

# annual report - 1972

division of fishery services - region 4





ANNUAL REPORT  
Division of Fishery Services  
Region 4



UNITED STATES DEPARTMENT OF THE INTERIOR  
Fish and Wildlife Service  
Bureau of Sport Fisheries and Wildlife

Prepared by:

A handwritten signature in cursive script that reads "L. Glenn McBay".

---

L. Glenn McBay  
Pesticide Specialist

Approved by:

A handwritten signature in cursive script that reads "Alex B. Montgomery".  

---

Alex B. Montgomery  
Regional Supervisor

ANNUAL REPORT

1910

Region 4



Department of the Interior  
Bureau of Sport Fisheries and Wildlife  
Washington, D. C.

U. S. GOVERNMENT PRINTING OFFICE

## TABLE OF CONTENTS

	<u>Page</u>
Introduction -----	1
Summary of Accomplishments -----	2
Fishery Management on Federal Areas -----	5
Department of Defense Areas -----	5
Veterans Administration -----	8
National Forests -----	9
National Parks -----	10
National Wildlife Refuges -----	14
Other Federal Areas -----	18
Fishery Management on Indian Reservations -----	19
Pesticide Field Appraisal and Monitoring Activities -----	22
Fishery Management on Non-Federal Areas -----	24
Cooperative Activities -----	26
Training and Extension Activities -----	33
Public Relations Activities -----	33
Personnel List -----	34

## TABLES

- Table 1. Summary of Fish Habitats Served and Management Accomplishments
- Table 2. Fishing Waters and Man-Days of Fishing on Cooperative Management Areas
- Table 3. Chemicals Used in Fish Population Control
- Table 4. Chemicals Used in Vegetation Control

TABLE OF CONTENTS

Introduction ..... 1

History of the Department ..... 2

Organization of the Department ..... 3

Administrative Structure ..... 4

Personnel ..... 5

Financial ..... 6

Physical Plant ..... 7

Public Relations ..... 8

Legislation and Regulations ..... 9

Appendix A ..... 10

Appendix B ..... 11

Appendix C ..... 12

Appendix D ..... 13

Appendix E ..... 14

Appendix F ..... 15

Appendix G ..... 16

Appendix H ..... 17

Appendix I ..... 18

Appendix J ..... 19

Appendix K ..... 20

Appendix L ..... 21

Appendix M ..... 22

Appendix N ..... 23

Appendix O ..... 24

Appendix P ..... 25

Appendix Q ..... 26

Appendix R ..... 27

Appendix S ..... 28

Appendix T ..... 29

Appendix U ..... 30

Appendix V ..... 31

Appendix W ..... 32

Appendix X ..... 33

Appendix Y ..... 34

Appendix Z ..... 35

## DIVISION OF FISHERY SERVICES

1972 Annual Report

### INTRODUCTION

Primary responsibilities of the Division of Fishery Services in Region 4 include providing technical assistance in managing fishery resources on federal and Indian lands, administering six cooperative fishery units, and conducting field appraisals and monitoring of pesticides.

Other important activities which are conducted in the twelve Southeastern States and the District of Columbia include cooperative fishery programs with state and other federal agencies, determination of needs for hatchery fish and their allocation, and evaluation of stockings of various species in reservoirs, tailwaters, estuarine areas, and small ponds. The technical staff during 1972 consisted of 21 biologists and 3 biological aides.

DIVISION OF PUBLIC AFFAIRS

STATE OF NEW YORK

MEMORANDUM

TO: THE COMMISSIONER OF PUBLIC AFFAIRS

FROM: [Illegible Name]

SUBJECT: [Illegible Subject]

[Illegible Paragraph 1]

[Illegible Paragraph 2]

[Illegible Paragraph 3]

[Illegible Paragraph 4]

[Illegible Paragraph 5]

[Illegible Paragraph 6]

[Illegible Paragraph 7]

[Illegible Paragraph 8]

[Illegible Paragraph 9]

[Illegible Paragraph 10]

[Illegible Paragraph 11]

[Illegible Paragraph 12]

[Illegible Paragraph 13]

[Illegible Paragraph 14]

[Illegible Paragraph 15]

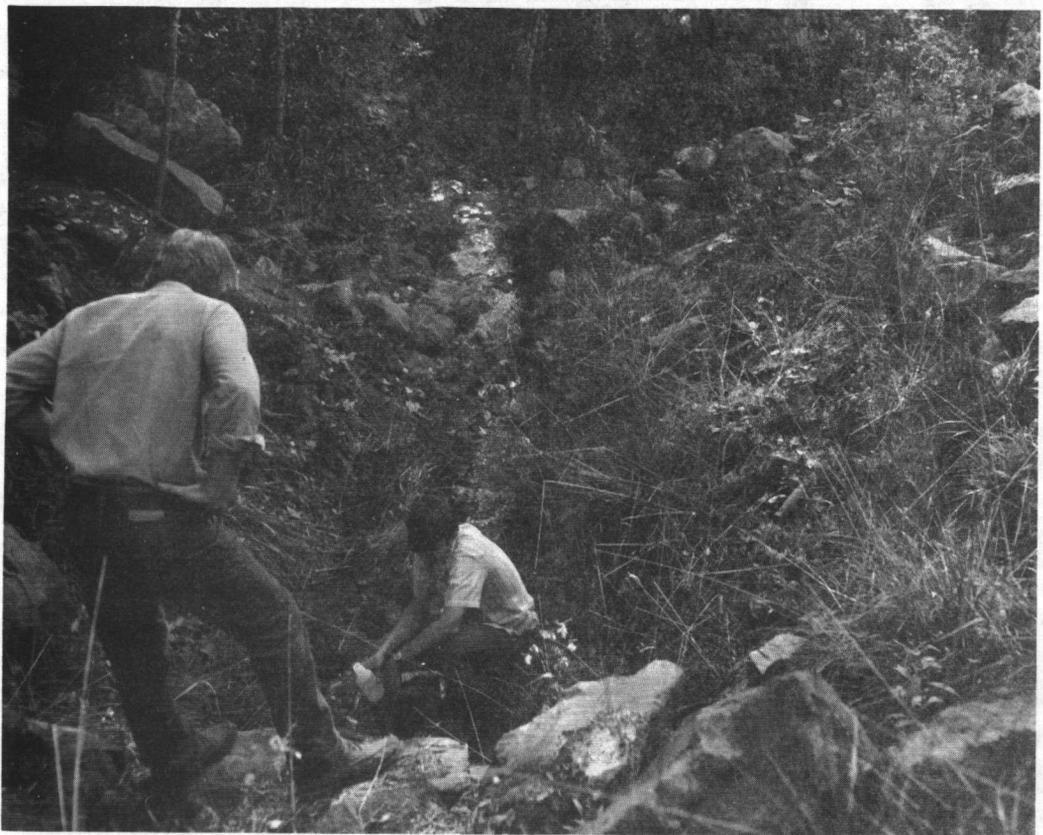
[Illegible Paragraph 16]

[Illegible Paragraph 17]

[Illegible Paragraph 18]

[Illegible Paragraph 19]

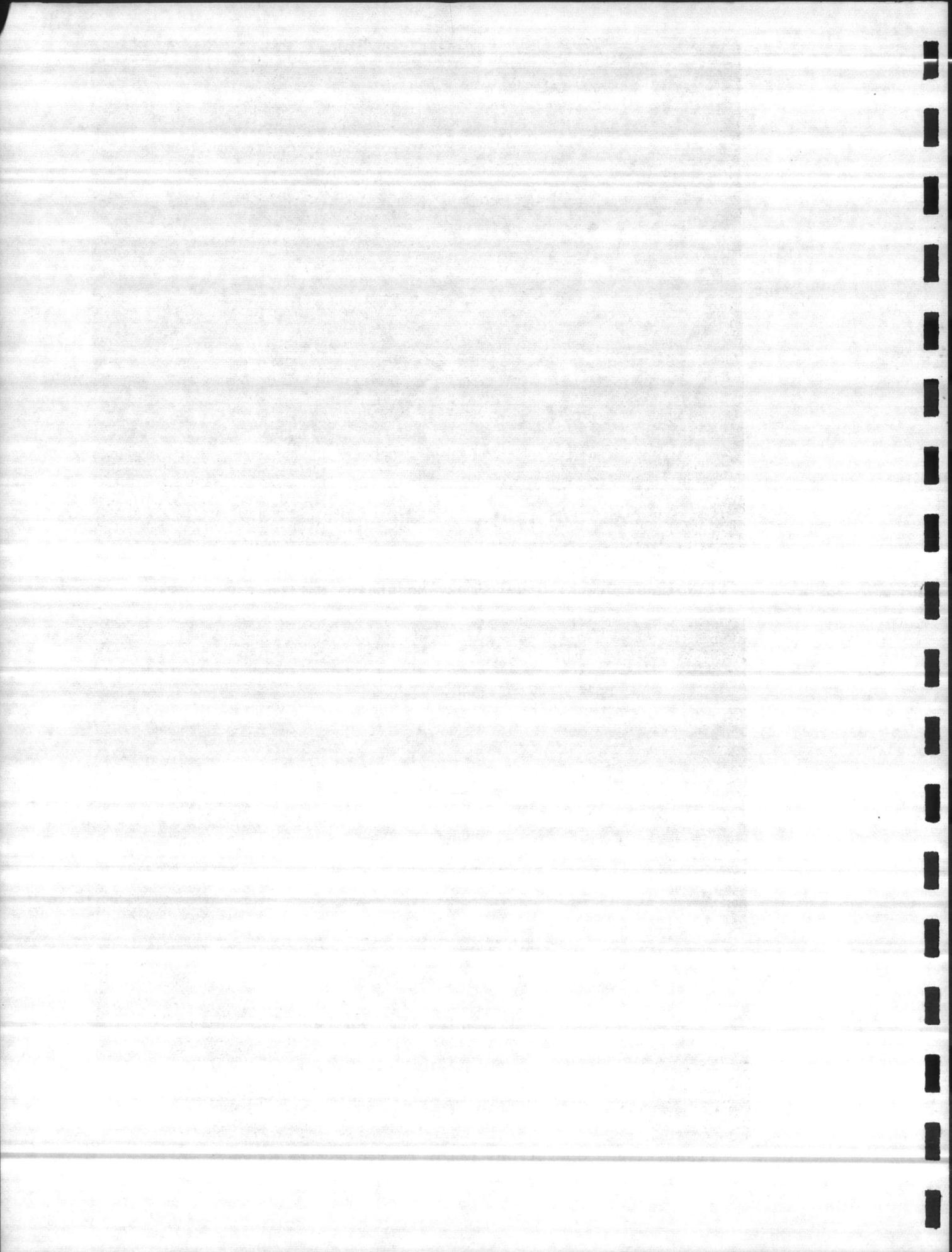
[Illegible Paragraph 20]



Checking acid pollution from road construction in a tributary of Nolands Creek, Great Smoky Mountains National Park, Tenn.



Fish salvage operations prior to reclaiming Sanders Spring Lake, Fort Knox, Kentucky.



## SUMMARY OF 1972 ACCOMPLISHMENTS

The Cherokee Indian fishery management program continued to provide increased recreational fishing opportunities on the Reservation. The 60 miles of streams and three lakes provided a total of 68,744 man-days of fishing, a 33 percent increase over 1971. An estimated \$600,000 was generated to the Cherokee community as a result of this outstanding program.

Active management programs continued on six National Forests and seven National Parks to improve the fisheries in 9,092 acres of lakes, and 5,233 miles of streams. These waters furnished an estimated 1,838,996 man-days of fishing.

Division programs on National Wildlife Refuges included providing technical fishery assistance in the management of 116,605 acres of lakes and 75 miles of streams. A total of 494,299 man-days of recreational fishing was expended on these waters in 1972.

The Division assisted in the fishery management of 8,031 acres of lakes and 467 miles of streams on Department of Defense lands that provided 980,966 man-days of fishing in 1972. The cooperative evaluation study of three species of catfish was continued in ponds located on Fort Gordon Army Base under the guidance of the Georgia Cooperative Fishery Unit Leader, Athens, Georgia. The investigation is revealing valuable information relating to catfish management programs in Region 4.

CONFIDENTIAL

The following information is being furnished to you for your information only. It is not to be disseminated outside your organization. This information is the property of the United States Government and is loaned to you. It and its contents are not to be distributed, copied, or otherwise made available to unauthorized persons. If you are not an authorized recipient, you should not read this document. If you are an authorized recipient, you should read this document in accordance with the instructions on the cover page. If you have any questions regarding this document, you should contact the person named on the cover page. If you have any questions regarding the information contained in this document, you should contact the person named on the cover page. If you have any questions regarding the information contained in this document, you should contact the person named on the cover page.

Division personnel provided technical advice for the management of 478 acres of lakes and one mile of stream on Veterans Administration, and miscellaneous federal and private lands which provided 16,400 man-days of fishing during the year.

Studies on effects of pesticides and pollution were accomplished in several areas in the Region. Three hundred and thirty-four samples of fish from 21 stations were collected in 1972 under the National Pesticide Monitoring of Fish Program. This included replication of samples for one of the species at each station. Analysis of fish species included determinations for lipids, PCBs, mercury, and organochlorine insecticides as well as lead, arsenic, selenium, and cadmium. This phase of the pesticide program continues to become increasingly important as the concern for the protection of the environment grows. In addition, 60 samples of fish, crabs, and sediments were taken from the Cape Fear River, North Carolina, to determine mercury or selenium residues.

Cooperative fishery investigations with the Tennessee Game and Fish Commission on Dale Hollow Reservoir were continued for the seventh year. Creel censusing revealed 101,049 man-days of fishing occurred on this 27,000 acre reservoir in 1972. The program emphasizes development and evaluation studies for establishing trout management guidelines in "two-story" reservoirs. Data are being analyzed and a final report is being prepared.

The first part of the report is devoted to a general description of the project and its objectives. It is followed by a detailed account of the work done during the period covered by the report. The results of the work are then presented and discussed. Finally, the report concludes with a summary of the work done and a list of references.

The project was carried out under the supervision of the Director of the Institute of Technology, who is thanked for his kind interest and support. The work was done in the Department of Applied Science, and the assistance of the staff of this department is gratefully acknowledged.

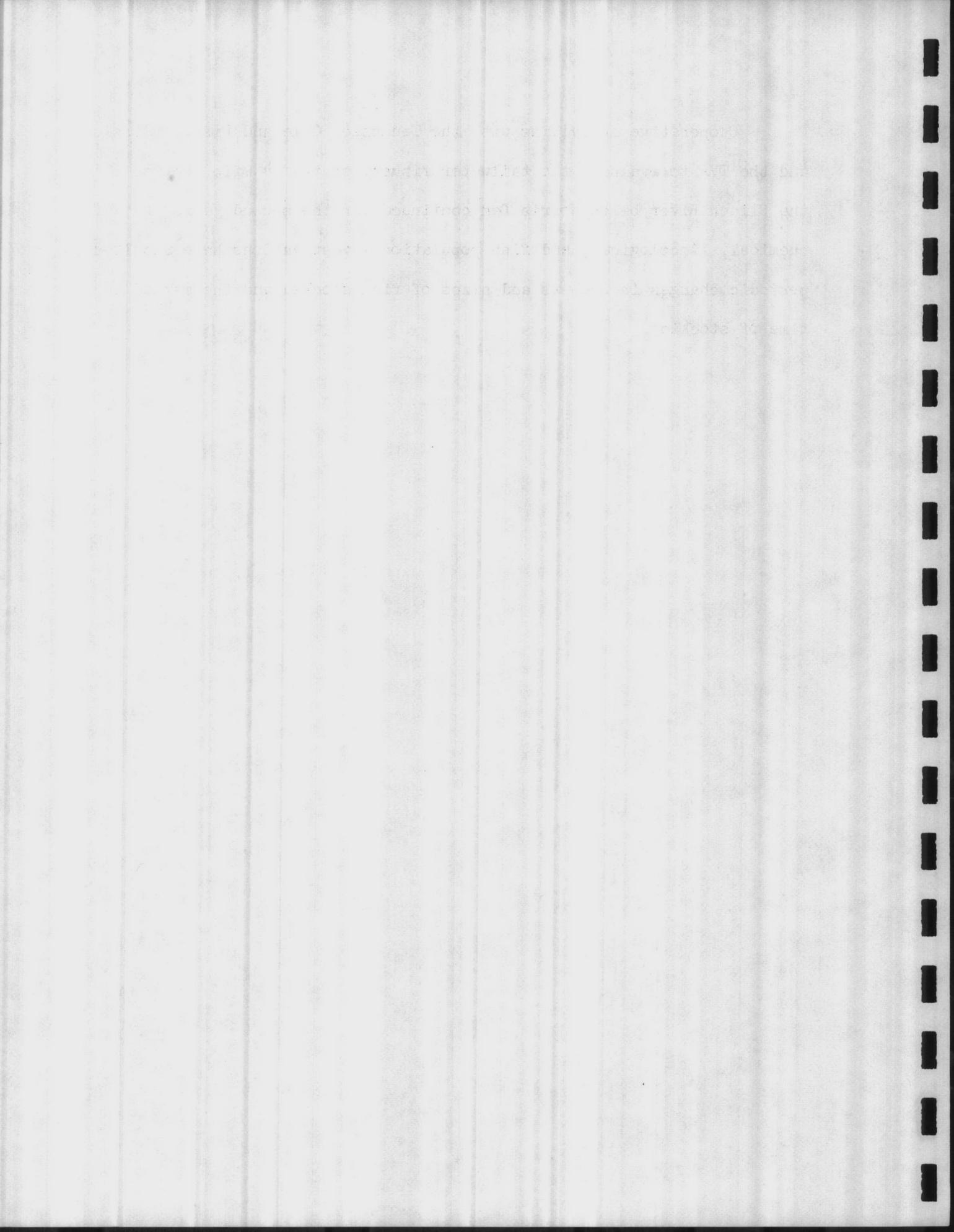
The work was done during the period from 1st January to 31st December 1964. The results of the work are presented in the following sections.

The first section is devoted to a general description of the project and its objectives. It is followed by a detailed account of the work done during the period covered by the report. The results of the work are then presented and discussed. Finally, the report concludes with a summary of the work done and a list of references.

The project was carried out under the supervision of the Director of the Institute of Technology, who is thanked for his kind interest and support. The work was done in the Department of Applied Science, and the assistance of the staff of this department is gratefully acknowledged.

The work was done during the period from 1st January to 31st December 1964. The results of the work are presented in the following sections.

Cooperative activities with the Tennessee Game and Fish Commission and the TVA to evaluate the tailwater fishery on the 14 mile section of the Clinch River below Norris Dam continued for the second year. Data from chemical, limnological, and fish population investigations have resulted in periodic changes in numbers and sizes of fish stocked and the method and time of stocking.



## FISHERY MANAGEMENT ACTIVITIES ON FEDERAL AREAS

### DEPARTMENT OF DEFENSE AREAS

During 1972 high interest in fishery management programs on military installations prevailed. Many installations now consider these programs an integral part of their operations. Since inception of the Secretary of Defense Award Program (1962), a military installation located in Region 4 has been awarded this honor every year except in 1967 and 1971. For six of the ten years this award has been presented, one or both of the "runners up" installations were located in this Region. This outstanding record depicts the dedicated determination with which the military program personnel view this award and the sincere effort they expend in developing quality conservation programs. It is felt that the Division has indirectly contributed to generating this dedicated interest and quality management through our technical assistance program to these installations.

In 1972 Division personnel provided technical assistance for fishery management programs on 59 Department of Defense installations (Air Force, Army, Navy and Marine). Intensive management practices were applied to 8,031 acres of lakes and some 467 miles of streams. Additional lakes and streams were surveyed and general recommendations for management formulated. These waters provided in excess of 980,000 man-days of recreational fishing during the year.

THE HISTORY OF THE UNITED STATES

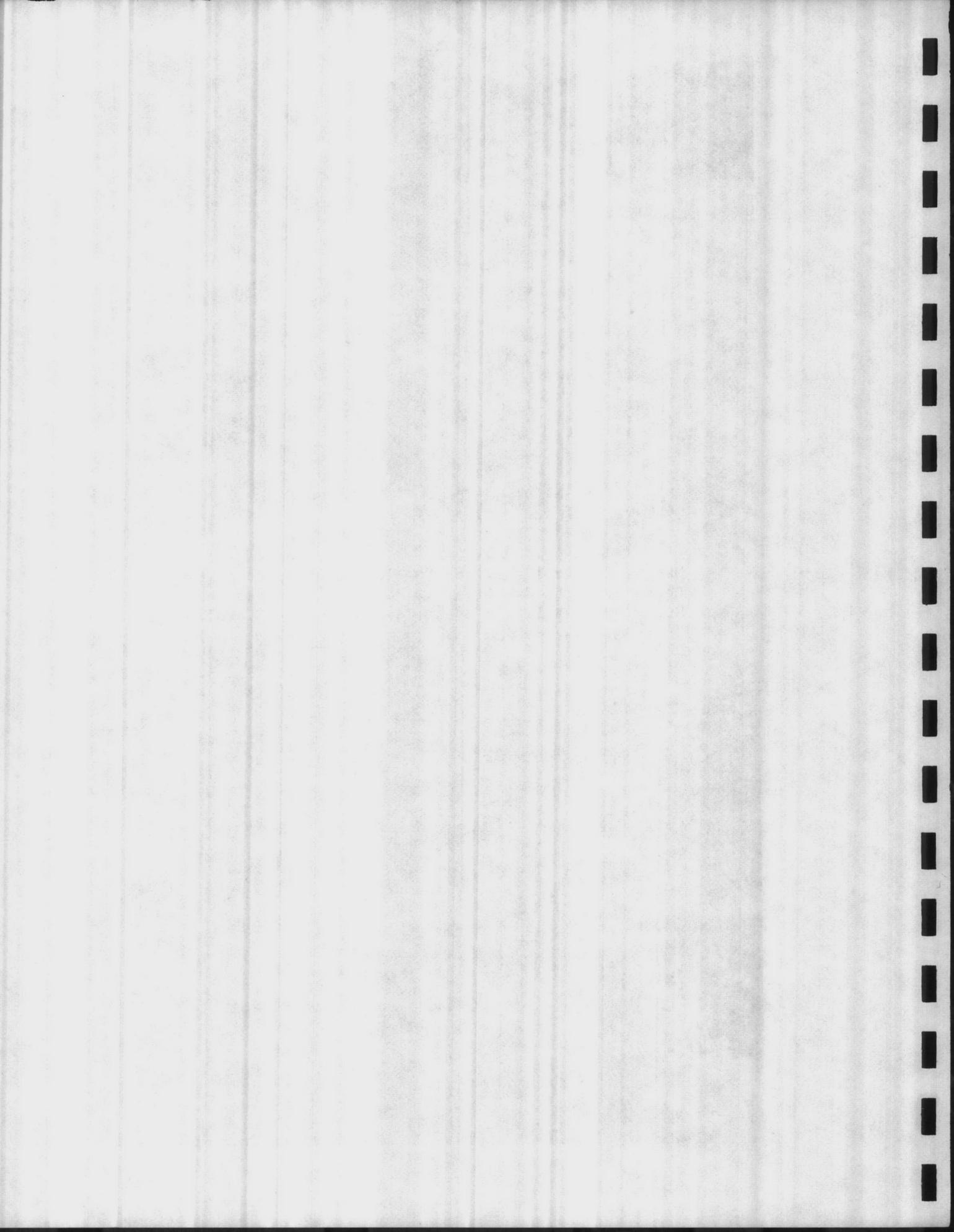
CHAPTER I

The first part of the history of the United States is the history of the colonies. The colonies were first settled by Englishmen in 1607. They were at first dependent on England for their supplies and for their protection. But as the colonies grew in number and in size, they began to assert their independence. They demanded that they should be able to elect their own representatives to the legislature. They demanded that they should be able to make their own laws. They demanded that they should be able to control their own trade. They demanded that they should be able to defend themselves. They demanded that they should be able to govern themselves. They demanded that they should be able to live in peace and harmony with each other. They demanded that they should be able to live in peace and harmony with the world. They demanded that they should be able to live in peace and harmony with the future.



Making chemical analyses in (Top) a new pond on Camp Lejeune, North Carolina, & (Bottom) a cypress lake on Sunny Point Military Ocean Terminal, North Carolina.





Military installation commanders, in general, continue to express high interest in fishery programs, and the consideration and support which Division biologists received from military fish and wildlife staffs during 1972 were truly gratifying. Management activities included renovation and restocking 220 surface acres of ponds and one and one-half miles of streams, and the development of 18 acres of new management waters. Interest in intensive management of channel catfish on a fed basis continued to increase, especially on those areas having limited water resources. Extremely heavy fishing pressure can be sustained on each acre of manageable water with this type of program.

Accomplishments in catfish management during the year included continued cooperative studies by Regional Office, Southeast Fish Cultural Research Laboratory, and Georgia Cooperative Fishery Unit personnel to compare the survival, growth and seasonal catchability of three species of catfish (blue, channel and white) in ponds on Fort Gordon, Georgia, and to compare management of channel catfish in a 25-acre pond with that of blue catfish in a 28-acre pond on Fort Benning, Georgia. Both are providing information which will enhance catfish management programs.

Additionally, a simplified method of applying antimycin to selectively control undesirable species in catfish ponds was evaluated. Reclamation of Department of Defense waters this year was primarily concerned with selective elimination of competing fish from intensively managed catfish ponds.

Faint, illegible text, possibly bleed-through from the reverse side of the page.



In general, the cooperative sport fishery management programs on Department of Defense installations persist as an extremely important part of the Division program in Region 4. The interest and success in military programs is exemplified and materially enhanced by the increasing number of full-time fish and wildlife coordinators employed by the installations. Future planning for Division activities will include continued evaluation of individual Department of Defense programs and realignment of activities to assure adequate assistance on those areas with the potential, need, and desire for further improvement.

Faint, illegible text, possibly bleed-through from the reverse side of the page.

VETERANS ADMINISTRATION

Participation by this Division with the Veterans Administration facilities in 1972 included technical assistance in management of four lakes encompassing 12 acres. These resources sustained 8,089 man-days of angling by ambulatory patients and hospital personnel at the Bay Pines, Florida; Mountain Home, Tennessee; and the Roanoke, Virginia, Veterans Administration Hospitals.

The programs have proved over the years to be of great value as recuperative therapy for the hospitalized, and facility personnel continually strive to improve fishing programs as funds become available. Fishing for trout, catfish, bass, bluegill, and redear is provided in these programs.

CONFIDENTIAL

The following information was obtained from a confidential source who has provided reliable information in the past. It is being provided to you for your information only. This information is being provided to you on a confidential basis and is not to be disseminated to any other person without the express written consent of the person to whom this information was originally provided.

The information is being provided to you for your information only and is not to be disseminated to any other person without the express written consent of the person to whom this information was originally provided.

The information is being provided to you for your information only and is not to be disseminated to any other person without the express written consent of the person to whom this information was originally provided.

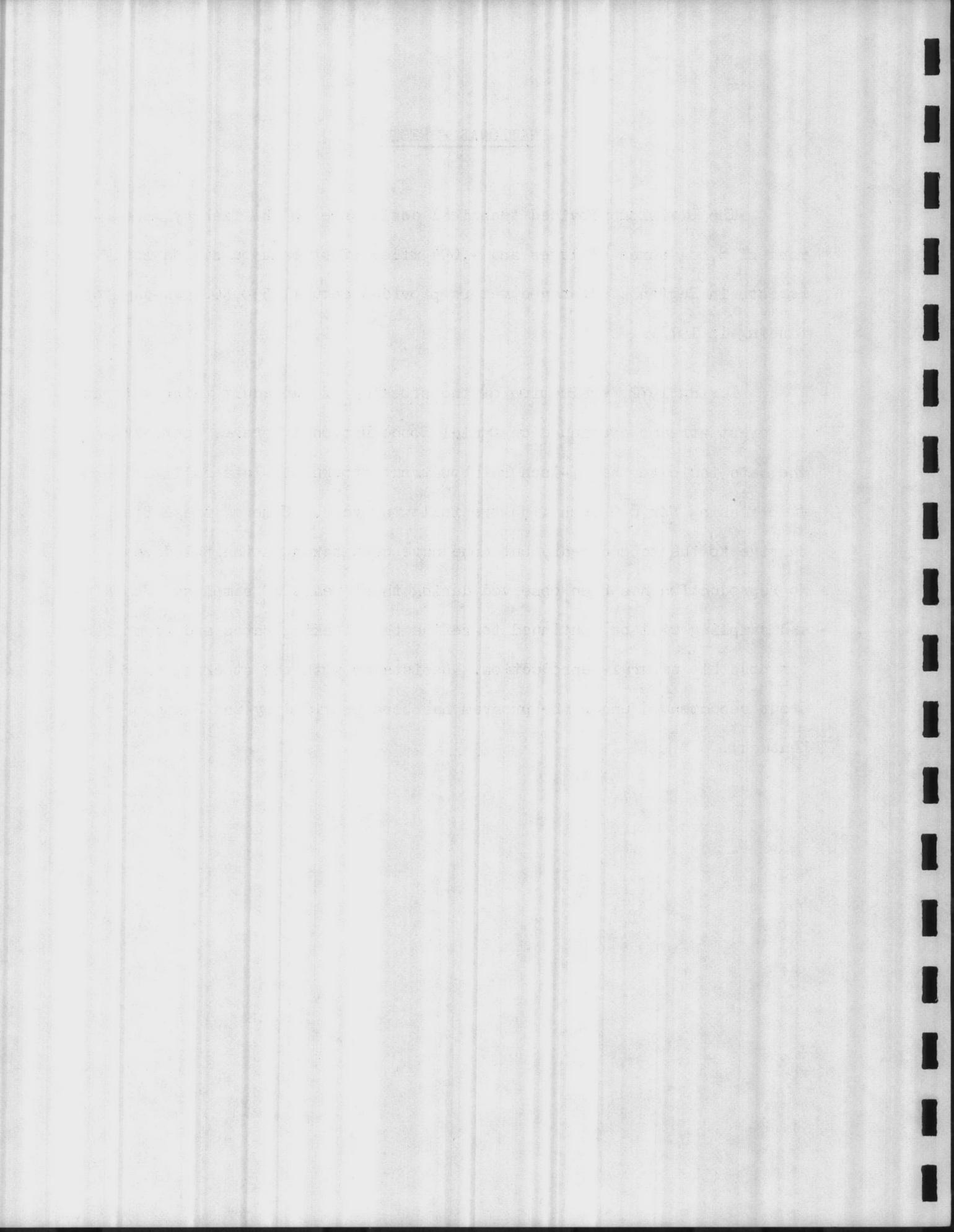
The information is being provided to you for your information only and is not to be disseminated to any other person without the express written consent of the person to whom this information was originally provided.

The information is being provided to you for your information only and is not to be disseminated to any other person without the express written consent of the person to whom this information was originally provided.

## NATIONAL FORESTS

The Division provided technical assistance in the fishery management of 8,881 acres of lakes and 4,094 miles of streams on six National Forests in Region 4. Managed waters provided about 1,558,500 man-days of fishing in 1972.

During 1972, evaluation of the stocking of sub-adult rainbow trout in Forest streams continued on Daniel Boone National Forest, Kentucky. The data indicate that 7-inch rainbow trout stocked in late fall will provide fishing for 8-9 inch fish the following year. Some of these fish survive to the second year, but none have been taken in the third year. No reproduction has been observed during three years of sampling. Stocking and sampling will be continued to refine the stocking rates and to monitor for possible natural reproduction. Assistance with the stocking of catchable trout recommended under the program has been provided by the State of Kentucky.



## NATIONAL PARKS

During 1972 Division personnel assisted in providing technical fishery management assistance to seven National Parks in Region 4. The areas included 210 acres of lakes and 1,139 miles of streams on which an estimated 280,496 man-days of angling occurred.

### Blue Ridge Parkway, North Carolina and Virginia

Waters on the Blue Ridge Parkway, 112 miles of streams and 13 lakes (121 acres), provided an estimated 31,780 man-days of fishing in 1972. The majority of the fishing is provided by Peaks-of-the-Otter Lake, Rock Castle Gorge, Doughton Park, Cone Park, Price Park, and Linville Falls Recreation Areas. Angling was excellent this year for the three species of trout and for warm water species in some of the lakes. The slight increase in angling pressure is attributed to a change in regulations which permitted bait fishing at the Linville Falls Recreation Area.

Technical assistance provided by the Division included planning and coordinating the stocking of 52,675 trout in 1972, stream and lake surveys and creel census interviews. The Division also assisted in gathering fishery resources data relative to the proposed Georgia Extension of the Parkway and in formulating fishing regulations.

WATER

The water supply for the city of New York is derived from the Catskill and Delaware watersheds. The water is treated at the Croton and Shawangunk water treatment plants and is distributed to the city through a system of pipes and tunnels. The water is of high quality and is safe to drink.

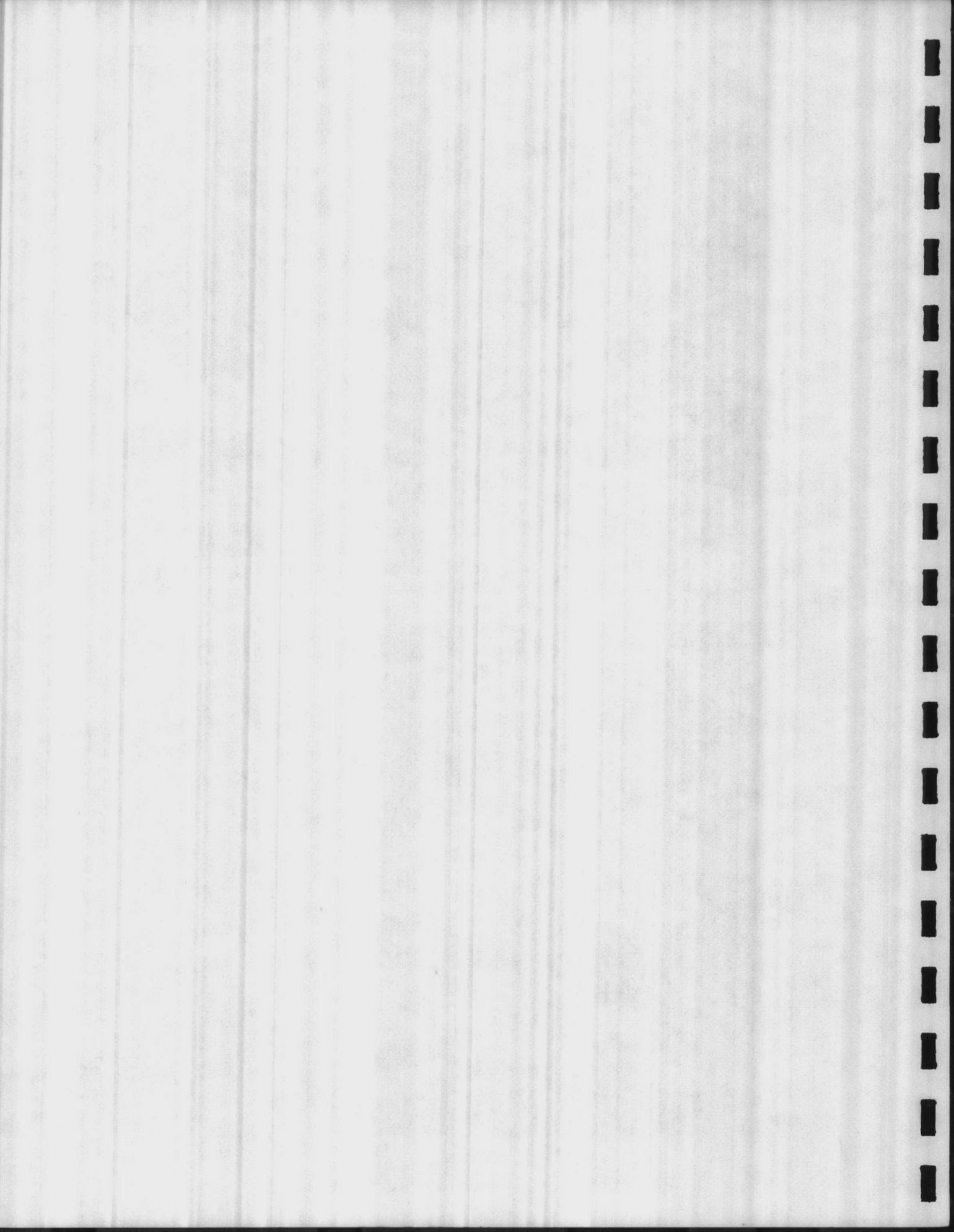
The water supply for the city of New York is derived from the Catskill and Delaware watersheds. The water is treated at the Croton and Shawangunk water treatment plants and is distributed to the city through a system of pipes and tunnels. The water is of high quality and is safe to drink.

The water supply for the city of New York is derived from the Catskill and Delaware watersheds. The water is treated at the Croton and Shawangunk water treatment plants and is distributed to the city through a system of pipes and tunnels. The water is of high quality and is safe to drink.



Blue Ridge Parkway, North Carolina & Virginia, opening day of trout fishing: (Above) Boone Fork in Price Park; (Below) Trout Lake in Cone Park.





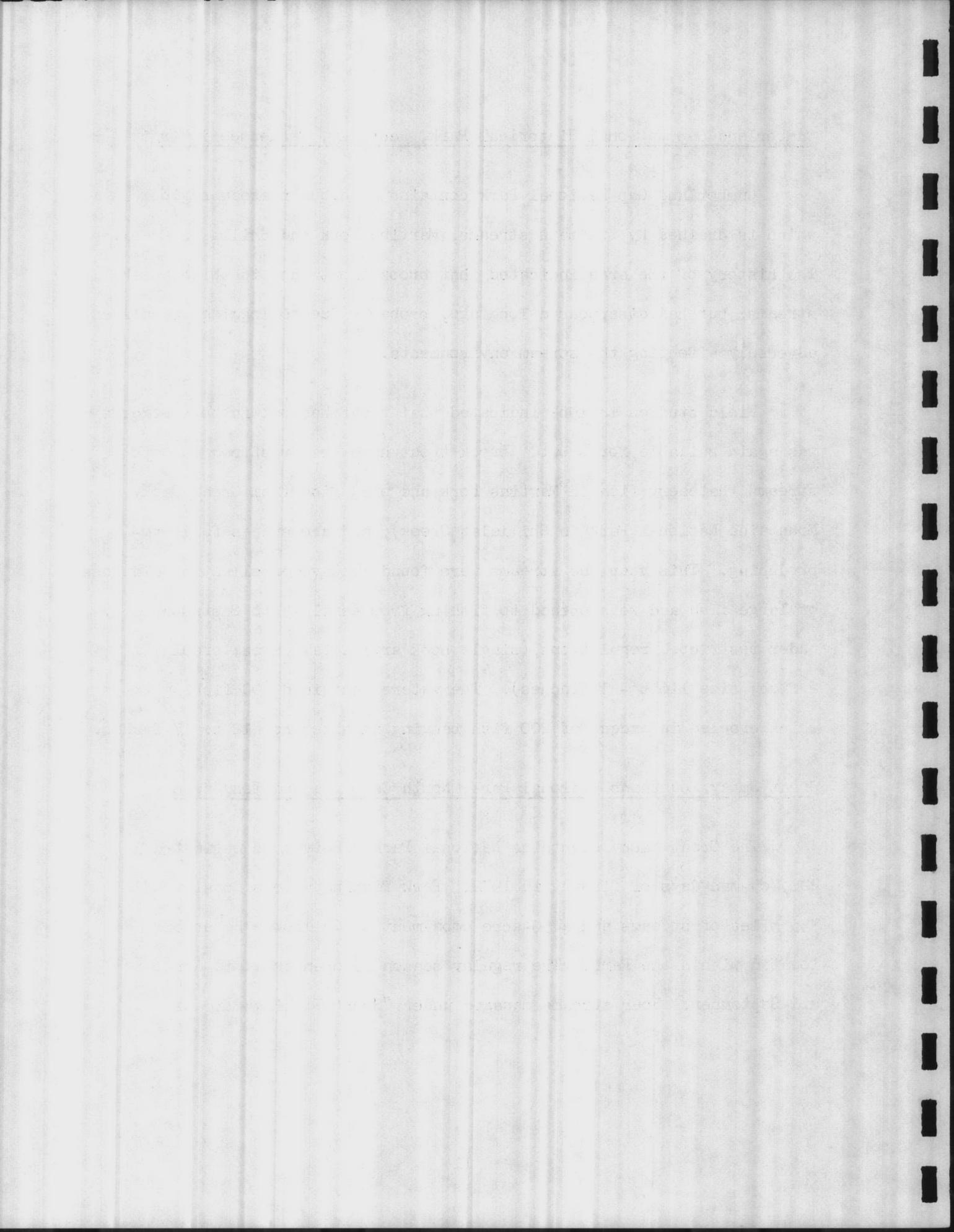
Cumberland Gap National Historical Park, Kentucky, Tennessee & Virginia

Cumberland Gap National Park contains a unique plateau region which is drained by two main streams, Martins Fork and Shillalah Creek. The history of the area indicated that brook trout once inhabited both streams, but had disappeared long ago, probably due to logging operations adversely affecting the stream environments.

Field studies in 1967 indicated that trout habitat in both streams was again suitable for trout. Brook trout have been restored to both streams (hatchery fish in Martins Fork and wild fish from Great Smoky Mountains National Park in Shillalah Creek), and are successfully reproducing. This year the streams were found to have excellent populations of large fish and were opened to fishing from April 15 to September 15 under restricted regulations (single hook artificial lures; creel limit - 2 fish; size limit - 12 inches). The waters sustained 800 fishing trips which creeled in excess of 200 fish ranging in size from 12 to 17 inches.

Great Smoky Mountains National Park, North Carolina and Tennessee

The Great Smoky Mountains National Park received an estimated 226,785 man-days of fishing in 1972. Park fishing waters consist of 735 miles of streams and a 50-acre embayment of Chilhowee Reservoir located within the Park. The regular season is open from mid-April to mid-September. Four streams managed under "Sport Fishing Streams"



regulations are open the entire year. This program is essentially catch and release because of the 16-inch minimum size limit. Anglers from all regions of the country are attracted to the Park to fish for wild trout. Fishing is considered outstanding by most of the anglers interviewed. About 90 percent of the catch is made up of rainbow trout, followed by brook trout, smallmouth bass, and rock bass.

Field activities included studies associated with stream and lake fish populations, creel census, brook trout distribution, experimental stocking and evaluation, and investigations of aquatic resources. Planning for and directing the release of 55,300 adult and sub-adult trout were completed into about 50 miles of stream with poor reproduction. Additional activities included cooperation with the Oak Ridge National Laboratory in determining mercury levels in fish from isolated Park streams and investigations to determine sources of acid pollution in several streams.

The biologist utilized Job Corpsmen from the Park Conservation Center in the stocking and fish marking operations. Students from the Student Conservation Corps were also used to sample fish populations. The fishery biologist and biological aide presented fishing demonstrations, slide talks, and field trips concerning stream ecology to students attending the Tremont Environmental Center located in the Park. Annual, monthly, and special reports were prepared for the Park.

Faint, illegible text, possibly bleed-through from the reverse side of the page. The text is arranged in several paragraphs and is too light to transcribe accurately.

Prince William Forest Park, Virginia

Fish population sampling in two streams indicated over-winter survival of brown trout but not of rainbow trout. Fishermen reported catching rainbows larger than those stocked in 1972, indicating some carry over. Angling pressure increased to 10,328 in 1972, a 37 percent increase over 1971. The trout stocking program fulfills the demands of an urban population for this type of fishery without the necessity of traveling to the mountains of central and western Virginia.

Shenandoah National Park, Virginia

The survey of fish populations in Park streams initiated in October 1971 was continued this year with the sampling of 16 more streams in the north section of the Park. This completes work on 25-30 percent of all streams to be checked. Trout populations again appeared high and average rainfall was above normal. Angling pressure did not change in spite of the excellent populations of fish.

The first part of the document discusses the importance of maintaining accurate records. It emphasizes that proper record-keeping is essential for the effective management of any organization. This section also outlines the various methods used to collect and analyze data, highlighting the need for consistency and reliability in the information gathered.

Section 2: Data Analysis and Interpretation

This section provides a detailed analysis of the data collected during the study. It includes a series of tables and graphs that illustrate the trends and patterns observed. The analysis shows that there is a significant correlation between the variables studied, and these findings have important implications for the field of research.

The final part of the document concludes the study and offers recommendations for future research. It suggests that further investigation is needed to explore the underlying causes of the observed phenomena. The author also expresses gratitude to the participants and the funding agency that supported this research.

## NATIONAL WILDLIFE REFUGES

Assistance was provided in the management of 116,605 acres of lakes and 75 miles of streams on fourteen National Wildlife Refuges in 1972. These waters received 494,229 man-days of angling. Intensive management in suitable waters directed toward providing increased public fishing, when compatible with waterfowl management, has become an integral part of most refuge programs within the Bureau.

### Mattamuskeet National Wildlife Refuge, North Carolina

The North Carolina Cooperative Fishery Unit has worked cooperatively with the Division of Wildlife Refuges in managing the fishery resources of this 40,000 acre lake that provided 25,466 man-days of fishing in 1972.

This area provides important sport and commercial fishing, and work here will continue in both investigation and management phases. Implementation of recommendations from studies by North Carolina Cooperative Fishery Unit personnel is resulting in more effective management of fish populations in the lake - catches of striped bass are largely the result of fish which are stocked from Bureau Hatcheries, and exploitation of alewife runs is now regulated to a degree that permits a larger percentage of this species to reach spawning areas in the lake and successfully perpetuate the fishery.

### Loxahatchee National Wildlife Refuge, Florida

Water levels on the Refuge in 1972 were materially improved over those encountered under drought conditions last year. While moderate

MEMORANDUM FOR THE RECORD

On 10/10/54, the Board of Directors of the American Telephone and Telegraph Company, Inc. (AT&T) met in New York City to discuss the proposed acquisition of Western Union Telegraph Company (WU) by AT&T. The Board considered the proposal and the financial and operational aspects of the acquisition. The Board's attention was drawn to the fact that WU is a public utility and that its acquisition by AT&T would result in a change of control of a public utility. The Board also considered the fact that WU is a company with a long history of service to the public and that its acquisition by AT&T would result in the loss of this service to the public.

The Board discussed the proposal and the financial and operational aspects of the acquisition. The Board's attention was drawn to the fact that WU is a public utility and that its acquisition by AT&T would result in a change of control of a public utility. The Board also considered the fact that WU is a company with a long history of service to the public and that its acquisition by AT&T would result in the loss of this service to the public.

The Board discussed the proposal and the financial and operational aspects of the acquisition. The Board's attention was drawn to the fact that WU is a public utility and that its acquisition by AT&T would result in a change of control of a public utility. The Board also considered the fact that WU is a company with a long history of service to the public and that its acquisition by AT&T would result in the loss of this service to the public.

fluctuation of the water level enhances the "natural" management of the fish population through concentrating the fish and consequent increased predation, drastic conditions as encountered in 1971 can have severe effects on the fishery. This is evidenced by a reduction in fishing to 215,537 man-days this year. A minimum level, below which the conservation pool will not be reduced, should be established.

Wapanocca National Wildlife Refuge, Arkansas

Some 49,200 angling trips were provided by Wapanocca Lake (600 acres) this year. This is slightly lower than last year due to increasing infestation of coontail which is restricting boating and fishing. Sampling indicated channel catfish stocked in 1968 have attained a total length of 22.0 to 24.0 inches. These fish have provided excellent fishing during the warmer months. Reproduction of sunfish is excellent, and fishing has been good for adults averaging seven inches. However, bass reproduction and that of channel catfish continues to be low and restocking will be scheduled as it appears necessary.

Big Lake National Wildlife Refuge, Arkansas

In 1971 management was resumed on this 3,500 acre lake which had been practically abandoned by Fishery Services for a number of years due to rough fish and turbidity. The program of stocking six to eight-inch bass and sunfish fingerlings into perimeter canals leading into the lower end of Big Lake was initiated. These clear water nursery areas furnished

Faint, illegible text at the top of the page, possibly a header or introductory paragraph.

Second block of faint, illegible text, appearing to be the main body of the document.

Third block of faint, illegible text at the bottom of the page, possibly a conclusion or footer.

good recruitment of adult bass able to compete successfully with rough species in Big Lake. The fish population inventory in August revealed very good flathead and channel catfish reproduction this year.

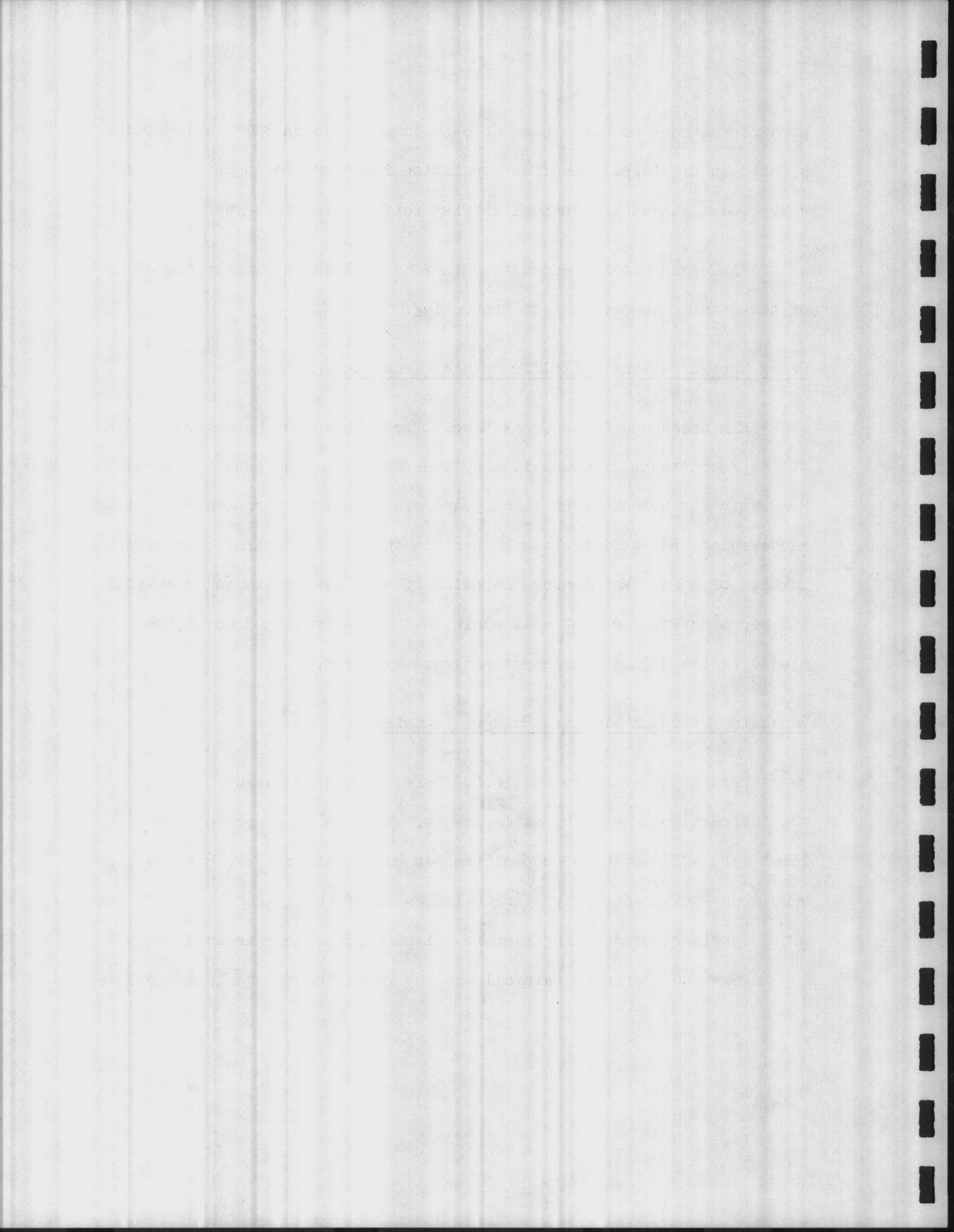
Fishermen use increased to 45,147 in 1972 due to improved quality of the fishing as a result of restocking.

Cross Creeks National Wildlife Refuge, Tennessee

Elk Creek and Cross Creek Reservoirs (875 acres) have been subjected to the recruitment of rough fish by overflows from the adjacent Barkley Reservoir for seven out of eight years since they were renovated. It was recommended that striped bass be stocked in 1973 to control excessive numbers of shad. Maintenance stocking of bass was continued to augment low reproduction success. Six additional ponds (6 to 363 acres) were included in the Refuge management program this year.

Lacassine National Wildlife Refuge, Louisiana

Fish populations in the 16,000 acre freshwater marsh impoundment are indirectly governed by water levels, which in turn are dependent on local rainfall. Species composition was excellent in 1971, but numbers were apparently reduced by a gradual die-off of the larger fishes as the water levels receded during summer. Fishing pressure increased in 1972 due in part to increased rainfall and the resulting favorable water levels.



Sabine National Wildlife Refuge, Louisiana

Pool 3, a shallow 26,000 acre freshwater impoundment, supported excellent fishing for largemouth bass and sunfishes. Sport fishermen continued the use of Refuge canals and tidal streams for crabbing and as a means of access to saltwater areas outside the Refuge. The improved fishing resulted in an increase in fisherman use to 47,347 man-days this year.

A proposed U.S. Soil Conservation Service "Small Watershed Project" will soon affect the eastern portion of the Refuge. Whether the project will benefit or harm fish and wildlife resources remains to be determined.

CONFIDENTIAL - SECURITY INFORMATION

1. The purpose of this document is to provide a comprehensive overview of the current state of the project and to identify the key areas that require attention. The information presented here is based on the most recent data available and is intended for the use of management and other stakeholders.

2. The project has made significant progress since the last report, with several key milestones being achieved. However, there are still a number of challenges that need to be addressed in order to ensure the successful completion of the project. The following table provides a summary of the key areas that require attention:

Area	Current Status	Key Challenges
Financial	On Track	Increased costs due to inflation
Operational	Delayed	Supply chain issues
Human Resources	Stable	Shortage of skilled labor

3. The following table provides a summary of the key areas that require attention:

Area	Current Status	Key Challenges
Financial	On Track	Increased costs due to inflation
Operational	Delayed	Supply chain issues
Human Resources	Stable	Shortage of skilled labor

4. The following table provides a summary of the key areas that require attention:

Area	Current Status	Key Challenges
Financial	On Track	Increased costs due to inflation
Operational	Delayed	Supply chain issues
Human Resources	Stable	Shortage of skilled labor

### OTHER FEDERAL AREAS

Approximately 6,183 man-days of fishing were received on six miscellaneous federal areas upon which the Division provides technical fishery management assistance. The areas include the Carville U.S. Public Health Service Hospital, Louisiana; Goddard Space Center; National Bureau of Standards and NIH (USPHS), Maryland; Harry L. Diamond Laboratory, Virginia; and U.S. Soldiers Home, Washington, D.C., with a combined total of 41 surface acres of lakes. A channel catfish-trout management program at the Soldiers Home in Washington, D.C. provides good fishing with high fisherman use.



## FISHERY MANAGEMENT ON INDIAN RESERVATIONS

In Region 4, three reservations receive Bureau assistance in managing Tribal sport fishing programs. Combined reservation water resources under management amount to 59 acres of lakes and 94 miles of streams on which 72,144 man-days of fishing were expended in 1972.

### Cherokee Indian Reservation, North Carolina

A fishery management program was initiated on the Reservation in 1964 with part-time technical assistance from the Bureau. In 1967, a Division office was established on the Reservation and staffed with a fishery biologist and a fishery aide to provide full-time technical assistance for the general operation of the program.

The enterprise fishing waters, managed waters on which non-Indians are charged a fee to fish, consist of 30.3 miles of stream and three ponds (6 acres). An additional 29.7 miles of stream are reserved for Tribal members only. Field activities include stream population surveys, stream improvement, creel census, angler interviews, planning and construction of ponds and recreation facilities, experimental stocking and evaluation, and investigations of aquatic resources.

A total of 268,608 trout were stocked on the Reservation this year and an estimated 255,378 fish were caught. The creel limit of ten fish was continued, and the average creel was 4.8 fish. The total fishing

THE HISTORY OF THE UNITED STATES

The first part of the history of the United States is the period of the early settlement of the eastern coast. This period is characterized by the arrival of the Pilgrims in 1620 and the establishment of the Plymouth colony. The Pilgrims were a group of English Puritans who sought religious freedom in the New World. They arrived on the ship the Mayflower and established a settlement in what is now Plymouth, Massachusetts. The Pilgrims faced many hardships, including a harsh winter and a lack of food and shelter. Despite these challenges, they survived and their colony became a model of self-governance. The Pilgrims' story is a testament to the courage and determination of the early settlers.

The second part of the history of the United States is the period of the American Revolution. This period is characterized by the struggle for independence from British rule. The American Revolution began in 1775 with the battles of Lexington and Concord. The colonists, led by George Washington, fought the Battle of the Clouds in 1777 and the Battle of Red Bank in 1778. The Revolution culminated in the signing of the Declaration of Independence in 1776 and the adoption of the Constitution in 1787. The American Revolution was a turning point in the history of the United States, as it established the principles of democracy and self-governance.

The third part of the history of the United States is the period of the westward expansion. This period is characterized by the movement of settlers from the eastern coast to the western frontier. The westward expansion was driven by the desire for land and the search for new opportunities. The pioneers traveled along the Oregon Trail and the Santa Fe Trail, facing many hardships and dangers. The westward expansion led to the discovery of gold in California and the establishment of new states. The westward expansion was a crucial part of the history of the United States, as it shaped the nation's identity and expanded its territory.

The fourth part of the history of the United States is the period of the Civil War. This period is characterized by the conflict between the Union and the Confederacy over the issue of slavery. The Civil War began in 1861 with the secession of the Southern states. The Union, led by Abraham Lincoln, fought the Battle of Gettysburg in 1863 and the Battle of Vicksburg in 1863. The Civil War ended in 1865 with the surrender of the Confederacy. The Civil War was a defining moment in the history of the United States, as it led to the abolition of slavery and the preservation of the Union.

The fifth part of the history of the United States is the period of the Reconstruction. This period is characterized by the efforts to rebuild the South and integrate African Americans into society. The Reconstruction began in 1865 with the passage of the Reconstruction Act. The Reconstruction was a period of great struggle and progress, as it led to the passage of the Civil Rights Act of 1866 and the Reconstruction Act of 1867. The Reconstruction was a crucial part of the history of the United States, as it laid the foundation for the modern civil rights movement.

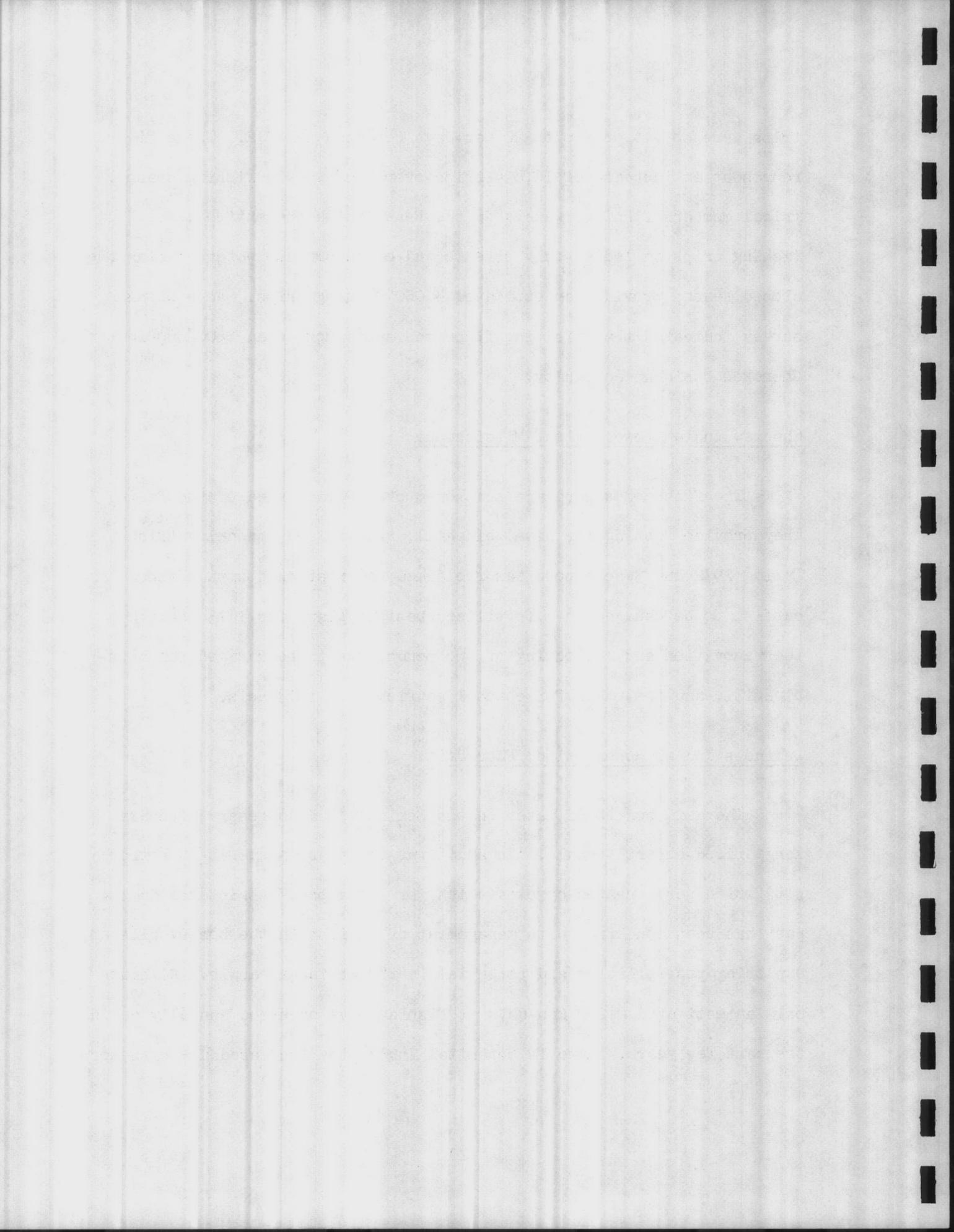
trips were 68,744 or about 320 man-days per acre in 1972. These figures represent an increase of 16,894 trips over last year's fishing season. Tribal members fish all waters on the Reservation the entire year. Indian fishing trips on Indian-only streams and on enterprise waters during the closed season provided an estimated 4,000 fishing trips. An economic survey indicated that visiting fishermen spent more than \$600,000 in the Cherokee business community.

#### Choctaw Indian Reservation, Mississippi

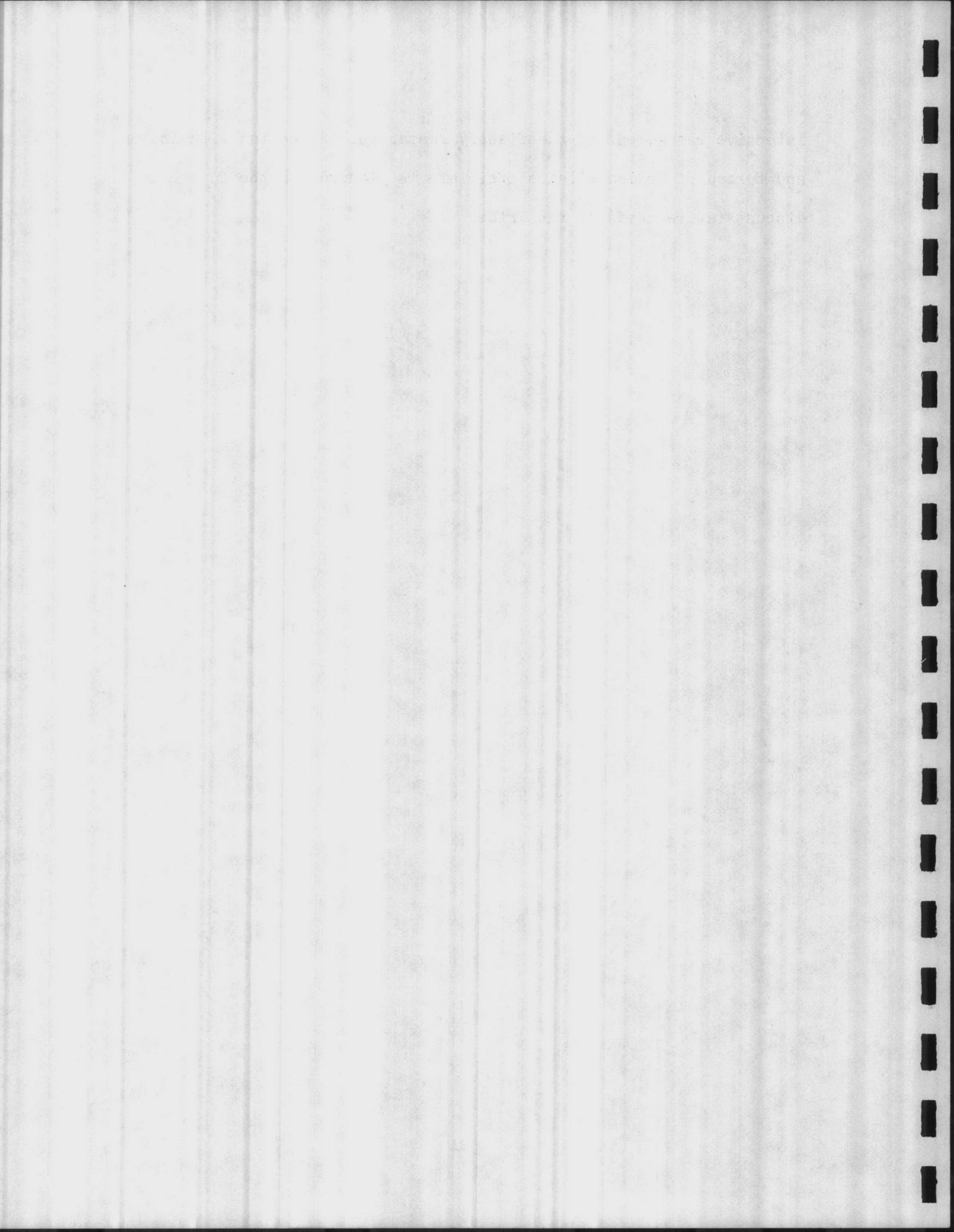
The fish ponds here are scattered over a wide area of the State. They provide fishing for bass, bluegill, redear, and channel catfish. During 1972 one 3 acre pond was reclaimed and restocked with channel catfish to be managed on a fertilized basis. Plans for 1973 include the renovation and restocking of two ponds, one to be managed for bass-bluegill, and the other for channel catfish on a fed basis.

#### Seminole Indian Reservation, Florida

The main bodies of water on the Seminole Indian Reservation are large flood-control canals. In addition, there are a number of borrow pits which were created by excavation for limestone. Assistance in the past has been concerned with management of catfish in the borrow pits and exploring possibilities and potential in the drainage canals. Although only an estimated 2,200 man-days of fishing have occurred annually during the past few years, there is potential for vastly increased use with more



intensive management of the fishery resources. A meeting with Indian and Bureau of Indian Affairs officials is planned for the future to discuss future needs of the Tribe.



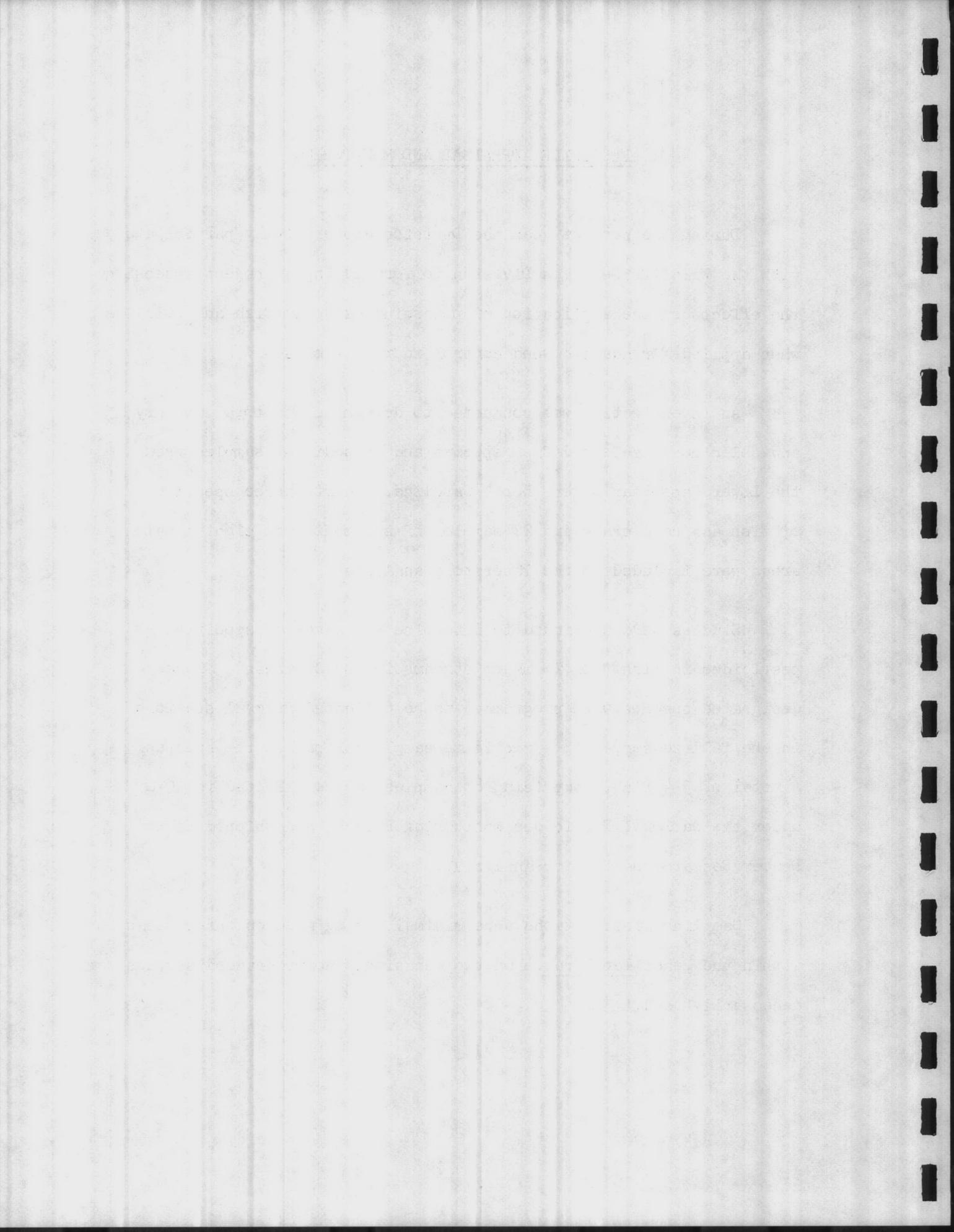
## PESTICIDE APPRAISAL AND MONITORING

During the project year the Division cooperatively participated with the Wildlife Services Division in formulating a project assessing the effects of the application of potassium azide on fish and wildlife when applied for aquatic weed control in rice fields.

An investigation was conducted to determine the total mercury and selenium in selected fish species and in sediment samples from the Lower Cape Fear River, North Carolina. Thirty-three specimens of fish and hard crabs and 27 samples of sediment from eight shoal areas were included in the laboratory analyses.

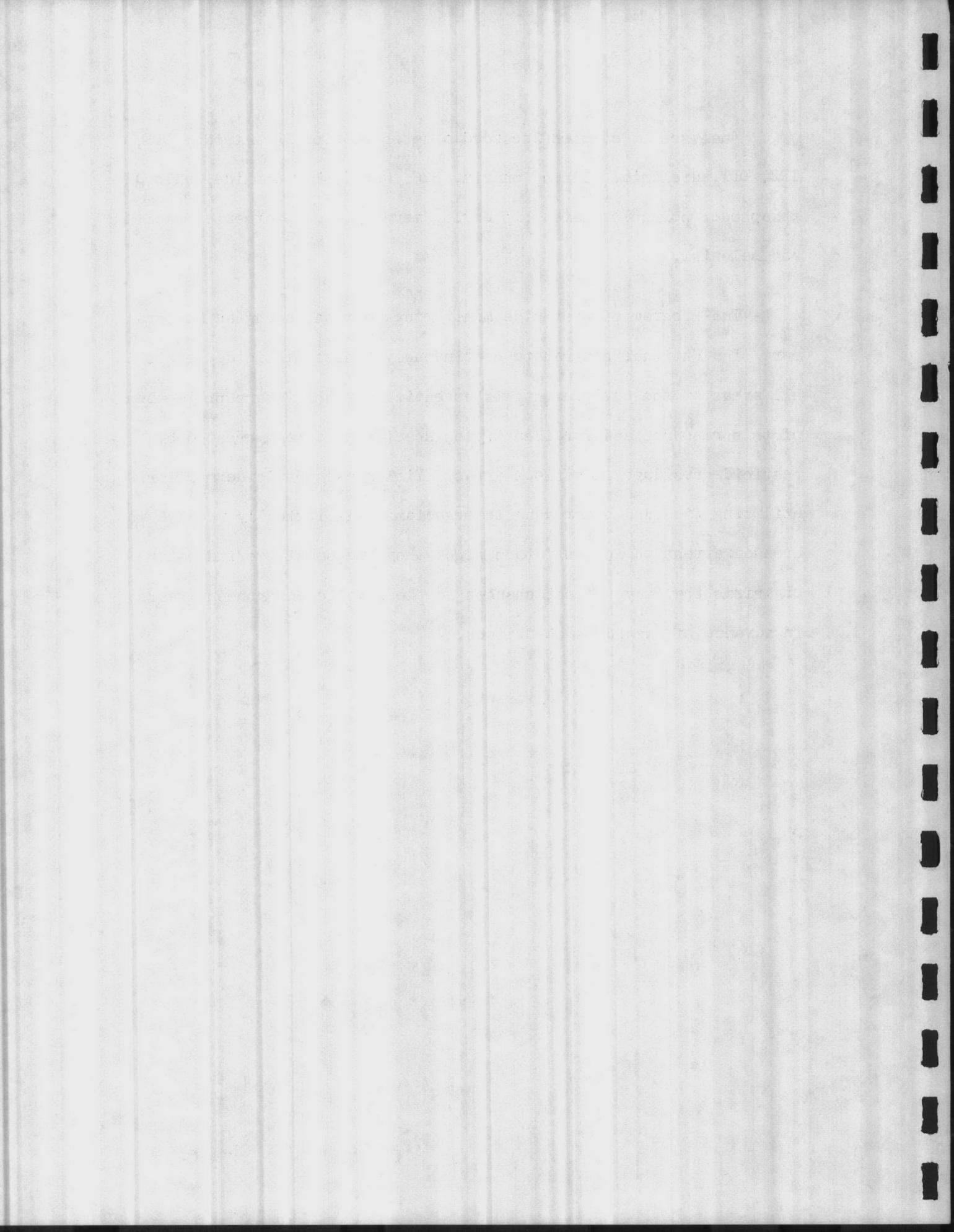
Studies were continued to determine the level of specific pesticides in fish from 20 major streams in the Southeast. Three designated species were programmed to be collected from 21 stations in the fall season, with a replicate sample for one of the species. A total of 334 fish, comprising 86 samples, were collected in 1972 under the National Pesticides Monitoring Program and shipped to the Denver Research Center for analysis.

Sampling substitutions were minimal, being made on three occasions within the genus Ictalurus. On two occasions, nonprogrammed species were necessarily used.



Analyses of samples included a determination for lipids, DDE, TDE, DDT, dieldrin, aldrin, endrin, BHC, heptachlor epoxide, chlordane, toxaphene, polychlorinated biphenyls, mercury, lead, arsenic, cadmium, and selenium.

The program of pesticide monitoring in fish, being an integral part of a National program to continuously assess pesticide levels in all areas of the environment, is essential for the future protection of this resource and for identifying specific problems created by pesticide residues in various areas. Biological pesticide monitoring utilizing fish and other aquatic organisms will logically receive increased attention in the future since they are sensitive indicator organisms that may reflect changes in the aquatic environment years in advance of hazardous conditions.



FISHERY MANAGEMENT ON NON-FEDERAL AREAS

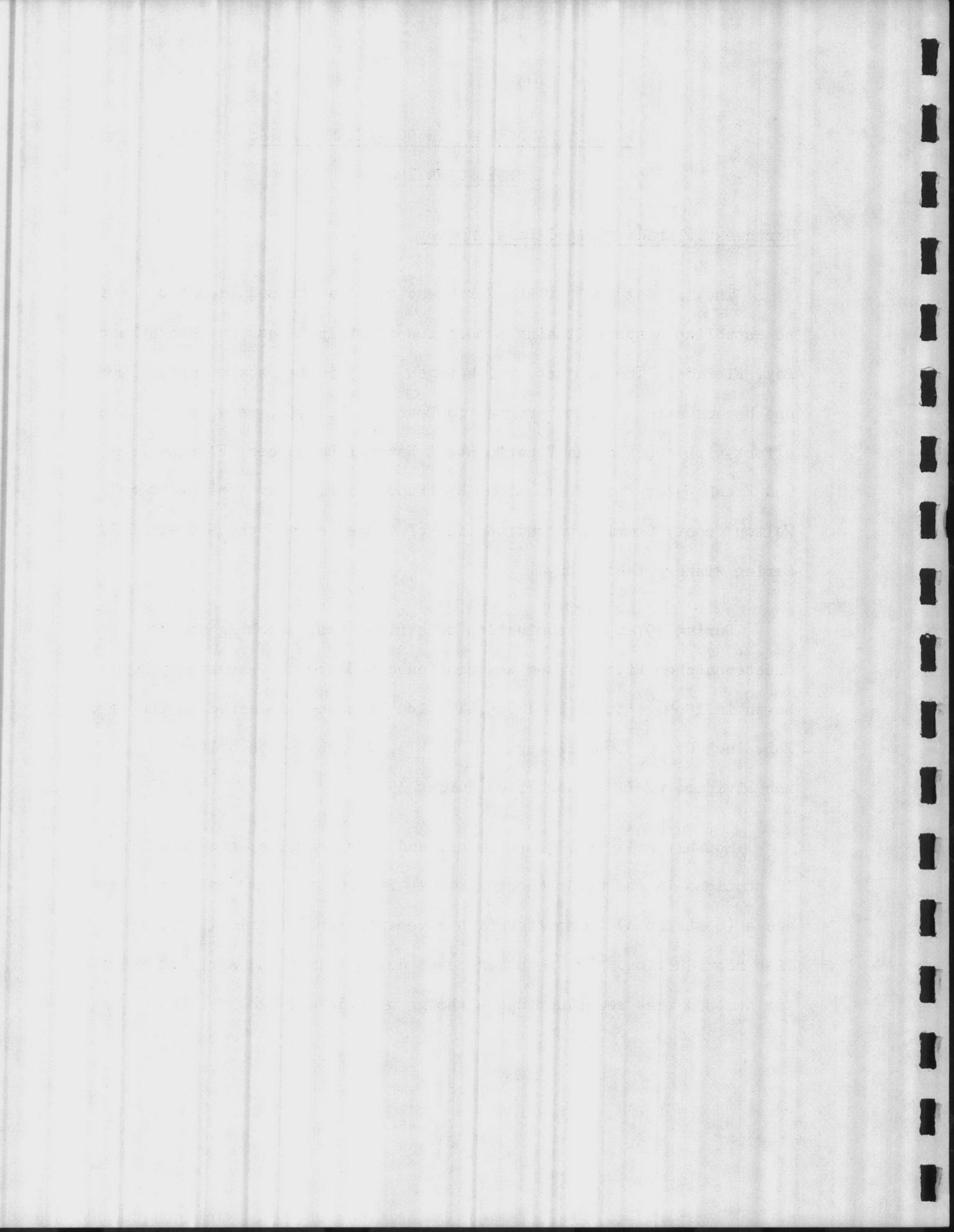
PUBLIC WATERS

Northwest Florida Striped Bass Project

The initial goal of the Northwest Florida Striped Bass Project is to establish a sport fishing population of striped bass in Choctawhatchee Bay, Florida. The project, which began on a limited scale during 1968 and became a full scaled program on November 1, 1970, is a cooperative effort with the Florida Department of Natural Resources, Florida Game and Fresh Water Fish Commission, Northwest Florida Development Council, Walton County Commission and Chamber of Commerce, and the Eastern Gulf Marine Fishery Laboratory.

During 1972, the evaluation of striped bass stocking in the Choctawhatchee River System was continued. Since the stocking program began in 1968, a total of 1,663,417 fish have been released in the Bay. This includes 573,800 fingerlings and 73,200 sub-adults delivered by the Division of Fish Hatcheries during 1972.

Monthly gill net, shore seine, and trawl samples were taken from 12 stations in the upper Choctawhatchee Bay (6 stations) and lower river areas (6 stations) to monitor fish movements, food availability, and fish reproduction. Egg nets were used during March and April to check for striped bass reproduction, although no eggs were collected.





Off loading, tempering and marking striped bass  
for stocking in Choctawhatchee Bay, Florida.



Temperature, dissolved oxygen, pH, salinity, and turbidity were recorded for surface and bottom waters at each sample station.

The first annual report of the study "Economic Impacts of Striped Bass Stocking in Four Counties Located in Northwest Florida" was completed in May 1972. This study, under contract to Georgia State University, estimated that 1,273 striped bass were caught during the last quarter of 1971. Fishing pressure on the River and Bay increased to 36,800 man-days in 1972, about 6,100 over last year.

#### PRIVATE WATERS

Inspection of private waters on which applications for trout had been received is summarized below:

<u>State</u>	<u>No. Ponds</u>	<u>Acres</u>	<u>Number Approved</u>	<u>Acres Approved</u>
Ga.	1	3.00	1	3.00
N.C.	20	33.62	14	11.10
Tenn.	3	5.50	3	5.50
<u>Va.</u>	<u>7</u>	<u>5.85</u>	<u>6</u>	<u>5.65</u>
TOTALS	31	47.97	24	25.25



COOPERATIVE ACTIVITIES  
COOPERATION WITH THE STATES

In 1972 cooperative fishery management activities were continued to varying degrees with each of the 12 states in Region 4. General Bureau-State cooperative work was continued in fishery management programs on a number of Department of Defense, Bureau, National Park and National Forest facilities, in making fish pesticide monitoring collections from 21 stations in the Region, and in reviewing needs and programming for use of fish produced in the national fish hatcheries. Research projects of interest to, and in cooperation with the respective states, were continued by all cooperative fishery units.

Cooperative Fishery Units

Since initiation of the Cooperative Fishery Unit Program in 1960, units have been established in six states in Region 4. Each unit is a cooperative project involving the Bureau, a college or university, and a state conservation department. A coordinating committee comprised of members from each of the participating agencies provides guidance and reviews research projects and budgets. The Bureau employs two fishery biologists to serve as leader and assistant leader. Details of these projects are reported in a separate annual report by each unit.

THE STATE OF TEXAS

COUNTY OF DALLAS

IN SENATE

January 10, 1901

REPORT

OF THE

COMMISSIONERS OF THE

LAND OFFICE

FOR THE YEAR

ENDING DECEMBER

31, 1900

BY

W. W. WALKER,

COMMISSIONER.

DAVID W. BROWN,

CLERK.

PRINTED BY

THE STATE PRINTING OFFICE,

DAVID W. BROWN,

COMMISSIONER.

DAVID W. BROWN,

CLERK.

DAVID W. BROWN,

COMMISSIONER.

DAVID W. BROWN,

CLERK.

DAVID W. BROWN,

COMMISSIONER.

DAVID W. BROWN,

CLERK.

Lewis Smith Reservoir, Alabama

Cooperative work continued on this project between the Division of Fishery Services and the Alabama Department of Conservation and Natural Resources. Plans were finalized for the establishment of a randomized creel census sampling program which will include aerial pressure counts and interviews at fisherman access points to determine total estimates of the angler use and catch. This will be conducted by State fishery personnel and will allow determinations of percentage of trout returns, growth rates, and food habit studies. The trout scheduled for stocking in the winter will be marked before they are released.

Inland Lake, Alabama

Activities on this project were very limited this year due to the absence of a State Project Leader. The voluntary creel census was terminated. It appeared that the creel census was not indicative of the trout harvest because fishermen were failing to report catches.

Dale Hollow Reservoir, Tennessee

The cooperative fishery work at Dale Hollow Reservoir (27,000 acres), by the State Game and Fish Commission and Fishery Services was continued, with emphasis on the development and evaluation of trout management for establishing guidelines for "two-story" reservoirs. The State continued the creel census to collect data from the last experimental trout stocking. Division biologists completed monthly temperature and oxygen monitoring.



All personnel began summarization and compilation of data preparatory for the final report. A draft report is anticipated in early 1973, to be finalized shortly thereafter. Best returns thus far have resulted from 9 inch fish, and these returns were extremely low both by number (13.33%) and weight (36.22%). The cumulative return from all trout stocked during the project was 1.10 percent. These data indicate that virtually no returns were realized from stockings of fingerling trout less than 6 inches in length. Predation by walleye, black bass, white bass, and residual adult trout was the most significant factor affecting survival. The results of this project should have a great impact on the use of trout in two-story reservoir management.

Norris Tailwater, Tennessee

The preliminary phase of investigation on the 14 mile section of the Clinch River's tailwater below Norris Dam continued with TVA and Tennessee Game and Fish Commission cooperating with the Division of Fishery Services. Sampling of the fish population was conducted cooperatively at two or three stations in February, July, and October.

From March 23 to May 25, 1972, 150,000 six-inch rainbow trout were stocked uniformly through the study area by boat. This group's average growth increment from July to October 1972 was 0.85 inches; whereas, for the same period of 1971, the average increment of the group of 4 inch rainbows stocked in March 1971 was 1.27 inches. The average fork length of the 4 inch group in October 1971 was 8.85 inches, and the average length





Norris Tailwater, Tennessee Cooperative Study: (Top) Bureau, Tennessee Game & Fish Commission & Tennessee Valley Authority personnel processing fish population sample; (Bottom) Fishermen utilizing tailwater area below Norris Dam.





of the 6 inch group in October 1972 was 8.79 inches. Apparently, the smaller fingerlings can utilize the natural food to more advantage. They also reached a higher condition factor in July and grew 6 and 3/4 inches during their first year in the tailwater.

Bottom fauna studies indicate that tendipedids are still the main trout food source, and trout food habit studies indicate that this is the most predominant food eaten; however, the isopods and amphipods are also eaten frequently.

The bottom fauna population samples do not indicate over utilization of trout food as a result of previous stocking rates. Plans were made to increase the stocking rate for fingerlings and to advance the 1973 stocking date to precede the peak of bottom fauna production in February.

Although predator fish have comprised very little of our routine population samples, electrofishing in December indicated that a few sauger and rockfish-hybrids move up to the dam in late winter. So far, predation has not been determined to be a serious problem for the trout.

A partial creel census was conducted from July 29 to October 1 to obtain background data on angling pressure and catch rate. Eight weekend and four week-day samples indicate that: (1) the major fishing effort occurs during low discharge periods (particularly on weekends); (2) most anglers are local residents; (3) in the upper 5 miles, weekend fishing averaged 106 anglers per hour and 21 anglers per mile; and (4) angler's catch averaged 0.84 trout per angler hour.



The catch rate decreased toward autumn during the low oxygen period. Oxygen below the dam ranged below 5.0 ppm from August 7 to November 13 and was below 1.0 ppm from September 21-25. As with last year, the condition factor of the trout was lowest during this critical oxygen period.

The three agencies consulted with Dr. Don Hayne toward the end of the year to initiate a full-time creel census which is scheduled to begin in January 1973.



### Cooperation with the Division of Fish Hatcheries

Divisions of Fishery Services and Fish Hatcheries personnel continued cooperative activities in rearing, marking, and stocking trout in Dale Hollow Reservoir and Norris Dam Tailwater in Tennessee, and striped bass in Choctawhatchee Bay, Florida. Fingerling striped bass were released during June and sub-adults were released September through December. Annual cooperative meetings were held with the States and various Federal Agencies to discuss needs, allocation, and distribution of hatchery fish. Fishery Services' biologists continued to inspect all private ponds for which trout applications were received.

### Cooperation with Other Divisions

Cooperative activities with other Divisions continued. Fishery Services and Wildlife Services personnel continued their joint efforts in pesticide field appraisal and monitoring activities and in the review of pesticide programs submitted by other Divisions: National Wildlife Refuges, Fish Hatcheries, and Federal Aid. One such project was concerned with assessing the effects of field applications of potassium azide in Louisiana. The pesticide biologist was assisted by Refuge personnel with fish pesticide monitoring collections at stations adjacent to several of the national wildlife refuges. Fishery Services' biologists assisted refuges with various fish control problems and with assessment of damage to refuge fish populations from tropical storms.



Activities with the Division of River Basin Studies included review of RBS reports on various water developments, detection of illegal dredge and fill operations, and field survey of several water development projects. National Marine Fishery Services' personnel assisted in conducting a pesticide investigation in the Cape Fear River, North Carolina, in conjunction with proposed dredging in Wilmington Harbor. As more emphasis has been placed on environmental protection and public recreation, there has been a corresponding increase in inter-Divisional activities. It is felt that an increasing proportion of the Division of Fishery Services' programs will be devoted to such activities in the future.

Division biologists were in frequent contact and conducted cooperative work with a number of other agencies and organizations during 1972.



## TRAINING AND EXTENSION ACTIVITIES

In October, the Division sponsored the Twelfth Annual Training Session for Military Game and Fish Coordinators in conjunction with the 26th Annual Conference of the Southeastern Association of Game and Fish Commissioners. Twenty-seven participants from military installations throughout the eastern part of the United States attended and took part in the discussions. As in the past, this year's meeting was considered very successful and beneficial in improving our assistance to military programs.

Various Division biologists continued participation in extension-type programs and in short course and "show-me" type training activities. Of particular interest this year were the periodic fishery programs which Fishery Services personnel scheduled for visitors to the Great Smoky Mountains National Park. Also, several of the biologists continued their educational programs, both academic and short term, to improve their individual work abilities.

## PUBLIC RELATIONS ACTIVITIES

Division personnel continued public relations as an integral part of their program activities. Frequent contacts were made with civic, sportsmen, and conservation organizations, as well as the general public, to promote better understanding of the Bureau's programs. The importance which Division personnel attach to public relations is significant in the continuing success of our management program.



PERSONNEL LIST

DIVISION OF FISHERY SERVICES, REGION 4, 1972

Regional Office

Alex B. Montgomery, Regional Supervisor  
William E. Daugherty, Associate Regional Supervisor  
Nancy H. Hopper, Administrative Assistant  
Theresa L. Robertson, Clerk-Stenographer

Panama City, Florida

Edward Crittenden, Fishery Management Biologist  
James M. Barkuloo, Fishery Management Biologist  
Wilfred B. Kucera, Fishery Management Biologist  
Roy Davenport, Biological Aide  
Floreine Prevost, Secretary (Steno)

Athens, Georgia

L. Glenn McBay, Fishery Management Biologist

Cherokee, North Carolina

Gerald Burton, Fishery Management Biologist  
Manual Watty, Fishery Aide

Gatlinburg, Tennessee

Ronald D. Jones, Fishery Management Biologist  
Alan Kelly, Biological Technician (Fisheries)

Norris, Tennessee

Hallett D. Boles, Fishery Management Biologist  
John Boaze, Fishery Management Biologist



Yorktown, Virginia

John R. Sheridan, Fishery Management Biologist

Alabama Cooperative Fishery Unit, Auburn, Alabama

Dr. John S. Ramsey, Unit Leader

Dr. William L. Shelton, Assistant Unit Leader

Georgia Cooperative Fishery Unit, Athens, Georgia

Dr. Alfred C. Fox, Unit Leader

James P. Clugston, Assistant Unit Leader

Louisiana Cooperative Fishery Unit, Baton Rouge, Louisiana

Dr. Charles F. Bryan, Unit Leader

Dr. William H. Herke, Assistant Unit Leader

North Carolina Cooperative Fishery Unit, Raleigh, North Carolina

Dr. Melvin T. Huish, Unit Leader

Dr. Garland Pardue, Assistant Unit Leader

Tennessee Cooperative Fishery Unit, Cookeville, Tennessee

Vacant, Unit Leader

Dr. Ray Don Estes, Assistant Unit Leader and Acting Leader

Virginia Cooperative Fishery Unit, Blacksburg, Virginia

Dr. Robert Raleigh, Unit Leader

Dr. Eugene Maughan, Assistant Unit Leader



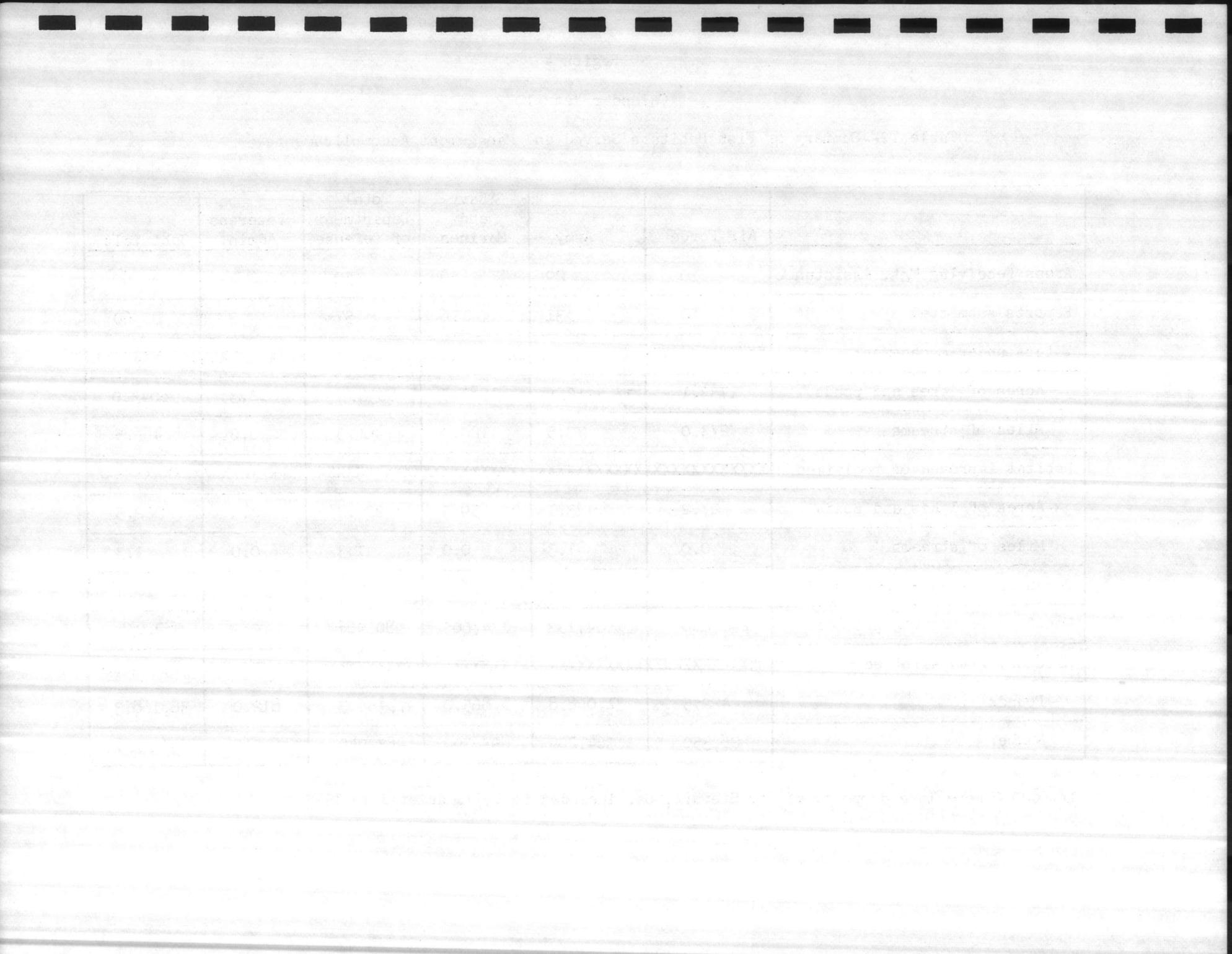
## Region 4

Calendar Year 1972

Table 1.--Summary of Fish Habitats Served and Management Accomplishments

	Air Force	Army	Navy and Marines	Total Department of Defense	Veterans Admin.	Subtotals
Areas Receiving Mgt. Assistance	10	29	20	59	3	62
Reports submitted	10	31	16	57	3	60
Waters under management	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Acres of lakes and ponds	1733.1	<u>1/</u> 4316.1	1981.5	8030.7	12.3	8043.0
Miles of streams	273.0	73.5	120.0	466.5	0.0	466.5
Habitat improved or reclaimed	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Acres of lakes and ponds	27.2	133.1	59.9	220.2	2.3	222.5
Miles of streams	0.0	1.3	0.0	1.3	0.0	1.3
Acres of new water developed	0.0	2.0	16.2	18.2	0.0	18.2
Man-days of fishing provided	242,208	604,153	134,605	980,966	8,089	989,055
Hatchery fish allotted	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Pounds	422.5	31,068.8	5,865.0	37,356.3	812.0	38,168.3
Number	26,350	364,209	97,390	487,949	6,567	494,516

1/ 800.0 acre lake proposed at Ft. Stewart, Ga. included in 1971, deleted in 1972.



## (Table 1, Continued)

Region 4  
Calendar Year 1972

Table 1.--Summary of Fish Habitats Served and Management Accomplishments

	National Forests	National Parks	National Wildlife Refuges	Indian Reservations	Misc. Federal Areas	Totals Federal and Indian Areas
Areas Receiving Mgt. Assistance	6	7	14	3	6	98
Reports submitted	5	9	16	4	6	100
Waters under management	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Acres of lakes and ponds	8,881.3	210.2	116,605.0 <sup>1/</sup>	59.0	41.3	133,839.8
Miles of streams	4,094.0	1139.0	75.0	94.0	0.9	5,869.4
Habitat improved or reclaimed	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Acres of lakes and ponds	0.0	0.0	15.0	3.0	0.0	240.5
Miles of streams	0.0	0.0	0.0	0.0	0.0	1.3
Acres of new water developed	0.0	0.0	30.0	0.0	0.0	48.2
Man-days of fishing provided	1,558,500	280,496	494,299 <sup>2/</sup>	72,144	6,183	3,400,677
Hatchery fish allotted	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Pounds	197,771.0	37,450.0	6,655.0	91,613.0	1,000.0	372,657.3
Number	714,166	132,765	369,347	274,108	3,150	1,988,052

<sup>1/</sup> Permanent pool level of 12,500 acres included in lieu of 74,477.0 acres reported in 1971.

<sup>2/</sup> Includes 22,367 man-days of saltwater fishing - deletes 184,950 man-days fishing on Okefenokee NWR.



(Table 1, Continued)

Region 4  
Calendar Year 1972

Table 1.--Summary of Fish Habitats Served and Management Accomplishments

	Federal-State Cooperative Areas	Private Waters	Sub-Totals Other Waters	Totals Federal and Indian Areas	Grand Totals
Areas Receiving Mgt. Assistance	10	37	47	98	145
Reports submitted	7	37	44	100	144
Waters under management	XXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Acres of lakes and ponds	134,256.0	423.8	134,679.8	133,839.8	268,519.6
Miles of streams	142.0	0.0	142.0	5,869.4	6,011.4
Habitat improved or reclaimed	XXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Acres of lakes and ponds	0.0	0.0	0.0	240.5	240.5
Miles of streams	0.0	0.0	0.0	1.3	1.3
Acres of new water developed	0.0	-	0.0	48.2	48.2
Man-days of fishing provided	273,969	2,125	276,094	3,400,677	3,676,771
Hatchery fish allotted	XXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Pounds	77,693.0	57.6	77,750.6	372,657.3	450,407.9
Number	1,056,499	975	1,057,474	1,988,052	3,045,526

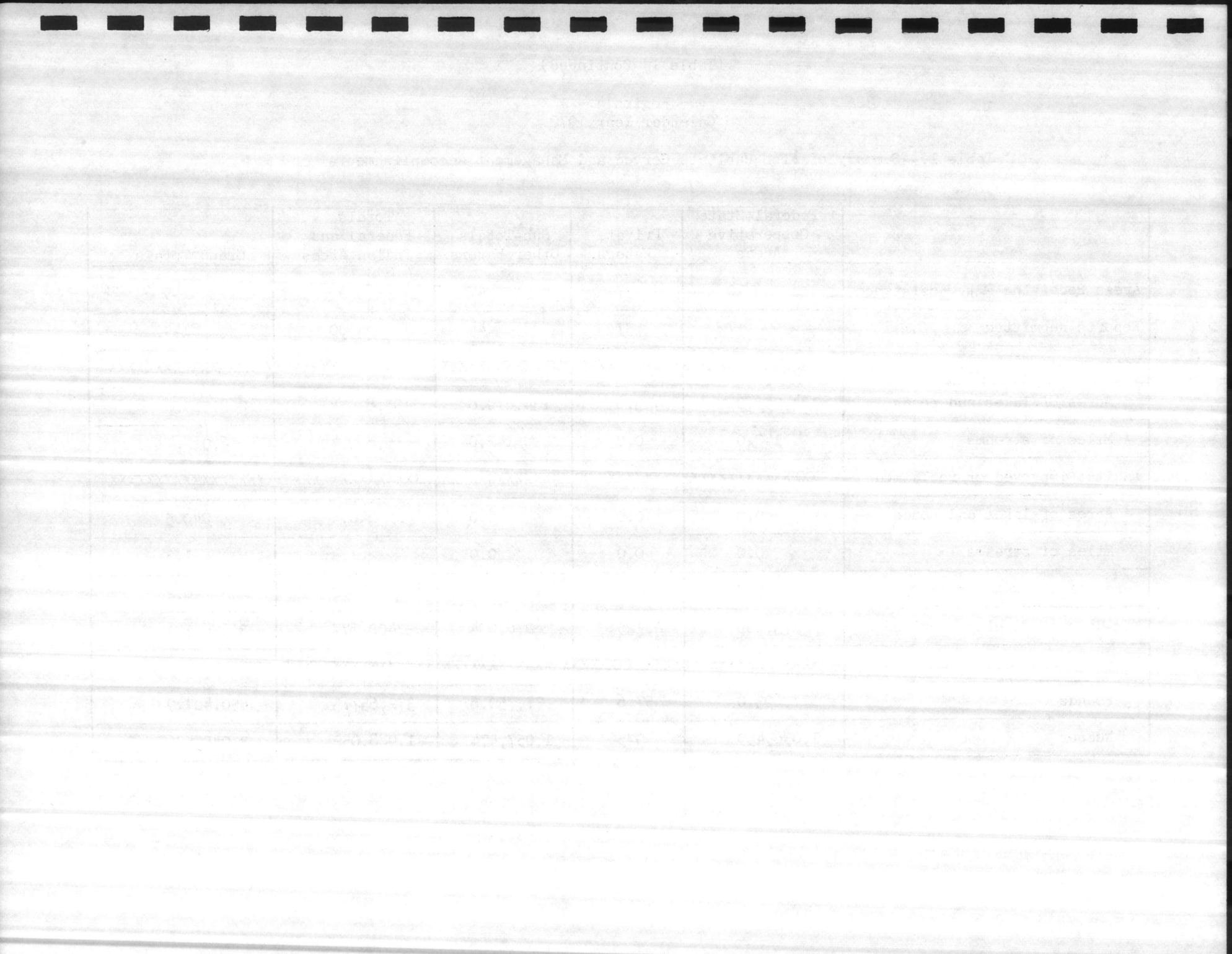
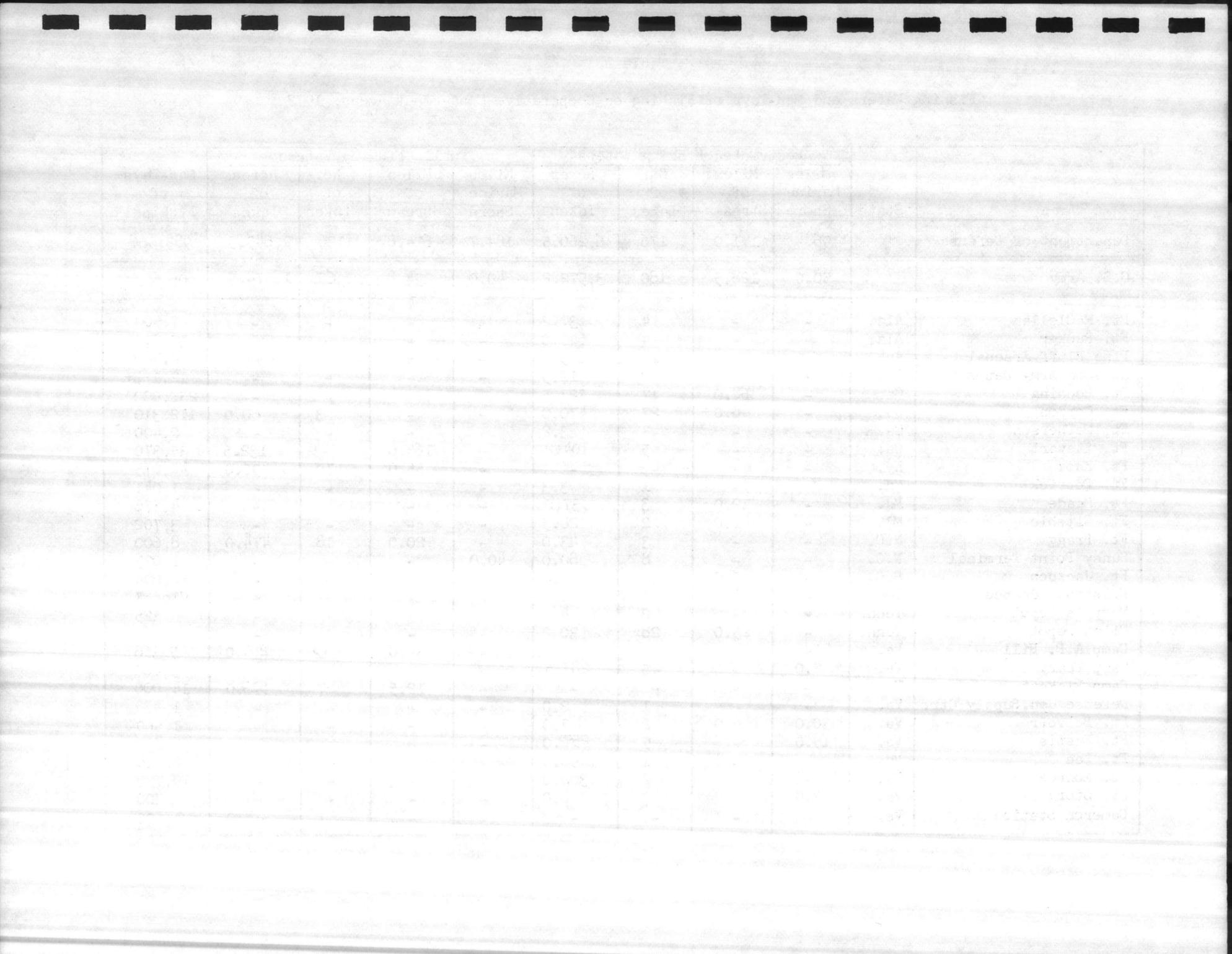


Table 2

## Fishing Waters and Man-Days of Fishing on Cooperative Management Areas, 1972

Area	State	Restricted Fishing Waters				Public Fishing Waters				Man-Days of Fishing
		Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	
Department of Defense		96.4	171.0	276	6,260.5	184.7	624.8	126	2,649.3	983,566
U.S. Army		50.0	128.5	180	3,572.2	40.0	294.8	65	1,574.5	606,653
Ft. McClellan	Ala.	-	-	4	37.2	-	-	-	-	7,500
Ft. Rucker	Ala.	-	-	4	641.0	-	-	-	-	12,000
Pine Bluff Arsenal	Ark.	-	-	17	275.0	-	3.3	-	-	2,500
Atlanta Army Depot	Ga.	-	-	2	12.5	-	-	-	-	12,133+
Ft. Benning	Ga.	-	68.0	17	327.5	-	-	-	-	231,000
Ft. Gordon	Ga.	-	6.0	27	470.0	-	-	3	60.0	112,310
Ft. McPherson	Ga.	-	-	3	3.2	-	-	-	-	2,400
Ft. Stewart	Ga.	-	-	5	104.2	-	165.0	14	132.5	35,370
Ft. Knox	Ky.	-	-	-	-	-	55.0	10	90.0	42,075
Ft. Detrick	Md.	-	-	1	3.3	-	-	-	-	1,041
Ft. Meade	Md.	-	12.0	3	37.0	-	-	-	-	4,576
Ft. Ritchie	Md.	-	1.0	2	28.5	-	-	-	-	3,702
Ft. Bragg	N.C.	-	-	3	43.0	-	20.0	18	474.0	8,600
Sunny Point Terminal	N.C.	-	-	8	80.0	40.0	-	-	-	1,025
Ft. Jackson	S.C.	-	5.0	34	527.0	-	-	-	-	70,600
Holston Ordnance	Tenn.	-	2.5	1	5.0	-	-	-	-	Closed
Memphis Depot	Tenn.	-	-	2	4.1	-	-	-	-	125
Milan Depot	Tenn.	-	25.0	28	30.2	-	-	-	-	65
Camp A.P. Hill	Va.	-	-	-	-	-	39.0	12	291.0	5,316
Camp Peary	Va.	2.0	-	5	283.5	-	-	-	-	5,867
Camp Pickett	Va.	-	-	-	-	-	12.5	7	519.0	14,000
Defense Gen. Supply Ctr.	Va.	-	-	1	2.0	-	-	-	-	1,432
Ft. Belvoir	Va.	30.0	6.0	2	3.0	-	-	-	-	1,560
Ft. Eustis	Va.	15.0	-	5	257.0	-	-	-	-	7,800
Ft. Lee	Va.	-	3.0	1	90.0	-	-	-	-	2,036
Ft. Monroe	Va.	-	-	2	300.0	-	-	-	-	19,720
Ft. Story	Va.	3.0	-	3	8.0	-	-	-	-	300
Cameron Station	Va.	-	-	-	-	-	-	1	8.0	1,600



004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

004-5  
004-5

(Table 2, Continued)

Region 4  
Calendar Year 1972

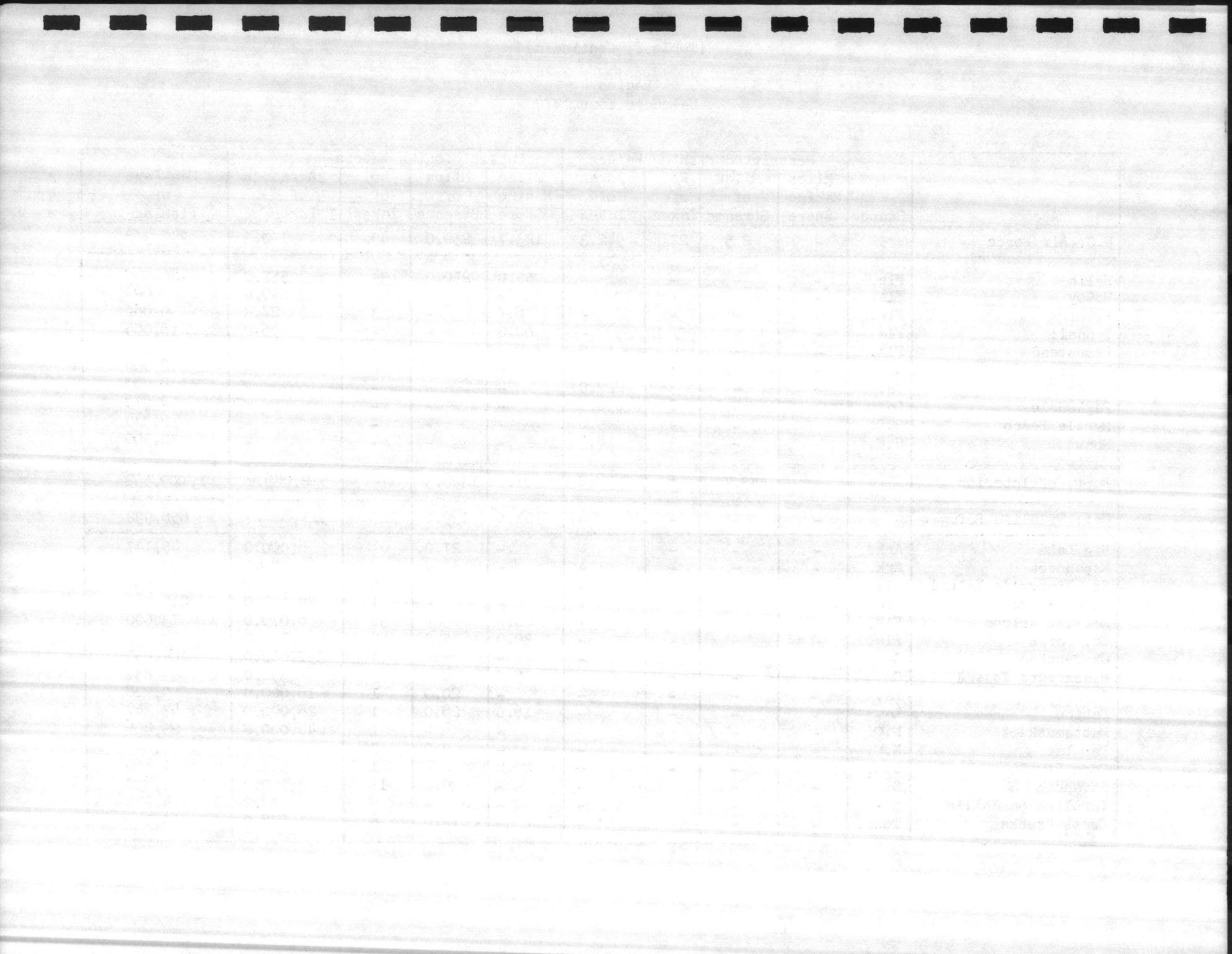
Area	State	Restricted Fishing Waters				Public Fishing Waters				Man-Days of Fishing
		Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	
Navy and Marine Corps		46.4	40.0	74	1,746.0	21.0	80.0	12	284.5	134,605
Cecil Field NAS	Fla.	-	3.0	3	52.5	-	-	-	-	212
Jacksonville NAS	Fla.	-	-	1	10.0	-	-	-	-	3,300
U.S. Naval Fuel Depot	Fla.	-	-	3	3.5	-	-	-	-	0
USN Training Station	Fla.	-	-	-	-	-	-	2	254.0	1,537
Glynco NAS	Ga.	-	-	3	12.5	-	-	-	-	1,000
Patuxent	Md.	6.0	-	4	41.5	-	-	-	-	5,190
USN Research Lab.	Md.	-	-	1	1.0	-	-	-	-	500
Meridian NAS	Miss.	-	-	8	153.0	-	-	-	-	1,800
Navy Construction Ctr.	Miss.	-	-	1	7.0	-	-	-	-	0
Camp Lejuene	N.C.	-	-	-	-	21.0	80.0	10	30.5	30,000
Cherry Point MCAS	N.C.	4.0	15.0	4	20.5	-	-	-	-	3,750
Charleston NWS	S.C.	5.0	-	8	65.0	-	-	-	-	23,000
Memphis NAS	Tenn.	-	-	10	74.7	-	-	-	-	27,020
Chatham Annex	Va.	-	-	5	222.0	-	-	-	-	6,133
Quantico MC Schools	Va.	6.0	15.0	8	808.0	-	-	-	-	8,114
Naval Radio Sta. (R)	Va.	-	-	2	3.5	-	-	-	-	475
USN Amphibious Base	Va.	4.4	-	1	5.0	-	-	-	-	1,100
USN Weapons Test. Lab.	Va.	6.0	2.0	3	65.0	-	-	-	-	1,240
Yorktown Naval Weap. Sta.	Va.	12.0	5.0	7	192.0	-	-	-	-	20,214
Dam Neck - FCDS	Va.	3.0	-	1	4.3	-	-	-	-	20
Buxton Naval Facility	N.C.	-	-	1	5.0	-	-	-	-	Inactive



(Table 2, Continued)

Region 4  
Calendar Year 1972

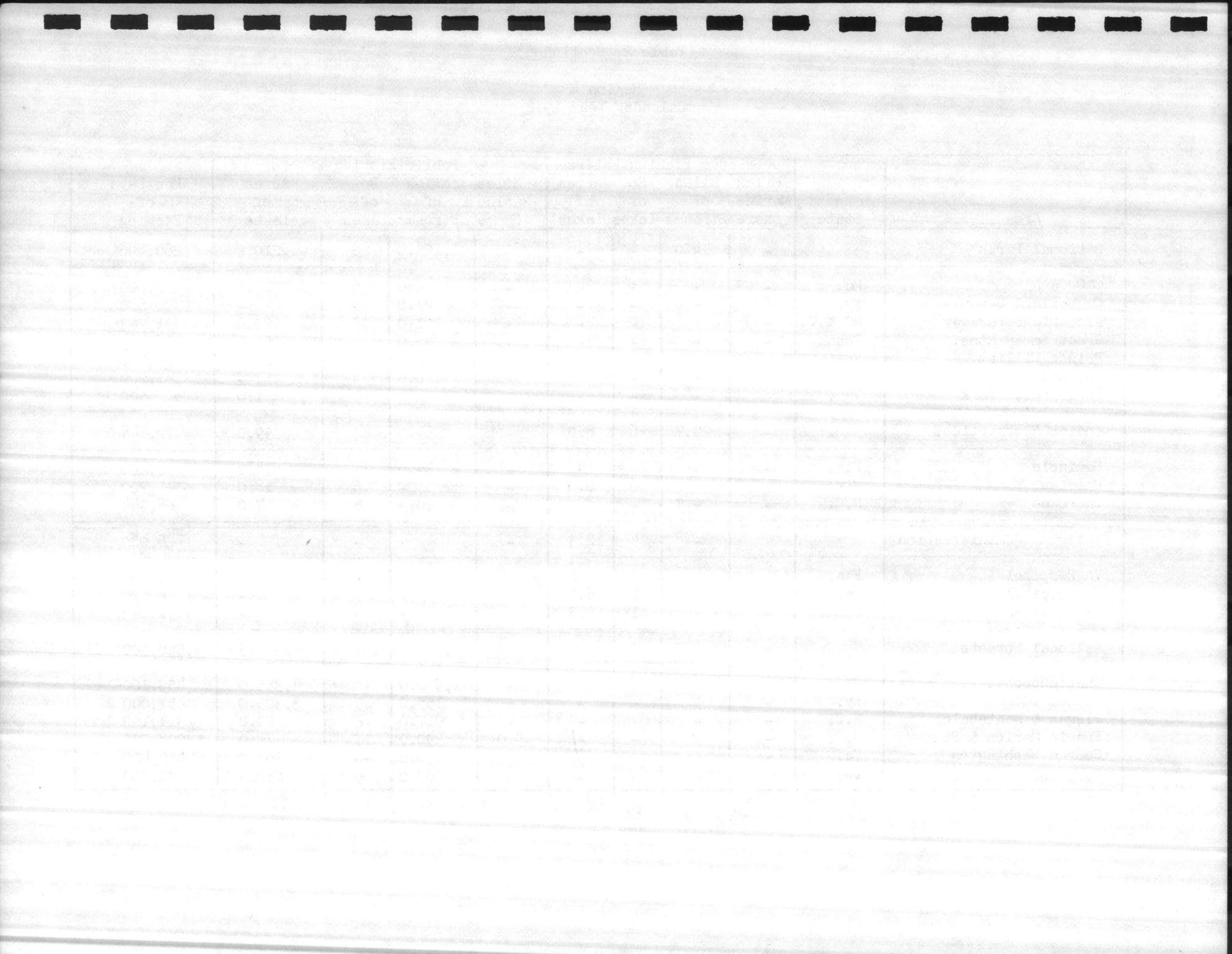
Area	State	Restricted Fishing Waters				Public Fishing Waters				Man-Days of Fishing
		Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	
U.S. Air Force		-	2.5	22	942.3	123.7	250.0	49	790.3	242,308
Eglin	Fla.	-	-	-	-	55.0	250.0	34	557.0	180,000
McCoy	Fla.	-	-	-	-	-	-	1	110.0	800
Patrick	Fla.	-	-	-	-	8.7	-	3	27.3	9,000
Tyndall	Fla.	-	-	-	-	60.0	-	11	96.0	18,000
Homestead	Fla.	-	-	2	16.0	-	-	-	-	300
Robins	Ga.	-	2.5	3	27.0	-	-	-	-	2,400
Moody	Ga.	-	-	3	222.0	-	-	-	-	8,000
Berksdale	La.	-	-	2	650.0	-	-	-	-	8,973
Myrtle Beach	S.C.	-	-	9	9.0	-	-	-	-	2,335
Shaw	S.C.	-	-	3	18.3	-	-	-	-	12,500
Dept. of Interior		-	43.7	6	8.0	101.0	1328.3	174	512,089.2	1,009,592
Nat. Wildlife Refuges		-	-	-	-	101.0	139.0	127	511,820.0	656,952
Big Lake	Ark.	-	-	-	-	-	27.0	1	8,000.0	45,147
Wapanocca	Ark.	-	-	-	-	-	-	2	580.0	49,214
St. Vincent's Island	Fla.	-	-	-	-	-	-	6	259.0	567
Loxahatchee	Fla.	-	-	-	-	-	-	1	74,477.0	215,537
Merritt Island	Fla.	-	-	-	-	20.0	-	30	8,075.0	13,000
St. Marks	Fla.	-	-	-	-	30.0	15.0	48	2,195.0	23,070
Okefenokee	Ga.	-	-	-	-	-	-	1	331,000.0	184,950
Blackbeard Island	Ga.	-	-	-	-	15.0	4.0	3	392.0	631
Icassine	La.	-	-	-	-	-	20.0	1	16,000.0	9,328
Sabine	La.	-	-	-	-	16.0	28.0	1	26,000.0	47,347
Mattamuskeet	N.C.	-	-	-	-	-	-	1	40,000.0	25,466
Pee Dee	N.C.	-	-	-	-	-	3.0	5	7.0	2,248
Cape Romain	S.C.	-	-	-	-	20.0	-	1	585.0	1,400
Savannah	S.C.	-	-	-	-	-	30.0	13	2,500.0	8,997
Carolina Sandhills	S.C.	-	-	-	-	-	-	5	72.0	4,270
Cross Creeks	Tenn.	-	-	-	-	-	12.0	8	1,678.0	25,780



(Table 2, Continued)

Region 4  
Calendar Year 1972

Area	State	Restricted Fishing Waters				Public Fishing Waters				Man-Days of Fishing
		Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	
National Parks		-	14.0	-	-	-	1,125.0	25	210.2	280,496
C&O Canal	Md.	-	-	-	-	-	136.0	6	22.5	7,000
Cumberland Gap	Ky.	-	14.0	-	-	-	21.0	-	-	800
Blue Ridge Parkway	NC & Va	-	-	-	-	-	101.0	13	120.2	31,783
Great Smoky Mtns.	Tenn.	-	-	-	-	-	735.0	1	50.0	226,785
Prince William	Va.	-	-	-	-	-	12.0	4	16.5	10,328
Shenandoah	Va.	-	-	-	-	-	120.0	-	-	1,200
Great Falls Park	Va.	-	-	-	-	-	-	1	1.0	2,600
Indian Reservations		-	29.7	6	8.0	-	64.3	22	59.0	72,144
Seminole	Fla.	-	-	-	-	-	34.0	11	34.0	2,200
Choctaw	Miss.	-	-	6	8.0	-	-	6	18.0	1,200
Cherokee	N.C.	-	29.7	-	-	-	30.3	5	7.0	68,744
Veterans Administration		-	-	4	12.3	-	-	-	-	8,089
VA Hospital	Fla.	-	-	1	2.0	-	-	-	-	1,946
VA Hospital	Va.	-	-	2	8.0	-	-	-	-	4,500
VA Hospital	Tenn.	-	-	1	2.3	-	-	-	-	1,643
National Forests		-	-	-	-	5.0	4,094.0	101	8,881.3	1,558,500
Chattahoochee	Ga.	-	-	-	-	-	1,595.0	16	4,355.0	455,100
Daniel Boone	Ky.	-	-	-	-	-	155.0	9	3,305.0	57,000
Pisgah & Nantahala	N.C.	-	-	-	-	-	917.0	2	22.0	311,100
Fracis Marion & Sumter	S.C.	-	-	-	-	5.0	390.0	17	72.0	208,200
George Washington	Va.	-	-	-	-	-	530.0	48	265.0	455,400
Jefferson	Va.	-	-	-	-	-	507.0	9	862.3	71,700



(Table 2, Continued)

Region 4  
Calendar Year 1972

Areas	State	Restricted Fishing Waters				Public Fishing Waters				Man-Days of Fishing
		Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	Miles Marine Shore	Miles of Streams	No. of Lakes	Acres of Lakes	
Misc. Federal Areas		-	0.9	8	41.3	-	-	-	-	6,183
Carville USPHS Hospital	Ia.	-	-	1	20.0	-	-	-	-	1,495
NASA - Goddard SFC	Md.	-	-	1	5.0	-	-	-	-	0
Nat. Bureau of Standards	Md.	-	0.9	2	7.8	-	-	-	-	300
NIH (USPHS)	Md.	-	-	1	4.5	-	-	-	-	338
Harry L. Diamond Lab.	Va.	-	-	1	2.0	-	-	-	-	50
Soldiers Home	Wash.	-	-	2	2.0	-	-	-	-	4,000
Fed.- State Coop. Areas		-	7.0	1	10.0	-	135.0	5	134,250.0	273,969
Inland Lake	Ala.	-	-	-	-	-	-	1	1,500.0	6,000
Lewis Smith Reservoir	Ala.	-	-	-	-	-	-	1	21,200.0	63,600
Choctawhatchee Bay	Fla.	-	-	-	-	-	100.0	1	83,840.0	35,000
Dale Hollow	Tenn.	-	-	-	-	-	-	1	27,700.0	101,049
Perimeter Waters, GSMNP	Tenn.	-	-	-	-	-	21.0	1	10.0	50,832
Norris Tailwater	Tenn.	-	-	-	-	-	14.0	-	-	11,988
Camp Daniel Boone	N.C.	-	-	1	10.0	-	-	-	-	2,500
Lake Powhatan	Va.	-	5.0	-	-	-	-	-	-	2,800
Rock Enon	Va.	-	2.0	-	-	-	-	-	-	200



Date	Description	Debit	Credit	Balance	Interest	Total
1900	Jan 1					
1900	Jan 2					
1900	Jan 3					
1900	Jan 4					
1900	Jan 5					
1900	Jan 6					
1900	Jan 7					
1900	Jan 8					
1900	Jan 9					
1900	Jan 10					
1900	Jan 11					
1900	Jan 12					
1900	Jan 13					
1900	Jan 14					
1900	Jan 15					
1900	Jan 16					
1900	Jan 17					
1900	Jan 18					
1900	Jan 19					
1900	Jan 20					
1900	Jan 21					
1900	Jan 22					
1900	Jan 23					
1900	Jan 24					
1900	Jan 25					
1900	Jan 26					

Table 3  
Chemicals Used in Fish Population Control in 1972\*

Agency	Chemical	Pounds Used	Pounds Active Ingr.	Acre-Feet Treated	Surface Acres	Miles of Streams
USA	Rotenone	488.38	24.42	35.0	5.0	0.5
	Fintrol		9 units (Concentrate)	614.0	61.10	0
	Fintrol	76.75	1.5275	66.0	11.0	0
		33.00 <u>1/</u>	4 units - 0.33 <u>1/</u> - 192 ml	128.0	24.0	0
USN	Rotenone	58.38	2.92	17.3	6.85	0
USAF	Fintrol 5	33.00	4 units - 0.33 <u>1/</u> - 192 ml	25.0	4.2	0
USMC	Fintrol 5	4.00	0.04	2.5	4.0	0
Vet. Admin.	Fintrol	16.50	0.165	6.0	2.0	0

1/ Calculated

Table 4  
Chemicals Used in Vegetation Control in 1972

Agency	Chemical	Pounds Used	Pounds Active Ingr.	Acre=Feet Treated	Surface Acres
USN	Polaris	6.1	-	1.5	13.0
USMC	Aquathol+	19.0 <u>1/</u>	18.4	-	13.0

1/ 96.9 percent A.I.

\* Assisted by BSF&W personnel

Date	Description	Debit	Credit	Balance
1900	Jan 1			
	Jan 2			
	Jan 3			
	Jan 4			
	Jan 5			
	Jan 6			
	Jan 7			
	Jan 8			
	Jan 9			
	Jan 10			
	Jan 11			
	Jan 12			
	Jan 13			
	Jan 14			
	Jan 15			
	Jan 16			
	Jan 17			
	Jan 18			
	Jan 19			
	Jan 20			
	Jan 21			
	Jan 22			
	Jan 23			
	Jan 24			
	Jan 25			
	Jan 26			
	Jan 27			
	Jan 28			
	Jan 29			
	Jan 30			
	Jan 31			
	Feb 1			
	Feb 2			
	Feb 3			
	Feb 4			
	Feb 5			
	Feb 6			
	Feb 7			
	Feb 8			
	Feb 9			
	Feb 10			
	Feb 11			
	Feb 12			
	Feb 13			
	Feb 14			
	Feb 15			
	Feb 16			
	Feb 17			
	Feb 18			
	Feb 19			
	Feb 20			
	Feb 21			
	Feb 22			
	Feb 23			
	Feb 24			
	Feb 25			
	Feb 26			
	Feb 27			
	Feb 28			
	Feb 29			
	Feb 30			
	Feb 31			



