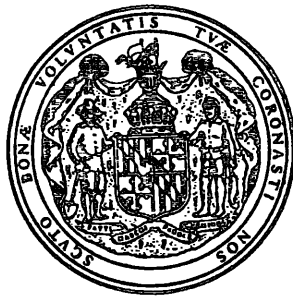


STATE OF MARYLAND

# Department of Natural Resources



Annual Activities Report

1971

DEPARTMENT OF NATURAL RESOURCES  
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STATE OF MARYLAND

DEPARTMENT OF NATURAL RESOURCES

1971 ANNUAL ACTIVITIES REPORT

Marvin Mandel, Governor

James B. Coulter  
Secretary

Joseph H. Manning  
Deputy Secretary

## FOREWORD

*The purpose of this report is to catalogue the activities conducted by the 1,027 men and women of the Department of Natural Resources during fiscal 1971.*

These achievements reflect a rewarding benefit of reorganization, an aim of which has been the creation of a work atmosphere that permits each person to perform to the limit of his capabilities.

The activities listed in this small booklet represent direct and indirect service to the public. During the fiscal year, more than 11 million persons were served in some direct fashion by one or more of some 188 activities of the department.

## WATER RESOURCES

The Department of Natural Resources, through its Water Resources Agency, is the custodian of the quantity and quality of the waters of the State. As such, its responsibilities are:

1. Supervise and plan multiple purpose development of all State waters.
2. Acquire interests or rights in real property for land and watershed management.
3. Control water pollution and supervise the discharge of waste waters.
4. Control the appropriation of surface and underground water through a permit system.
5. Control and supervise the construction and repair of dams and reservoirs.
6. Control well drilling through a permit system.
7. Develop a long range program for sediment and flood control, provide technical assistance to local governments and cooperate with the Federal Government.
8. Conduct joint study to define boundaries of tidal and non-tidal waters.
9. Provide leadership for, and oversee, a State-wide program for Soil Erosion and Sediment Control in Urbanizing Areas.
10. Effective July 1, 1970, by directive of the Secretary of the Department of Natural Resources, provide for emergency clean-up of oil spillage in designated waterways of the State.
11. Implement a program to control agricultural drainage that impairs water quality.
12. Provide for the training of industrial wastewater treatment plant operators.

### 1971 activities:

Completed 30 reports evaluating waters at various points of discharge identifying ability of stream or water region to assimilate effluent, and detailing probable impact of discharge loads at specific points.

Conducted 2,013 inspections and studies of water quality in Maryland bays, streams and lakes.

Inspected 20 abandoned wells.

Granted permits for 43 dams and 73 surface water appropriations.

Issued 171 permits for proper changes in course, current or cross sections of streams and other bodies of water.

*Operated 799 monitoring stations to determine whether water quality standards are being met, to develop statistical relationship of water quality to land use; and to provide base data for scientific and administrative decisions.*

*Remedied 304 at administrative level and still are working on 56.*

Referred 22 industries to the Office of the Attorney General for prosecution under State Water Quality Laws.

Investigated 81 significant sources of sediment discharge.

Found 19 cases in compliance with sediment control laws and regulations, 29 cases not in compliance and referred 5 to the Attorney General for prosecution.

Helped investigate 122 sewage treatment facilities - with capacity of 50,000 gallons per day or more, found 69 in compliance, 17 not in compliance but being improved to bring them up to standards, and 36 not in compliance.

Reviewed and approved 23 county sediment control ordinances.

*Assisted 50 municipalities in development of sediment control and storm drainage ordinances.*

*Trained construction supervisors, equipment operators, local officials, professional engineers and citizens groups in proper sediment control practices.*

Inspected 153 projects for sediment control and storm drainage practices.

Processed 150 sediment control complaints, brought 61 into compliance by administrative action; still negotiating 59 instances; referred 30 to the Attorney General for prosecution.

Reviewed six applications for use of surface water supplies.

Reviewed 7 applications for dam and reservoir construction and 174 farm pond notices.

Reviewed 92 applications for stream channel alterations.

Developed and published standards and specifications for sediment control measures.

Assisted subdivisions in development of sediment control and grading ordinances.

Monitored 1,561 miles of streams at 1,253 sampling points for water quality compliance.

*Investigated 872 points of discharge.*

*Probed 87 oil spills, 43 fish kills and 31 kills involving other aquatic life.*

*Analyzed in the laboratory 14,323 water samples involving a total of 45,831 separate analyses.*

Found 479 industrial operations in compliance with water quality standards.

Issued 254 new groundwater appropriation permits, 41 of them requiring public hearings.

Developed cooperative program with Department of Health and Mental Hygiene and county governments to establish solid waste disposal facilities which do not pollute water resources.

Participated in hydrogeologic investigations of sites; attended 12 public hearings on landfill permits and developed water quality monitoring techniques for landfills.

Set up program for handling at least 60 cases of petroleum contamination of groundwater.

*Evaluated 25 cases of groundwater pollution problems.*

*Made field inspections of water wells, 30 electrically logged and 100 examined visually.*

*Checked 20 well drilling complaints and investigated well drilling applications issuing 6,800 permits.*

Issued 351 orders to correct water quality violations.

Reported 133 industries in process of reaching compliance.

Trained 225 persons as superintendents of industrial wastewater works.

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## CHESAPEAKE BAY AFFAIRS

In fiscal 1971, the Department of Natural Resources, operating through its Chesapeake Bay Affairs Agency, had the responsibility for planning, development, management and conservation of the Chesapeake and other tidal waters, plus the shorelines and bottoms. Specific responsibilities included salt water recreation, shore erosion control and waterways improvement and maintenance.

Activities included:

Registered 77,419 boats and titled 22,469.

Corrected or duplicated 1,942 certificates or titles.

*Audited 274 boat dealers.*

*Made 91 appearances at boating clubs.*

*Held 9 fishing fairs or tournaments.*

Registered 6,000 fish caught and distributed 2,390 awards.

In boat safety education: 20,490 instructional booklets distributed, aided 17 camps in safety courses; loaned safety films to clubs on 97 occasions.

Received 81 applications for financial assistance in shore erosion control.

Made 200 inspections of properties on shore erosion control matters.

Completed 35 sets of plans and specifications for shore erosion control projects.

Completed \$435,500 worth of shoreline protection.

*Encumbered \$662,800 for approximately 18,000 feet of shoreline in need of erosion control.*

*Mapped 6,000 acres of wetlands.*

*Processed 150 applications to work in wetlands.*

Held 133 wetlands public hearings.

Reviewed 250 Corps of Engineers public notices.

Filled 40 requests for wetlands advice and preliminary inspection.

Investigated 25 alleged wetlands violations.

Granted \$78,568.33 to counties for construction of public access to the Chesapeake Bay.

Completed 1 public marina.

Removed 22 derelict vessels from Bay waters.

Removed 400 abandoned fish trap poles and pilings.

*Encumbered \$122,750 for counties to complete public marinas or other construction beneficial to boating public.*

*Installed and maintained 59 seasonal markers and 30 day markers.*

Cut and disposed of 1,148 acres of nuisance aquatic weeds.

Maintained two State boat parks which recorded 30,000 visits.

Dredged and disposed of 75,000 cubic yards of spoil.

Completed plans and specifications for 5 projects for removal of 180,000 cubic yards of spoil.

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## FORESTS AND PARKS

The Department of Natural Resources, through the activities of its Forests and Parks Agency, manages the State park system. It also administers the forestry laws, operates a state tree nursery and provides advice to landowners in the management of woodlands.

Activities included:

Conducted training sessions in forest fire control.

Distributed 3 million pieces of forest fire prevention literature.

Processed 2,000 requests for advice and service in forestry and reforestation matters.

Rendered protective treatment to 2,369 acres of woodlands.

Produced and distributed 6,375,190 forest tree seedlings.

Planted 7,410 acres of trees.

Participated in 509 informational programs on forestry.

Oversaw 149 tree farms in Maryland totalling 49,052 acres.

Assisted all counties and several municipalities of the State in planning, operating and maintaining recreational facilities.

Aided in development of the Scenic Rivers Program, enacted by the 1971 General Assembly.

*Conducted 293 examinations of 15,818 acres of woodlands.*

*Carried out tree plantings and timber stand improvements valued at \$143,005 on 433 Maryland farms.*

*Staffed 34 forest fire lookout towers and responded to 785 emergencies.*

*Grew 6 million seedlings and managed 128,000 acres of State forests.*

Reforested 2,072 acres.

Carried out 659 interpretative programs, nature walks, campfire programs, history walks, boat tours, nature games, fishing contests, surf casting and surf rescue demonstrations attracting 95,181 participants.

Acquired 1,708 acres of land for State parks and 112 for forests.

Processed 402 applications for grants-in-aid, 190 for the Land and Water Conservation Fund and 212 for Program Open Space.

*Cooperated with local, federal and private agencies and groups in battle against Southern Pine Beetle invasion of Eastern Shore loblolly pine regions.*

*Treated 39 sites infested by Oak Wilt in Western Maryland.*

Managed 30 operating State parks with a record attendance of 10.3 million.

Experimented with a camping reservation system at five parks.

Refunded \$113,908 to counties in lieu of taxes for park properties.

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## MARYLAND GEOLOGICAL SURVEY

Through the Geological Survey, the Department of Natural Resources prepares topographic maps, studies and reports on extent of character of the State's geology, mineral and water resources, regulate drilling for oil and gas, supervise Bureau of Mines and Division of Archaeology.

### Activities included:

Reviewed applications and plans and issued 49 permits for mining operations.

Oversaw strip mining operations which included 583 acres mined, 492 acres backfilled and 232 acres planted.

Operated 103 stream gauging stations to measure minimum, maximum and average flows of streams throughout the State, providing information for development of water supplies, sewage disposal projects, water power projects, industrial use, planning of dams and control of surface water use.

Maintained 127 observation wells and two springs to determine effect of ground water withdrawals on the ground water resource and to record fluctuations in the water table.

*Revised county topographic maps with total press run of 15,000.*

*Measured shoreline recession at 100 locations.*

*Published six geological reports and educational booklets.*

*Trained 80 individuals in mine safety and rescue practices.*

Made 272 visits to public and private buildings to advise on coal use in heating plants.

Examined offshore depth changes, looked into rates of sediment transport along the shorelines and assembled an inventory of protective structures already in place.

Surveyed Maryland's archaeological sites and recorded approximately 800 sites.

Investigated Maryland's water resources, producing publications on the subject.

Completed study of geology and mineral resources of Southern Maryland.

Published 5,000 aeromagnetic maps of Cecil and Kent Counties.

Continued study of formation and parallel bar and trough systems, which has been enlarged to include the entire Bay area.

*Prepared report on dune and beach system of Assateague Island State Park.*

*Issued the following reports: "Geologic and Hydrologic Factors Bearing on Subsurface Storage of Liquid Wastes in Maryland;" "Geology and Mineral Resources of Southern Maryland;" "Deep Wells in Maryland;" "Caves of Maryland;" "Miocene Fossils in Maryland."*

Sampled 4 points in Potomac Basin to detect trends in sediment discharge.

Made monthly chemical analyses at seven stations in the Potomac Basin to detect any intermediate or longer range changes in chemical quality.

Initiated Baltimore-Washington Urban Area Study to provide planners, engineers, other government agencies and the general public with information on the physical environment in a form that will be useful in guiding the growth of this area.

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#### BOARD OF WELL DRILLERS

The Board is responsible for the examination of applicants for well drilling licenses, issuance of temporary and permanent licenses, renewal and revocation of licenses. It also works closely with the groundwater management division of the Water Resources Agency.

Some of the Board's activities in fiscal 1971:

Held 12 regular monthly meetings; issued or renewed 210 licenses; gave 4 tests and 1 field test; investigated 9 complaints; held 5 hearings; suspended 2 licenses.

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## MARYLAND ENVIRONMENTAL SERVICE

The Maryland Environmental Service is a quasi-public corporation established by the General Assembly as a part of the Department of Natural Resources to aid local government and industry in providing liquid and solid waste treatment, disposal and reclamation facilities.

### Activities included:

Concluded liquid waste planning for 18 State watersheds, a plan approved by U.S. Government safeguarding \$13.4 million in Federal funds for construction, maintenance and operation of liquid waste management facilities.

*Conducted a series of multi-county planning sessions on liquid waste management.*

*Joined with Delmarva Advisory Council in conducting Eastern Shore solid waste planning sessions.*

Assumed responsibility for Baltimore Harbor Planning Project designed to find means of improving the quality of water in the harbor.

Established a Board of Directors for the Service as required by law.

Gained approval for utilization of planning funds to establish positions.

Helped organize workshops sponsored by the Maryland Association of Counties in order to facilitate contacts with local officials.

*Met with Federal officials to develop specific grant applications dealing with regional management of liquid and solid waste systems.*

*Marketability of bonds of the Service was enhanced and use of Water Quality Loan Act of 1968 expanded to include solid waste planning.*

Began pilot planning project for the Monocacy River Basin to facilitate orderly and efficient development of final river basin plans.

Offered proposals to each of the counties that they join forces with the Service in developing coordinated planning efforts which would meet requirements for regional and individual county solid waste plans.

Received gubernatorial directive to undertake responsibility for operating liquid and solid waste facilities owned by the State.

Began development of proposals for regional sewage treatment plants in two locations, a solid waste pyrolysis plant in Baltimore City and a rail haul-reclamation system for the two chief metropolitan regions of the State.

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MARYLAND ENVIRONMENTAL TRUST

The Maryland Environmental Trust is an agency of the Department of Natural Resources designed to educate and inspire Marylanders to take a personal and active interest in betterment of the environment.

Some of its activities:

Sponsored and assisted in programs of research and education pertaining to the aesthetic, natural, scenic or cultural qualities of Maryland.

Appeared at meetings of service clubs and other groups.

Distributed and sold litter bags, baskets, pins, and other devices and paraphernalia promoting the purposes of the Trust.

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## FISH AND WILDLIFE

Through its Fish and Wildlife program, the Department of Natural Resources is responsible for maintaining abundant populations of shell and finfish and wildlife through biologically sound management practices; and provide commercial and recreational opportunities through controlled harvest of commercial and game species.

*Supervised commercial harvesting \$17,800,000 worth of seafood products in Maryland tidal waters.*

*Issued 9,700 licenses to commercial watermen in sixteen counties and Baltimore City.*

Planted 5,218,972 bushels of oyster shells as part of oyster repletion program.

Supervised commercial harvest of 2.6 million bushels of oysters with a dockside value of \$11.7 million; 24,935,000 pounds of hard crabs valued at \$2,086,000; 1,580,000 pounds of soft crabs at \$670,000; 5,834,000 pounds of soft-shell clams at \$2,240,000 and 15,796,000 pounds of finfish valued at \$1,828,000.

Issued 11,000 licenses to individuals and organizations engaged in seafood production, processing and marketing.

Stocked Maryland waters with 447,065 finfish.

Investigated and analyzed 74 instances of fish mortalities.

Surveyed State's waterfowl population, counting 523,000 Canada geese and 48,000 whistling swan.

*In 632 instances given technical assistance to landowners with regard to plantings aimed at development of good wildlife habitat.*

*Planted 259,696 trees and shrubs in its land management program.*

*Blasted 43 potholes for improved waterfowl habitat.*

Constructed and installed 1,311 nest boxes for squirrel production.

Administered a saltwater sportfishery valued at an estimated \$1,064 billion.

Gained public hunting rights to 21,000 acres of private lands.

In shellfish disease program, there were 4,017 animals opened and fixed, 3,432 tissues embedded in paraffin, 4,275 tissues sectioned, 3,834 slides stained, 5,654 slides examined, and 23 areas of Manokin River monitored for spatfall.

Completed 24 surveys for oyster ground leases.

Resurveyed 74 of leased oyster ground.

*Surveyed 65 hull planting areas, and 162 seed planting areas.*

*Located 896 state oyster plantings and 102 natural oyster bars.*

*Located 60 shore control survey stations and fixed navigational aids.*

Established 22 triangulation stations.

Measured 23 pound nets.

Completed 18 surveys of clamming areas and 19 surveys for clam samples for State Department of Health and Mental Hygiene.

34 wild turkeys trapped and banded.

26 wild turkeys trapped, banded and transplanted.

397 wild turkeys stocked on game farms.

35 personal visits for technical assistance to landowners.

540 requests for information answered.

26 information and extension programs presented.

*4,090 mourning doves trapped and banded.*

*2,200 pheasant trapped, banded and experimental releases completed.*

*10,000 quail and pheasant chicks, experimental releases completed.*

*10 personal visits for technical assistance.*

*250 requests for information answered.*

*20 information and extention programs presented.*

2,971 ducks and geese trapped and banded.

17,000 mallards released as experimental.



Provided 392,127 man days of recreation on state and cooperative lands.

Planted 837,429 bushels of fresh oyster shells on 487 acres of oyster bars.

Planted 5,016,617 bushels of dredged shells on 1491 acres of bars.

Planted or transplanted 1,098,810 bushels of seed oysters on 2,623 acres of oyster bars.

Made 2,109 acres of bottom available for clamming after survey of 3,454 acres of bottom.

*Contracted for study of Blue Crab to determine fluctuations in annual harvest.*

*Inventoried 106 1-mile stream sections after investigating 53 streams in anadromous fish study which also included seining of 153 sites, 1,655 fish investigations and 1,719 plankton collections.*

Installed 110 channel buoys, resurveyed 22 Potomac River markers, issued 69 private oyster ground leases, conducted 18 days of ice-breaking activity.

Surveyed 3,454 acres of shellfish bottom and 1,500 acres of rangia clam populations in Potomac River.

Released 237,753 warmwater finfish received from Federal hatcheries.

Raised 51,519 warmwater finfish in State Hatcheries.

Purchased 150,169 warmwater finfish for stocking from commercial or private rearing sources.

*Checked 60 ponds in all geographic locations of the State.*

*Placed 46 tons of fish pond fertilizer in State owned or controlled impoundments.*

*Completed 4 reservoir reproduction checks.*

141,519 fish produced and distributed from State Hatcheries in coldwater project.

260,000 fish received from Federal sources and released for production and distribution in coldwater project.

Completed survey of Susquehanna Flats.

Began pilot Marsh Study.

50 personal visits for technical advice.  
350 requests for information answered.  
9 information and extension programs presented.  
100 nutria trapped and banded.  
16 beaver trapped, banded and transplanted.  
30 information and extension programs presented.  
56 acres dams, dikes and levees developed and maintained.  
6900 lin.ft. of canals and channels developed and maintained.  
50 miles roads and trails developed and maintained.  
38 public use facilities maintained.  
190.5 miles of boundary marked or posted.  
4,474 acres mowed and seeded.  
170 acres cleared or thinned.  
80 acres of State land custom farmed.

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#### FISH AND WILDLIFE EXTENSION

Prepared literature to improve hunter-landowner relations.  
Published 6 issues of Commercial Fishing News sent to 11,000 watermen and 2,000 to schools.  
Produced motion picture on Chesapeake Bay Dog for loan to schools, civic organizations and general public.  
Began production of film on sport crabbing.  
Appeared 120 times at civic group meetings.  
Prepared radio tapes for 12 stations on fish and wildlife topics; issued weekly fresh water fishing report; arranged fish and wildlife displays at fairs, schools and other events.

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## LAW ENFORCEMENT

Made 1,535 arrests and issued 2,264 warnings for violations of boating laws and regulations.

Issued approximately 200,000 licenses for fresh water fishing and hunting licenses.

Uncovered 2,153 violations of State wildlife laws.

Trained and graduated 23 marine policemen and wildlife officers in law enforcement courses.

*Made 311 arrests and issued 119 warnings for violation of crab conservation violations; 37 arrests and 61 warnings for finfish conservation violations; 240 arrests and 17 warnings for oyster conservation violations.*

*Towed 706 disabled vessels to port and freed another 160 from shoals and sandbars.*

Helped repair 76 boats.

Conducted or assisted in searches for 61 overdue vessels.

Afforded water transportation in 39 cases; aided other public agencies on the water 20 times.

Pumped sunken boats on 29 occasions and devoted 952 man hours to searching for drowning victims.

Rendered other water-oriented assists on 103 occasions including delivery of emergency messages, aid to persons on shore, regatta patrol, recovery of drifting boats, removal of persons from water, aid by scuba divers, administration of first aid, recovery of bodies from water, ice breaking, search for downed aircraft, fire fighting on boats, search for lost articles, and recovery of stolen vessels.

*For educational purposes, compiled and publicized statistics involving hunting accidents in the State.*

*Trained 12,545 persons in classes in the State's Safe Hunter Program.*

Boarded boats on 127,655 instances to check for conservation and boating violations.

Inspected seafood processing houses 36,581 times.

Made 551 trips to collect water samples for seafood program conducted by State Department of Health and Mental Hygiene.

Initiated new marine police duty stations on South and Bohemia Rivers and started night patrol in Bay area waters between Patapsco River and Chesapeake Beach.

Rendered services in 410 instances dealing with hunting, fresh water fishing, wildlife conservation and related outdoor activities.

*Graduated 14 men from basic recruit classes at Marine Police Academy and conducted 198 hours of in-service training in such fields as radiological monitoring, first aid, collection and preservation of evidence, riot control, marksmanship and police management.*

Recovered 73 stolen vessels and 37 stolen outboard motors.

Apprehended 2,153 individuals for violations of game, fish, and fresh water boating laws and regulations.

Delivered 9 emergency messages.

Patrolled 15 regattas.

Recovered or assisted in recovery of 33 drowning victims.

Made 795 arrests and issued 249 warnings for marine conservation violations.

*Assisted stranded motorists and helped in searches for missing hunters and children.*

Worked with 832 volunteer hunter safety instructors.

Conducted hunter safety instructors' workshop attended by 167 individuals.

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## PUBLIC INFORMATION

Published 50,000 copies of a Boating Handbook for Maryland Waters.

Published 105,000 booklets, papers and guides for sports fishing in tidal waters.

Awarded 2,300 citations for contestants in annual saltwater fishing tournament.

*Published 10,000 copies of Fisherman's map for Loch Raven and Tridelphia Lake Reservoirs.*

*Issued 25,000 copies of Maryland Wildlife Resources map.*

Printed 20,000 copies of "Homes and Shelters for Wildlife" leaflet.

Published 5,000 copies of "Maryland Fishing" Pocket Summary, 1,500 copies of Management of Fish and Wildlife in Maryland, 20,000 copies of "A Guide to Maryland's Public Hunting Area."

Distributed 120,000 copies of Maryland Fish and Wildlife News.

Mailed 26,000 copies of "Maryland Environmental-Gram."

Circulated 56,000 copies of "The Maryland Conservationist."

*Sold at cost 23,000 copies of "Cruising Guide to Maryland Waters."*

*Issued 150,000 brochures describing the parks of Maryland.*

Published 1,000 pamphlets describing the Chesapeake Bay.

Published 2,000 pamphlets describing the functions of the Maryland Environmental Service.

Distributed approximately 450 news releases informing the public of departmental activities, decisions and policies.

Made almost weekly public speaking appearances before schools, service clubs, professional societies and citizens groups.

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## OFFICE OF THE SECRETARY

Here are some of the more significant activities of the Department of Natural Resources conducted through the Office of the Secretary during fiscal 1971:

Began planning activities to administer legislation enacted by the 1971 General Assembly establishing an environmental trust fund raised from surcharge on electricity generated in Maryland to underwrite power plant environmental research and site evaluation program. Through advance work, by the end of the fiscal year when the Act took effect, the program was ready to begin environmental review of proposed power plant sites; develop methods of monitoring emissions from existing and future generating stations; and further research.

*During the fiscal year work was begun by the Cooling Waters Studies Group which brought together individuals competent in the thermal effects and socio-economic considerations of power plant siting to (1) make certain important research is done and funds used for most critical research; (2) to evaluate results of research; and (3) to evaluate need for further research.*

Began planning for studies that would recommend both long range and early action projects designed to eliminate or abate pollution from mine seepage. Work began during calendar 1971.

Represented the State of Maryland on the following major regional organizations:

*Susquehanna River Basin Compact  
Interstate Commission on the Potomac River Basin  
Potomac River Basin Advisory Commission  
Potomac River Fisheries Commission  
Atlantic States Marine Fisheries Commission  
Ohio River Basin Commission  
Mid-Atlantic Forest Fire Compact*

Comprehensive planning and policy making functions including reviews and environmental impact assessments.

Administrative and fiscal services of the department.

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DEPARTMENT OF NATURAL RESOURCES

STATE OFFICE BUILDING

ANNAPOLIS, MARYLAND 21401

PHONE: 267-5666

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