30th Year

PENNSYLVANIA ANGLOIA

November 1931 - 1961
Pattern for Progress

By

ALBERT M. DAY

Executive Director
Pennsylvania Fish Commission

Much of this issue of the ANGLER is devoted to a brief recital of the accomplishments of the Pennsylvania Fish Commission for the 12-month period ending May 31, 1961. It contains summaries of the work performed in the various organizational units of the Commission. It outlines the pattern of administration, the numerous accomplishments, and the aims and the plans for the conduct of this part of state government. It reveals in diagrammatic form the division of revenue to the Fish Fund and the distribution to the various programs conducted by the Commission.

A recital of this kind can give the reader only general ideas of an over-all picture insofar as fisheries in Pennsylvania are concerned. We, perhaps more than any fishery agency in the Union, are faced with tremendous problems. Pennsylvania's industries for years have poured their industrial and mine wastes into our public waters; cities and towns have traditionally used rivers and streams as the most convenient place to take away from their homes, their factories and their noses, the things that were no longer of use to them. But, Pennsylvania has accepted the challenge and is making real progress through its stringent laws and the day by day activities of its Sanitary Water Board in correcting a situation which once seemed almost hopeless. While we still have setbacks and occasionally lose clean streams because of pollution, the over-all picture is encouraging and the end results in another decade will show continued improvement in the purification of Pennsylvania's waters.

We of the Fish Commission are attempting to make our waters the most productive possible under existing circumstances. The pages that follow recite that effort during the past year. They do not tell of some of the real accomplishments that have occurred since the end of the fiscal year period. These include the most forward step that has been taken by the Commission in many years—the inclusion of new fishing lakes and boating facilities in all sections of the Commonwealth under the provisions of the General State Authority. The recent Legislature approved an authorization of almost 3 million dollars from this source to provide for the development of fishing and boating projects in 13 separate locations within the state.

Progress is being made on the Susquehanna River survey, which seeks to find a solution of fish passage at the dams on the lower Susquehanna. The Commission is cooperating closely with the Department of Forests and Waters to make its newly constructed lakes the most beneficial possible for fishermen. We are working with the Corps of Engineers to insure that their impoundments on the Allegheny, the Delaware and other streams provide their full share of fishing opportunities. We are working with the Soil Conservation Service under Public Law 566 in similar fashion.

Basically, the Fish Commission is doing the best it can with its limited resources—but these are not enough. License sales have declined as costs have increased. More revenues must be obtained if we are to carry on at even our present limited level. Fishermen now pay less than one cent a day for their license. This isn't enough. Moreover, this resource is of such importance to related industries such as tackle dealers, gasoline stations, motels, restaurants and other businesses that some means other than the mere sale of fishing licenses should be provided. Some states are converting the taxes on the gas and oil used by boatmen into fishing and boating administration rather than into the Highway Fund. Some states are floating bond issues for the expansion and improvement of recreational facilities including fishing. Some states even use revenues obtained from pari-mutuel race tracks to supplement their conservation programs.

Perhaps it is time that we in Pennsylvania take a new look at our total program to see how we can more adequately finance this form of recreation which is of such tremendous interest and importance to all of the people of the Commonwealth.
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All photos by Johnny Nicklas, Chief Photographer
Pennsylvania Fish Commission

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PENNSYLVANIA ANGLER
Autopsy of a River

By RUSSELL S. ORR, Chief
Conservation-Education Division

Some of the dead fish, only a hundred of thousands killed by mine acid drainage pollution in the North Branch of the Susquehanna River recently. Holding heavy lines of murdered walleye, bass, suckers, are (left to right): Paul Sevison, Sid Stadel, Gerald Eveland, LeRoy Troy and William Bickert, all residents of Catawissa.

One of the worst fish kills in the history of the Susquehanna River occurred early in October. As this issue of the PENNSYLVANIA ANGLER went to press, the Fish Commission, which met in Harrisburg on Monday, October 23, took action which it is hoped will lead to the recovery of $58,504.50 in damages from the corporation responsible for pumping the mine acid wastes into the river.

For more than a week the field representatives of the Fish Commission and the Sanitary Water Board of the Department of Health investigated the source of the pollution which extended from South Wilkes-Barre to below Sunbury.

On October 17, the Sanitary Water Board, after establishing the source of the pollution as being a set of huge pumps installed and operating on the Glen Alden Mining Corporation’s property in South Wilkes-Barre, issued a “cease and desist order.”

During the investigation period, Albert M. Day, executive director of the Commission, Commissioner Maynard Bogart, Fishery Biologist Robert Bielo and several fish wardens and other Commission personnel were in constant touch with the situation. Bielo was in charge of a crew which made accurate counts of the dead fish found along the 55-mile stretch of the river.

During its October 23 meeting, the Commission passed a resolution to be presented to the Sanitary Water Board, scheduled to meet October 25 and 26. The resolution follows:

WHEREAS—One of the most devastating kills of warm-water game fish in the history of the Commonwealth occurred in the North Branch of the Susquehanna River during the period of October 2 to 17, 1961, and

WHEREAS—this fish kill coincided with the period of time when the Glen Alden Mining Corporation was engaged in pumping stagnant waters from deep mine shafts at its new pumping station in South Wilkes-Barre, and

WHEREAS—the State Sanitary Water Board on October 17 issued a “cease and desist order” which shut down these pumps, and

WHEREAS—the fish kill is estimated at 116,280 fish by the Pennsylvania Fish Commission, with a value of $58,504.50.

NOW THEREFORE BE IT RESOLVED, that the Pennsylvania Fish Commission in regular session assembled at Harrisburg on this 23rd day of October, 1961, respectfully requests that the State Sanitary Water Board in cooperation with the Department of Mines and this Commission, conduct a more complete study of this situation and if the Glen Alden Corporation is finally determined as having been primarily responsible for this unfortunate situation, that their permit to henceforth operate the pumping station in South Wilkes-Barre be conditioned to include the following requirements:

1) The Glen Alden Corporation pays into the Pennsylvania Fish Fund the sum of $58,504.50, as payment for the fish killed because of their actions, and

2) Any permit issued to this Corporation contain a stipulation that pumping from this Station shall be under supervision of the State Sanitary Water Board so that operations may be correlated with adequate river flow to protect the aquatic life of the river below.

FURTHERMORE—the Fish Commission pledges that the payment by the Glen Alden Corporation will be used to assist in the rearing and planting of walleye, bass and other suitable game fishes in the North Branch of the Susquehanna River as soon as it recovers sufficiently so that the previously flourishing fish populations may be restored to our citizens.

/s/ Gerard J. Adams,
Chairman, Pennsylvania Fish Commission.
Installation of additional aeration equipment at the Reynoldsdale Hatchery for the purpose of improving the water for the growing of trout and in the end it is believed it will also increase the production capacity of that hatchery.

Continuing the program of replacing worn out hatching troughs with large concrete tanks which have proven to be superior to shallow troughs for the purpose of starting and growing of fingerling trout.

Repairing and improvement of some of the ponds at the Pleasant Mount Hatchery.

The construction of a two-story garage and storage building, 60' x 120' is under way at the Bellefonte Hatchery.

Improvement of buildings and facilities for handling of fishery operations on Lake Erie in progress at the newly acquired property on Walnut Creek, Erie County.

Several artesian wells were drilled at the Corry Hatchery for the purpose of increasing the water supply at that place.

Improvement in muskellunge hatching and production facilities at the Linesville and Union City Hatcheries.
The following is a report of the summary of the fish stocked in the waters of Pennsylvania during the period June 1, 1960, to May 31, 1961, showing the species, approximate size, number and weights:

<table>
<thead>
<tr>
<th>Species</th>
<th>Approximate Size</th>
<th>Number</th>
<th>Weight in Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brook trout</td>
<td>6 to 18&quot;</td>
<td>664,884</td>
<td>181,332.59</td>
</tr>
<tr>
<td>Brown trout</td>
<td>6 to 24&quot;</td>
<td>866,313</td>
<td>278,499.44</td>
</tr>
<tr>
<td>Rainbow trout</td>
<td>6 to 30&quot;</td>
<td>811,961</td>
<td>232,676.75</td>
</tr>
<tr>
<td>Walleye</td>
<td>10 to 16&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walleye fingerling</td>
<td>7 to 14&quot;</td>
<td>136,555</td>
<td>74,711.31</td>
</tr>
<tr>
<td>Bluegills</td>
<td>4 to 10&quot;</td>
<td>24,679</td>
<td>5,945.99</td>
</tr>
<tr>
<td>Other sunfish</td>
<td>4 to 6&quot;</td>
<td>4,450</td>
<td>456.35</td>
</tr>
<tr>
<td>Yellow perch</td>
<td>7 to 12&quot;</td>
<td>11,385</td>
<td>2,583.55</td>
</tr>
<tr>
<td>White crappies</td>
<td>10 to 12&quot;</td>
<td>17,946</td>
<td>17,646.60</td>
</tr>
<tr>
<td>Black crappies</td>
<td>7½ to 8½&quot;</td>
<td>900</td>
<td>900.00</td>
</tr>
<tr>
<td>Carp</td>
<td>10 to 17&quot;</td>
<td>2,600</td>
<td>600.00</td>
</tr>
<tr>
<td>Brown bullheads</td>
<td>12 to 14½&quot;</td>
<td>1,135</td>
<td>824.98</td>
</tr>
<tr>
<td>Rock bass</td>
<td>7 to 8½&quot;</td>
<td>1,892</td>
<td>692.70</td>
</tr>
<tr>
<td>White bass</td>
<td>6 to 10&quot;</td>
<td>11,921</td>
<td>2,985.54</td>
</tr>
<tr>
<td>Sheephead</td>
<td>11 to 19&quot;</td>
<td>5</td>
<td>7.00</td>
</tr>
<tr>
<td>Smelt</td>
<td>7½&quot;</td>
<td>8,400</td>
<td>790.00</td>
</tr>
<tr>
<td>Chain pickerel</td>
<td>16 to 24&quot;</td>
<td>695</td>
<td>1,330.34</td>
</tr>
<tr>
<td>Channel catfish</td>
<td>9 to 14&quot;</td>
<td>20,130</td>
<td>13,457.50</td>
</tr>
<tr>
<td>Bowfins</td>
<td>25 to 29&quot;</td>
<td>60</td>
<td>373.00</td>
</tr>
<tr>
<td>Total adult warm water</td>
<td></td>
<td>2,328,820</td>
<td>838,079.70</td>
</tr>
</tbody>
</table>

RESEARCH AND FISH MANAGEMENT

Important accomplishments of the Division of Research and Fish Management are summarized as follows:

Space limitation in fish cultural research was overcome to a large degree by the development of new units, for egg incubation and fingerling rearing, which resembled the earlier jar method but were made from 16-ounce plastic bottles. The number of individual experiments that can be conducted is greatly increased with no increase in space required. These units can be used in any fish cultural station and can thus increase the amount and spread of research experiments at far less cost.

In the spring of 1961 research on the life history and culture of northern pike, muskellunge and pickerel was continued. Egg taking, fertilization and incubation techniques were further improved. The culture of northern pike and pickerel was very successful. The fertilization and hatching of muskellunge eggs were far better than any previous year. However, an almost complete mortality of muskellunge fry occurred. This demonstrates a need for more research on fry survival for this species.

The identification and control of fish diseases in state hatcheries continued to be one of the major services of the biological staff at Benner Spring. In addition, a number of commercial hatcheries and cooperative trout nurseries sought aid and advice on fish disease problems.

Several research projects on fish diseases were continued or enlarged. Three drugs for use in treatment of the fish disease furunculosis were evaluated under equal conditions. One drug which is relatively new to the fishery field was found to be a very efficient therapeutic agent for this disease and exhibited no harmful side effects.

Methods on diagnosis, therapy and control for a new serious parasitic disease were continued. Some control of the disease was obtained by disinfection of the water supply. An arsenical drug is also being evaluated for therapeutic value in this disease.

Two research projects are continuing as cooperative efforts between the Pennsylvania State University and the Pennsylvania Fish Commission. One project is concerned with the immunological reactions in the fish disease furunculosis. A year ago it was found that trout showed a high test tube immune response to a one immunization shot of furunculosis vaccine. During the past year it was found that the immunized fish were actually immune to heavy doses of live furunculosis bacteria. This promises to be a major step forward in preventing losses in expensive trout brood stock through this immunization procedure. Oral methods of immunizing fish are also being tried.

A second project is concerned with blood typing in fish. Outstanding progress was made in this study dur-
ing the past year. Blood types have been established in rainbow, brown and lake trout. The pattern of inheritance of the various blood types is now being studied and their correlation with growth, survival, egg production, disease resistance and other factors is being attempted. Similar studies with farm animals, particularly chickens, have paid off tremendously in recent years.

Age and growth studies were made on the important game and panfish of Pennsylvania. A series of seven articles on these studies was prepared for the PENNSYLVANIA ANGLER.

The staff at Benner Spring contributed one paper to the PROGRESSIVE FISH-CULTURIST and a number of articles for the PENNSYLVANIA ANGLER.

An electric fish counter was developed and built at Benner Spring. The counter is used with our mechanical fish sorter and preliminary tests show it to be more accurate and less time consuming than counting by hand.

The big water electro-fishing unit which has been under development for several years was used very successfully at Lake Erie for obtaining northern pike and muskellunge breeders in the spring of 1961. Eggs were taken successfully and the breeders were returned to the lake unharmed. In addition, a number of adult bowfin were collected with the aid of the shocker for an experimental stocking.

Continued assistance was given the Commission's stream improvement program. Streams improved in 1960 were inspected and help was given for the 1961 work plans. A stream improvement demonstration was set up for approximately 500 Boy Scouts in Berks County. A number of the biological staff also supervised stream improvement work conducted by the junior conservation camp.

Personnel of the biological staff again made an analysis of fishing license applications (1960) to determine the percentage of anglers who (1) fished for trout and (2) ice fished the preceding year. Of about 6,500 applications sampled, 49.7 per cent stated they fished for trout. This was a drop of about 7 per cent from the previous year. The number of ice fishermen remained about the same at 6 per cent.

Further studies were made on the "fish-for-fun" project which is now in its fourth year. A continued electro-fishing and angler census indicates a plentiful supply of catchable fish. The overall population has increased slightly in size. At the request of landowners, a section of another nearby stream has been set aside for a fish-for-fun project. A publication summarizing this type of project is to be presented at the national meeting of the American Fisheries Society. This will enable other states to have guide lines to follow should they desire to initiate a similar program.

Personnel from the biological staff at Benner Spring aided biologists of the Army Engineers in the study of the effects of fish passage through two kinds of turbines operating under different hydraulic heads and pressures. The studies were conducted at the Allis-Chalmers Company's hydraulic laboratory in York, Pa. Results of the tests give valuable information on fish survival after turbine passage and should be applicable to Pennsylvania dams as well as the high dams located in the west.

A two-year project on the evaluation of fall vs. spring trout stocking in certain north central Pennsylvania streams was completed during the past year. In general it was found that fall stocked brook and rainbow trout yielded very little winter carry-over but fall stocked brown trout were returned to the creel in fairly good numbers in the spring. Other interesting information was obtained in the study and will be published at a later date in the PENNSYLVANIA ANGLER.

The biological staff cooperated with the Pennsylvania Department of Health in several stream pollution cases during the past year. In two instances, biologists presented data which strengthened the Health Department's cases in legal proceedings.

The basis for a cooperative state-federal trout stocking program was developed as a result of several meetings attended by Commission personnel, representatives of the Fish and Wildlife Service and the Pennsylvania Federation of Sportsmen's Clubs. This program, which is similar to that developed by other northeastern states, will become effective in 1962 and will result in more equitable and economical distribution of the trout from both state and federal hatcheries. Plans to implement this program are now being developed at the Benner Spring Station.
The range of the muskellunge in Pennsylvania has been extended by introduction of hatchery-reared fingerlings over the past several years. Last year 30 waters were stocked which had not originally held native populations. Test netting by biologists in several of these waters showed excellent survival and growth. Natural reproduction has occurred in at least one of the waters. The plantings of past years are now entering anglers' catches in annually increasing numbers. Anglers' interest in this new, large game species is high.

Several research and survey studies were continued on Lake Erie. Experimental trawling gear was again used to determine the commercial availability of the smelt in Pennsylvania waters. Information was collected on the species composition of trawl catches and demonstrations on the use of trawling equipment were given to area commercial fishermen.

Joint biological studies with bordering state agencies and the U. S. Bureau of Commercial Fisheries were again conducted during the past year. Included in these studies was a simultaneous lake wide survey of 15 stations of eastern Lake Erie to determine the range of oxygen depletion in bottom waters brought on by summer stagnation. Last year a 600 square mile area in western Lake Erie was found to have critical oxygen levels in the bottom waters. Assistance was also given to the U. S. Bureau of Commercial Fisheries in their seasonal collection of biological data from Pennsylvania commercial landings.

Other continuing projects on Lake Erie were the investigation of the extent of lamprey scarring on the commercial catch, the survey of lamprey spawning in tributary streams and the evaluation of adult rainbow plantings in tributary streams. The latter project was conducted in an attempt to build up a spawning run of rainbow trout in Lake Erie. A number of returns of large marked trout show that this project is at least partially successful.

Joint fish management policies, programs and fishing regulations were considered for several interstate waters at meetings with New Jersey, New York, Ohio and Maryland. Most of these meetings were attended by fishery biologists and law enforcement personnel from the states represented. As a result of these meetings over the past several years uniformity in laws and fish management practices are being developed.

Public relations activities in the Division of Research and Management increased appreciably during the year. Public demonstrations of fish populations were made in numerous trout streams using electro-fishing gear. Fish management lectures and displays were presented to many sportsmen's groups, Boy Scouts and other organizations. The demand for special instructional programs for teachers, junior conservationists and professional societies increased. The staff at Benner Spring again conducted more than 50 tours for fisheries workers and others.

Another service rendered the public by the Division was the aging of fish scales sent in by fishermen. Judging from the increased requests for this service, fishermen are becoming more interested in the story behind the fish they catch.

The aim of the Fish Commission's regional fishery managers is to improve fishing in the waters of the Commonwealth through better knowledge of the factors affecting fish life, and through the application of known fish management principles. Over 200 streams and lakes were surveyed by the managers. Many of these surveys were of the 'trouble-shooting' variety to determine whether waters were suitable for stocking with trout. Lake surveys were more comprehensive in nature and included such basic studies as fish populations, water chemistry and physical conditions. Fish management plans were prepared for the waters surveyed.

Two experiments were designed to test the utilization of hatchery-reared trout when stocked near areas of heavy human populations, in easily accessible waters and where trout fishing opportunity was at a minimum. In the first experiment, five lakes in southwestern Pennsylvania were stocked just prior to the opening of the season and then weekly for six weeks. Although these lakes held warm water fish populations, conditions appeared suitable for trout, at least until early summer. During a six-week creel census on one of these lakes, 5,428 trout or 57 per cent of the number planted (9,500) were counted in anglers' creels. Actual catch was somewhat greater since an estimated 10 per cent of anglers were not sampled. In a second experiment, which was cooperative with the Fish and Wildlife Service, trout from a federal hatchery were stocked one or more times during the open season in accessible lower portions of streams which had not been stocked with trout before. Although creel censusing was not
possible on these streams, warden observations indicated that angler interest was unusually high in these experimental plantings and influenced by such factors as degree of publicity, accessibility of streams, nearness to cities, other fishing opportunities in the area and the weather. Preliminary results of these experiments indicate that maximum returns of stocked trout may be expected in this type of stocking. Thus, from an economical standpoint, this program seems sound. Both experiments will be continued.

Chemical reclamation in one watershed prior to flooding for a new fishing impoundment was carried out. When filled, the lake was stocked according to a management plan. Evaluation studies were continued in several lakes where primary emphasis is being placed on maintaining predator game species following chemical reclamation and re-stocking.

Fishing opportunity in Pennsylvania is being enhanced annually by various state and federal agencies in an expanded dam building program. In addition to the lakes built by the Pennsylvania Fish Commission with federal aid which are managed primarily for fishing, multiple-purpose impoundments are being developed by the Pennsylvania Department of Forests and Waters, U. S. Corps of Engineers and the Soil Conservation Service. Pre-impoundment surveys and comprehensive fish management plans were prepared for these new waters by the managers.

As a joint conference of Fish Commission engineers and biologists, plans were discussed for incorporating additional facilities in new impoundments for better management practices. Such features as multiple draw off points, improved catch basins and adjacent holding ponds as well as seineing areas for checking fish populations and special provisions for the spawning of game species were discussed. If found to be economically feasible, these facilities will increase greater flexibility in the management of these waters.

A fertilizer with high nitrogen content was applied on 3 dates to a Commission fishing impoundment of 253 acres. This lake had annually developed a heavy weed growth which greatly restricted angling and required expensive weed control treatments. The plankton bloom developing from the fertilization was sufficient to discourage rooted aquatics and anglers could utilize the lake throughout the summer. In addition, this treatment may have increased fish growth. The application of fertilizer as an indirect control of aquatic weeds may be economically justified in certain fishing impoundments of this size.

The bowfin was introduced into one lake as a possible means of reducing panfish. The value of the planting for this purpose was not determined since the fish bit readily after planting and were removed rapidly by anglers who consider them an excellent sport fish.

Despite the great size of the Susquehanna Basin, little was formerly known of the factors affecting fish life and fishing there. A comprehensive plan of study of the Basin was adopted and activated by the establishment of 18 check stations extending from Columbia on the main river to the New York State line on the North Branch. At each station water quality was determined and fish population and other related biological studies made. The West Branch was studied extensively from the standpoint of determining the sources and amounts of acid mine drainage entering the system. This work is considered one of the most important undertakings of the fishery managers since it will serve as a guide for all future programs and developments in this great basin.

The studies of Dr. Harlan Holmes and Mr. Milo Bell, consultants retained by the Fish Commission to study the dams on the lower Susquehanna and to prepare plans for fish passage facilities, continued. Included in their studies were observations on the passage of fish over several dams in the west. In connection with this study, a fishery manager transported fertilized shad eggs from Chesapeake Bay and successfully hatched them in floating hatching boxes at various points on the Susquehanna River in Pennsylvania. Rate of incubation of these eggs was high.

Assistance was given the Office of River Basin Studies, U. S. Fish and Wildlife Service, in surveying and classifying all Potomac Basin streams within Pennsylvania. This is part of a basin-wide stream study for evaluating all future water development proposals within the Potomac drainage.

Fishery managers together with biologists from New York, New Jersey, the Fish and Wildlife Service and Lehigh University cooperated again in the tri-state study of the Delaware River. Data obtained on fish populations, water chemistry and related matters will be used for planning for the future fish management of proposed impoundments on the River.

The shad run into the Delaware River in the spring of 1961 was the largest in many years and proved to be very popular among anglers. The fishery manager and enforcement officer cooperated with the Fish and Wildlife Service in collecting samples of fish scales and other data which were forwarded to a federal laboratory for age analysis. Although several age-groups of shad were represented in anglers' catches, the greatest number fell in age-group IV. A study is now under way by the Fish and Wildlife Service to determine what river conditions existed in 1957 which might account for the high survival of this age-group.

One fishery manager has studied and experimented with aquatic weed control methods for the past several years. This manager continued tests of new herbicides at the Benner Spring Fish Research Station, Bellefonte Hatchery and in several ponds and small lakes in south central Pennsylvania. Two of the compounds tested gave excellent results on specific aquatic weeds. Several papers were prepared on these results and were presented at the 15th Annual Meeting of the Northeastern Weed Control Conference in New York City. In addition, approximately 30 requests for information on aquatic weeds and their control were received. Assistance was given whenever possible on the many aspects of the weed control problem. A mimeographed
paper revising instructions on weed and fish control was prepared and distributed to Fish Commission field men, county agents and other interested personnel.

Miscellaneous work accomplished by managers included assistance in drawing down lakes, fish salvage and an ice-fishing survey on northeastern lakes. Fishery managers tagged a number of fish in a program developed jointly between the Commission and a television station. The Commission's objective was to promote more fishing in the Susquehanna River. Television coverage of this project was outstanding.

ENGINEERING

Preliminary investigations were conducted on the following: Tamarack Lake Site, Crawford County (to be developed in cooperation with the Soil Conservation Service and Public Law 566), topography and subsurface explorations. Dr. Vincent Shepp, Geologist with Department of Internal Affairs, cooperated and worked closely with our Engineering Staff in analyzing the unusual subsurface conditions at this site; Kings Creek Dam Site, Washington County, field reconnaissance and topography survey; Sewickley Dam Site, Westmoreland County, field reconnaissance. Preliminary topography survey and preliminary investigations on the following: Dunlap Creek Dam Site, Fayette County; Harman Creek Dam Site, Washington County; Kearchers Creek Dam Site, Berks County; and Mauch Chunk Creek Dam Site, Carbon County.

Land surveys were made at Walnut Creek Area on Lake Erie, Erie County, and Yellow Creek Dam Site, Indiana County. Additional work was done on Hammert Creek, Lancaster County, and Negro Glade Dam Site, Somerset County.

Topographic surveys were conducted on Meadow Grounds, Fulton County; Kings Creek, Washington County; Lackawaxen Creek between Belmont Lake and Pleasant Mount Hatchery, Wayne County; Negro Glade Dam Site, Somerset County; Walnut Creek, Erie County; and Tamarack Lake, Crawford County.

Property and topography surveys were conducted on the following proposed access areas along with the preliminary development plans: Delaware River near Equinunk (Warfield Property), Wayne County; Delaware River near Equinunk (Dillon), Wayne County; Delaware River near Yardley, Bucks County; Juniata River near Thompsonstown, Juniata County; Juniata River, Raystown Branch near Huntingdon, Huntingdon County; Juniata River near Mexico, Juniata County; Juniata River near Millerstown, Perry County; Juniata River near Millcreek, Juniata County.

Engineering plans and specifications were completed on Bridys Lake, Monroe County; Beechwood Lake, Tioga County; to be developed in cooperation with the Soil Conservation Service and Public Law 566; precast concrete toilets for access areas and dams; Harveys Lake Access Area, Luzerne County; and the new Walnut Creek Hatchery, Erie County, including access to Lake Erie.

Preliminary plans were completed on fishways on Allegheny River in Coudersport, Potter County; Meadow Grounds Dam Site on State Game Lands No. 53, Fulton County; Negro Glade Dam Site, Somerset County; and Tamarack Lake, Crawford County.

The Beechwood Lake project in Tioga County and Tamarack Lake project in Crawford County are being developed in cooperation with the Soil Conservation Service of the United States Department of Agriculture, and are combined flood control and recreation developments. Under this plan, the Pennsylvania Fish Commission is responsible for land purchases and right of ways, road and utility relocations, construction of public use facilities and maintenance. The Soil Conservation Service is responsible for the construction of the dams and appurtenances. Upon the completion of the project the Pennsylvania Fish Commission will have ownership of the entire development.

Improvement on the following access areas:

- Long Pond—Wayne County
  - ¾-mile access road, 50-car parking area, boat launching ramp

- Duck Harbor—Wayne County
  - ¼-mile access road, 30-car parking area, boat launching ramp

- Delaware River—Wayne County
  - 25-car parking area with entrance road, concrete beam and blacktop boat launching ramp

- Juniata River—Juniata County at Mexico
  - 25-car parking area, entrance road, concrete beam and blacktop boat ramp

- Letterkenny Reservoir—Franklin County
  - Entrance road and 30-car parking area

- Waynesboro Reservoir—Franklin County
  - 30-car parking area

- X. Br. Susquehanna River, State Game Land No. 35—Susquehanna County
  - 25-car parking area, concrete beam and blacktop ramp
Allegheny River, City of Franklin — Venango County
30-car parking area with concrete ramp

Canadohata Lake—Crawford County
30-car parking area with entrance road and boat launching ramp

Eaton Reservoir—Erie County
25-car parking area, entrance road and boat launching ramp

Walnut Creek, Lake Erie—Erie County
250-car parking area and boat launching ramp

Big Spring—Cumberland County
2 parking areas (35 cars)

The construction of a 59-acre lake on Opossum Creek, Lower Frankfort Township, Cumberland County, was completed on June 30, 1961. The reconstruction of Mud Pond, Wyoming County, producing a lake of 62 acres was in the final stages on June 30, 1961. Also, essentially complete on June 30, 1961, was the construction of 3.6 miles of paved road, reconditioning of existing dam and the construction of a 50-car paved parking area at Bradys Lake, Monroe County; thus providing much needed access to this 229-acre fishing lake. The final Dingell-Johnson inspection of all three of these projects was scheduled for July of this year.

In addition, the engineering staff supervised the construction of a new storage building and repair shop at the Pleasant Gap Hatchery. This building was about 70 percent completed on June 30, 1961. Supervised the drilling of water wells at the Corry Hatchery; also assisted the Real Estate Division in the demolition of old power buildings on the Conestoga Creek, Lancaster County, and completed plans for proposed new fish transportation tanks.

Stream improvement work was completed on the following:

Northkill Creek—Bucks County
Work on approximately 3 miles of this stream consisted of the following:
1. Nine (9) log dams
2. Two (2) log cribbings
3. Thirty (30) stone dams and deflectors

Buck Run—Franklin County
Work on approximately 1½ miles of this stream consisted of the following:
1. Four (4) single deflectors of log construction
2. Four (4) cribbings of log construction
3. Four (4) watering point piers of log construction
4. Three (3) single deflectors of rock construction
5. Four (4) sections of rock rip-rap
6. One (1) rock dry wall
7. Planted 1,000 trees on banks

Big Spring—Cumberland County
Work on approximately ¼ mile of this stream consisted of the following:
1. Three (3) single deflectors of rock construction
2. Placing of forty-two (42) digger logs
3. Cleaning of 1,000 feet of channel
4. Demolition of old mill
5. Planting of 500 trees

South Branch, Little Aughwick Creek—Fulton County
Work on approximately 2½ miles of this stream consisted of the following:
1. Three (3) log fishing dams
2. One (1) log barrier dam
3. Removed 15 major choked channel areas
4. Rebuilt 23 existing stone devices

REAL ESTATE

The Real Estate Division continued with its accelerated pace in compliance with the Commission policy to acquire existing and accessible fishing waters throughout the State. The factors which have made us a rich and advanced industrial State have also threatened our invaluable fishing resources. Urbanization, industrialization and intensive agriculture practices, for instance, have led to a great loss in this natural resource. The Commission's complete awareness of this continued loss has been exemplified by the Real Estate Division's Program of not only maintaining, but improving these natural resources. The results have been gratifying, and the Division was appreciative of the cooperation in its many projects by the U. S. Fish and Wildlife Service and the Soil Conservation agencies.

During the past period, the Maintenance personnel in addition to their regular janitorial and maintenance duties, have been constructing fishing paths at lake access areas, planting trees, fabricating and erecting many signs on recently developed access areas, assisting our Engineers in redevelopment of access areas, and the demolishing of old Commission owned buildings.

In land acquisition work, additional land was acquired
on Stevens Lake in Wyoming County for further development.

The acquisition of land for two lakes is in the final stage of completion; namely, Beechwood Lake Site, Tioga County, and Tamarack Lake Site in Crawford County.

When constructed, the two lakes will provide an additional 600 acres of water for recreation.

The area known as the Straub Hatchery has been acquired for development as an access to Lake Erie.

The purchase of Hunter's Lake in Sullivan County has been completed which opens to the public a lake with over 100 acres of water.

Settlement has been completed on some of the properties on the Hammer Creek Dam Site in Lancaster County, and is continuing on the ones remaining.

Access Areas have been acquired on the Delaware River, Juniata River, the north Branch of the Susquehanna River, the main branch of the Susquehanna, and the Allegheny River.

A "Directory of Public Fishing and Boating Properties" was prepared by the Division listing access areas available to Pennsylvania fishermen and boatmen. The brochure was prepared for publication and distributed free by the Conservation-Education Division.

LAW ENFORCEMENT

In the spring of 1961, the Commission sent eighteen law enforcement officers from various parts of our State to Pittsburgh to attend the U. S. Coast Guard Boating School. These wardens were in the same classes as were Coast Guard recruits and officers. The splendid grades attained were acknowledged by their instructors. Many of the fish wardens have now had advanced training courses in seamanship. The Commission is determined to continue such training of the enforcement officers in the future.

The records show that the wardens spent 83,343½ hours enforcing the Fish and Motorboat Laws. This represents approximately forty-eight per cent of their time worked. The other fifty-two per cent was spent assisting hatchery personnel, pollution and mine drainage, channel changes and draw downs, attending sportsmen’s meetings, fish management research, lands and waters acquisition, stream improvement, assisting game protectors and other enforcement officers of the State and special assignments. During the year 1960 the wardens investigated 770 mine drainage permit applications for the Sanitary Water Board.

The fish wardens' working day averages 10.9 hours per day for the year. They have recorded the ages of persons arrested and the time of day and the day of the week violations occurred. This information will be compiled in the Harrisburg office for study and analysis. It is hoped that from this study much valuable information will be secured whereby new avenues of approach may be opened to the problems of law enforcement. As far as is presently known, no other state has attempted such a study in this field, but several have indicated their interest in this endeavor.

From June 1, 1959, to May 31, 1960, the wardens investigated fifteen motorboat accidents. Fourteen were nonfatal and one fatal. For the same period the following year they investigated eleven accidents. Eight were nonfatal and three fatal. While the decrease is small it is, however, improvement. Carelessness was the big factor in the majority of the accidents. It should also be mentioned that arrests for motorboat violations have decreased in the same period of time.

The Commission has, at the present time, the best trained wardens in the history of the Fish Commission.
CONSERVATION EDUCATION AND PUBLIC RELATIONS

The Conservation Education and Public Relations Division has been reorganized. This has resulted in an accelerated program for the distribution of educational materials and information to individuals and groups concerned with conservation education in the Commonwealth. It has brought about a greatly expanded distribution of information concerning Fish Commission activities to newspapers, radio and TV stations, outdoor columnists and other news media.

The PENNSYLVANIA ANGLER has taken on a "new look" with more colorful cover pages. The editorial make-up has been expanded to include a boating section. Increased emphasis is to be placed on the use of stories and articles concerning the conservation activities of sportsmen's clubs.

Greatly increased activity has been noted in participation in various teachers' workshops and clinics held throughout the state. The division chief, as well as regional biologists and fish wardens have been called upon frequently for these affairs. In an effort to provide teachers and other educational personnel with the most complete information relative to materials and other types of assistance available, packets of Fish Commission publications have been distributed. Special emphasis has been placed upon the availability of these materials for use in teaching conservation education to the youth of the Commonwealth. District fish wardens answer frequent requests to present slide lectures and talks to school groups on all levels.

These materials also are made available in answer to thousands of requests annuall from boy scouts, girl scouts and other organized youth groups. Individual requests from school children are answered as received, with the volume being particularly heavy for several weeks in advance of National Wildlife Week. Added to this there has been a constant flow of requests for information from both fishermen and the general public. While most of this correspondence has originated within the Commonwealth, many requests are received from other states and countries.

Although some requests for information can be answered by supplying printed materials which include the desired information, others require individual replies.

Public relations activities have included the statewide distribution of news releases concerning Fish Commission activities. These releases normally go to more than 1,100 newspapers, radio and TV stations and outdoor columnists. Beginning with the opening of trout season a weekly report of fishing conditions was sent out to all news media. Frequent requests by writers and editors for special information were given immediate attention. These services included the supplying of special films for use on television programs.

In order to carry the Fish Commission's message to the public, the division chief made more than 50 appearances at public meetings throughout the Commonwealth. These included meetings of many sportsmen's groups, service clubs and other organizations. Here again the district fish wardens have assisted greatly in public relations program. In addition to attending many of the monthly meetings of groups in their respective districts, they also are frequently called upon to provide slide lectures and other special programs.

The Commission was represented at numerous meetings and conferences of conservation organizations. These included the American Association for Conservation Information, Pennsylvania Outdoor Writers Association, Outdoor Writers Association of America, National Wildlife Federation and the North American Wildlife Conference.

The Commission's live fish exhibits attracted more than two and one-half million people at the major sportsmen's shows in Philadelphia, Pittsburgh, Harrisburg and Allentown and county fairs and other events. These exhibitions provided an excellent opportunity for the distribution and sale of Commission publications. District wardens or biologists were in attendance at all of these displays to handle the distribution of materials and to answer questions by the public.

Publications released by the division during the year included, "Fishing Waters in Pennsylvania," a second edition of "Pennsylvania Reptiles and Amphibians," the leaflet "Public Fishing and Boating Properties and Facilities" and a series of PENNSYLVANIA ANGLER reprints on the age and growth of the common fishes of Pennsylvania. Work has been started on a new and greatly improved edition of "Fishing Waters in Pennsylvania," a stream improvement guide, and a revision of the leaflet describing the Commission's muskellunge program.
FINANCIAL REVIEW FOR THE FISCAL YEAR
JUNE 1, 1960, TO MAY 31, 1961

By PAUL J. SAUER, Comptroller

The revenues, expenditures and financial position of the Pennsylvania Fish Commission are presented in the following statements and charts, covering the second year of the 1959-1961 biennium. Explanatory comments on each of the schedules are included to facilitate understanding and uniform interpretation of the information presented.

SCHEDULE NO. 1
CONSOLIDATED STATEMENT OF FINANCIAL POSITION
AS OF MAY 31, 1961

<table>
<thead>
<tr>
<th>CASH</th>
<th>LESS: LIABILITIES AND WORKING CAPITAL:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VOUCHERS PAYABLE—PENNSYLVANIA FISH COMMISSION $ 96,280.15</td>
</tr>
<tr>
<td></td>
<td>ENCUMBRANCES—PENNSYLVANIA FISH COMMISSION 695,962.47</td>
</tr>
<tr>
<td></td>
<td>ENCUMBRANCES—DEPARTMENT OF REVENUE 1,669.70</td>
</tr>
<tr>
<td></td>
<td>RESERVE FOR WORKING CAPITAL 600,000.00</td>
</tr>
<tr>
<td>$1,470,730.50</td>
<td>1,393,912.32</td>
</tr>
<tr>
<td></td>
<td>NET BALANCE AVAILABLE FOR EXPENDITURE DURING FISCAL YEAR 1961-1962 $ 76,818.18</td>
</tr>
</tbody>
</table>

SCHEDULE NO. 1—This schedule reflects the cash balance and the financial position of the Commission at May 31, 1961. It indicates a cash balance in the Treasury of $1,470,730.50, a decrease of $3,408.21 under the cash balance one year before, June 1, 1960. Of this cash balance, a total of $793,912.32 must be reserved to effect payment of the vouchers payable and encumbrances resulting from expenses and costs relating to the fiscal year June 1, 1960, to May 31, 1961, and $600,000 for working capital to maintain the cash balance at a level sufficient to pay normal operating expenses and costs during the period September through March, when revenues from license sales are substantially lower than operating expenses which remain fairly constant throughout the entire twelve-month period.

VOUCHERS PAYABLE represents invoices submitted to the Auditor General and State Treasurer for payment prior to May 31, 1961, but which had not been paid by the State Treasurer at that date.

ENCUMBRANCES represent commitments in the form of purchase requests, purchase orders and other contracts, and estimates in some cases, covering the purchase of materials and supplies, land acquisitions, rentals, utility expenses, services and accrued payrolls which had not reached the invoice stage but were directly related to the fiscal year June 1, 1960, to May 31, 1961.

NET BALANCE AVAILABLE FOR EXPENDITURES in the amount of $76,818.18 represents the difference between the cash balance in the Treasury, and all required reserves, and is the amount which is added to the estimated receipts for the 1961-62 fiscal period and becomes a part of the total amount on which the budget for the 1961-1962 fiscal period is determined.

SCHEDULE NO. II—This statement shows that the cash balance in the State Treasury at the beginning of the fiscal year, June 1, 1960, was $1,474,138.71, from which Vouchers Payable at that date of $11,550.74 have been deducted, leaving a balance of $1,462,587.97 available for expenditure. During the fiscal year, this amount was increased by revenues amounting to $2,800,815.45, resulting in a total of $4,263,403.42 available during the year. From these funds, $2,888,953.07 was expended; $2,722,888.08 by the Fish Commission, and $166,064.99 by other State departments. These expenditures included the liquidation of encumbrances applying to the prior fiscal year, as presented in the Commission Financial Review published in the November, 1960, issue, amounting to $442,210.55. The expenditures of $166,064.99 made by other State departments consisted of $71,327.41 for printing, issuing and collecting license fees, and $94,737.58 for contributions to the State Employees Retirement System and Social Security. The total expenditures of $2,888,953.07 is the total as recorded by the Fish Commission. However, $96,280.15 of this total represented vouchers not yet paid by the State Treasurer, and this amount must be considered and added to the balance of $1,374,450.35 to produce the cash balance in the State Treasury of $1,470,730.50 at May 31, 1961. This cash balance is subject to the reserves shown in Schedule I and explained in the remarks on that schedule.

SCHEDULE NO. III—This schedule shows the expenditures made by the Commission in compliance with the Legislative mandate of Act No. 330, Session of 1957, P. L. 619. Receipts and expenditures are shown on a calendar year basis to conform with the license year. Expenditures, by type, are classified by the nature of the activity to which they apply. The lower part of
SCHEDULE NO. II

PENNSYLVANIA FISH COMMISSION
STATEMENT OF REVENUE, EXPENDITURES AND CASH BALANCES
FISCAL YEAR JUNE 1, 1960, TO MAY 31, 1961

REVENUE

Cash in State Treasury to Credit of “Fish Fund” June 1, 1960
Less: Unpaid Vouchers in Fiscal Offices as of May 31, 1960
Net Cash Available for Expenditure as of June 1, 1960

Receipts June 1, 1960, to May 31, 1961

Resident Fishing Licenses
Nonresident Fishing Licenses
Nonresident Trout Stamps
Special Bel Licenses
Motorboat Licenses
Tourist Fishing Licenses
Lake Erie Licenses
Commercial Hatchery Licenses
Fishing Lake Licenses
Fishing Law Fines
Rent of Equipment
Rent of Real Estate
Contracted Repairs
Light, Heat, Power
Fidelity Bonds
Fees

Plus: Expenditures by Other State Departments (*)
Department of Revenue
Department of State
Treasury Department
Department of Labor and Industry

TOTAL EXPENDITURES
Plus: Unpaid Vouchers in Fiscal Offices as of May 31, 1961
Cash Balance in State Treasury to Credit of “Fish Fund” May 31, 1961

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**Note:** These items are used out of the “Fish Fund” upon requisitions drawn by the other departments and are included for a complete presentation of the “Fish Fund” finances.
SCHEDULE NO. III

EXPENDITURES IN COMPLIANCE WITH ACT NO. 330—SESSION OF 1957

Act No. 330, Session of 1957, P. L. 419, amends the Act of May 2, 1955, P. L. 448. This Act became effective September 1, 1957, and provides that the sum of One Dollar ($1.00) from each resident and nonresident fishing license fee shall be used exclusively for (I) the acquisition, leasing, development, management and maintenance of public fishing waters and of areas for providing access to fishing waters and the carrying out of lake and stream reclamation and improvement; (II) the rebuilding of torn-out dams and (III) the study of problems related to better fishing.

For the Calendar Year 1960—January 1, 1960, to December 31, 1960

<table>
<thead>
<tr>
<th>Item</th>
<th>1960</th>
<th>1959</th>
<th>1958</th>
<th>1957 (9-1 to 12-31)</th>
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<tr>
<td>Salaries and Wages</td>
<td>$88,345.74</td>
<td>$42,586.73</td>
<td>$19,941.83</td>
<td>$34,048.99</td>
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<tr>
<td>Salaries</td>
<td>75,486.12</td>
<td>36,912.65</td>
<td>18,094.52</td>
<td>15,856.41</td>
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<td>Wages</td>
<td>12,859.62</td>
<td>15,474.07</td>
<td>16,847.31</td>
<td>18,192.58</td>
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<tr>
<td>Other Operating Expenses</td>
<td>29,506.43</td>
<td>21,748.20</td>
<td>8,739.46</td>
<td>19,147.62</td>
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<tr>
<td>Preparing, Binding and Stationery</td>
<td>335.99</td>
<td>46.50</td>
<td>365.46</td>
<td>800.91</td>
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<tr>
<td>Food and Forage</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Materials and Supplies</td>
<td>5,006.72</td>
<td>10,501.16</td>
<td>545.90</td>
<td>6,803.43</td>
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<tr>
<td>Fees</td>
<td>2,394.48</td>
<td>4,416.35</td>
<td>24.00</td>
<td>9,825.43</td>
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<td>Traveling Expenses</td>
<td>7,206.79</td>
<td>6,231.03</td>
<td>1,834.56</td>
<td>6,262.70</td>
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<tr>
<td>Motor Vehicle Supplies and Repairs</td>
<td>3,037.95</td>
<td>1,217.87</td>
<td>1,044.80</td>
<td>2,019.41</td>
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<tr>
<td>Postage</td>
<td>716.34</td>
<td>66.00</td>
<td>33.48</td>
<td>36.52</td>
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<td>Telephone and Telegraph</td>
<td>3,059.61</td>
<td>230.13</td>
<td>338.56</td>
<td>300.58</td>
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<td>Newspaper Advertising and Notices</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Light, Heat, Power, Water, and Fuel</td>
<td>662.59</td>
<td>32.92</td>
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<td>Contracted Repairs</td>
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<td>1,800.00</td>
<td>109.07</td>
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<td>Rent of Real Estate</td>
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<td>0.00</td>
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<td>Rent of Equipment</td>
<td>36.94</td>
<td>1,166.46</td>
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<td>0.00</td>
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<td>Insurance, Surety and Fidelity Bonds</td>
<td>1,596.62</td>
<td>301.18</td>
<td>183.34</td>
<td>389.19</td>
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<tr>
<td>Other Operating Services and Expenses</td>
<td>621.63</td>
<td>86.18</td>
<td>523.79</td>
<td>328.54</td>
</tr>
<tr>
<td>Equipment</td>
<td>15,083.73</td>
<td>30,144.80</td>
<td>143.84</td>
<td>29,428.99</td>
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<tr>
<td>Motor Equipment</td>
<td>5,653.51</td>
<td>3,199.00</td>
<td>0.00</td>
<td>13,465.65</td>
</tr>
<tr>
<td>Other Equipment and Machinery</td>
<td>6,070.19</td>
<td>28,943.80</td>
<td>143.84</td>
<td>16,020.14</td>
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<tr>
<td>Outlay for Lands, Structures and Improvements</td>
<td>0.00</td>
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<td>153,234.83</td>
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<tr>
<td>Land</td>
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<td>0.00</td>
<td>153,234.83</td>
<td>0.00</td>
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<tr>
<td>TOTALS</td>
<td>$132,779.96</td>
<td>$94,479.73</td>
<td>$182,113.96</td>
<td>$82,621.00</td>
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</table>

STATEMENT OF RECEIPTS AND EXPENDITURES—ACT NO. 330—SESSION OF 1957

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Residence Licenses Sold</th>
<th>Nonresidence Licenses Sold</th>
<th>Minimum to Be Expended</th>
<th>Expenditures Over (+) or Under (-)</th>
<th>Cumulative Over (+) or Under (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>4,044</td>
<td>165</td>
<td>$4,009.00</td>
<td>$142,467.00</td>
<td>$127,858.00</td>
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<tr>
<td>1958</td>
<td>621,392</td>
<td>16,294</td>
<td>637,986.00</td>
<td>452,715.00</td>
<td>185,279.91</td>
</tr>
<tr>
<td>1959</td>
<td>603,548</td>
<td>16,436</td>
<td>619,584.00</td>
<td>534,014.83</td>
<td>95,509.67</td>
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<td>1957 (9-1 to 12-31)</td>
<td>607,667</td>
<td>13,197</td>
<td>800,704.00</td>
<td>725,702.97</td>
<td>149,409.07</td>
</tr>
</tbody>
</table>

CHARTS—Pie charts are included to present, in graphic form, the revenues received and expenditures made by the Commission during the fiscal period covered by this report.

The chart entitled "Sources of Revenue to the Fish Fund" indicates receipts from all sources of $2,800,815.45. This total, which is $517,215.41 higher than the total receipts for the prior fiscal year, should not be considered normal for a twelve-month period. Eliminating contributions from the Federal Government (Dingell-Johnson Act) which vary widely between years, the increase between the two fiscal years amounts to $408,193.98 for license sales and other regularly recurring revenues. An analysis of this increase indicates that receipts from license sales were $425,579.92 greater, and other revenues $17,385.94 less. This is a distorted reflection of the true situation and results from the use of a fiscal year beginning June 1 and ending May 31, and the method of collecting and reporting license sales. This distortion is obvious when it is realized that the total of resident, nonresident and tourist licenses dropped 16,996 from 1958 to 1959, and 17,376 from 1959 to 1960, a total decrease of 34,373 in two years. Accordingly, there could not be an increase of license sales revenue. Since the heaviest revenue from license sales is concentrated in the months of April, May, June and July (approximately 72 per cent), two months of which are in one fiscal year, and two months in the following fiscal year, a delay of a month or two in reporting license sales revenue results in substantial distortions of revenue patterns.

The chart entitled "How the Fisherman's Dollar Was Spent" shows expenditures by the Research and Fishery Management Division of $234,320.94, or 8.11 per cent of total Commission expenditures. It can be argued, with logic, that a considerable portion of these
AUDIT OF THE FUND

Under the provisions of Article IV, Section 402 of the Fiscal Code, the Auditor General is required to audit the accounts and affairs of all State Departments, Boards and Commissions at least once each year. The last formal audit of the Commission covered the fiscal year ended May 31, 1959.

Additional safeguards and controls imposed upon all Departments, Boards and Commissions are:

1. The mandatory requirement that all invoices, payrolls and other operating expenses must be audited by the Auditor General and State Treasury Departments before payment.
2. The mandatory reporting daily of all financial transactions to the Governor's Bureau of Accounts and Controls.
3. The control exercised by the Governor’s Budget Secretary over all requests for budget allotments and all other budget matters.
4. The periodic verification of Departmental Accounts with those maintained by the Auditor General's Department, the State Treasury and the Governor’s Bureau of Accounts and Controls.

A number of minor modifications of the fish and boating laws were made by the 1961 General Assembly.

House Bill 1308, Act No. 308 of July 14, 1961, provides that the fishing license must be “displayed on an outer garment” of the licensee, instead of being merely carried on the person as heretofore.

House Bill 823, Act No. 301 of July 13, 1961, changes the fishing license year from the end of December to the end of February, and extends validity of 1961 licenses the additional two months to February, 1962.

expenditures should be classed as Propagation rather than Research costs. Expenditures of $63,387.39 (2.19 per cent) which are included in the total of $234,320.94, resulted in the production of 24 tons of legal trout for stocking, 1 1/4 tons of fingerling trout, 150,000 fathead minnows and 1,500 largemouth bass fingerlings for transfer and stocking. If these Propagation costs were deducted from the Research and Management Program and added to Propagation, these expenditures would be $1,128,931.93 or 39.07 per cent; Fishery Management expenditures for Research alone would be $61,749.15 or 3.81 per cent and the net expenditures for Research alone would be $61,184.40 or 2.11 per cent. However, these statements and charts were prepared and reported upon in accordance with programs previously established by the Fish Commission and approved by the Budget Secretary. Consideration is now being given by the Commission to a new program which will more clearly reflect these divisions.


PENNSYLVANIA ANGLER
COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
SOURCES OF REVENUE TO THE FISH FUND
RECEIPTS FOR THE FISCAL YEAR JUNE 1, 1960 TO MAY 31, 1961
TOTAL $ 2,800,815.45

MISCELLANEOUS REVENUE
INTEREST ON SECURITIES
INTEREST ON DEPOSITS
RENTAL OF FISH COMMISSION PROPERTY
SALES OF UNSERVICEABLE PROPERTY
CONTRIBUTIONS FOR RESTOCKING STREAMS
PUBLICATION SALES
MISCELLANEOUS RECEIPTS
CONTRIBUTIONS FROM FEDERAL GOVERNMENT, DINGELL-JOHNSON ACT
FINES
FISH LAW FINES
MOTOR BOAT LAW FINES
SPECIAL EEL LICENSES
LAKE ERIE LICENSES
COMMERCIAL FISHING LICENSES
FEE FISHING LAKE LICENSES
TOURIST FISHING LICENSES
NON-RESIDENT LICENSES
NON-RESIDENT FISHING LICENSES
NON-RESIDENT TROUT STAMPS

HOW THE FISHERMAN'S DOLLAR WAS SPENT
EXPENDITURES FOR THE FISCAL YEAR JUNE 1, 1960 TO MAY 31, 1961
TOTAL $ 2,888,953.07

SPENT BY FISH COMMISSION $ 2,722,688.08
SPENT BY OTHER STATE DEPT'S $ 166,064.99

EXECUTIVE & GENERAL
DIRECTORS OFFICE
CONTROLLER'S OFFICE
GENERAL ADMINISTRATION
REVENUE DIVISION

CONSERVATION EDUCATION DIVISION
DEPARTMENT OF REVENUE - PRINTING AND ISSUING FISHING AND MOTOR BOAT LICENSES
DEPARTMENT OF STATE - CONTRIBUTIONS TO STATE EMPLOYES' RETIREMENT FUND
DEPARTMENT OF LABOR & INDUSTRY - EMPLOYER'S SHARE OF SOCIAL SECURITY TAXES
AUDITOR GENERAL'S AUDIT COSTS

EXECUTIVE AND GENERAL ADMINISTRATION $ 150,347.47
CONSERVATION EDUCATION DIVISION $ 34,994.77
DEPARTMENT OF REVENUE $ 749,364.58
DEPARTMENT OF STATE $ 15,000.00
DEPARTMENT OF LABOR & INDUSTRY $ 25,000.00
AUDITOR GENERAL'S AUDIT COSTS $ 10,478.65

SPENT BY OTHER STATE DEPT'S $ 166,064.99

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
HOW THE FISHERMAN'S DOLLAR WAS SPENT
EXPENDITURES FOR THE FISCAL YEAR JUNE 1, 1960 TO MAY 31, 1961
TOTAL $ 2,888,953.07

SPENT BY FISH COMMISSION $ 2,722,688.08
SPENT BY OTHER STATE DEPT'S $ 166,064.99

EXECUTIVE & GENERAL
DIRECTORS OFFICE
CONTROLLER'S OFFICE
GENERAL ADMINISTRATION
REVENUE DIVISION

CONSERVATION EDUCATION DIVISION
DEPARTMENT OF REVENUE - PRINTING AND ISSUING FISHING AND MOTOR BOAT LICENSES
DEPARTMENT OF STATE - CONTRIBUTIONS TO STATE EMPLOYES' RETIREMENT FUND
DEPARTMENT OF LABOR & INDUSTRY - EMPLOYER'S SHARE OF SOCIAL SECURITY TAXES
AUDITOR GENERAL'S AUDIT COSTS

EXECUTIVE AND GENERAL ADMINISTRATION $ 150,347.47
CONSERVATION EDUCATION DIVISION $ 34,994.77
DEPARTMENT OF REVENUE $ 749,364.58
DEPARTMENT OF STATE $ 15,000.00
DEPARTMENT OF LABOR & INDUSTRY $ 25,000.00
AUDITOR GENERAL'S AUDIT COSTS $ 10,478.65
The first issue of the PENNSYLVANIA ANGLER was born in George Neff's cellar on October 1, 1931. No offense to Mr. Neff, but from these lowly portals, the brain child of its first editor, Alex P. Sweigart, took form and substance to become the official state magazine of the Pennsylvania Fish Commission.

Neff, who later became purchasing agent for the Commission, mimeographed the "bulletin," as it was originally termed, in his cellar with an early hand crank, mimeograph machine. The first few months served a circulation of 4,000 copies . . . free! It increased later to 4,500 and in September 1933 reached 5,000 copies distribution. The covers of the early issues were printed in bulk at the Telegraph Press. Neff charged 75 cents per stencil, ran from 8 to 16 stenciled pages; charged $1.00 per thousand additional to run, assemble, staple. His average charge was $75 per month. These charges included free pick up and delivery, for after the magazine or "bulletin" was finally assembled, George had to deliver them to the Bureau of Documents in his personal car at no charge.

The mimeograph process gave way in October 1933 to the first printed issue that appeared in black and white, had 16 pages and was 9 x 12 inches in size. By then, the circulation had almost doubled and a charge of 10 cents per single copy or 50 cents per year was solicited to help pay costs of publication.

A two-color issue appeared in August 1934 of 16 pages, and a 3-color back cover was attempted in December 1934. The first use of full color on the cover was made with the May 1937 issue and through the years following, Fred Everett, beloved outdoor painter, did the art work for the ANGLER covers. Samples of his work can only meagerly be duplicated in black and white, cannot possibly show the brilliant colors from Mr. Everett's canvas.

Subscribers mourned the disappearance of these treasured covers when the last one was used in the February 1943 issue. World War II brought shortages of ink, paper and materials so necessary at the time for the war effort. The old black and white process was back again with an occasional burst of 2-color covers.

On down the years many styles of covers, articles, features, art styles have reflected the aims and thoughts of six editors, the graphic story told partly in the cover reproductions in this issue. Each issue of the ANGLER, from first to last represents, in its printed pages, thousands of plans, schemes, ideas, failures and a million worries to the magazine's succession of editors, advisors and contributors year after year . . . decade after decade . . . THIRTY YEARS!

The ANGLER has matured . . . it has never strayed from its position of simple, quiet dignity, clean, wholesome information and inspiration, and more, it has always expressed a courteous concern for all its readers no matter what creed, color or station in life. Mostly informal, unassuming . . . no winner of glorious prizes, literary or otherwise, it HAS directed its vigor, not in some meaningless mumbo-jumbo in the name of "conservation," but, to the slow, steady, solid and hearty contact with the fishermen of Pennsylvania via the printed word and picture. Thus . . . ANGLER and fisherman, together, have in some measure, learned the dogged, hard lesson of mutual restraint and understanding that largely influences and determines our actions outdoors as sportsmen and human beings.

ALEX P. SWEIGART
FIRST EDITOR

Those were great days, halcyon days (but what aren't, in retrospect), back there in the early 'thirties when the ANGLER "chipped through the shell." It was at a time when CCC roads were opening up many of the areas where the native brook trout still held sway. Gifford Pinchot, the "Old Forester" and, in your correspondent's memory the greatest caster with an "ounce or slightly better fly rod" of his day, was Governor. His Commissioner of Fisheries, Oliver M. ("Ollie") Deibler, was to start in those early days the Spring Creek Project near Bellefonte, Centre County, better known as "Fisherman's Paradise."
A great way for the angler to pass the time from one season to another is to read the experiences of others and to read about the species of fish of particular interest. Whether it is informative detail or armchair adventure, the dedicated fisherman enjoys all that is related to his favorite pastime. The more it can be applied to his fishing waters, the better he likes it. These are the reasons why the pages of the PENNSYLVANIA ANGLER are enjoyed and appreciated by the fishermen of the Keystone State.

An old rolltop desk and one typist-secretary proved to be the rallying point there in the South Office Building for the grandest group of practical fishermen this graying editor ever knew. For, you see, the first ANGLER was, first of all, a cooperative project. Without the support of the dedicated anglers who backed it with their contributions it would probably have never "sparked." There were Charlie Wetzel, dry fly expert and author; Fred Everett, nature artist supreme; Charlie Fox, Clayt Peters, of Lykens; the late Lloyd E. ("Juniata") King, Harrisburg; and the late "Bob" McCafferty, of Hershey, to mention a few. That old rolltop became a veritable fishermen's "roundtable" as the magazine grew from a tiny mimeographed 4-page number on its birth date in 1931, to an illustrated 16-page or better number by 1942. Incidentally, the first mimeographed copies were given away by the Fish Commission but in short order the practice became too burdensome and the printed illustrated issues became a reality.

The ANGLER of the '30's and early '40's was blessed, too, by the four-color covers by Fred Everett and splendid aquatic insect articles by Charlie Wetzel whose booklet "The Art of Fly Tying" in 1936 became an instant hit with trout fishermen.

Yes, to your humble scribe, those years of the ANGLER's beginning and subsequent growth will always remain memory's "golden years." It was a privilege beyond compare to work with so many dedicated and devoted angler-conservationists.

It was a pleasant and satisfying experience to serve as Editor of the ANGLER. Certainly one met and corresponded with many kindred spirits, made new friends and indulged in an extra share of fishing conversation.

As the magazine enters its fourth decade of service, we wish it and its Editor all possible success.

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It was back in the winter of 1940, under the pen name of Dick Fortney, that I began writing a monthly column of fishing notes and tips for PENNSYLVANIA ANGLER. Little did I imagine at the time that some seven years later I would have the interesting and challenging experience of sitting in the editor's chair for an interim period of one year.

But that is what happened—and as a result I'm the only ex-editor of the ANGLER who did his job at long range.

I did the editorial work—selecting manuscripts, editing copy, making up dummies, and reading proofs—at my home in Williamsport. The printing and distribution were handled from Harrisburg. The half-tone engravings and cartoons used as illustrations were made in Johnstown, and the articles that appeared in the ANGLER during my editorship were the work of outdoor writers scattered all the way from Cleveland to New York City, including many points in between.

My warmest memories of my year on the job are of the wholehearted cooperation of everyone concerned. I made frequent trips to Harrisburg to confer with headquarters personnel of the Fish Commission; I received letters of encouragement and frequent contributions from members of the commission. A secretary in the office of the commission was assigned to me, and a steady flow of correspondence kept me as close to headquarters as if I had been working in an office across the hall instead of in a city 85 miles away.

It certainly was a unique arrangement in magazine publishing.
THE GIRLS...

THE BOYS...

THE OLD TIMERS...
When Dick Williamson resigned, Fred Stone was appointed editor by the Fish Commission, turned out his first edition in January 1948. He alternated the ANGLER desk with J. Allen Barrett until December 1950.

EDITOR GEORGE FORREST

Present editor, took over paste pot with the January 1951 issue. His first hitch at the editor's desk ended with the September 1956 issue. During the interim the ANGLER was enriched by "regulars"... Charlie Wetzel, Charlie Fox, Nick Castillo, Thad Bukowski, Keith Schuyler, Dick Fortney, Al Shimmel, Don Shiner, Carsten Ahrens, Ellen Dietrich, Vince Marinaro, George Harvey, Hal Harrison, Joe Carricato, Brook Focht, Ralph Sides, Pete Busser, Bill Boyd, Bill Wolf, Jim Hayes, John Alden Knight, Richard Alden Knight, Joe Paucaas, Bill Walsh, Johnny Mock, Seth Myers, Alvin "Bus" Grove. Some nationally known writers... Al Clark, Howard Walden, II, Joe Bates, Jr., Mike Hudoba, Edwin Way Teale, Sparse Grey Hackle, Art Flick, Jim Gasque, John Terres, Willy Ley, Ben East, Ben Robinson, Gene Burns, George X. Sand, Erwin Baner, Lee Wulff and Ray Ovington. There were many, many more contributors of equal writing agility and fame. Some great photographs came from: Aubrey Bodine, Joseph Muench, Ormal Sprungman, Frank Floss, Bob Motter, W. T. Davidson, Don Shiner and others. Some of the nation's greatest fishing, outdoors cartoonists like Al Kaufman, Tom Blakely, Mel Millar, Alwyn Girod, Atkins and many others, were regular contributors in this era. After a long battle against illness, the present editor returned in May, 1960.

EDITOR EMERITUS J. ALLEN BARRETT

"On agin—off agin—in agin—finigin"—yes, that's just about how the editorship of the PENNSYLVANIA ANGLER fell in my lap on four separate and distinct occasions during my twenty years of service with the Pennsylvania Fish Commission.

Coming with the Fish Commission on October 1, 1940, I was assigned to the office of "educational lecturer," which job carried me all over the state preaching the gospel of conservation and appealing for public cooperation with the program and policies of the Commission. In September, 1944, the editor of the ANGLER up and quit and yours truly inherited the additional responsibility. I continued until July, 1946, when the services of a new editor were procured. This editor carried on for one and one-half years and then with the January, 1948, issue he resigned and I supervised and alternated with Fred Stone until December, 1950, when the present editor, George W. Forrest, took over. Mr. Forrest remained for five years and eight months, but with the October, 1956, issue, I again fell heir and edited the ANGLER until June, 1960, when Mr. Forrest returned to the top desk, which job he occupies at this writing.

Editing the PENNSYLVANIA ANGLER has not only been interesting, but also a very fascinating venture and I loved every minute of it.

I am confident that the present editor will continue to do a bang-up job and I herewith convey my warm best wishes upon this 30th anniversary of the magazine's publication.
Early edition of the ANGLER, typical cover and back. They were mimeographed copies ranging from 4 to 16 pages; several covers were of blue stock, others in gold. Alex Sweigart edited these early issues. Distributed free.

First PRINTED copy of the ANGLER—October 1933. Ten cents a copy or 50 cents per year was solicited to cover printing costs. Cover was in black and white.

August '31 issue was first two-color cover of orange and black. Starry-eyed bass looked pugnacious, probably was.

New cover design appeared in July 1951. Dark portions were in solid cover, masthead in white reverse.

Another design appeared in May 1952 very similar to that of Natural History Magazine of that era.

This design carried forward through 1953. One artist complained there were too many “lines” to suit him. Prize photos by W. T. Davidson later appeared in National Geographic.

Again, the mag changed its mind, came up with this outside styling which it kept over a period of 5 years, off and on.
An example of Mr. Everett's Christmas 1942 art, colorful in brilliant reds and greens. February, 1943, was last full color cover as World War II shortages hurt.

A new design for the October 1944 issue was a return to two-color cover; legends in color over black and white photograph.

District Warden Kenneth Aley in full uniform was the outstanding cover man of that and any other year. Handsome, huh?

This yuletide issue of December 1959 brought forward the year's series of covers in red and green.

The 1960-61 covers carried no set style of mastheads, mostly a combination of line drawings such as the one above by John Taylor (Editor of Maryland Conservationist), and the fine photograph by Johnny Nicklas, the Pennsylvania Fish Commission's chief photographer.
"I'M BACK AGAIN, FOLKS!"

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