the parks.

Ranger School

The Maryland Park Service did not have a Ranger School in the Fall of 1979 due to the fact that there was insufficient personnel to make up a class. Eighty park ranger who hold Law Enforcement

positions were qualified in the use of fire arms. Fire arms were issued to those rangers at Elk Neck, Assateague, Gunpowder Falls, Patapsco Valley and Sandy Point.

The Law Enforcement section of the Maryland Park Service was moved from the Tawes State Office Building in Annapolis to Long Hill Communications Center in Pasadena, Maryland. The Law Enforcement section is now housed in the same building as the Forest and Park Service Communication Center.

The Communication Center during the past year has added the capability of the MILES Terminal (Maryland Inter-agency Law Enforcement System). This puts us in direct contact with the Motor Vehicle Administration Computer, the State Police and all other Law Enforcement agencies within the state.

Refresher Courses Annually, the Maryland Park Service provides refresher courses in law enforcement, first aid, and CPR. These courses allow employees to improve their law enforcement skills every two years, their first aid every three years, and their CPR every year.

Technician Training Training for park employees who specialize in land and property management was increased in 1980. The Park Service was able to take advantage of many workshops sponsored by outside agencies such as the University of Maryland, the Maryland Department of Health, the Maryland Department of Agriculture and the Maryland Recreation and Parks Association. In addition, two workshops were provided by Maryland Park Service personnel. Areas of training included workshops on pesticides, facilities construction, wastewater treatment, turf management, horticulture and electricity.

Interpreter Training The fourteen rangers who regularly conduct interpretive programs participated in a week-long training program in February. As part of an ongoing program to provide these interpreters with a better understanding of natural features and processes, this program emphasized using natural resource knowledge in the development of walks, talks, displays and other forms of interpretation. In addition to this program for classified personnel, a weekend training program was provided for summer interpreters to provide an orientation to the MPS interpretive program and to detail the duties and responsibilities of summer interpretive personnel.

Historical Interpretation While nearly all the parks have nature interpretive programs, historical interpretive programs are limited to the five state parks with features of historical interest. In the summer of 1980 the following programs took place at these parks:

At Fort Frederick, one full-time ranger interpreter and five summer seasonal historians garrisoned the fort seven days a week demonstrating a number of aspects of 18th Century frontier garrison life. In addition, a group of volunteers in the parks (VIP's) served at the fort on many weekends. Major weekend programs involving large military units were held in May (Fort Frederick Rendezvous), in July and September (Governor's Firelock Match).

The Steppingstone Museum Foundation, a private, non-profit organization, continued operation into its second year under the direction of a new executive director. Crafts demonstrations, special events and living history were featured. Elsewhere in the park, the Rock Run mill area, with several restored structures, were open to the public with living history demonstrations.

Gathland State Park cooperated with the town of Burkittsville for a large 2-day event commemorating the Battle of South Mountain in September. Reactivated Civil War units were featured.

At Smallwood State Park, three seasonal historians provided tours of the restored manor house, colonial candlemaking demonstrations, gardening and cooking in the kitchen area. At the annual Revolutionary War Days weekend in May; numerous crafts-people from all over the east coast demonstrated their skills. Several other special events were featured during the summer.

Point Lookout's history program got a boost from the opening of major new exhibits in the park's visitor center. Besides the park's own moving interpreters, reactivated Civil War groups were on hand during special events to augment the program. The annual Confederate Memorial Service was held in June.

Nature Interpretation The proportion of total attendance participating in interpretive programs increased in many parks. Interpretive programs and facilities continue to serve over 200,000 people. Roughly one-fourth of the total number of people visiting our parks participate in interpretive programs and activities.

Interpretive programs now extend into the fall, spring and winter. New programs have been developed to reach into the communities near our parks. Programs were also developed to provide

assistance to novice backpackers, campers, and hikers to help them to have a safer, more enjoyable outdoor experience. The types of programs being provided are being gradually expanded toward a full spectrum of programs that will range from enjoyable activities to in-depth nature study.

Special Events in addition to interpretive programming, many of the parks sponsored special event days which allowed visitors to participate in an unusual activity which is not held regularly at the park. These events establish a rapport between the park and the community and frequently the community is a co-sponsor of the event. Some of the events attract visitors statewide as well as tourists passing through.

Several events are held annually. Those which were popular in FY 1980 are:

Special Events	Park	Attendance
Cross Country Ski Races	New Germany/ Herrington Manor	1,000
Maple Syrup Demonstration	Cunningham Falls	4,750
Easter Egg Hunts	Elk Neck	400
	Ft. Frederick	200
	Sandy Point	350
Martinak Days	Martinak	5,000
Smallwood Revolutionary War Days	Smallwood	6,700
Mid-Atlantic Championship Bathtub Races	Point Lookout	400

Programming in the parks is frequently enhanced by the volunteers who perform services without pay but are recognized by the Park Service as Volunteers in the Park (VIP). During FY 1980, VIP's performed a variety of duties including interpretive programs, craft programs, and nature trail restoration.

Visitor Protection and assistance Because the Maryland Park Service is concerned with the safety and health of the public and its employees, it initiated a comprehensive safety program in all the state parks. The goals of the program established safety attitudes and safety habits. The safety program emphasized training all employees in accident prevention; keeping and updating accurate records and reports; investigation and safety inspections and establishing safety standards.

To insure that park visitors have a safe and troublefree experience in the parks, the Park Service has trained law enforcement officers and park wardens. These people, who usually serve as park rangers, primarily work as visitor contact personnel, making the park visit a worthwhile experience. They also enforce laws protecting and preserving the parks.

During FY 80, more than 5 million people visited our parks and enjoyed the many facilities. Visitor - park breakdown is as follows:

PARK	ATTENDANCE
Assateague	639,432
Calvert Cliffs	49,073
Cedarville	38,708
Cunningham Falls	361,742
Dans Mountain	12,395
Deep Creek	53,505
Elk Neck	278,350
Fort Frederick	96,065
Gambrill	201,803
Gathland	37,104
Greenbrier	185,645
Gunpowder	591,052
Herrington Manor/ Swallow Falls	226,316
Janes Island	139,617
Martinak	65,244
New Germany	52,647
Patapsco	580,863
Patuxent	5,978
Pocomoke River	140,311
Point Lookout	320,536
Rocks	182,423
Rocky Gap	200,580
Sandy Point	344,809
Seneca Creek	32,279
Severn Run	11,752
Smallwood	42,330
Soldiers Delight	4,920
Susquehanna	104,153
Tuckahoe	28,906
Washington Monument	131,846

FEDERAL PROGRAMS

Young adult Conservation Corps (YACC) projects employed 125 individuals aged 17-23 in six state parks. Susquehanna, Elk Neck, Assateague, Sandy Point, Patapsco Valley and Herrington Manor State Parks benefited from their efforts. Their projects included the renovation of buildings, rehabilitation of over-used areas, repair of flood damaged areas, historical restoration of buildings and equipment, trail building and the construction of buildings and facilities.

Twenty-seven young people were employed in the summer Youth Conservation Corps (YCC) program at Point Lookout, Pocomoke River State Parks and the South Mountain Natural Environmental Area. The YCC crews improved and expanded park facilities.

MARYLAND FOREST SERVICE

Budget

General Funds	\$2,105,988
Special Funds	1,131,482
Federal Funds	716,732
TOTAL	\$3,954,202
Number of Staff	179

STATE FOREST SYSTEM

This unit is concerned with land acquisition, timber sales, forest recreation, watershed management, forest protection and maintenance.

Ten forested areas totalling 125,254 acres make up the state forest system. These areas include Doncaster State Forest, 1,485 acres; Elk Neck State Forest, 3,165 acres; Garrett State Forest, 6,824 acres; Green Ridge State Forest, 32,466 acres; Pocomoke State Forest, 13,229 acres; Potomac State Forest, 10,658 acres; Savage River State Forest, 53,064; Seth State Forest, 125 acres; Wicomico State Forest, 1,110 acres; and the Cedarville Natural Resources management Area, 3,158 acres.

Land Acquisition During 1980, the state forests were enlarged by 139 acres added to Elk Neck State Forest.

Federal Manpower Programs on State Forests

Enrollees of the federally funded Young Adult Conservation Corps, Youth Conservation Corps and Comprehensive Education and Training Act programs again took part in state forest projects.

A residential project of the Young Adult Conservation Corps operated throughout the year on Savage River State Forest. Project population which fluctuated between 10 and 25 included enrollees of both sexes recruited statewide. Enrollees completed many important projects in forest conservation and forest recreation. Pocomoke and Green Ridge State Forests had YACC projects and did forest improvement work, established campsites and overlooks. The YCC program involves high school students interested in resource conservation. Sixteen enrollees engaged in a work-learning experience on Green Ridge State Forest during the summer of 1979. In addition to worthwhile forest conservation work

accomplished, the enrollees completed a 17-mile hiking trail began in 1978.

The CETA program is more labor intensive than YCC and enrollees perform duties similar to regular state forest employees. A total of 15 enrollees worked on state forests during 1980 Timber Sales.

Timber Sales The improvement of the state forests by thinning and removing defective and diseased trees is a high priority project. The total number of acres improved in 1980 was up slightly at 702 acres improved partly due to the removal of much low grade timber by citizens for fuelwood.

Reforestation The number of trees planted on state forests remained about the same with 240 acres planted. Loblolly pine areas cleared to control the bark beetle on Pocomoke State Forest were reforested.

Forest Visitation Forest visitation declined slightly in 1980. Hot humid weather, uncomfortable for tent-camping was the main factor. There is evidence that the camping "boom" of previous years is slowing further.

FOREST RESOURCE PROTECTION

This program consists of three primary functions Forest Fire Protection, Insect and Disease Detection and Urban Forestry.

Forest Fire and Protection Wildfire Protection: Wildfire protection is provided to 2,706,000 forested acres and 994,000 acres of marshlands located mainly on the Eastern Shore. This protection is provided through three operational phases: fire prevention, preparedness, and fire suppression. Fire Prevention: Prevention is carried out using both educational techniques and by enforcement of existing laws and regulations. The educational techniques include:

School Programs which are directed toward students in the 2nd, 3rd and 4th grade levels. Over 300 programs were presented in fiscal 1980.

Distribution of prevention materials: Over 150,000 items were distributed to both children and adult groups.

Jr. Forest Ranger Program: 7,000 children received Jr. Forest Ranger kits in 1980.

Law enforcement efforts were directed to reducing both debris burning and incendiary caused fires.

These efforts included:

- * Training of Forest Service personnel in investigative techniques.
- * Apprehension and conviction of incendiaries.
- * Issuance of burning permits, over 500 permits were issued to contractors and landowners.
- * Cooperative efforts with the State Health Department in issuance of burning permits.
- * Inspection and declaration of railroad hazards. All railroad rights-of-way were inspected for hazards - approximately 714 miles.

With the increasing number of wildfires, fire prevention is becoming one of the most important functions of the fire protection efforts.

Preparedness The first phase of fire preparedness involves planning. Each of the four administrative regions of the service, have plans for directing fire suppression efforts. These plans are analyzed annually and updated to meet current fire conditions.

- Fire weather forecasting - a system of fire weather projection was established in 1980. Using data provided by the U.S. Weather Bureau, daily weather conditions are provided to each of the eight dispatching centers in the state. The information is used to develop daily fire danger projections which provide basic fire planning for personnel and equipment required to provide for effective fire suppression.

- Fire trail maintenance is carried out in the limited access areas in Western Maryland. Using CETA and part-time labor, 20-25 miles of trails are opened each year.

A program of equipment maintenance is carried out annually. The 100 specialized vehicles equipped for fire suppression are inspected bi-annually and maintained in top condition for suppression action.

Fire Suppression: In 1980, even with the wet spring season, Maryland Forest Service personnel were involved in the suppression of 554 wildfires which burned over 8,779 acres. The leading causes were debris burning, children and incendiary.

Insect and Disease Protection: Forest Service personnel continued to assist the Department of Agriculture in insect and disease detection. The main effort was in the survey for Gypsy Moth. Along with day to day detection of minor infestations, Forest Service personnel also assist in surveys and evaluation of the Southern Pine Bark Beetle on the Eastern Shore and the Oak Wilt disease in Western Maryland.

Training was provided to both Forest Service personnel and fire departments. The training consisted of basic fire behavior and fire suppression methods.

Maryland again served as host for the Middle Atlantic Forest Fire Compact States annual training session. Personnel from Maryland, West Virginia, Pennsylvania, Delaware and New Jersey were in attendance. Instruction was provided by the U.S. Forest Service. The theme of the session was wildfire cause determination. This training provided fire basic concepts in investigation and determination of wildfire causes.

Funding was provided to volunteer fire departments through the Rural Community Fire Protection program. Thirty-seven thousand six hundred dollars (\$37,600) was distributed to provide for both training and to purchase fire and safety equipment. The volunteers matched these funds through their department budgets.

URBAN AND COMMUNITY FORESTRY

Urban Forest Planning One function of Urban Forestry is to work with land development projects. During 1980, forty-three (43) projects were provided assistance in the Southern Maryland and Baltimore areas.

Roadside Tree Supervision Another phase of Urban Forestry involves the supervision of tree care work on any tree growing within the public right-of-way. This function involves the supervision of utility crews through a permit system. There were over 1,200 permits issued which involved over 29,000 hours of personnel time in supervision. This function is funded by direct charges to the utility for supervision.

Street Tree Inventories. Street tree maintenance in towns and cities is a necessary function of the city government. In order to better plan the maintenance program, the Forest Service assists in the inventory of the street trees. The inventory not only includes a record of the number and location of street trees, it includes specific recommendation for proper tree care. Inventories were completed for Uniontown in Carroll County and for Ammendale in Prince George's County. Inventories were started in Hyattsville, Frederick and Cumberland.

To provide further guidance to towns and counties in roadside tree plantings, a recommended tree list was published. The list provides species recommendations for various types of plantings.

Shade Tree Requests. Over two thousand (2,000) property owners received advice and recommendations as to how to treat tree problems.

Funding. Through federal fund sources, the forest Service provided over \$20,000 to the City of Baltimore and Prince George's County. The funds were matched by the county and city to provide for a computer program to evaluate roadside planting stock. The information will be used to select proper planting stock for future plantings.

Tree Expert Licensing. Any individual or company which provides a tree care service for a fee must be licensed by the Department. during 1980, 271 individuals were licensed as tree experts.

Roadside Plantings. To assist residents in the beautification of their streets, the Forest Service provides saplings at the production cost. These saplings are to be used for plantings within the public rights-of-way or any other publicly owned property. A total of 1,900 trees were sold in 1980 for this purpose.

COOPERATIVE FOREST MANAGEMENT

Several major elements of the CFM Program combine to improve and maintain the contributions that trees, forests and related resources provide to all citizens. All these efforts are service oriented in nature and are provided upon request to private landowners across the state.

Services are available to individuals, municipalities and developers, and involve timber marking, timber stand improvement, watershed and wildlife development, area design for subdivisions and overall environmental education projects, advice and assistance to the wood-using industry, revegetation of strip mines, and reforestation throughout the state. The program is concerned with the establishment of trees in the environment and to this end operates and maintains the Buckingham Forest Tree Nursery. The program works closely with the county Forest Conservancy District Boards in prompting and developing sound forestry practices.

In addition, the program has responsibility for the resource planning function which provides necessary direction to MFS functions.

Federal funds supporting a portion of program costs (under the Cooperative Forest Assistance Act of 1978) are obtained from the United States Forest Service on a matching basis depending on federal allotments. Some funds are also available under

Title IV of the Agricultural Act of 1954, as amended, for reforestation and superior seed tree and seed protection development.

	ACTUAL 1980
Forest Nursery	
Trees Distributed	2,750,000
Landowner Plantings (No.)	1,116
Acres Planted	2,441
Landowner Assistance	
Requests Serviced (No.)	14,947
Plans Prepared (Acres)	26,626
Forest Tax Relief Agreements (No.)	81
Timber Stand Improvement (Acres)	1,543
Watershed Improvement	
Critical Area Planted (Acres)	30

Some of the accomplishments are:

Private Woodland Owner Assistance: Twenty-two project foresters and their aides, assisted 14,947 landowners. Detailed forest resource management plans were developed for 16,500 acres of privately owned land. One thousand, three hundred and sixteen (1,316) tree planting plans were prepared and 2,400 acres were planted or seeded to trees. Referrals to consulting foresters numbered 188 and involved 7,800 acres.

Watershed Program: Technical assistance was provided to landowners within 3 designated P.L. 566 small watershed projects and the Potomac Flood Control Project under P.L. 534. Both of these laws provide forest resource management assistance and watershed protection. Forest management plans were prepared for 4,524 acres of forestland and 94 acres were planted.

Forest Conservancy District Boards: Forest Conservancy District Boards seek to encourage and assist in the wise use of trees for a variety of benefits. Each county has a board made up of at least five persons from various walks of life. A president and executive committee coordinate state level activities, while each county has a chairperson to coordinate county activities.

The project forester in each county is the secretary to the board and is responsible for board administration.

Nursery: The Buckingham Forest Tree Nursery produces the seedlings for the forestation program and those for the Wildlife Administration. One hundred and thirty-seven thousand (137,000) hardwood, 2,495,000 softwood and 74,000 wildlife shrubs were produced.

Old and inefficient irrigation pipes are being replaced over a three-year period. Much of this work is timely, considering the anticipated increased production required to meet the needs of the Pine Tree Reforestation Law.

Forest Resource Planning The Maryland Forest Service's resource planning effort made substantial process during FY 80. The project, established as a result of federal legislation and the state Renewable Resources Planning Act, is designed to provide the MFS with strong direction for resolving important forest resource issues in Maryland. MFS planners, with the help of the general public, identified outstanding forestry issues of the 1980's. Issues such as loss of forest land, tax incentives, wood energy, lack of markets, and information and education were defined and analyzed to discover their importance and scope. Utilizing additional public input and assistance from Maryland's forestry boards. MFS planners began developing a plan to resolve the issues. Implementation of portions of that plan also began in the form of a comprehensive legislative initiative to help resolve the woodland tax reform issues.

Resource Utilization

The Resource Utilization Specialists continued to take a team approach to the increased utilization of our forest resources by assisting the wood-using industry in harvesting and milling practices. New emphasis has been placed on the development of wood for energy and on the development of the resources of each county by working through the local government and local foresters.

The type of service varied greatly with 825 assists to individuals, mills and organizations involving 219,200 cubic feet and 183,000 board feet of forest products worth \$318,786.

Sawmill improvement	
Program (SIP)	9 studies
Improved Harvest Program	8 studies
Improved Drying Program	3 studies
Forest Products Residue	
Utilization	6 studies
Wood Energy	1 study
System Development	5 assists
Economic Studies for	
Local Governments	5 studies

MARYLAND ENVIRONMENTAL TRUST

Budget

General Funds	92,985
Special Funds	—
Federal Funds	—
TOTAL	92,985
Number of Staff	3

GENERAL DIRECTION

The Maryland Environmental Trust was created to conserve, improve, and perpetuate the natural, scenic, and cultural qualities of the Maryland environment. Its policies and programs are defined and supervised by a volunteer board of trustees consisting of twelve citizens and three ex-officio members.

With the general objective of helping to foster a conservation ethic in Maryland, the Trust has one major project, Resource Stewardship, under which there are three main activities: The Conservative Easement, Local Projects, and Research and Information Service.

The Trust's main activity is to encourage landowners of rare or unique natural areas, productive farmland, large open spaces, waterfront, or scenic areas to donate conservation easements on their land to preclude development of their property. The Trust also works with local organizations to establish programs to conserve energy and materials, improve local environments, and increase citizen-awareness of the need for voluntary stewardship of Maryland's natural resources.

It also gathers and disseminates information about environmental issues through its monthly newsletter MARYLAND LANDSCAPE and its clearinghouse for information on waste reduction, recycling, and litter control systems.

These activities were carried out by three permanent employees, three contractual workers, one seasonal employee, and a large number of volunteers. The Trust's twelve volunteer members of the Board of Trustees donated their labor for administrative and policy meetings, testimony at hearings, and conservation easement negotiations.

The Environmental Trust was given eleven conservation easements on 800 acres in nine counties. Almost all of this land is productive farmland and half of it is located on the

Chesapeake Bay. Fourteen other easements were in progress; these will restrict 2,648 acres in Baltimore, Howard, and Queen Anne's Counties. The three easement workers also made monitoring visits to nineteen easement sites and responded to seventy five inquiries about donation of easements.

Trust easement work continued to be successful in the Sugarloaf Mountain area of Montgomery County; with the donation of one easement on 221 acres there, the Trust now holds easements on 1,687 acres around the southern edge of Sugarloaf Mountain. The preservation of these farms directly supplements other state, county, and private preservation programs in that region.

The donation of one easement on thirty acres in Baltimore County, in 1978, led to the donation of two easements on 46 acres by adjacent owners and also successful negotiations to execute in FY 1981 seven other easements on 988 acres of other adjacent property owners. This success will constitute a concentration of 1,064 acres in one valley there.

In Dorchester County on Beckwith Creek, two owners, across the creek from the Trust's 92 acre easement site there, executed easements on 255 acres.

The Environmental Trust is now responsible for forty two easements in twenty counties and Baltimore City which restrict use of 9,770 acres. In FY 1979 the Environmental Trust held thirty conservation easements on 8,253 acres. This is a 40% increase in the number of easements and a 18% increase in acreage since the previous year.

During this period the Trust continued its solicitation of land owners in the Chesapeake Bay region. This solicitation is based on a priority list of natural areas according to their ecological importance or rarity and a priority list of the areas' vulnerability to destruction or degradation. Preparation included consultation with all state, local and federal agencies with land acquisition programs in Maryland so that the Trust's easement program will complement other land preservation programs.

In FY 1980, the Trust published a revision of its booklet, *Conservation Easements: To Preserve A Heritage*. With this publication the Trust continued to concentrate its solicitation on easements in the coastal counties, especially St. Mary's, Calvert, Charles, Somerset, Wicomico, and Worcester Counties.

As part of its Research and Information Service the Trust became a clearinghouse for information concerning recycling, energy conservation, and

MARYLAND BOARD OF WELL DRILLERS

litter control aspects of mandatory deposit-refund and litter tax systems in the United States. Six months of research by the Staff, members of the Board of trustees, and other volunteers resulted in the Trust's publishing a 110-page compendium of information on Maryland and, primarily, six other states:

Conservation of Energy and Natural Resources: A Report on Maryland and Other States, With Emphasis on Litter and Beverage Container Legislation. The Trust distributed copies of this report to all members of the Maryland General Assembly and many officials of local government.

As a result of the research done on other states' experiences, the M.E.T. Board of Trustees recommended that the State of Maryland adopt a mandatory deposit and refund system for beverage containers. Consequently, Trust staff and volunteers were active in supplying the General Assembly with information about the other states' experiences with such systems as it considered H.B.309. The Department of Natural Resources and Department of Transportation joined the Trust in supporting the bill.

After the defeat of this bill the Trust continued to collect and evaluate data about mandatory deposit and litter tax laws and distribute it to the public.

The Trust also established a monthly newsletter, *MARYLAND LANDSCAPE*, to be sent to 600 public officials, organizations, and individuals. It published ten issues during the year.

The Trust continued to distribute copies of its Earth Satellite poster "Our Shores Survived the Winter of '77 . . . Can They Survive Us"? Since 1977 6,000 copies have been distributed.

Maryland Environmental Trust has seven volunteer committees in Allegany, Baltimore, Howard, Montgomery, Somerset, Wicomico, and Worcester Counties and has affiliations with Citizens For A Better Charles County and the Potomac River Association. The Trust also works on mutual projects with other organizations, such as the Maryland Historical Trust, Citizens Against Waste (a coalition of 60 Md. organizations), the Coalition of Peninsula Organizations, in south Baltimore; and the Chester-Sassafras Foundation, Inc. The Trust advised residents of the Upper Eastern Shore in forming the latter group as a local private land trust to help preserve the rural landscape, economy, and lifestyle of that region.

LICENSING OF WELL DRILLERS

The Maryland Board of Well Drillers is responsible for the examination of applicants desiring to engage in the business of well drilling. The Board issues Master Well Driller licenses, Journeyman Well Driller licenses, two classes of Apprentice Well Driller licenses, Pump Installer licenses, Water Conditioning Installer licenses, and Well Point Installer licenses. The Board also is responsible for the annual review of licenses, suspension or revocation of licenses for violations of applicable State laws and regulations, and holds hearings on charges of violations against licensees. The Board investigates complaints of violations, administers a statewide performance bond, administers liability insurance requirements and enforces rules and regulations necessary for the performance of its activities.

Licenses Issued:

Master Well Driller	185
Journeyman Well Driller	81
Apprentice Well Driller	74
Well Driver	18
Well Digger (Hand dug)	3
Pump Installer	37
Water Conditioning Installer	27
Temporary	20
Board meetings held	14
Disciplinary hearings held	8
Examinations given	25
License suspensions	2
License revocations	1
License fees collected	\$14,320.00
Application fees collected	\$470.00

NATURAL RESOURCES POLICE FORCE

	Budget
General Funds	\$3,465,106.00
Special Funds	1,358,617.00
Federal Funds	302,440.00
TOTAL	\$5,126,163.00

The Natural Resources Police Force is responsible for enforcement of all laws and regulations promulgated to protect the natural resources of Maryland, the State Boat Act and the criminal laws of Maryland on both tidal and non-tidal waters.

GENERAL DIRECTION

The Headquarters Section plans and provides administrative support and services for the operational divisions and houses the Central Communications Center which is manned 24 hours a day, 7 days a week. The Headquarters Section has a staff of 15 uniformed and clerical personnel (6% of the total force) with a budget of \$145,287.00 (2% of the agency budget).

The Police Academy provides basic training for cadets and recruits and advanced training for field personnel. This section also provides various support activities to the operational divisions. With a staff of 3 uniformed officers who are responsible also for the Cadet Program (6% of the total force) and an operating budget of \$168,752.00 (3% of the agency budget) the activities of the Police Academy were carried out as shown on the accompanying table.

The Maintenance and Supply Section provides maintenance and repair service to the Natural Resources Police patrol boat fleet and associated equipment. The facility also serves as a centralized supply depot responsive to the police force as well as sister agencies. This section has a staff of 10 men (4% of the total force) and a budget of \$244,558.00 (5% of the agency budget).

The Aviation Section provides aerial services for the Natural Resources Police and other agencies. With a staff of 2 officers (1% of the total force) and a budget of \$53,192.00 (1% of the agency budget) this section plays an important role in the enforcement program.

INLAND ENFORCEMENT

The Field Enforcement Section is responsible for the enforcement of those laws pertaining to the protection of all wildlife species. In addition, it enforces the State Boat Act on non-tidal waters of the State and investigates criminal activities

uncovered during the performance of its primary missions. There are 69 employees, 63 of whom are uniformed officers (29% of the total force) with a budget of \$1,763,155.00 (33% of the agency budget). The division performed activities as set forth on the accompanying table.

The Hunter Safety Program provides mandated classroom training and lectures on a statewide basis insure firearms safety and good hunting practices. Operating expenses for a staff of 6 which includes 5 uniformed officers (2% of the total force) amounted to \$154,182.00 (3% of the agency budget).

MARINE ENFORCEMENT

The Field Enforcement Section is responsible for the enforcement of all laws and regulations pertaining to the protection of natural resources within the tidal waters of the State. The division also enforces the State Boat Act on tidal waters and investigates criminal activities uncovered during the performance of its primary missions on the Chesapeake Bay and its tributaries. With 119 employees, which includes 117 uniformed officers (50% of the total force) and an operating budget of \$2,527,456.00 (49% of the agency budget) the division performed the activities as set forth on the accompanying table.

The Boating Safety Section conducts a home study course designed to promote public safety and prevent boating accidents. A staff of 2 (1% of the total force) with a budget of \$69,581.00 (1% of the agency budget) distributed 11,728 Basic Boating Courses and was responsible for incorporating the course in the curriculum of 39 schools in Maryland. Activities conducted are set forth on the accompanying table.

NATURAL RESOURCES POLICE ACTIVITIES

	FY 79	FY 80	Change %
HEADQUARTERS SECTION			
Calls received	38,238	31,709	-17
Public relations details	170	21	-88
Police Academy (Staff Hours)			
Cadet training	9,573	20,023	+209
Recruit training	7,899	9,964	+26
In-service training	4,468	3,732	-16
Maintenance and Supply Section			
Store requisitions	1,574	1,589	+1
Repair job orders	1,176	1,365	+7
Aviation Section			
Hours flown	5	451	+99
Cases made	0	90	+100

NATURAL RESOURCES POLICE ACTIVITIES

(contd.)

	FY 79	FY 80	Change %
INLAND DIVISION			
Field Enforcement Section			
Arrests	2,001	2,001	NC
Warnings	355	273	-23
Fishermen checked	37,217	34,452	-7.5
Hunters checked	28,522	22,712	-25.5
Boaters checked	4,763	5,147	
Trappers checked	712	806	+13
Vehicles checked	1,369	2,115	+54.4
Telephone calls rec'd - office	33,622	35,714	+9
Telephone calls rec'd - home	18,257	18,011	-1
Hunter Safety Program			
Students certified	10,461	10,484	+0.2
Volunteer instructors	577	458	-21
Accidents	22	18	-18
MARINE DIVISION			
Enforcement			
Arrests	3,169	3,535	+11.5
Warnings	2,328	2,007	-13.8
Confiscations	1,062	1,440	+35.5
Boat inspections	97,382	103,285	+6.06
Seafood establishments checked	13,105	13,758	+5
Vehicles checked	818	577	-29.5
Assists to public	1,315	1,481	+12.6
Persons rescued by assists	3,529	3,099	-12.1
Public relations details	107	252	+135.5
Telephone calls rec'd - home	9,782	10,610	+8.5
Visits from public - home	962	780	-19
Investigation Section			
Investigations - abandoned boats	97	151	+55.6
Warrants served (Marine & Inland)	218	125	-43
Stolen boats	222	201	-9.5
Recovered boats	92	85	-7.6
Stolen motors	49	47	-4
Recovered motors	7	5	-29
Stolen articles	114	150	+31.5
Recovered articles	14	2	-85.7
Larceny investigations		267	
Accident Investigation			
Boating accidents	185	259	+40
Boats involved	321	288	-10.3
Property damage	\$536,665	\$800,378	+49.1
Injuries	28	103	+367.8
Deaths	32	39	+21.5
Boating Safety Program			
Students certified	2,766	2,129	-23
Boating Safety assignments	170	129	-24.1
Miscellaneous			
Assists to other agencies		*197	
Man hours expended on assists		*4,167	
Value of property stolen		*\$627,083	
Value of property recovered		*\$358,864	

* An asterisk indicated that this is the first time this information has been reported on this report.

WATER RESOURCES ADMINISTRATION

Budget

General Funds	\$3,456,250
Special Funds	613,600
Federal Funds	2,331,012
Number of Staff	205

The Water Resources Administration is responsible for the protection, management and enhancement of the water resources of the State. Through enforcement, permitting and planning activities, the Administration seeks to insure the quality and quantity of the waters of the State of all legitimate uses.

Consolidation: An Executive Order with amendments transferred certain DNR, WRA environmental control programs and authorities to the DHMH, OEP as of July 1, 1980. The programs transferred are astericked and include: the NPDES and State Discharge Permit Programs, the Waste Hazardous Substances Program and the RCRA Program, 208 Water Quality Planning, the Well Drillers Permit Program, Water Quality Certificates and reviews on projects in navigable waters, Field Operation and Technical Analysis Divisions, Non-Point Source Management Division and the enforcement activities that are a part of each of these programs.

GENERAL DIRECTION

This activity is responsible for the overall direction, supervision and coordination of activities within the Administration. It also coordinates the Administration's review of State Clearinghouse projects, public hearing activities and public information.

ENFORCEMENT

This program is responsible for the inspection and enforcement activities of the Water Resources Administration under the authorization of the Natural Resources Articles Titles 8 and 9 and the regulations adopted pursuant thereto, including oil control activities. The program was organized into 4 field regions: Western Maryland; Central and Southern Maryland; Northeast Maryland; and Eastern Shore. Program personnel conduct both periodic and unscheduled surveillance by ground, air and water. Enforcement actions, either administrative or legal, are based on the nature, extent and impact of the violations. Primary emphasis is given to direct "in the field" corrective

action and follow-up. A twenty-four hour duty roster is maintained through the Department of Natural Resources Police radio watch to handle emergency water pollution problems.

The Oil Control Division is responsible for the issuance of (1) Oil Operations Permits, (2) Oil Vehicle Operator's Certificates, and (3) Oil Terminal Facility Licenses as well as for the follow-up field enforcement work related to this activity. The Division is supported by the Maryland Oil Disaster, Containment, Clean-up and Contingency Fund. This special fund is maintained by license fees charged for oil storage facilities over 3,000 barrels. The Division has developed and obtained equipment for the use to respond, to contain and clean up oil spills for inland waters, the Chesapeake Bay and other open waters throughout the State.

In the past fiscal year, the culmination of actions exacted approximately \$29,000 in fines from violations that ranged from lack of oil control to the indiscriminate handling of DHS. WRA investigations were aided by the detachment of Natural Resources Police assigned to WRA.

	FY 79	FY 80
Inspections of Non-Permitted Points of Discharge or Pollution Sources*	2,687	2,960
Inspections for State Discharge Permits*	4,750	2,896
Inspections for Oil Terminal Facility Licenses	280	272
Inspections for Oil Operations Permits	1,738	1,668
Inspections for Toxic Materials Permits*	30	37
Inspections for Waterway Permits	3,581	3,124
Inspections for Appropriation Permits	132	56
Inspections for Small Pond Permits	116	40
Inspections for Surface Mining Permits and Licenses	1,296	1,024
Inspections for State Sediment Control	1,540	1,680
Inspections for State Wetlands Licenses/Permits	2,689	2,116
Inspections for Hazardous Materials Permits*	49	155
Inspections for Well Permits and Construction*	1,159	927
Other Inspections (Long-Range Monitoring - Local Problems)	557	344
Other - Miscellaneous	1,871	1,628
Complaints Received & Administered Enforcement Actions (Administrative and Legal)	1,482	1,628
Oil Terminal Facility Licenses	2,180	960
Oil Vehicle Operator's Certificates	155	162
Oil Spill Response	1,293	2,539
Oil Operations Permits	275	360
	400	339
		2,960

The following report was published: Summary of Oil Spill Events, Fiscal year 1980.

WATERWAY CONSTRUCTION

This Program is responsible for the issuance of water use permits, certifications and approvals pursuant to State law and regulations relating to wetlands, watershed management, flood management and dam safety. Also included in this program is non-point source pollution control activities.

Wetland Division This Division is responsible for 1) issuance of wetland permits and approvals for the regulations of dredging and filling in private wetlands; 2) making recommendations to the Board of Public Works on the issuance of wetland licenses for work in State wetlands including storm drain systems outletting directly to tidewater; 3) issuance of certification to federal agencies on the impact on water quality of proposed projects involving dredging and/or filling in navigable waters*; 4) review and comment on all other applications for Corps of Engineers' permits to place any fixed works in waterways*; and 5) administering the monitoring of overboard dredge spoil disposal projects. The permit and licensing procedures for these activities involve site inspections, evaluations and public hearings. In addition, this Division provides advisory services to prospective applicants on modifications and/or alternatives to proposed works which will minimize adverse effects to the environment.

	FY 79	FY 80
Board of Public Works Licenses	459	427
Department of Natural Resources Permits	35	28
Department of Natural Resources Approvals	38	57
Water Quality Certificates	433	448
Water Quality Certificates (Review)	424	245
Advisory Services, Specific Projects	400	134
Federal/Other Reviews	425	63

The following reports were published:

Non-Tidal Wetlands of the Patuxent River Watershed, Report to the General Assembly, January 1980

"A Unique Wetland in Maryland", Sipple, Wm. S. and Wayne A. Klockner, *Castanea* 45:60-69. 1980.

Watershed Management Division This Division is responsible for the issuance of eight (8) types of permits/approvals/licenses: Small Ponds;

Waterway Obstructions; Waterway Constructions; Temporary Waterway Construction; Erosion and Sediment Control; Maintenance and Repairs; Surface Mining Licenses and Surface Mining Permits. The Division makes site inspections and conducts technical evaluations and/or reviews of proposed projects leading to a permit decision. In addition, advisory services are provided to prospective applicants on measures and alternatives to proposed works which will minimize adverse effects on the environment.

	FY 79	FY 80
Small ponds	2	3
Waterway Obstructions	7	2
Temporary Waterway Constructions	123	133
Maintenance and Repairs	69	130
Erosion and Sediment Controls	184	149
Surface Mining Licenses; Issued and Renewed	161	177
Surface Mining Permits; Issued, Renewed, Modified	26	105

Flood Management Division This Division is responsible for (1) coordination and promotion of the National Flood Insurance Program, (2) technical assistance to local subdivisions including advice on local ordinances, watershed modelling and other matters related to flooding, flood management and stormwater management, (3) floodplain delineations, and (4) development of hydrologic data and methods of handling floods. In 1976, legislation was enacted establishing the Flood Hazard Management Act of 1976 which mandates comprehensive planning and design of flood management programs. Amendments to the Act this past year established a grant program to assist local governments with flood management capital projects.

	FY 79	FY 80
Watershed Technical Studies Completed	1	3
Flood Management Plans Completed	0	1
Communities in Emergency Flood Insurance Program	74	61
Communities in Regular Flood Insurance Program	38	50

Dam Safety Division A restructured Dam Safety Program was established during FY '78 to centralize existing State obligations in this area and as a response to a renewed interest in the National Dam

Inspection Act of 1972. Under this Act. Phase I - Safety Inspection Reports of all Class I dams are to be accomplished by the Corps of Engineers over a three-year period. Toward this end, Maryland has entered into an agreement with the Corps which calls for (1) updating the State's portion of the National Dam Inventory and (2) performing and/or assisting in Phase I Inspection Reports. Initial Inspection Reports will be prepared independently by the State for those dams not included in the agreement with the Corps of Engineers. Additionally, a Small Pond Inventory will be maintained from which inspections will be made to determine eligibility of small ponds for dam status.

	FY 79	FY 80
Phase I, Inspections/Reports (Federal/State)	14	26
Inventory Inspections (Federal/State)	89	207
Initial Inspection Reports (State)	3	3
Small Ponds Inventoried	—	3,100
Other dams inventoried	—	150

Non-Point Source Management Division* This Division is responsible for the development and implementation of programs for the control of non-point pollution. Sources of non-point pollution originate in surface runoff which is directly related to uses of land; e.g., agriculture, silviculture, surface mining and land development.

In FY '80 this Division continued development of the "Statewide Agriculture Water Quality Management Program for the Control of Sediment and Animal Wastes". This program was adopted by the Governor on July 5, 1979 and approved by the U.S. Environmental Protection Agency in February 1980. In FY '81, the Division will assist in implementing this program in every Soil Conservation District in Maryland. In an effort to make a preliminary determination of the impact of non-point pollution, the Administration contracted with Soil Conservation Districts in certain areas to provide land use information. All Districts have completed the work. The Administration has also entered into contracts with the Baltimore Regional Planning Council and nineteen Soil Conservation Districts to map critical areas for sediment and animal wastes. It is expected that the work on all contracts will be completed early in FY '81. The Division also participated in the development of a computer model that is to be used to evaluate the changes in the quality of runoff when different agricultural practices are used.

PLANNING AND EVALUATION

This program is responsible for administering and

coordinating major planning, program development, regulatory and service activities dealing with water quality monitoring and laboratory analyses, water quality investigations, and planning and regulation for municipal waste discharge.

Field Operations* The Field Service Operations is responsible for the collection of physical, chemical, biological and bacteriological field data. This Division performs surveys work designed by the Technical Analysis Division and, in addition, is responsible for portions of the federally-mandated Basic Water Monitoring Program (CORE). A major program activity is compliance monitoring of permitted wastewater discharges.

Technical Analysis Division* This Division provides review, evaluation, analysis, project design, project supervision and recommendations to meet the need for surveys, data collection, data management, math modelling, standards and regulations revision and other problem analyses requirements of WRA programs. Responsibilities include providing these services for activities and investigations performed under Sections 201, 208 and 303(e), Federal Clean Water Act of 1977, NPDES discharge permit system, Federal Resource and Recovery Act of 1976 (P.L. 94-580), geographically selected intensive studies, and water quality monitoring. The Division is responsible for participation in EPA's Chesapeake Bay Program and in Maryland's dredging and spoil disposal programs. As of July 1, 1980, the Tidewater Administration of DNR assumed the responsibility for the activities relating to the Chesapeake Bay Program.

Laboratory Services The Laboratory Services Division performs chemical, physical and bacteriological analyses of water, wastewater, sediments and aquatic life for the programs of the Administration and other agencies within the Department of Natural Resources. The present laboratory facilities include the main laboratory located in Cumberland. Laboratory determinations can also be performed aboard the vessel "Monitor" or on mobile trailers for analysis in the field.

	FY 79	FY 80
Chemical	81,641	84,720
Bacteriological	4,180	4,220

Municipal Permits Division* This Division is responsible for regulating the discharge and disposal of municipal waste and wastewater, including the following: (1) the issuance of State and NPDES discharge permits for municipal point source wastewater discharges to surface waters; (2)

conducting technical evaluations of the effect of wastewater discharges on receiving waters; (3) making technical determinations of the environmental effects of wastewater discharge alternatives, including land disposal, mandated under Section 201, Federal Clean Water Act; (4) the issuance of State discharge permits for municipal and related wastewater discharges to the land; (5) the review and evaluation of requests for significant modifications to State and NPDES discharge permits; (6) the review of compliance plans pursuant to orders from the Administration's Enforcement Division; (7) the review and comments on State Clearinghouse projects related to sewage treatment and collection systems; and (8) the review and evaluation of pretreatment ordinances required by the NPDES permits.

	FY 79	FY 80
Discharge Permits	212	2
Permit Modifications	28	7

WATER AND WASTE MANAGEMENT

This program is under Natural Resources Article Title 8 responsible for the State and Federal (NPDES) discharge permits to industrial facilities, the State's Hazardous Substances Waste Control Program, and the State's water supply planning and appropriation programs. The program is organized in two divisions - Industrial and Hazardous Substances*, and Water Supply.

Industrial and Hazardous Substances Division* This Division has primary responsibility for issuing and reevaluating State and NPDES discharge permits to industrial and commercial facilities, as well as implementation of the State's Hazardous Substances Control Program (Section 8-1413.2 of the Natural Resources Article, Annotated Code of Maryland), which includes permitting of facilities for disposal of hazardous substances, certification and licensing of haulers a waste manifest system and management of the Hazardous Substances Control Fund. The Division is also responsible for implementation in Maryland of the Federal Hazardous Substances Program under the Resource Conservation and Recovery Act of 1976. Other duties and responsibilities of the Division include:

1. Reviewing compliance plans submitted in accordance with issued discharge permits as well as orders issued by the Administration's Enforcement Program.
2. Issuing State Certification to the Internal Revenue Service for pollution control facilities under the Rapid Tax Amortization Program.

3. Issuing "need and adequacy statements" to the Small Business Administration regarding loans for pollution control purposes.
4. Issuing permits for use of toxic materials for aquatic life management purposes.
5. Evaluating the effects of dischargers on receiving streams and evaluating various treatment technologies or process modifications and the degree of pollutant reduction attainable by their implementation.
6. Developing a consolidated permit program including the following Federal/State Programs: Discharge (NPDES) Permits, Hazardous Substances (RCRA) Permits, Underground Injection Control (UIC), and the dredge and fill program.

	FY 79	FY 80
Hazardous Substances Disposal Facility Permits	53	51
Hazardous Substances Haulers	92	189
Vehicle Certificates	349	829
Hazardous Waste Manifests	12,000	15,000
Industrial Discharge Permit		
Discharge Permits	83	166
Permit Modifications	32	8
Toxic Materials Permits	52	98
Thermal Study Reviews	15	11
Bond Issue Certification	—	—
SBA Need and Adequacy Statement	2	—
Rapid Tax Amortization Certification	2	2

Water Supply Division The Water Supply Division is responsible for the State's water supply planning program (Section 8-203 of the Natural Resources Article, Annotated Code of Maryland), the well drilling permit program (Sections 8-603 and 8-604)*, the well abandonment program (Section 8-605)*, the water appropriation permit program (Section 8-802), the triennial review of issued appropriation permits (Section 8-811) and the Geothermal Resources Program (Section 8-8A). These activities involve close coordination and cooperation with the Maryland Geological Survey, county health departments, the Department of State Planning and the Department of Health and Mental Hygiene - Environmental Health Administration. In addition, the Water Supply Division serves as the Administration's liaison with the Maryland Geological Survey for the U.S. Geological Survey Cooperative Water Resources Program and the Natural Water Use Data System; and, receives federal assistance under Title III of

the Water Resources Planning Act, P.L. 89-90. The Division evaluates the environmental impacts of water withdrawals, determines the adequacy of water supplies used or proposed for use by local jurisdictions, industries and commercial facilities, and resolves conflicts between competing water users. Through the permit and planning activity, the Division maintains records on the amount of water used throughout the State, records water appropriations, and inventories all wells drilled in Maryland. The Geothermal Program provides management and regulation of the natural heat of the earth higher than 49° C or the energy extracted from the natural heat excluding oil and other hydrocarbon substances.

	FY 79	FY 80
Well Permits Issued	11,750	8,902
Appropriation - New Permits Issued	460	487
Appropriation - Existing Permits Modified	205	245
Geothermal Exploratory Permits	10	1

MARYLAND ENVIRONMENTAL SERVICE

Budget

General Funds	
General Operations	\$ 567,448
State and Water Projects	\$1,362,981
Total	\$1,930,429
Special Funds	
State Projects	\$ 182,404
General Operations	\$1,125,342
Total	\$1,307,746
Total General and Special Funds	
	\$3,238,175
Total Corporate Operations	
	\$11,273,225
Personnel 139	

Maryland Environmental Service (MES) is one of the few agencies of its kind in the United States; although in 1980 several State governments requested assistance from MES as they sought to create similar non-profit public utility corporations/State agencies.

MES provides water, waste water and solid waste management services on a non-profit basis.

Customers are local governments, regional entities and private businesses and industries. The Service provides a full range of planning, design, finance, construction, operations and maintenance services.

The largest share of MES income derives from fees charged to users of its services; most expenditures are related to the rendering of those services.

GENERAL DIRECTION

The director, deputy director, chief of administrative services, contract, public affairs and personnel officers conduct the day to day administrative affairs of the agency's four operating divisions. An Assistant Attorney General provides legal counsel. The director and deputy director also serve as officers of the MES Corporation, along with a treasurer and a secretary appointed by the Secretary of Natural Resources.

Nearly 200 persons are employed by the Service; 75 are employed by facilities operations contractors engaged by MES; 61 are MES Corporation employees; and 139 are state employees.

State budget general funds are used to carry out planning and technical assistance programs for the State and its local jurisdictions and to operate State owned water and wastewater treatment plants. MES operates more than 100 water and wastewater facilities including 50 State-owned plants, and 3 owned by MES and 49 owned either by private businesses or by local governments. Costs of utility operations and technical services performed for non-State clients are paid for in full by the users.

OPERATING PROGRAMS

Operating programs are Design and Construction, Operations and Maintenance, Technical Services, and Finance and Grants.

The Design and Construction program provides the engineering capabilities necessary to prepare and/or evaluate preliminary and final design plans submitted by consulting engineers for the construction, reconstruction, improvement or extension of solid waste disposal facilities and liquid waste treatment facilities, and to assist in contract negotiations, inspection, and evaluation of construction activities. The facilities constructed serve State and local governments and industry and meet State and federal requirements and standards for solid and liquid waste treatment and disposal project construction.

The Operations and Maintenance program provides the engineering and technical capabilities necessary to operate, maintain, repair solid and liquid waste treatment, reclamation and disposal

facilities and water treatment and supply facilities which are acquired, or otherwise managed by the Maryland Environmental Service. The facilities operated serve State and local governments and industry to comply with State, Federal and local requirements for achieving and maintaining established environmental quality standards as well as supplying high quality water service consistent with State, federal and local requirements.

The Technical Services program responds to needs and requests from State and local agencies and government bodies and industry to assist in evaluating problems and developing facilities and procedures for water supply and waste management systems, particularly those emphasizing recycling, reuse, and reclamation. It is also responsible for the preparation of regional solid waste management, water supply, and water quality plans and conducts specialized studies on resources recovery, hazardous waste and other specialized waste management programs.

The Finance and Grants program is responsible for maintaining a detailed accounting system for all financial transactions of the Service, both State and non-State; preparation of budgets and formulation of financial management reports of the operations of the Service; determination of costs and overhead recovery rates to be charged to customers; preparation of payrolls; participation in contract negotiations with potential customers relating to financial management of the agency; investment management of service funds; negotiations with lending institutions in development of financial planning for contract implementation including cash flow, billing and debt retirement; consolidated service purchasing; and coordination of grant administration.

WATER AND WASTEWATER

A staff of 107 operators, maintenance and support personnel provide 24-hour operations and maintenance services to more than 100 water and wastewater plants. Services include collection and analysis of samples, preparation and filing of appropriate applications, permits and reports, mechanical and technical cooperation of equipment from the simplest aerators and pumps to the most sophisticated electronic monitors and controls. During Fiscal Year 1980, the Service assumed responsibility for operation and maintenance of its first out-of-state facility; a plant in West Virginia which discharges its effluent to the Potomac River.

RESOURCE RECOVERY AND ENERGY CONVERSION

The principal resource recovery and energy conversion project in which the Maryland Environmental Service has been involved is the

Baltimore County facility at Cockeysville.

Expansion of that facility to serve greater market requirements is pending and tempered by the newly created Northeastern Regional Waste Authority which include Baltimore City and Baltimore County, Harford and Anne Arundel Counties. MES is represented on the Board of the Authority and has provided interim staffing and consultation.

Refuse derived fuel (RDF) produced at Cockeysville was successfully test burned at the Baltimore Gas and Electric Company Crane Station during the summer. Studies are underway to determine the feasibility of a system (Simplex) which mixes RDF with coal and sewage sludge for gasification. A Department of Energy grant application to support scale-up of the process at the Cockeysville Resource Recovery plant is pending.

SEWAGE SLUDGE MANAGEMENT

Two hundred and twenty thousand tons of sewage sludge were entrenched by MES in Prince George's and Montgomery Counties during Fiscal Year 1980. At the end of the Fiscal Year, both counties had located sites for composting and MES has entered into contracts with the Washington Suburban Sanitary Commission to finance, design, construct and operate facilities to compost 1,000 tons of sludge daily. One will be located on Western Branch in Prince George's County and another will be at Dickerson in Montgomery County. Both are targeted to be in operation by January 1, 1981. Composting will be done by the method developed at Beltsville by the U.S. Department of Agriculture and the Maryland Environmental Service. Composting will ultimately end the need to entrench sludge.

USED OIL

The Service coordinates efforts to inform the self-service motoring public of its obligation to return used crankcase oil for reprocessing. In FY 1980, there were more than 700 collection stations in Maryland. Since the program was begun in 1978, the volume of oil collected has increased from six million gallons to eight million gallons in Fiscal Year 1980. It is estimated that the eight million gallons of used oil collected for reprocessing in Maryland could replace 116,000 barrels of imported fuel oil, capable of heating 41,250 homes for a year.

HAZARDOUS SUBSTANCES

Under contract to the Maryland Port Administration and Allied Chemical Company, the Maryland Environmental Service has begun the removal and sealing of chrome ore deposits in the Baltimore Harbor area.

Before the end of the fiscal year, preliminary work was begun to provide staff support for the Hazardous Waste Siting Board, as required by new legislation enacted by the 1980 session of the General Assembly.

MARYLAND GEOLOGICAL SURVEY

Budget

General Funds	\$1,288,821
Special Funds	236,514
Federal Funds	208,670
TOTAL	\$1,734,005
Number of Staff	39

GENERAL DIRECTION

The mission of the Maryland Geological Survey is to conduct topographic, geologic, hydrologic, and geophysical surveys, and to prepare topographic, geologic, and other types of maps to meet specific needs. The Survey prepares reports on the extent and character of the geology, mineral, and water resources of the State, and supervises provisions relating to archeology. The Maryland Geological Survey engages in, sponsors, and coordinates archeological research in the State; it encourages preservation of archeological resources, and disseminates information about the archeology of Maryland.

Through scientific investigation and analysis, the Survey seeks to obtain a better understanding of the geology, archeology, water resources, and mineral resources of the State; and to apply this knowledge to practical problems related to the earth sciences. Examples of such applications include water supply, water pollution, assuring continuing supply of mineral resources, the many ramifications of land use, the use of the Chesapeake Bay and Bay bottom, shore erosion and shore protection, and the preservation and study of archeological sites threatened by development.

Survey expenditures increased from \$1,491,209 in FY-79 to \$1,734,005 in FY-80. The overall growth combined an increase of \$362,235 (primarily for a new vessel to conduct research in Chesapeake Bay) a decrease of \$55,970 in Special Funds, and a decrease of \$63,469 in Federal Funds.

Publications

New publications available for distribution in FY-80 include: Wicomico County Geology Map by J.P. Owens and C.S. Denny; Baltimore East Quadrangle Geologic Map by J. Reinhardt and W.P. Crowley; Baltimore West Quadrangle Geologic Map by W.P. Crowley and J. Reinhardt; Phoenix Quadrangle

Geologic Map by S.A. Moller; Quadrangle Atlas No. 4, White Marsh Quadrangle: Geology, Hydrology, and Mineral Resources by E.T. Cleaves, K.R. Kuff, E.G. Otton, W.P. Crowley, and J. Reinhardt; Quadrangle Atlas No. 10, Hydrogeologic Atlas, Winfield Quadrangle, Carroll County, Maryland by E.G. Otton, et. al.; Quadrangle Atlas NO. 11, Hydrogeologic Atlas, New Windsor Quadrangle, Carroll County, Maryland by E.G. Otton, et. al.; Educational Series No. 4, Collecting Fossils in Maryland by J.D. Glaser; Information Circular No 28, 1978 Annual Report of the Maryland Geological Survey; Information Circular No. 29, Equilibrium, Cyclicality, and Problems of Scale—Maryland's Piedmont Landscape by E.T. Cleaves and J.E. Costa; Information Circular No. 30, Directory of Mineral Producers in Maryland, 1979 by J.A. Sutton and M.N. Dimmitt; Report of Investigations No. 30, New Data Bearing on the Structural Significance of the Upper Chesapeake Bay Magnetic Anomaly by J. Edwards, Jr. and H.J. Hansen+; Report of Investigations No. 31, Simulated Changes in Water Level in the Piney Point Aquifer in Maryland by J.F. Williams, III*; Report of Investigations No. 33, A Quasi Three-Dimensional Finite-Difference Ground-Water Flow Model with a Field Application by G. Achmad and J.M. Weigle**; 29th Annual Highway Geology Symposium Proceedings.

Two county topographic maps were revised and printed: Calvert County by J.D. McLennan and Kent County by K.A. Schwarz.

Reprints of publications available for distribution in FY-80 include: Allegany County Topographic Map by J.D. McLennan; Carroll and Frederick County Report (microfiche only); Bulletin NO. 2, Tertiary and Cretaceous Subsurface Geology of the Eastern Shore by Anderson and others (microfiche only); Bulletin No. 6, Shore Erosion in Tidewater Maryland by J.T. Singewald, Jr. and T. H. Slaughter (microfiche only); Bulletin No. 12, The Sediments of Chesapeake Bay by J.D. Ryan (microfiche only); Geologic and Hydrologic Data from Two Core holes Drilled Through the Aquia Formation (Eocene-Paleocene) in Prince George's and Queen Anne's Counties, Maryland by H.J. Hansen; List of Publications.

+in cooperation with the Maryland Energy and Coastal Zone Administration, Power Plant Siting Program

* in cooperation with the U.S. Geological Survey, Water Resources Division and the Boards of County Commissioners of Calvert, Caroline, and St. Mary's Counties

** in cooperation with the U.S. Geological Survey, Water Resources Division, Mayor and City Council

of Ocean City, and Worcester County Sanitary Commission.

Committee Activities

Through its Director, the Survey is represented in intra-state and state-federal advisory activities. These functions include the Mid-Atlantic Governor's Coastal Resources Council; Association of American State Geologists; Interstate Mining Compact Commission; Interstate Oil Compact Commission; Committee on Surface Mining and Reclamation; National Academy of Sciences; Delaware Boundary Commission; Maryland Mining Council; State Topographic Mapping Committee; and the Frederick-Montgomery-Howard County Boundary Line Ad Hoc Committee.

Thirty-one speeches, illustrated lectures and field trips were conducted. There were six press releases concerning new publications, three news articles regarding Survey activities or publications, and five exhibits at local conventions.

HYDROGEOLOGY AND HYDROLOGY

The Hydrogeology and Hydrology Program, in cooperation with the U.S. Geological Survey, is responsible for the maintenance of a Statewide water data network and the investigation of the hydrologic and geologic characteristics of Maryland water resources. The water data network provides necessary information on: (1) minimum, maximum, and average stream flows for the planning of water supply and sewage facilities, water-power projects, dams, bridges, and other public and private works; (2) the amount of sediment load in the Potomac River Basin; (3) the ground-water levels in selected wells throughout the State to determine the hydrologic effect of long-term changes in pumpage, land-use patterns, and precipitation; and (4) the chemical quality of streams at selected localities.

Site-specific water-resources studies are undertaken to extend the inventory of water resources of the State and to determine water characteristics and rates of replenishment. During FY-80, investigations were underway in areas of Anne Arundel, Baltimore, Calvert, Caroline, Dorchester, Garrett, Howard, Queen Anne's, St. Mary's and Wicomico Counties.

Stream Flow Gaging Network: Eighty-two continuous-record stream-gaging stations were in operation. In addition, fifteen crest-stage, partial-record stations were operated. Data from these stations for the 1979 water year were compiled and published in Water Resources Data for Maryland and Delaware, U.S. Geological Survey Water-Data Report MD-DE-79-1.

Water Quality and Sediment Network. Surface

water samples were collected monthly for chemical analysis at three network stations and quarterly at ten other stations. Regular sampling at four suspended-sediment stations was continued in the Potomac River Basin.

Ground-Water Data Network. Ninety-five wells and springs comprise the regular network, and several hundred wells are being measured periodically as part of aquifer research projects.

Water Use Data System. Plans are in progress to have an experienced hydrologist assume the responsibilities of State program Administrator to coordinate water use data collection activities throughout the State, and communication between State and Federal Water Use Programs.

Stream-Flow Characteristics. Data from approximately seventy partial-record sites have been used to determine the relationships between discharges at these low-flow partial-record stations and the corresponding index (continuous record) stations. Analyses and computations of data from these gaging stations continue to help determine low-flow characteristics.

Small Basin Modeling. Stream-flow and ground-water level measurements continued in two small basins: (1) South Branch of the Casselman River near Bittinger, Garrett County; (2) tributary to Cattail Creek near Cookesville, Howard County. Water-table, bedrock altitude, saprolite thickness, transmissivity and perennial stream network maps were prepared. Work will continue into FY-81 and FY-82.

Hydrogeology of Baltimore County. Hydrogeologic atlases of eight quadrangles are being prepared: Ellicott City, Hampstead, Hereford, Lineboro, New Freedom, Norrisville, Phoenix and Reisterstown Quadrangles. Each atlas consists of five maps: (1) Location of wells and springs; (2) Depth to the water table; (3) Availability of ground-water; (4) Constraints on installation of septic systems; and (5) Land slope map.

Aquia/Piney Point Aquifer Studies. These studies began in FY-79 and will incorporate new data over a three-year period for planning the role of the Aquia Aquifer as a future water supply in southern Maryland. Six additional observation wells were drilled (total well network is now 162 wells). These wells will provide data for synoptic water-level maps for both the Aquia and Piney Point Aquifers.

Eastern Shore Water Table Aquifer Study. Selected well inventories were completed in Caroline, Dorchester, Kent, Queen Anne's and Talbot Counties to measure water levels and field water quality parameters. Comparable work in Somerset and Wicomico Counties is in progress. A

total of four test-observation wells were drilled to measure water tables, lithology and age of underlying formations: two in Caroline County and one each in Wicomico and Dorchester Counties.

Coastal Plain Aquifer Research. During FY-80 emphasis was placed on the Potomac Group aquifers. Deep exploratory test wells were completed in Charles County at Pinefield and in Queen Anne's County on Kent Island near Chester. These wells obtained new data for mapping the distribution of fresh and brackish ground water in the deeper aquifer of the Potomac Group.

Hydrogeologic Aspects of Power Plant Siting. Funds budgeted for this project were used to support continued monitoring of observation well stations at Morgantown and Douglas Point in Charles County, Chalk Point in Prince George's County, Elms site in St. Mary's County, and Still Pond Neck and Fairlee in Kent County.

Coal Hydrology Study. A large underground mine complex is being worked by the Mettiki Coal Company in Garrett County. The effect of mine dewatering on the local water table and stream network is being monitored by three observation well clusters drilled in FY-80 as well as by project gaging stations on three affected tributary streams of the Potomac River.

ENVIRONMENTAL GEOLOGY AND MINERAL RESOURCES

This program has the responsibility for geologic and environmental mapping and research, topographic map revision, mineral and energy resources investigations, and dissemination of geologic information. Such studies provide the basic framework for delineating and managing the State's mineral and land resources, and thus generate the geologic data necessary for prudent land-use decisions. A relatively new approach in environmental mapping is the Mineral Resource and Mined-Land Inventory Maps and maps of the Geologic Factors Affecting Land Modifications.

The following investigations were in progress or completed in FY-80:

Geologic and Environmental Mapping. Geologic mapping continued in the Woodsboro 7.5 minute quadrangle and was completed in the Bristol and Port Tobacco Quadrangles. Mapping was initiated in the Lower Marlboro and Hereford Quadrangles. To date, twenty-six quadrangles have been mapped and twelve published.

Topographic Mapping. A revision of the Garrett County map was begun during the year. Publication of this map is anticipated in FY-81. Compilation of data in Baltimore County continues.

Mineral Resources. A study was initiated in

cooperation with the Coastal Resources Division of the Tidewater Administration to tabulate areas with less absolute restrictions on future exploitation of sand and gravel; (e.g., wetlands). A limestone sampling and testing project was continued in cooperation with the U.S. Bureau of Mines.

The Prince George's County Mineral Resources and Mined-Land Inventory Map was completed and was sent to the publisher in FY-80.

Offshore drilling in the Atlantic decreased from FY-79. Only four dry holes and one non-commercial gas well were drilled.

A Federally-funded geothermal drilling program was completed in the State as part of an overall Atlantic Coastal Plain program. During FY-80 a deep (5,562 feet) well was completed, tested, and plugged near Crisfield in Somerset County. This program has provided data for future planning in the search for anomalous warm-water zones in the Atlantic Coastal Plain.

A guide to mineral collecting in the greater Washington area is nearing completion.

COASTAL AND ESTUARINE GEOLOGY

The Coastal and Estuarine Geology Program has the responsibility for basic and applied geological investigations in the coastal zone of Maryland. The overall objectives are to determine the processes altering the shorelines of Maryland and to characterize the physical and chemical aspects of the recent sediments of Chesapeake Bay. The program has two major projects: Applied Research Investigations and the Chesapeake Bay Earth Science Study.

Applied Research Investigations. The major activities involve monitoring shoreline changes along Chesapeake Bay and along the Atlantic Ocean. Measurements are conducted at one hundred sites along Chesapeake Bay and twenty-five sites along the Atlantic Ocean shoreline.

Records from over ten years of Atlantic Ocean beach profiles have been compiled in a graphic format. These profiles are available for review by interested parties.

Chesapeake Bay Earth Science Study (CBESS). This study is in the second year of a cooperative agreement with the U.S. Environmental Protection Agency to study the physical, chemical and biological characteristics of the bottom sediment of Chesapeake Bay. CBESS has three major task areas: Sedimentology, Geochemistry and Animal-Sediment Relationships.

Sedimentology - The objective of this study is to determine the distribution and physical properties of the Chesapeake Bay sediments and to identify the sites of erosion or deposition of these

sediments in the estuary.

The major effort of the sedimentology task is to continue sample collection and preparation. To assist in the sample collection the research vessel "Monitor" was used although a contract was awarded in March 1980 to MonArk Boats of Monticello, Arkansas for construction of a forty-six foot aluminum research vessel to be delivered in December 1980. This is the first State vessel designed primarily for research. The research vessel will be equipped to conduct research activities such as sediment coring, surface sampling, pore water sampling, and geophysical surveying.

A series of Chesapeake Bay Atlases (CBA's at a scale of 1:40,000) are being prepared to portray the physical and chemical characteristics of the sediments that have application to management and environmental problems. Each atlas will consist of seven maps: Sample Location, Sediment Distribution, Water Content, Total Carbon Content, Organic Carbon Content, Sulfur Content and Sedimentation Rates. The first atlas (CBA-3) will cover the area from the Bay Bridge to Herring Bay.

The distribution of sediments in CBA-3 range from sands in the nearshore region to silty clays and clayey silts in the deeper, main Bay channel region. High water content and organic carbon content characterize the silty clays and clayey silts. Sands have a lower water content.

Deposition and erosion of sediments are determined by comparing the historical bathymetric charts with the most recent charts. The deep channel areas of CBA-3 are sites of deposition. Random patterns of erosion and deposition occurred along the nearshore margin resulting from constant reworking of sediments. The greatest areas of deposition and erosion occurred along the eastern edge of the main channel, along the very steep channel wall. It appears that submarine slumping may be an important mechanism of sediment transport.

Geochemistry - The objectives of this investigation are: (1) to characterize water/sediment composition and to examine the variations in interstitial water chemistry as a function of sediment type and position along the salinity gradients of the Bay; (2) to interpret the reactions between the mineral components of the sediments and the interstitial waters which may control the concentration of dissolved species in the system; and (3) to determine the mechanism and assess the extent of transfer of chemical species across the sediment-water interface.

The analysis of the interstitial water chemistry is

completed for a majority of the key environmental parameters, such as pH, EH, Silica, Iron, and Manganese. Trace metal analyses in the pore waters is in the initial stages. The focus of this research is to develop a better understanding of the behavior of trace metals within the framework of the Chesapeake Bay, with emphasis on the reservoirs and fluxes of the trace metal.

Applications of the results and techniques for the main Chesapeake Bay are being extended into the tributaries and the atmosphere. Both of these areas have major inputs in the Bay. A study of the atmospheric inputs is being initiated.

Animal-Sediment Relationships - During the year, the major effort has been analysis of bioturbation and species diversity in the Bay sediments. An atlas of x-ray radiography illustrating bioturbation is being compiled for publication.

Publications - A contract has been awarded for the publication of "The Design and Calibration of a Rapid Sediment Analyzer and Techniques for Interfacing to a Dedicated Computer System" by Jeffrey P. Halka, Robert D. Conkwright, Randall T. Kerhin, and Darlene V. Wells.

An abstract entitled, "Identification of a Paleochannel System Under the East Flank of the Chesapeake Bay" by Randall T. Kerhin, Jeffrey P. Halka and Robert D. Conkwright has been accepted by the Geological Society of America for presentation at their annual meeting.

DIVISION OF ARCHEOLOGY

The archeology program is responsible for research in Maryland archeology, for coordinating professional and amateur archeological activities in the State, and for administering the permit system for archeological investigations on State lands, as provided in the Maryland Archeological Resources Act of 1968. The Division maintains a reference library, records all known archeological sites and investigations in the State, and collections of historic and prehistoric artifacts from all sections of the State. Its resources are available to the public, governmental agencies, and professional archeologists through publications, lectures, and open files.

Highway studies involve document review and field reconnaissance for historic and prehistoric archeological remains in proposed highway rights-of-way. The project that began in 1975 with one part-time principal investigator, was expanded to a full-time position in 1977, and funds for a second full-time archeologist were approved for FY-80. Except for the State Archeologist's supervisory time, the project is fully funded by the State

Highway Administration. During FY-80 studies and reports were completed for eleven highway projects in nine counties and Baltimore City. Coordination with consultants was provided on a number of projects.

The Monocacy Region Study is gathering baseline data on the historic and prehistoric archeology of the Monocacy River area in Frederick and Carroll Counties. The object of the study is to develop a model to predict site locations that will prove useful to planners and cultural-resources managers in conserving our archeological heritage. Begun in January 1978 and scheduled for completion in October 1980, the project is largely funded by a Federal Heritage Conservation and Recreation Service (HCRS) grant-in-aid administered by the Maryland Historical Trust and by grants from the Commissioners of Frederick and Carroll Counties.

Coal Region Survey. A survey of the prehistoric and historic archeology of the Maryland coal region in Garrett and western Allegany Counties was implemented in early April with funding from the Maryland Bureau of Mines. The project is undertaking extensive historical background research and systematic field sampling of the entire region. Objectives include identifying representative historic and prehistoric sites, and developing a predictive model of historic and prehistoric archeological site location and significance. Joining the Survey as principal investigators for the eighteen month project are Robert D. Wall and Kenneth C. Lacoste.

Archeological Resource Management provides for assistance to the public, to governmental agencies, and to professional archeologists in evaluating project sites, and in improving access to Division of Archeology resources and guidelines for archeological work in Maryland. The work is partly funded by HCRS grant-in-aid administered by the Maryland Historical Trust. During FY-80, field investigations were conducted at sixteen locations in eight counties, a number of new sites were recorded as a result of field trips with private collectors, and guidelines for archeological investigations in Maryland were prepared.

Other management activities by the Division included reviewing numerous projects and reports submitted by private and governmental organizations, responding to general information queries, and advising the State Highway Administration and the Department of Natural Resources on archeological investigations at Catoctin Furnace in Cunningham Falls State Park. The number of archeological sites recorded in the Maryland Archeological Site Survey increased

from 3,309 to 3,620 during FY-80.

The Advisory Committee on Archeology advises the Maryland Geological Survey on archeological matters. It met on September 13, 1979, December 5, 1979, March 26, 1980 and June 18, 1980.

The Division of Archeology maintains close liaison with the Archeological Society of Maryland and the Council for Maryland Archeology. Staff members presented illustrated talks to several school, civil and governmental groups. The State Archeologist continues to serve on the Governor's Consulting Committee for the National Register of Historic Places, the Scientific Council of the Maryland Academy of Sciences, and is State representative on the Committee for Public Archeology of the Society of American Archeology.

TIDEWATER ADMINISTRATION

Budget

General Funds	\$1,018,900
Special Funds	8,015,723
Federal Funds	1,838,127
TOTAL	10,872,250
Number of Staff	134

The Tidewater Administration, created on July 1, 1979 by Chapter 601 of the Maryland Code, brought under one Administration the Coastal Resources Division, the Waterway Improvement Division, the Tidal Fisheries Division and the General Direction Program which includes all executive vessels and tidewater facilities, sports fishing and commercial fishing liaison activities, and the State Boat Act responsibilities.

GENERAL DIRECTION

This program is responsible for the overall direction, supervision and coordination of activities within the Administration. It is broken into three areas:

Administration and Support - This group provides administrative and clerical services in all phases of the operation. Budgets, contracts, personnel, purchasing and secretarial services are included with this function.

Boating and Fishing Liaison

Boating Liaison - Boating Liaison is charged with the liaison between the Department and boating activities within the State, the Coast Guard Auxiliary, the National Weather Service, Corps of Engineers, United States Power Squadrons, most of

the yacht clubs in the Chesapeake Bay Area, and thousands of individuals. The Guide for Cruising Maryland Waters is published by the Boating Liaison Office. In addition this office acts as the conduit between the Department and the Boat Act Advisory Committee.

Commercial Fisheries Liaison - Commercial Fisheries maintains liaison with the commercial fisheries industry in Maryland. This involves coordination with the State watermen, wholesalers, State Health Department, the State Department of Economic Development, the Environmental Protection Agency and the University of Maryland Sea Grant Program. The Commercial Fisheries News is distributed free to 30,000 subscribers bimonthly.

Sport Fishing Liaison - The Sport Fishing section represents the Department at sport fishing and recreation oriented exhibitions, shows, fairs, and tournaments. It is responsible for accurately informing and educating sport fishers and the general public of the status of the sport fishery resources and other water related sports and recreation. It maintains contact with outdoor writers and conducts the fresh and salt water Maryland fishing tournaments.

Tidewater Vessels and Facilities

Vessels - In the past year the vessels under control of this group were the Aurora and the Fifty-Fifty. Their function has been the promotion of the Chesapeake Bay and other Maryland waters. Numerous cruises were conducted through the year for the benefit of Maryland citizens.

Facilities - The facilities currently under control of this group includes 69 Prince George Street, the Cambridge Boat Yard, the Matapeake Water Port and the State Pier in Annapolis. The maintenance and operation of these facilities for the benefit of the State is a coordinated conjunctive effort which realizes the maximum utilization of facilities for the least dollar cost.

WATERWAY IMPROVEMENT PROGRAM

Mission - The mission of the Waterway Improvement Program is to develop, maintain, improve, and promote the recreational and commercial capabilities, conditions, and safety of Maryland's waterways for the benefit of the boating public and to protect the natural and physical resources of the waterway environment.

History - The Waterway Improvement program extends back to 1960 when the Maryland General Assembly enacted the Maryland Boat Act, designed to promote fully the development, use, and recreational values of the Chesapeake Bay and

its tributaries. The Act called for cooperation with neighboring states and the federal government in search and rescue operations, and in the enforcement of laws and regulations relating to boating safety.

A major change occurred in 1965 when the Maryland General Assembly adopted legislation providing, through a Waterway Improvement Fund, for the development of one of the State's prime assets, its natural waterways. The Fund became financed through a three percent title tax imposed on boat transactions in lieu of the three percent sales tax previously collected. The purpose of this Fund was to finance dredging and marking of channels and harbors, clearance of obstructions, and construction of facilities to benefit the boating public. It also provided funds for an educational program on boating safety. These original purposes remain intact today.

The Waterway Improvement Program administers the provisions of the Maryland State Boat Act through the following four projects:

Hydrographic Operations. Hydrographic Operations is responsible for hydrographic engineering services in establishing, positioning, and maintaining regulatory buoys; surveying and measuring the lengths of pound nets; ice-breaking operations during winter shellfish operations; determining requirements and needs for aids to navigation to mark channels for the boating public; hydrographic surveying to determine channel delineation and exact location of aids to be established, and charting of the above functions.

In Fiscal Year 1980, Hydrographic Operations serviced 1,218 regulatory buoys, 360 aids to navigation, and eight artificial fishing reef buoys. These figures reflect a 35% increase in the last four years. This program relocated 292 corners representing 2,350 acres of private oyster ground leases, an increase of 29% over last fiscal year. There is still a backlog of lease applications which will be processed when the moratorium on leases is lifted upon completion of the Bay Bottom Survey. The 1,060 private oyster ground leases maintained by this program represents 9,033 acres of submerged land throughout Maryland.

This project assisted the Tidal Fisheries Division by supplying hydrographic engineers for positions and charting in 14 clam sampling operations. There were no reclassifications this fiscal year. The program also assisted the Potomac River Fisheries Commission by measuring and marking with buoys for seed areas, locating pound nets, and driving pilings.

Debris causing hazards to navigation were removed from the West River, Gunpowder River, and Bodkin Creek in furtherance of the Marine Services Operations Debris Removal program.

Twenty-four vessel days and 92 man days were spent in ice-breaking operations to keep a channel clear to Smith Island and in selected harbors throughout the Bay so that oystermen could continue their winter harvest. Forty vessel hours were spent in setting buoys and acting as committee boat in the Chesapeake Appreciation Day activities and at the Rock Hall Regatta. Public relations trips were also made for the Crisfield Volunteer Firemen's Association and students of the J. Millard Tawes Vocational School.

Dredging Operations Project. Dredging is responsible for State waterway projects involving the dredging and protection of channels and harbors. Activities include conducting hydrographic and topographic surveys over proposed channel areas; design input of all State funded dredging projects; determining the need for protective jetties at project sites; designing and construction jetties where needed; and performing surveys at previously completed channel dredging sites.

The Dredging Project completed 21 projects valued at \$46,400 during Fiscal Years 1963 through 1968; 46 projects valued at \$2,005,600 during Fiscal Years 1969 through 1973; and 31 projects valued at \$2,557,000 during Fiscal Years 1974 through 1979.

In Fiscal Year 1980, Dredging completed 8 projects valued at \$658,188.00 consisting of channel and harbor dredging. Two survey crews completed 30 hydrographic dredging surveys.

Currently the project has 33 active dredging, jetty, and breakwater projects in various stages of development with a construction value of \$4,068,440.

Waterway Grants and Project Planning. Waterway Grants and Project Planning is responsible for the recreational development of the Chesapeake Bay and its tributaries with particular emphasis on projects and activities directly related to the general boating public. Specific activities include liaison with Federal and State agencies and county and municipal governments in prompting, designing, construction and financing marine facility projects.

To fund projects beneficial to the general boating public described above, the Waterway Improvement Fund is distributing in one of the five following methods: matching funds (50% Waterway Improvement Program, 50% governing

body); 100% funding by Waterway Improvement Program for the construction of marine facilities located within Department of Natural Resources owned land; \$5,000 and \$25,000 grants; and interest free loans for the creation of tax districts to governing bodies to finance waterway improvement projects.

During Fiscal Year 1980 this project commenced construction on three new regional boating centers: Gunpowder State Park, Baltimore County; Elk Neck State Park, Cecil County; and Somers Cove Marina, Crisfield, Somerset County. Somers Cove will include a major State marina complex as well as the J. Millard Tawes Library/Visitors Center. Since the conception of the regional boating facilities plan, four have been completed: Sandy Point State Park, Anne Arundel County; Inner Harbor, Baltimore City; Point Lookout State Park, St. Mary's County; and Deep Creek Lake State Park, Garrett County. During this fiscal year, construction continued on two additional regional boating facilities: Smallwood State Park, Charles County and Rocky Gap State Park, Allegany County.

Forty-nine Waterway Improvement projects with a construction value of \$2,126,000 were completed or partially funded during Fiscal Year 1980. To date a total of 591 projects have been completed in this program with a cost value of \$14,734,300 since its inception in 1966.

There are currently 146 open projects in various stages of development with a construction value of \$12,304,500.

Marine Service Project. Marine Services is responsible for general waterway maintenance conducted in channels, harbors, and areas of the Chesapeake Bay that are not maintained by the U.S. Army Corps of Engineers. Activities include the removal of debris and derelict vessels from the Chesapeake Bay and tributaries; the installation of daymarker piles used as aids to navigation; the repair and maintenance of various public-owned facilities such as piers, bulkheads, launching ramps; and small dredging operations associated with the above mentioned projects. Winter activities include ice-breaking operations.

During Fiscal Year 1980, the derelict boat and debris removal project expended \$188,000 for the removal of 87 derelict vessels and barges from bay waters. Old piers and miscellaneous debris accounted for an additional 200 tons of material removed. Nine State vessels were hauled at the Cambridge Terminal for railway maintenance and overhaul.

The marine construction crew of this program

completed four State dredging projects removing a total of 9,200 cubic yards of dredged material. The major construction project during this fiscal year was at the Somers Cove Marina, Crisfield. Construction included four 15' x 60' concrete launching lanes, 470 linear feet of timber bulkhead, two 7' x 100' timber piers, on-site grading and backfilling of the two acre, 75 car trailer parking lot, and minor dredging.

One hundred twenty boat hours were spent during winter ice-breaking to keep channels open for commercial oyster boats.

COASTAL ZONE MANAGEMENT PROGRAM

The Coastal Zone Management Program, which has been under development for four years, received final approval on September 30, 1978. Fiscal Year 1979 marked the transition from development to implementation of the Program. The program draws on the authority, expertise, and perspective of six state Departments, sixteen coastal counties and Baltimore City, and numerous federal agencies. The Coastal Resources Division is charged with administration of the program, including a \$1,400,000 grant from the National Oceanic and Atmospheric Administration. It has the primary functions of coordinating among the many program participants, ensuring that all state and federal actions are consistent with the State's coastal resources policy, providing technical and financial assistance to local governments and State agencies and improving the quality and extent of Coastal decision-making information.

The Division has six functional sections which carry out portions of the programs responsibility:

Intergovernmental Coordination
Intergovernmental coordination is responsible for establishing and maintaining contacts with local governments, state agencies, the federal government and other States.

Work agreements were continued or established between CZU and sixteen of seventeen local governments to provide financial and technical assistance for coastal resource planning and management decisions. Approximately \$280,000 was passed through to local governments in this manner. Work accomplished ranged from establishing tidal flood area bench marks in Dorchester County to establishing new zoning guidelines for marinas in Anne Arundel County.

Work with state agencies included establishment of Memoranda of Understanding on state goals, objectives and policies of the Coastal Zone Management Program. Three agreements were signed in Fiscal Year 1979 between the Department of Natural Resources and the Department of

Economic and Community Development, Transportation, and Health and Mental Hygiene.

Work with federal agencies included naming representatives from each federal agency which influences coastal management to the Program's Coastal Resources Advisory Committee (CRAC). Procedures for determining the consistency of federal permit actions with the Coastal Zone Management Program were established and combined with the Water Quality Certification process already in effect.

Interstate activities included providing assistance to the Maryland-Virginia Legislative Advisory Commission on Chesapeake Bay and the initiation of discussions on the establishment of an executive interstate coordinating group with the Virginia Department of Commerce and Resources.

Public Participation The operation of the Program Advisory Group, the Coastal Resources Advisory Committee was strengthened and expanded to assist the Program in the first year's implementation. Its activities included:

1. Dr. Bette Bauereis (Maryland Chamber of Commerce) testified on CRAC's behalf at Senator Mathias' Hearing on Coordination of Bay Management.
2. CRAC approved the appointments of Frank Gerred (St. Mary's County) and Richard Pollitt (Somerset County) as local government representatives on EPA's Chesapeake Bay Program Management Study Committee in order to provide local government perspective on the committee.
3. Responded to the joint Maryland - Virginia Legislative Commission on Management Needs of the Bay.
4. Responded to a request of an Anne Arundel County citizen on residential development impacts in a recommended critical area and on sedimentation violations at a residential area by initiating inquiries to appropriate state agencies. The Maryland Critical Areas Program was reviewed and CRAC approved formation of a Critical Areas Task Force to provide additional recommendations for refining that program.
5. CRAC approved formation of a CZMP Priorities Task Force to assist CRD in developing program objectives during the next few years and to evaluate the Program progress year-to-year.
6. CRAC sent comments on the proposed Bauman/Mathias Bill on Research Coordination on the Chesapeake Bay to appropriate Congressional Committees.

7. CRAC approved local government projects for receipt of Coastal Energy Impact Funds for Baltimore City, Wicomico County and Calvert County.

The public participation effort also involved reaching the public with newsletters (distribution 5,000 copies), information series on Land Use Program (distribution 1,500 copies) and showing of public education films (2,100 viewers).

Program Review The Program Review section ensures that all coastal programs, procedures, rules and regulations, and activities are consistent with the State's official coastal zone policies. The section's efforts included analysis of boating congestion and utilization, development of new mooring buoy regulations, improving the available information on available shorefront access sites, reviewing local controls on development in shore erosion hazard areas, assisting the cities of Havre de Grace and Cambridge develop plans for improving urban waterfronts and serving as Department liaison for the Pocomoke River Basin Study.

Project Evaluation The Project Evaluation Section provides a comprehensive review of major development projects in the coastal zone to ensure the projects consistency with State coastal resources policy, to ensure the use of best available information and where necessary to provide new data necessary to permit agencies in a timely manner. The section carried out two extensive, comprehensive reviews of proposed developments in the Mayo Peninsula and the Gunpowder River delta; a less extensive review was provided on approximately 43 projects.

Special Problems Analysis The Special Problems Analysis Section is responsible for improving the quality and extent of management decision-making information necessary to ensure wise use of coastal resources. This function is carried out through a variety of inhouse and contractual studies including the following:

A Boat Wake Study is determining the impact of high speed motor boating on the small creeks and coves of Anne Arundel County.

Impacts of Open Water Marsh Management are being studied jointly with the Department of Agriculture to determine this techniques' usefulness in mosquito control.

The Ocean Dumping Project helps to determine the affect of EPA permitted ocean dumping on ocean quohog and surf clam resources.

The *Research and Management Data Base* is a computer tracking system for U.S. Army Corps of Engineers permits for shoreline alterations on Chesapeake Bay.

A *Choptank River Sediment Budget* is being developed to evaluate the relative levels of suspended sediments from channel dredging, shellfish dredging, upland erosion and natural sources.

Land and Gravel Maps of mineral resources existing in the metropolitan Baltimore region and land use and zoning restrictions which impact their availability.

Reasons for Success and Failure of Shoreline Erosion Structures in Chesapeake Bay are being evaluated through a comparison and analysis of over 30 structures, their design, method of construction, placement with regard to prevailing geologic and weather conditions.

An *Interim Erosion Control Plan* was developed to determine the ways in which Maryland might deal with erosion problems in Ocean City over the next ten years.

Coastal Fisheries The purpose of the Coastal fisheries section is to provide comprehensive assessment of Maryland's commercial and sports fishing industry, the resources on which they are based are the management measures in effect. A sports Fishing Survey and a Harvestable Yield Model were initiated and the identification of aquatic resource areas as Areas of Critical State concerns was begun.

The Coastal Energy Impact Project The Coastal Zone Unit also administers federal coastal energy impact funds which assist state and local governments in dealing with fiscal, economic, environmental and recreational impacts of coastal energy facilities. Three planning projects initiated in Fiscal Year 1979 and are continuing: (1) a study of fiscal, economic, environmental and recreation impacts of existing and potential energy facilities and activities in Baltimore Harbor, (2) a safety analysis of the Liquefied Natural Gas terminal at Cove Point, Maryland, and (3) an assessment of effects of an existing petroleum storage and terminal facility and its proposed expansion at Piney Point in St. Mary's county. Federal funds for these projects total \$177,000

TIDAL FISHERIES PROGRAM

The Tidal Fisheries Program administers fisheries laws and regulations and manages the use of fisheries resources for the benefit of Maryland citizens and industries. These varied activities are

combined in management programs to enhance current fish stocks and insure their future abundance. The Division monitors and regulates harvesting activities, collects statistics, conducts surveys and biological investigations, plants oyster shell and seed, and cooperates with other State and Federal agencies to enhance the status of Maryland's fisheries. Maryland landings of fish and shellfish for calendar year 1979 totaled 59,626,798 pounds worth \$35,167,781 to the harvesters. It is clear that the harvested value of fish and shellfish represents only a fraction of the value generated by the industry. A Rhode Island study estimated, for example, that each \$100 in fish landings stimulates \$424 in economic activity in the state. This means the estimated fisheries multiplier is 4.24 which contrasts to the estimated multiplier of 1.69 for the average industry in that state, making a single job in fisheries more significant than a single job elsewhere. Using the Rhode Island figures, Maryland's fisheries generated nearly \$150,000,000 value to the State's economic activity.

ANALYSES AND VERIFICATION PROGRAM

The program in FY 1980 was responsible for the collection of reports and compilation of the commercial fisheries harvest in the State. A total of seven years of data for the oyster fishery, six years of finfish, and five years for the softshell clam fishery has been processed and distributed.

The retrieval and analysis of oyster and finfish data has been greatly improved by converting the data to a user oriented system (SAS-Statistical Analysis System). This system allows persons with limited computer programming background quick and economical access to catch record data. Fisheries Statistics personnel will continue to review and update the project's data collection procedures with the assistance of consultants.

Activities included Chesapeake Bay-wide monitoring for about 40 infectious and non-infectious diseases in several species of molluscan shellfish; primarily oysters. *Minchinia nelsoni* (MSX), a potentially serious oyster pathogen has been found in the lower areas of the Maryland portion of the Bay in fairly low prevalences since 1977, after an absence beginning in 1970. *Perkinsus marinus* ("Dermo"), another oyster pathogen, was still found in low prevalences over most of its enzootic area - where the salinity usually reaches 15 0/00 over the greater part of the year. No major mortalities have been attributed to these two organisms in recent years in the Maryland portion of the Bay. Cooperative work efforts with various State and Federal agencies continued and greatly

enhanced the monitoring and study objectives of this project. This program assisted the Department's Eel Study Project concerned with the assessment of nematode infections in the American Eel, *Anquilla rostrata*. The program also assists in investigations of other finfish disease problems and mortalities by providing the services of histologic processing and examination.

Fish Mortality Investigation

Fish mortality personnel was reduced from two biologists to one in January of 1980. In April, responsibility for fish kill investigations in non-tidal waters was shifted to the Inland Fisheries Division. The following percentages pertain only to those kills investigated by Tidal Fisheries personnel from July 1979 to April 1980.

Inland mortalities accounted for 62% of the kills investigated. Pollution, including pesticides, oil, chlorine, and fertilizers, was responsible for 6 of 9 stream kills during this time, with 2 additional kills unsolved but strongly indicative of pollution. Estuarine kills made up the remaining 38%. Natural phenomena were responsible for 38% of the kills investigated. Pollution and other man-related activities, such as explosive tests or sport and/or commercial discards, accounted for 42% of the investigated kills. The remaining 20% were unsolved.

Three of the most noteworthy mortalities occurring this fiscal year were due to natural causes.

An unusually extensive bloom of dinoflagellates, locally called a "mahogany tide" was responsible, through oxygen depletion, for destroying an estimated 37,700 fish along the bayshore of Calvert County.

For the second time in five years a massive winter mortality of young-of-year spot occurred in the open bay. An estimated 24,000,000 fish died from Tilghman Island north to the Patapsco River when water temperatures dropped below 2.0°C.

The perennial spring die-off of menhaden was of relatively moderate intensity this spring. Observations indicated the majority died from May through June in the Patapsco River. Blueback and branch herrings, hickory shad, and American shad, were sampled to determine if any of these closely related clupeids are carriers of the virus which is believed responsible for the spring mortality. Weekly samplings of menhaden for viral and antibody surveys were conducted before, during, and after the kill. Cooperative efforts by the University of Maryland, the National Marine Fisheries Service, and the Department of Natural

Resources were directed toward these investigations.

TECHNICAL ASSISTANCE PROGRAM

Protection and enhancement of the ecosystem and habitats which support aquatic organisms is central to responsibility for sport and commercial fish populations. The primary means by which habitat protection is addressed is the review of proposals which will affect the environment, evaluating their effects and recommending mitigation or alternatives.

In 1980, a total of 953 such projects were referred for review by the program: Corps of Engineers Section 404 permit applications; A-95 Clearinghouse projects; State of Maryland water appropriation and waterway construction permits; and Maryland Wetlands Law permits. Part of the caseload is the review of Bay research proposals, and state and federal management proposals. Fisheries and the environmental information is also disseminated in response to citizens, consultants, and scientists requests.

The caseload and responses made were as follows:

Type of Cases	No. of Cases	No. of Responses	Percent Responses
Clearinghouse	27	18	66.7
Waterway Construction	22	12	54.5
Wetlands	227	42	18.5
Corps of Engineer's permits	466	11	2.4
Highways	146	14	9.6
Other	137	137	100.0
TOTAL	943	234	24.81

Following imposition of an emergency closure of sport and commercial fishery for American shad, an attempt was made to estimate the population of the adult shad during their spring spawning migration in the Susquehanna River/Flats area. The population was estimated to be about 4,200 adult fish.

A creel census of sport angling in the Head of the Bay was conducted during the spring, the results of which were compared with fishing surveys conducted in 1970 and 1979. The comparisons are as follows:

- 21,062 in 1980 were 80% of those in 1979 (26,291) and 37% of those in 1970 (56,977).
- Relatively more striped bass, channel catfish, and carp were caught, and relatively fewer herring, hickory shad, and shad were caught over the spring season.

In the summer survey of juvenile fish in the Susquehanna Flats nursery area no young shad have been found. Young blueback herring are severely depressed, being about 10% as abundant as in 1979. Young alewife herring are more abundant than last year. Anchovies are much less abundant than in 1968-1969.

The emphasis of the Marine Surveys project was changed from tidewater finfish to a dual role. The new emphasis will be on environmental impacts in the seaside bays and Atlantic Coast area. The project will concentrate on providing background for the evaluation of environmental impacts by conducting a research effort aimed at benthic animal populations at several sites in the seaside bays. Design of the research is currently under way. A major impact to be evaluated is the possible use of bay-derived sand for beach nourishment.

Estimation of the amount of eels harvested and the number of people and fishing effort in the burgeoning eel fishery are the objectives of the newly formulated eel project. Effort is being concentrated in the head of the Chesapeake Bay. Design of the estimation study was carried out in the summer. Project staff is in the field for the fall and spring portions of the fishery.

SHELLFISH PROGRAM

The Shellfish Program is made up of four projects. These projects are Oyster Propagation, Blue Crab Management, Clam Management, and Bay Bottom Survey. Each project is directed by a biologist who reports to the Shellfish Program Director. The budget for FY '80 was \$2.01 million, of which 87% came from Special Funds, 12% came from a General Fund Appropriation for Oyster Propagation, and 1% from Federal Fund Appropriations.

The oyster harvest for FY '80 was 2.1 million bushels, valued at \$17.6 million dockside. The catch was approximately the same as FY '79, however, the dockside value for FY '80 increased \$3.1 million.

The primary oyster management projects of planting fresh and dredged shell, and the transplanting of oysters continued during the spring and early summer of 1980. By the end of the fiscal year, 371,100 bushels of fresh shell and 4.8 million bushels of dredged shell had been planted throughout the Chesapeake Bay and tributaries. Plans were completed for the establishment of a new seed area in the Calvert Bay region of St. Mary's County, and the area planted with dredged shells. There was a poor spat set on seed areas planted in 1979, therefore no seed of adequate quality was available for transplanting. However,

slightly over 10,000 bushels of oysters were transferred from closed areas to areas where they will be available for harvesting.

Personnel of the project began a weekly survey of oyster shells piled at various shucking plants throughout Maryland. This survey was to determine the extent of undersize oysters being harvested. Spat plates and shell bags were placed overboard during the oyster spawning season to monitor the spat set. The oyster survey vessel "G.F. Beaven" extensively sampled the oyster bars throughout the Chesapeake Bay and tributaries.

Increased costs are becoming an area of concern to the oyster project, especially as related to shell planting. The existing dredge shell contract expires at the end of calendar year 1982, and indications are that increases as much as 30-40% may be expected when the new contract is submitted. The solicitation process for bidders has already begun, however the project is going to critically evaluate its objectives and priorities during the upcoming months.

Population surveys taken in 1979 suggested that blue crab abundance in Chesapeake Bay during the spring and summer of 1980 would be average or better than average compared to landings for this same time period from 1970 to 1979. However, these same samples also showed that the 1979 crab hatch was poor. Beginning in late August or September of 1980, these 1979 hatched crabs will make up the bulk of the commercial harvest.

Preliminary commercial landing figures for the 1980 crabbing season indicate that the crab catch was very good through August. The 1980 harvest will probably exceed the 1979 harvest for this same time period.

Surveys taken in Chincoteague Bay in 1979 indicated that the spring and summer crab harvest there should be fair to good. Preliminary landing figures show that early spring and summer harvest there was good.

A crab pot anti-fouling study in Chincoteague Bay was concluded in October 1979. The study compared the fouling rate of crab pots treated in varying ways. Methods, procedures, and results of this study can be obtained from Tidewater Administration. A crab pot anti-fouling study in Chesapeake Bay was started in June 1980. This study is similar to the one conducted in Chincoteague Bay. This study will be concluded in October 1980. Results of this study will be available from Tidewater Administration by spring of 1981.

The 1980 Legislature passed two laws concerning crabbing. One law allows holders of a commercial crabber's license to use their license as a sports

crabber's license if they wish. The second new law allows shoreline property owners in Somerset, Wicomico, and Worcester Counties to fish four crab pots in front of their property.

One new regulation amendment was adopted during FY-80. Crab pot buoy free channels were established in Bodkin Creek and Whitehall Creek in Anne Arundel County.

In the first half of FY '80 the Bay Bottom Survey Project used the Oyster Propagation boat *Miss Kay* to conduct a survey of the upper bay shell deposits. This work quantified these deposits to help determine the future availability of shells for oyster propagation. The results were:

Area	Estimated Amount of Shell (cu. yds.)	No. of Years Supply at Present Rate of Dredging
On present dredging permits	1,962,136	3.2
Not on present dredging permit areas or oyster bars	1,580,163	2.6
Not on present dredging permit areas;		
On presently unproductive oyster bars	2,290,287	3.8
TOTAL	5,832,586 cu. yds.	9.6 yrs.

The number of years supply figure is based on the present removal rate of 600,000 cu. yds. per year and is dependent upon a decision to dredge the areas surveyed. The oyster bars that are included in the third area listed are Tea Tables, Gales Lumps, Millers Island, and Mitchells Bluff Buoy. There are also extensive deposits on productive bars south of these areas which will be surveyed by the Bay Bottom Survey Project in FY '81.

During the second half of FY '80 the Bay Bottom Survey Project was changed drastically. In February the *Miss Kay* and a permanent crew were assigned to Bay Bottom Survey full time. An electronic survey (using a hydrophone and sonar only) began in March. From March through June the *Miss Kay* surveyed 77,000 acres of bottom in the upper Bay. This is in contrast to the 13,000 acres surveyed by the *Miss Kay* during the four month survey of shell deposits in the fall using similar techniques. This tremendous increase in efficiency was a result of major improvements in the equipment which allowed the boat to work at higher speeds while actually increasing the quality

of the data.

The soft-clamming efforts during FY '80 were concentrated in Dorchester and Queen Anne's Counties. These two Counties accounted for 70% of the State total of 239,000 bushels, valued at \$5.3 million. However, samples taken on major clamming areas by Tidal Fisheries biologists indicate a significant reduction in harvestable clams for the coming year.

Meetings have been held with clambers throughout Maryland to discuss management alternatives to improve utilization of the soft-clam resource. A comprehensive management plan will be the product of these meetings between management and industry.

A contract has been awarded to the University of Maryland, Chesapeake Biological Laboratory, to conduct a comprehensive study of the environmental impact of hydraulic escalator dredging on oyster communities. The study is expected to take 18 months and its results will be used to project any environmental effects of bottom reclassification.

Initial meetings have been held with the commercial hard clambers of Worcester County. A committee of commercial watermen to function in an advisory capacity to the Department of Natural Resources is being formed. A management plan is being developed for the Worcester County area.

TIDEWATER FINFISH PROGRAM

The Tidewater Finfish Program provides information needed for the management of resident, anadromous, and marine finfish.

The major effort of the program is directed toward fishery resource monitoring. These activities document spawning success and recruitment of young fish into the various commercial and recreational fisheries. These studies are important in determining quantitative projections of Maryland's fishery harvests. They also add insight to the causes and effects of species abundance fluctuations.

Another important group of activities pursued are those of closely monitoring the commercial and recreational harvest of fish so that management decisions can be based on factual information on the production of young, their growth, and mortalities. Detailed descriptions and results of these activities are published in the report "Estuarine Fish Recruitment Survey" which determines relative annual abundance and distribution of various estuarine fishes with emphasis on recruitment success of important species.

Another major study is continuing to determine

the temporal and spatial distribution and density of striped bass eggs, larval and juveniles, and their inter-relationships to include environmental and other species factors.

Hatchery utilization of Maryland Striped Bass to determine viability of ova and sperm and to develop large scale culture techniques was carried out and techniques were developed to produce striped bass/white bass hybrids. Hybrids were stocked into the wild to evaluate their potential contribution for Maryland fisheries.

The Division funded (\$39,000) an effort by the Town of Elkton, with support of many commercial fishermen, to raise and release striped bass from the Elkton Hatchery.

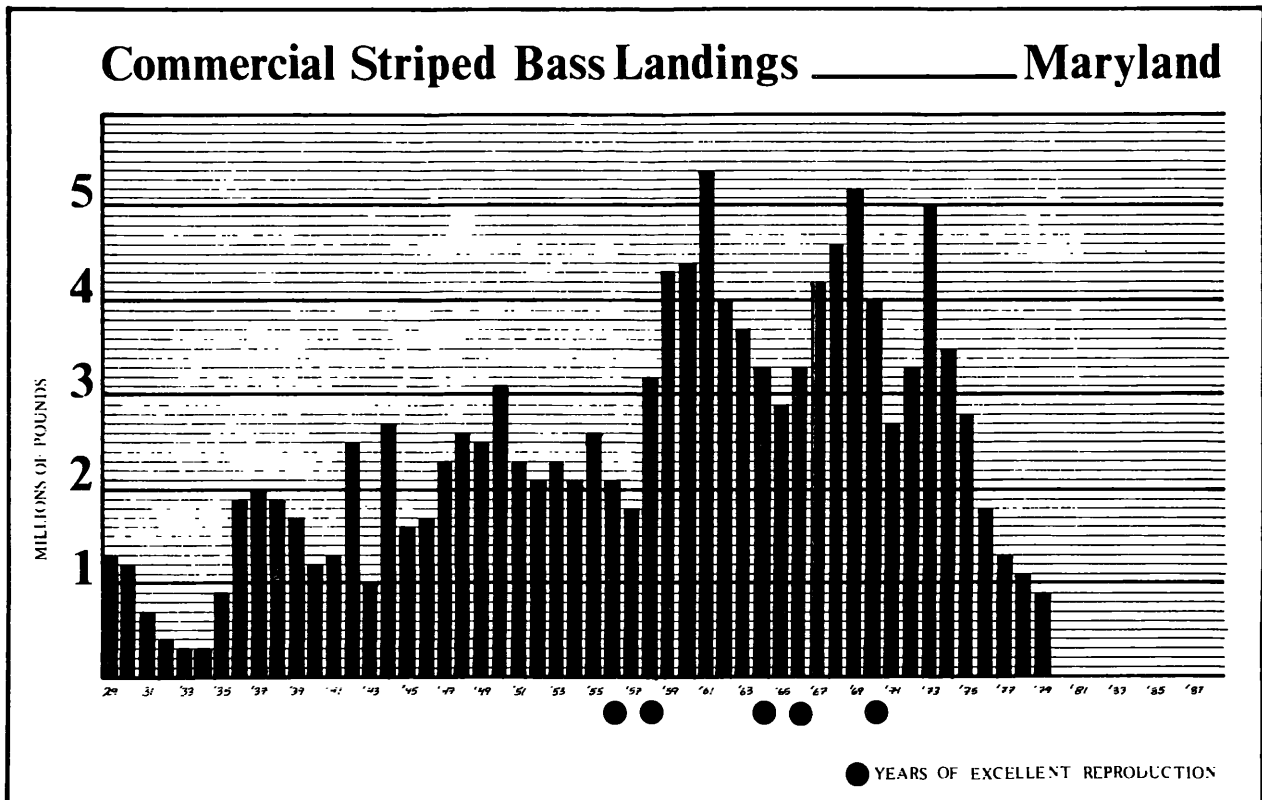
Anadromous fish species are also monitored in a somewhat similar manner to estuarine species. The results of these activities are published in a "Survey of Anadromous Fish Spawning Areas." Project activities include water quality investigations, stream barrier inventory, and stream improvement which usually involves the removal of stream barriers. Spawning activity and success for anadromous species as well as parent stocks are closely monitored. American shad, hickory shad, alewife, and blueback herring are the principal species.

Presently the tidewater finfish program is developing standardized procedures to monitor the reproductive success, populations, and fisheries for inshore marine fish species.

A profile of striped bass fisheries was published describing harvest patterns of the North Eastern Coastal striped bass stocks produced in the Chesapeake Bay. This study is an important statement about Chesapeake Bay stocks which provides the link between Maryland and other Coastal States that is necessary to develop a regional management plan for this species.

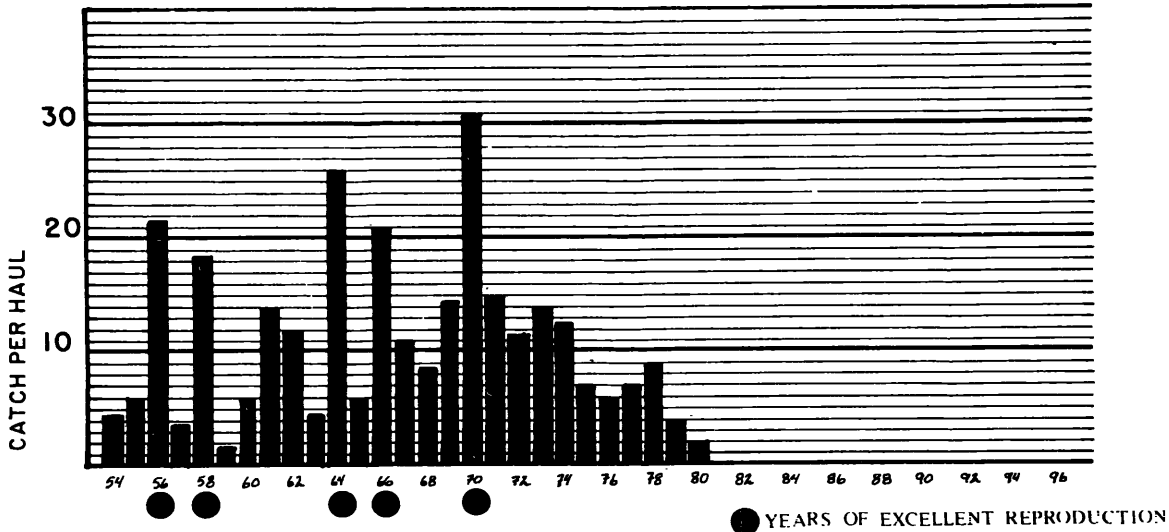
This program is active and has input into two major coastal striped bass programs. The first program is the formation of written management plan within the Mid-Atlantic Fishery Management Council framework by means of a Sub-Board, a Technical Committee, and a Citizens Advisory Committee coordinated by a project leader and a Sub-Board chairman. The second group of activities are largely investigative of striped bass, in cooperation with the University of Maryland and Virginia Institute of Marine Sciences, funded by the "Chaffee Act" through the National Marine Fisheries Service and the United States Fish and Wildlife Service.

Based in part on the trends shown in the following charts, recommendations were made to the Maryland General Assembly to take conservation measures to protect declining striped bass stocks. Some of these measures enacted into law include: the closure of certain areas of the Bay to commercial fishing; an increase in the minimum size limit of striped bass for certain times in certain areas; and the limitation of commercial gill nets to a maximum mesh size of six inches.



RELATIVE ANNUAL ABUNDANCE OF YOUNG-OF-YEAR STRIPED BASS IN MARYLAND WATERS

WEIGHTED TO REFLECT INDIVIDUAL SPAWNING AREA CONTRIBUTION TO TOTAL POPULATION.



ENERGY ADMINISTRATION

Budget

General Funds	\$ 689,338
Special Funds	7,024,448
Federal Funds	1,745,972
TOTAL	\$9,459,758
Number of Staff	43

The Energy Administration's mission is to evaluate the production and conservation of energy while minimizing adverse environmental effects. This is accomplished by acquiring future power plant sites, determining the environmental impact of existing plants, increasing public and private awareness of the need for energy conservation, maintaining balanced fuel allocation within the State in accordance with the needs of the consumer, and the controlling active coal mining, and reclaiming abandoned coal mines. These tasks are the responsibility of three operating programs within the Administration which are Power Plant Siting, Bureau of Mines, and the Maryland Energy Office.

POWER PLANT SITING

The Power Plant Siting Program provides the technical information needed for strict enforcement of environmental controls in the siting and design of power plants, without imposing unnecessary costs or delays on the production of electricity. The law provides for:

- Consolidated decisions that incorporate inputs from all of the various economic, environment, health, and planning agencies into a single action of the Public Service Commission;
- A dependable fund source for the program by placing a small environmental charge on electricity produced within the state.

Activities are organized in four functional areas.

- The Assessment of the environmental impact of existing power plants.
- Prediction of the impact of future power plants at proposed sites. The program also conducts a detailed site investigation, including extensive field data collection at all proposed power plant sites.
- Research, which is geared to developing an understanding of Maryland's environmental and socioeconomic structure.
- Site Acquisition which identifies, investigates, acquires, and holds in the Site Bank, an inventory of sites suitable for the construction and operation of power plants.

Major Activities In FY 80 Included

- The review of applications for the Morgantown, Crane, Chalk Point, and Calvert Cliffs Power Plants in order to determine the need for modifying cooling systems.
- Air quality impact studies at the Crane and Brandon Shores Power Plants to determine the feasibility of switching from oil to coal.
- The sampling of the Susquehanna River and the Upper Chesapeake Bay in order to determine the radiological impact of normal operations at the Peach Bottom Nuclear Plant, and of the accident at Three Mile Island. The results of this study will be used to predict the impacts on the Bay that would be the result of radioactive releases as proposed in the Three Mile Island Cleanup Plan.
- A detailed site evaluation and review of Delmarva Power and Light Company's application to build a 500 Megawatt coal-fired power plant at Vienna, Maryland.
- A study of the effects of Conowingo Dam on resident and anadromous fish populations in the Lower Susquehanna River.
- The selection of contractors to conduct a power plant site search in Western Maryland.

Major goals for the coming year include participation in several Water Resources Administration, Public Service Commission, and Federal Regulatory Commission Hearings on the cooling system reviews, fuel conversions, and Conowingo Dam relicensing, respectively. Also, the study and selection of a new power plant site in Western Maryland will proceed.

BUREAU OF MINES

The Bureau Of Mines has two distinct areas of responsibility 1) Environmental control of active mines and 2) restoration of abandoned mines.

Active Mines

The Bureau evaluates mining plans for proposed deep and surface coal mines. Environmental controls are established and reclamation plans must be approved before the mining operation can begin. Active mines are monitored for compliance with the law and agreement with the approved plans.

In March, 1980, the Bureau submitted a proposed program for controlling surface coal mining and reclamation operations to the Office of Surface Mining in accordance with the Federal Surface Mining Control and Reclamation Act of 1977. This proposal was approved by the U.S. Department of Interior in October, 1980.

Implementation of this program will be a major activity in FY 1981.

Abandoned Mines

State and Federal legislation makes possible the restoration of abandoned mines which for decades have presented serious environmental problems. Money collected from a surcharge on mined coal is used to repair the environmental damage caused by abandoned mines.

Activity	FY 79	FY 80
Number of Active Mines	117	84
Tons Mined	2,650,000	3,007,350
Acres Permitted	1,026	524
Acres Reclaimed	1,104	733*
Abandoned Mine Projects	13	14

* Calendar Year 1980

MARYLAND ENERGY OFFICE

The Maryland Energy Office (MEO) has responsibility for managing the State's fuel emergency allocation program and is the lead agency promoting energy conservation activities in Maryland.

MEO's role in allocation of fuel derives from the Emergency Petroleum Allocation Act of 1973. The office manages 5 percent of all motor gasoline imported into the State along with 4 percent of the middle distillate and 3 percent of the propane. The set-asides are available for assignment to various users in accordance with Federal Energy Guidelines. In 1980 the MEO set up a system for allocating emergency set-aside fuel to filling stations and developed new procedures for assigning supplies to bulk end users such as farmers and small businesses. The MEO is also the key agency for planning and executing such emergency fuel curtailment efforts as odd/even plans for any state-wide cutbacks mandated by the Governor.

The MEO is the principal State agency for receipt of federal energy conservation funds and a variety of conservation and alternative energy promotion programs are run by the office. For example, the MEO participates with the Southern Solar Energy Center, one of four regional solar energy centers established by the U.S. Department of Energy, in promoting passive solar home design. The MEO continues to operate the basic conservation program funded under the 1975 Energy Policy and Conservation Act and its 1976 supplement. Total grant funding during 1980 under these two acts has been about 1.2 million dollars. Typical projects contracted from the Energy Office include energy curriculum development by the

Maryland State Department of Education; support of the Maryland Department of Transportation's VANGO and ridesharing program; promotion of energy conserving driving habits among senior high school students; and enforcement of the 55 mile per hour speed limit by State Police. A contract was concluded with the University of Maryland to provide technical assistance to all the local jurisdictions in Maryland and to back-up energy staff in Maryland counties and municipalities. Another project was directed at the State farming community via the University's Agriculture Extension Service.

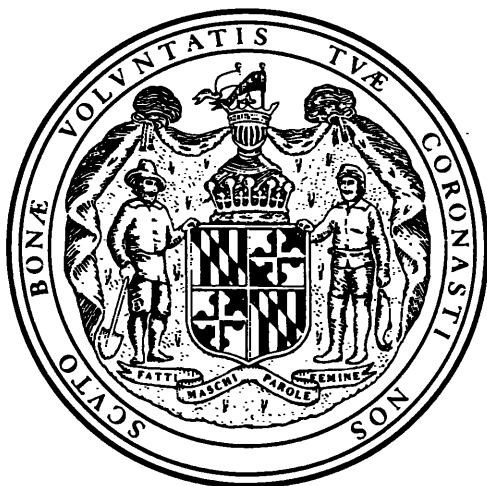
The national Energy Extension Service began in 1980 and Maryland received a \$506,000 formula grant for this project. Nineteen local organizations were funded to carry out this program which is designed to carry the energy conservation message to individuals and small businesses. Four field representatives were placed in DNR regional offices to support this program.

The largest single conservation program underway in 1980 was the Institutional Conservation Program (ICP). This fifty percent match program was mandated by the National Energy Conservation Act of 1978 in order to assist schools, hospitals and buildings owned by local governments to conserve energy. Energy auditors were trained; simple walk-through and complicated technical audits have been carried out and many institutions have been awarded funds for the retrofitting of existing buildings and energy plants.

This program will save at least 30 percent of the

operating energy costs of the public and private institutions participating. The program is designed and funded to continue for at least another fiscal year. Since the State currently spends approximately \$45,000,000 for energy in its buildings (FY 1980 figures) the State alone can expect to save \$13.5 million annually if all State institutions participate and/or carry out energy conservation efforts encouraged by the MEO. Savings in the private area also benefit the citizens by reducing the nation's total dependency for foreign oil.

In 1981 the MEO will continue to plan for energy emergencies and will submit a full scale fuel curtailment plan to the federal government in accordance with the Energy Emergency Conservation Act of 1979. This curtailment planning is presently being coordinated with state agencies, the private sector, regional planning councils and local governments. The MEO will also supervise the Residential Conservation Service program which was created by the NEA of 1978. This Act requires utilities to make home energy audits available to all of their customers. The MEO estimates that 67,500 homeowners in Maryland will request such examinations of their residences. The audits will provide cost/benefit analyses of energy conservation measures that homeowners and owners of small businesses can take. This program requires extensive coordination with six major utilities, the Public Service Commission, as well as the Attorney General's Office and other state agencies involved in loan supervision and consumer protection. The conservation program set up by the 1975 and 1976 supplement will continue into 1981 along with the Energy Extension Service and ICP.



State of Maryland

Harry Hughes
Governor

Louis L. Goldstein
Comptroller of the Treasury

William S. James
Treasurer

Department of Natural Resources

James B. Coulter
Secretary

Louis N. Phipps, Jr.
Deputy Secretary

HC
107
.M3
M263.
MD 1R

936
Maryland. Department of Natural Resour...
Annual activities report.

