

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

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STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

DISTRICT I
Alliance, Nebraska

Personnel

Jack Peterson
Walt Meyer

District Supervisor
Assistant Supervisor

INTRODUCTION

District I consists of the 11 counties that are included in the panhandle of the state. The following is a resume of the work accomplished in this district during 1972.

Two major projects were undertaken during the year and both proved to be quite time consuming.

The first was the Level "B" Study which was the sampling of all tributary waters in the North Platte River drainage. Since the Natural Waters Specialist will be writing up this project it won't be elaborated on in this report. However, the streams and drains sampled will be listed under the stream survey portion of this report.

The second project was the North Platte River catfish study which was undertaken during the past spring and early summer. A resume of this is included under streams.

Fish Population Surveys - Lakes and Reservoirs

Island Lake - Crescent Lake Refuge - 711 Acres

The standard number of gill nets were used in sampling this lake. The majority of the fish collected were northern pike. The age and average length is as follows: 0-10.4", I-17.4", II-22.2", III-24.7" and IV-26.6". The remainder of the sample consisted of 1 largemouth bass, 2 bluegill and 13 carp.

Blue Lake - Crescent Lake Refuge - 288 Acres

This is the deepest natural lake in the sandhills. It has a maximum depth of 18 feet and an average depth of approximately 10 feet. It is slated for a renovation sometime in the future. The fish population consists of carp and suckers. A bioassay using 5 percent liquid rotenone indicated a 2.0 ppm concentration would be sufficient. Concentrations of 1.0 ppm, 2.0 ppm, 3.0 ppm and a control were used.

Lake Minatare - 2,158 Acres

This lake was sampled in the fall with the Otter trawl for reproduction. Target species were gizzard shad and white bass which had been stocked as adults in 1971. Reproduction from both species were collected, however, the numbers of white bass were quite low. Numerous young-of-year crappie and yellow perch were collected.

Big Lake Alice - 784 Acres

This lake was also sampled with the Otter trawl. The target species there was walleye. Hatchery reared walleye are stocked in this lake in the spring and when the lake is drained into Lake Minatare in the fall they go into the lake as 5-7 inch fish. Our sampling indicated a good

population during the summer.

Lake Winters Creek - 235 Acres

This lake was also sampled with the Otter trawl looking for all reproduction. The dominant species was crappie, followed by yellow perch and black bullhead.

Lake McConaughy

With the help of District IV the west end of this lake was gill netted. We were looking for marked catfish that had moved back into the lake after their spawning run. Thirty catfish were collected, however, none were marked.

Miscellaneous Lakes

Five lakes on the Oglala National Grassland were checked for fishery potential.

Water samples were collected from numerous sandhill lakes and given to the state limnologist to be analyzed.

Fish Population Surveys-Streams

North Platte River Catfish Study

On April 11, 1972 a study was undertaken to determine the magnitude of the channel catfish population that migrate from Lake McConaughy up the North Platte River. Starting on this date and ending on June 16, a total of 2,705 catfish were marked at the Lewellen weir. Of these 2,705 marked fish, 2,384 were marked with an adipose fin clip. The remaining 321 were marked with a metal jaw tag.

Six hoop nets were set in the river above Lake McConaughy from Oshkosh to the Belmont diversion dam. These nets were fished continuously from June 1 until June 23. A total of 2,230 catfish were examined during this period. Of this number, 63 had been marked with an adipose clip and 2 had been jaw tagged.

The population point estimate came out 84,389. It is unknown at this time if this number of fish are all migratory fish or if there is a resident population that stays in the river all year around. We can say that during the period of sampling there were approximately 84,389 channel catfish in the North Platte River from Lake McConaughy to the Belmont diversion dam west of Bridgeport. We also feel that we had a fairly even distribution since marked fish were collected at all six sampling stations.

In working up this population estimate only the fin clipped fish were considered as recaptures. One of the reasons was because of the two tagged fish we examined, both had tags that were quite loose and appeared as though they might not last much longer. Thus we wondered how many fish we examined

that had already lost a tag and we were unable to tell it. Another reason was that two fish examined had complete sections gone from the jaw bone that were approximately the size of a tag. This led us to believe that the jaw bone was possibly crushed or cracked during the tagging and thus a tag loss.

The final reason was that in interviewing several anglers, they mentioned catching catfish that were tagged but the tags were all but falling off. One interesting item concerning the tagging was that during the study seven fish were examined that had tags and had retained them at least two years. We feel that tagging has its benefits but when working with population estimates they shouldn't be used.

Another interesting feature of this study was that all fish examined in the river were given an upper caudal clip so they would not be counted more than once if they were recaptured. After these fish were examined they were put back in the same hole that they were taken from. After all the fish were examined the net was immediately reset in the same hole. Of all the fish we examined less than ten were recaptures with a caudal clip. This indicated that these fish probably had a tremendous desire to move and upon release they headed out, usually upstream.

In conjunction with the population estimate we attempted to gain more knowledge on the leeches that parasitize this catfish population. Both at the weir and at the hoop nets these fish were categorized as either having leeches or not having leeches. If one or more leech was found on the fish it was considered to have leeches. During early April leech infestation was present on approximately 95 percent of the fish. This rate of incidence started dropping as the water temperature increased until approximately June 16 when the incidence was less than 5 percent. Then on June 19 we started noticing leeches that were approximately 1-2 mm. long. These leeches grew at an exceptionally fast rate and as of the middle of July they were as big as the adult. So it appears that this population of fish is parasitized almost their entire life by these leeches. None of the fish examined appeared to be suffering any ill effects from them and some examined had as high as 20-25 leeches attached to the body and fins. Some of these leeches were collected and sent to Dr. Marvin C. Meyer, Professor of Zoology, University of Maine. He identified them as Illinobdella moorei (Meyer, 1940).

On July 10, hoop nets were set above the Belmont diversion with the idea in mind that if no catfish were found a fishway could be designed at this irrigation diversion to aid the fish in their upstream migration.

Irrigation demands on the river made it very difficult to find good netting areas, however, we did collect some catfish in the nets. We have good information that there were very few catfish above the Belmont diversion prior to the 1971 flood. Joe Ulrich (Morrill County) and Jim McCole (Scotts Bluff County), both Conservation Officers who have been at their present locations over 20 years, indicated that they had only seen one catfish caught above the diversion during this period prior to the flood. During the flooding catfish moved around the diversion and provided excellent fishing all the way to the Wyoming state line. We had assumed that these

fish would move back downriver to the reservoir in the fall. Consequently the idea of a fish ladder came about. If we could get this population of fish over the diversion each year we would not only increase the angling but increase the spawning habitat and probably the population as well. However, it appears that all the fish did not move back to the reservoir. We don't think a fish ladder would be necessary at this time. However, we plan to monitor this population to make sure they are established and will reproduce successfully.

Deer Creek - Sheridan County

This stream was electro-fished for species composition. It is quite isolated, rarely fished and seldom stocked. A good population of both brown and rainbow trout were found.

Streams Sampled Under Level "B" Study

Alliance drain	Dry Sheep Creek
Moffet drain	Kiowa Creek
North Platte River	Owl Creek
Blue Creek	Horse Creek
Nine Mile Creek	Wet Sheep Creek
Tub Springs	Sheep Creek
Minatare drain	Akers Draw
Winters Creek	Red Willow Creek
Dry Spottedtail Creek	Greenwood Creek
Pumpkin Creek	East Wildhorse Creek
Deepholes Creek	West Wildhorse Creek
Upper Dugout Creek	Wildhorse Creek
Indian Creek	West Branch Red Willow
Unknown drain in Morrill County	Stuckenhole Creek
Silvernail drain	Lonegan Creek
Wet Spottedtail Creek	Clear Creek
Otter Creek	

Partial Renovations

None carried out during this year.

Complete Renovations

Agate Lake - Oglala National Grassland - 20 acres.

Habitat Improvement

None.

Fish Tagging and Marking

In conjunction with the catfish study 321 catfish were jaw tagged, 2,705 were given an adipose clip and 2,230 were given an upper caudal clip.

Fish Culture

Assistance was given to the District Research Biologist with fish culture on migratory rainbow trout at the Winters Creek Trout Hatchery.

Fish Salvage

The irrigation ditch below Kimball Reservoir was seined after the water was shut off. Eighty rainbow trout (2-2½ pounds) were salvaged and returned to the reservoir.

Removed 9,520 pounds of bullheads from Walgren Lake. This is approximately 106 pounds per surface acre.

New Fish Introductions

None in the district this year.

Total Fish Stocked

The following species were stocked in District I waters during 1972.

<u>Species</u>	<u>Number</u>
Rainbow trout	109,777
Brown trout	90,779
Largemouth bass	46,490
Smallmouth bass	61,968
Rock bass	2,500
Northern pike	66,947
Walleye	162,636

Creel Census

None collected this year.

New Fishing Areas

None.

Vegetation Control

None.

Private Ponds

None were checked, however, quite a few answers to letters were written to private pond owners who had problems.

Pollution and Fish Kill Investigations

Several pollution problems and two fish kills were investigated

during the year and all were from the same source - the Colossal Land and Cattle Company near Minatare. Runoff from this feed lot goes into the Moffet drain and this drain goes into Nine Mile Creek. One fish kill occurred in Moffet drain and the other in Nine Mile Creek. The kill on Moffet drain wasn't investigated until several days after the kill occurred and only a couple of dead suckers were found. The kill that occurred in Nine Mile Creek was investigated the next day and some large migratory rainbow trout were found dead. We have also had some problems with this same feed yard running residue from their silage pit into Moffet drain. This residue was found to contain a high amount of ethanol. Some action has been taken against this cattle company and hopefully the problem will be eliminated in 1973.

Programs Presented

1. Gering Grade School
2. Alliance Kiwanis Club
3. Alliance Cub Scouts

Technical Meetings and Conferences

None attended this year.

Meetings Related to Commission Activities

Scottsbluff - concerning North Platte River.
Hastings - Fishery meeting.
Kearney - Fishery Meeting (2).
Bridgeport - Level "B" Meeting.
Lincoln - Law Enforcement School.
Alliance - District Meetings (several).
Scottsbluff - Met with RC&D, NRD and SCS on Nine Mile Project.
Crawford - Hatchery manager on trout stocking (numerous).
Bridgeport - Irrigation District about fish ladder.
Chadron - Forest Service, about ponds in Oglala Grassland.
Alliance - Chief of Production on Hatchery-Management problem.
Fort Robinson - Park Superintendent on Soldiers Creek.
Crescent Lake Refuge - Manager about fishery problems.
Alliance - Jim Wofford, TV program.
Alliance - Wes Sheets, pollution problems.
Alliance - Information and Education articles.
Scottsbluff - Great Western Sugar Company about diversion on Winters Creek.

Reports and Articles Completed or in Progress

Channel catfish paper in progress.
Leeches on channel catfish paper in progress.
Two tapes were made with Mr. NEBRASKALAND.
The usual amount of Game Commission reports were completed.

Other Activities

A considerable number of man-days were spent assisting Research Biologist Van Velson with his project.

Dissolved oxygen taken on lakes during the winter.

Numerous man-days assisting at the Lewellen weir.

Assisted with northern pike spawn taking at Valentine.

Assisted with National Hunting and Fishing day at the district office.

Assisted in salvaging sunken barge from Lake McConaughy.

Fourteen man-days were spent on deer check station.

Helped build fence on Otter Creek.

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ANNUAL REPORT

1972

DISTRICT II
Bassett, Nebraska

Personnel

J. Larry Hutchinson	District Supervisor
Walt Meyer	Assistant Supervisor
Steve Schainost	Assistant Supervisor

INTRODUCTION

District II includes thirteen and one-half counties in northcentral Nebraska. This area of Nebraska encompasses the major portion of the Sandhills region and a large number of associated natural lakes.

Eleven state lakes totalling 4,948 acres and about 16 private lakes which total approximately 3,030 acres are available for public fishing in the District. In addition, there are 36 lakes on the Valentine National Waterfowl Refuge of which nine, totalling 3,233 acres, are open to public fishing. Fishery management of the Refuge lakes is done in cooperation with the U.S. Fish and Wildlife Service.

Approximately 2,900 miles of streams are in District II. Portions of the Snake River (Cherry County) and Pine Creek (Brown County) are of statewide angling importance. The remainder are considered to be of local importance or nonproductive. Nearly all of these streams are on private property; however, many portions are open with permission.

The Valentine State Fish Hatchery is located in District II and a considerable amount of inter-divisional assistance occurs.

In April of 1972 Walt Meyer was transferred to District I. His vacancy was filled by Steve Schainost in May. Steve was promoted in December to the position of Specialist Aide. Beginning January 1, 1973 Lynn Schlueter assumed the duties of the Assistant Supervisor of Aquatic Wildlife in District II.

Fish Population Surveys - Lakes and Reservoirs

Chamberlain Overflow Lakes (Cherry County)

The Chamberlain Overflow Lakes consist of two small natural lakes with several small potholes between them. They are all interconnected during high water seasons. These small lakes are on the McKelvie National Forest and were created several years ago when Chamberlain Lake was drained.

The upper lake is approximately one acre in size and the lower lake is approximately five acres in size. Both lakes were sampled with gill nets, trap nets and the boat shocker. In addition both were sounded.

Black bullheads and largemouth bass were the only species sampled in each lake. Bullheads were the predominant population in each lake.

The maximum depth found in the upper lake was 7.5 feet and the maximum depth in the lower lake was 4.0 feet.

The area was again visited in December and the problems and potential of developing a fishery was discussed with Forest Service and U.S.F.W. Service personnel.

Cottonwood Lake SUA (Cherry County)

Cottonwood Lake is a 44-acre natural lake located one mile east of Merriman. It was sampled in April to determine if a selective bluegill renovation was justified. Results of the survey indicated that growth of bluegill did not justify a selective renovation. Accordingly the renovation was postponed indefinitely.

Fish Lake (Rock County)

Four trap nets and two gill nets were used to sample Fish Lake during March after some evidence of winterkill was observed. Results of the survey revealed that an adequate game fish population was still present.

Hull Lake SUA (Boyd County)

Hull Lake was sampled with two gill nets and three trap nets to determine if a selective renovation of bluegill with Fintrol was justified. The average size of bluegill collected was over 6.3 inches. A selective renovation with Fintrol was postponed.

Long Lake SUA (Brown County)

A pre-renovation survey was carried out during June on this 155 acre natural lake. Northern pike, carp, black bullheads and golden shiners were the only species sampled. Black bullheads averaging 6.0 inches made up 70.2 percent of the species composition and carp averaging 10.8 inches accounted for 16.5 percent of the species composition. Northern pike made up 12.8 percent of the species composition and averaged 18.5 inches total length.

Renovation of this lake is certainly in order. Due to very poor success with past renovations it is recommended that this lake be drained to a very low level in the fall during the next renovation attempt.

Merritt Reservoir (Cherry County)

This 2,900 acre reservoir located on the Snake River southwest of Valentine was surveyed during June. The boat shocker was used in April and again in July.

The 1972 sampling efforts again showed that an excellent walleye fishery was present. The catch per gill net was 19.5 walleye and they had a mean length and weight of 16.6 inches and 1.8 pounds. Analysis of scale samples indicate that all the walleye sampled are from stocked year classes. Angling success for walleye was very high in the spring and early summer.

Alewife made nearly equal contributions to the gill net catch (19.1/net). This is a remarkably greater catch rate than during either

the spring or fall surveys of 1971 (1.8 and 7.4/gill net respectively). This population appears to be rapidly expanding.

Other species that are expanding include the yellow perch and bluegill populations. Yellow perch were first sampled during the fall 1970 survey although no authorized stocking was made. Scale sample analysis suggest that growth is fair and anglers are now taking desirable size perch. Bluegill accounted for over fifty percent of the trap net collections in 1972. The catch per net was 33.8 compared to 10.6 during the spring 1971 survey.

The fact that a black crappie population has become firmly established was reaffirmed during the 1972 survey. A combined total of 68 specimens averaging 6.3 inches were taken in the survey nets. Anglers had good success catching both bluegill and black crappie by still fishing and during winter ice fishing.

Despite the stocking of over 98,000 rainbow trout in 1971 and 23 thousand in 1972 prior to the survey, only nine individuals were taken in the survey nets. Angling success was good in the Boardman Bay and Boardman Creek areas shortly after the December 1971 stocking but was generally poor through the rest of the year. The stomachs of 12 walleye taken with the boat shocker were examined and four contained trout remains. Predation is probably taking a large number of the 5-8 inch trout stocked.

Black bullhead collections were similar to the numbers sampled in 1971, however the mean length has increased. In the spring 1971 survey the mean length of black bullheads taken in gill nets and trap nets was 6.7 inches compared to a mean length of 8.5 inches during 1972.

White bass appear to be established in Merritt although their population is relatively minor. Fifteen specimens averaging 12.0 inches were taken in gill nets during 1972. Anglers are taking white bass occasionally with some specimens weighing up to two pounds.

The white sucker population may have declined slightly since the spring 1971 survey. The catch per gill net was 4.0 in 1972 compared to 5.9/gill net a year before. The population is presenting no immediate problems at this time.

Rock bass, green sunfish, pumpkinseed, smallmouth bass, grass pickerel (one specimen), and golden shiners were other species sampled. Of these species, only pumpkinseed were sampled in significant numbers (40). Several smallmouth bass ranging in length from 7.1-18.9 inches were taken with the boat shocker. The largest smallmouth weighed 3.8 pounds. Occasional smallmouth were taken by anglers and at least 19 Master Angler awards were given for smallmouth taken from Merritt.

No channel catfish were sampled during the survey despite stockings totaling 115,302 fingerlings between 1968 and the fall of 1971. Evidence of natural recruitment or survival from the 1971 stocking and the September 1972 introduction was found during October when the Ainsworth Canal

was drained. Two size classes (1-2 inch and 5-7 inch) of catfish were found during fish salvage operations.

Due to greater than normal precipitation during the irrigation season, water releases from Merritt resulted in a water level drop of only six feet. The Ainsworth Canal was run full of water for only a short period in August. During this period the boat shocker was used in an effort to sample and salvage fish. Alewife were the only species collected or observed. When the canal was shut off in October a total of 35 rainbow trout, one walleye and 15 channel catfish were salvaged.

Quinn Sandpits (Brown County)

Four sandpits located on an 80-acre tract 2 miles east and 3/4 miles south of Johnstown have been the object of lease agreement negotiations in 1972. Terms agreeable to both the owner and the Game and Parks Commission have not yet been reached. All four sandpits were surveyed and sounded to determine the investment necessary to provide a sport fishery.

The north pit is 10.9 surface acres and has a maximum depth of 20 feet. Black bullheads, yellow perch, and black crappie are the major fish populations. A few green sunfish were also sampled.

The south pit is 8.5 surface acres and has a maximum depth of 21 feet. Populations of small black crappie, green sunfish and black bullheads were sampled with gill nets. Their contributions to the species composition was 68, 20 and 12 percent respectively. The same species plus one northern pike were taken in trap nets.

The east pit is approximately 0.8 acres and the maximum depth is 11 feet. Small yellow perch, black crappie, green sunfish and black bullheads were sampled.

The west sandpit is 1.0 acre and was not sounded. Small green sunfish and black bullheads were the only species sampled.

Round Lake (Cherry County)

This 245 acre natural lake was surveyed with the standard number of net sets during July. The boat shocker was also used for one hour.

An excellent walleye population was sampled. All year classes from 1967 to 1972 were represented in the sample confirming that annual recruitment is occurring. Over twenty walleye per gill net were taken and they represented over 50 percent of the species composition in both gill net and trap net collections.

Carp ranked second in gill net collections despite a large carp die-off that was investigated during May.

Other noteworthy collections include twenty northern pike (18.0-37.5 inches total length), five rock bass (10.2-11.3 inches), and three Iowa darters which were collected with a short dip net.

This lake reportedly received considerable fishing pressure in 1971 and early 1972.

Valentine National Wildlife Refuge Lakes (Cherry County)

Clear Lake

Assistance was given to the Fishery Services Biologist (U.S.F.&W.S.) with the survey of Clear Lake during August. Twelve trap net and four gill net sets were made.

Yellow perch appear to be the predominant population at this time. Carp rank second in numbers collected. Both populations still seem to be expanding.

The Sacramento perch population appears to have declined considerably. At least two year classes were sampled. One 1971 year class specimen was taken along with three older specimens that could not be aged with confidence. The older specimens could be from either the 1967, 1968 or 1969 year class because of difficulty in identifying true annuli.

Three year classes of walleye were sampled although the population appears to have declined since the 1968 survey. The 1962 walleye stocking in Dewey Lake apparently is responsible for two year classes of walleye prior to 1969 being present in Clear Lake.

Other species sampled included relatively small numbers of black bullheads, black crappie, northern pike and bluegill.

Dads Lake

Dads Lake was sampled by the federal biologist from Valentine. Yellow perch, fathead minnows and black bullheads were the only species sampled. Yellow perch were taken in the greatest numbers with many individuals in the one pound category.

Dewey Lake

This 550 acre natural lake was surveyed with the standard number of nets during June. The boat shocker was also used for approximately two hours.

A fair walleye population exists with several year classes present. The average size of walleye taken was 21.5 inches and 3.3 pounds.

A good northern pike population was also sampled. This population was created when 2,919 spawners from Pelican Lake were transferred to Dewey Lake during March. This transfer was done at the request of the

Refuge Manager in hopes that some control of the carp and yellow perch population could be achieved.

The yellow perch and carp populations appear to be expanding fairly rapidly. A total of 198 yellow perch and 380 carp were sampled in the nets.

Three rock bass and five black crappie were taken confirming that at least small populations are still present as a result of past stockings.

Minor population of black bullheads, bluegill, pumpkinseed, and orangespotted sunfish were also sampled.

Duck Lake

This 66-acre natural lake was selected as a site for an experimental stocking of muskellunge during August of 1972. A standard survey (8 gill net and 8 trap net sets) was carried out in early August to obtain base-line fisheries data prior to the introduction of muskellunge.

A strong largemouth bass population was sampled with nearly equal numbers taken in gill nets and trap nets (8.4/gill net and 8.2/trap net). The largemouth bass averaged only 9.0 inches and examination of scale samples indicates that growth is relatively slow.

A strong 1972 year class of black crappie were sampled. Also collected were 56 adults averaging almost ten inches. This species should provide good forage during 1972 and 1973.

A total of 56 black bullheads were collected in the sixteen survey nets. These fish had a mean length of 11.3 inches and a mean weight of 1.0 pounds. The largest individual bullhead was 15.5 inches long and weighed 2.6 pounds. Although this population is relatively small a large proportion are of very desirable size.

A fair bluegill population was sampled. A few individuals were in the one pound category, however, the average size of all bluegill collected was 5.0 inches.

Pumpkinseed sunfish were taken in fairly strong numbers. They represented 22 percent of the total trap net collection if the 1,456 young-of-the-year black crappie collected in one small mesh trap net are disregarded.

A total of 1,180 muskellunge ranging from 3½-8 inches were stocked shortly after the survey.

Watts Lake

This 230 acre natural lake was surveyed in June with 8 gill net sets and 8 trap net sets. The boat shocker was also used.

The trap nets revealed the presence of good bluegill and black crappie

populations. Fair numbers of very desirable size individuals of both species were sampled.

A fair northern pike population was also sampled. A total of 74 individuals averaging 19.8 inches were taken in the survey nets. Natural recruitment is occurring annually.

A fair number of black bullheads were sampled with a few individuals weighing up to one pound.

Other incidental populations sampled include largemouth bass, yellow perch, carp and hybrid sunfish.

Fish Population Surveys - Streams

Elkhorn River

Several stations on the Elkhorn River between Osmond and O'Neill were sampled with electro-fishing gear. This work was done during October in conjunction with District III personnel and the Natural Waters Specialist.

Fairfield Creek (Brown and Cherry County)

This trout stream was sampled during September with a portable back-pack stream shocker. Two stations were sampled and brown trout were taken at both locations.

North Loup River (Purdum to Genoa)

This river was sampled at several stations in conjunction with Missouri River Basins Studies personnel and Aquatic Wildlife Division personnel from District III and Lincoln. Electro-fishing gear was used.

Pine Creek (Brown County)

In May the stream shocker was used at the State Recreation Area to sample the trout population. Wild (non-stocked) rainbow and brown trout that measured 8.0 inches or greater were tagged.

During August the stream shocker was used to sample seven stations on Pine Creek. A total of 360 rainbow trout and 94 brown trout were taken. Four of the 360 rainbows were fish that had been stocked in 1972. Of the 94 brown trout collected 17 were from the 1972 stocking.

In September a portable back-pack shocker belonging to the Federal Biologist at Valentine was tested in Pine Creek. Results compared very favorably to the District II stream shocker.

Schlagel Creek (Cherry County)

This trout stream was sampled at three locations in September. A

portable back-pack shocker was used. Brown trout were sampled only at two stations below the State Area.

Partial Renovations

No activity.

Complete Renovations

Conrad Frickle Pond (Holt County)

This ½-acre private pond was renovated with liquid rotenone and stocked with rainbow trout.

Habitat Improvement

No activity.

Fish Tagging and Marking

<u>Species</u>	<u>Water</u>	<u>Number</u>	<u>Tag or Mark</u>
Rainbow Trout	Merritt Reservoir	22,245	L. Pel. Clip
Rainbow Trout	Pine Creek	2,800	L. Pect. Clip
Rainbow Trout	Pine Creek	285	Jaw Bandette
Brown Trout	Pine Creek	251	Jaw Bandette
Brown Trout	Pine Creek	3,100	L. Pect. Clip
Brown Trout	Plum Creek	1,500	R. Pel. Clip

Fish Culture

Division personnel assisted the Valentine Hatchery during the 1972 northern pike spawning operations. Trapping was begun March 7 and was terminated March 19. A total of 3,550 northernns were taken, of which 1,265 males and 949 females were used. Four hundred one quarts of eggs were taken for a total egg count of 26,309,812. All of the northernns trapped were taken from Pelican Lake.

At the request of the Refuge Manager and the Federal Biologist 2,919 spawners were transferred to Dewey Lake. Objectives of this transfer were to create an alternate spawning population as well as to attempt to control expanding yellow perch and carp populations in Dewey Lake. A total of 494 male spawners were returned to Pelican Lake. Only 14 spawners were lost through handling and small numbers of others were distributed to the Gretna State Fish Hatchery and to Gavins Point National Aquarium for display purposes and to the Research Division for experimental studies.

Other fish culture activities include collection and transfer of 5,250 yellow perch from Dewey Lake (Cherry County) to Cameron Lake (Rock

County); distribution of northern pike into the upper Elkhorn River drainage and to Shell Lake and Dewey Lake; and assistance in the collection of largemouth bass and Sacramento perch spawners for the Valentine State Fish Hatchery. Rainbow trout were stocked into the Conrad Frickle pond. Assistance was also provided in the distribution of trout to Merritt Reservoir and to Pine Creek.

Fish Salvage

Ainsworth Canal

Rainbow trout	1-3#	37
Walleye	2#	1
Channel catfish	1.5-6.0"	16

New Introductions

No activity.

Species	Total Fish Stocked	Size	Number
Northern pike		1-3"	45,716
Northern pike		2-8#	2,919
Muskellunge		3½-8"	1,180
Yellow perch		4-5"	5,250
Largemouth bass		4-8"	1,241
Rock bass		1-2"	1,000
Channel catfish		2½-3½"	97,534
Channel catfish		5-7"	15
Brown trout		3-4"	18,500
Brown trout		8-14"	3,100
Rainbow trout		5-8"	75,569
Rainbow trout		8-12"	15,336
Rainbow trout		Adults	35

Creel Census

An occasional spot check of creels was done during routine field duties.

New Fishing Areas

Attempts were made to negotiate a public access agreement on four sandpits in Brown County owned by Alvin Quinn. Satisfactory terms have not been agreed upon. Additional information regarding this area is included in Section 1 (Quinn Sandpits).

Vegetation Control

No activity.

Private Ponds

Bob Allan Pond (Brown County) - This 2 acre pond was checked with a seine for survival of largemouth bass and bluegill stocked in 1971. Survival of both species was found.

B. T. Buell Pond (Loup County) - This pond was checked regarding a hatchery permit application and approved.

Cody Lake (Cherry County) - This 350 acre meandered natural lake was inspected at the request of Paul Bass (adjacent landowner) who is interested in its fishery potential.

Ell Lake (Cherry County) - This 120 acre natural lake was the subject of complaint from the landowner regarding too many northern pike and poor bullhead fishing. He was advised that if time permitted an attempt would be made to trap and remove northern pike during the 1973 spawning season.

Conrad Frickel Pond (Holt County) - This one-half acre private pond was sampled with two gill nets to determine if there was survival from a 1971 rainbow trout stocking. Green sunfish and white suckers were the only species sampled. Water quality data indicated the pond would support trout. With the advice and assistance of District II personnel the pond was renovated and restocked with rainbow trout.

Ferguson Pond (Brown County) - The water quality of this two acre natural pond was checked for fishery potential. The total alkalinity was 3,797 ppm CaCO₃ and the landowner was advised against stocking.

A. B. Haller Tract - The fishery potential on the portion of Pine Creek passing through this 900+ acre tract was inspected in reference to possible acquisition by the Game and Parks Commission.

Jones Pond (Holt County) - This 1.5 acre pond was inspected in reference to vegetation control. The owner was advised of the kinds of vegetation present and recommendations were made as to where to order and how to use the proper chemicals. Assistance in applying the chemical was offered in the event he decided to treat the pond.

Quinn Sandpits (Brown County) - This is discussed in Section 1.

Tilbert Wright Pond (Hooker County) - Two ponds were inspected regarding an application for a hatchery permit. The application was approved.

Pollution and Fish Kill Investigations

Ainsworth Irrigation Wastewater Pond (Brown County)

A complaint that a wastewater pond controlled by the Ainsworth Irrigation District was overflowing into Pine Creek was investigated. Water

samples were taken in Pine Creek above and below where overflow entered the stream. The downstream station contained 300 percent more settleable solids than the upstream station. The Pollution Specialist and the Dept. of Environmental Control were notified.

A. W. Dilsaver Pond (Loup County)

A fish-kill at this one acre pond was investigated. A rapid increase in alkalinity due to photosynthetic activity was believed to be responsible. Bluegill and largemouth bass were the only species affected and survival of both species was observed.

Fish Lake (Rock County)

A reported fish-kill at this natural lake was checked. Winter-kill conditions are suspected. Test netting indicated good survival of all species affected (See Section 1).

Pine Creek (Brown County)

A Dept. of Roads maintenance crew was observed dumping surplus road oil down a runoff culvert into Pine Creek from Highway 20. The Maintenance Supervisor at the Dept. of Roads District Office was notified as was the Pollution Specialist.

Programs Presented

Broken Bow High School Biology Class
District II Conservation Officers
Valentine 7-8 Grade Conservation Day
Nebraska Chapter A.F.S.

Technical Meetings & Conferences

21st Annual G.P.F.W.A. Workshop - Sheridan, Wyoming
Nebraska Chapter A.F.S. - Valentine, Nebraska

Meetings Related to Commission Activities

Attended Aquatic Wildlife Division Meeting at Kearney.

Conferred with Assistant Director and several Commissioners regarding Lewis Iverson's problems at Fish Lake.

Conferred with Stan Huffman at Round Lake regarding irrigation diversion agreement.

Attended District II Open House during National Fishing and Hunting Day activities.

Attended meeting between I & E personnel and District II staff.

Conferred with Missouri River Basin Studies personnel regarding vegetation control in the Ainsworth Canal.

Conferred with Forest Service personnel regarding fishery potential on McKelvie National Forest.

Reports and Articles Completed or In Progress

Big Alkali Survey Report
Duck Lake Survey Report
Overton Lake Fish Population Control Evaluation Report
Quinn Sandpits Pre-renovation Survey Report
Clear Lake Report
Synopsis of Long Lake Fish Management
Merritt Reservoir Report
1971 Annual Report
F-7-D-9 Work Plan
Nebraskaland Fauna article "Tiger Salamander"
Projected Fish Needs
Dewey Lake Survey Report (Part of the data has been summarized)
Watts Lake Survey Report (Part of the data has been summarized)

Additional Activities

- Completed 1971 General Inventory
- Hackberry Lake mapping (field work discontinued due to unsafe ice until January, 1973).
- Water quality and ice conditions were monitored on miscellaneous natural lakes.
- Collected rainbow and brown trout specimens for I & E personnel.
- Assisted in the collection of fish to be examined for parasites by the Research Division.
- Fish control structures at Fish Lake and Overton Lake were inspected.
- Camping accommodations and a canoe trip were arranged for the Nebraska Chapter of the A.F.S.
- Nets were taken to North Platte for repairs.
- Assistance was provided with the fencing of Otter Creek.
- Walt Meyer provided assistance with fighting prairie fires in Hooker and Thomas counties.
- Assistance was provided to the Terrestrial Wildlife Division on deer, turkey and pheasant check stations.
- Some time was spent on literature review.

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

DISTRICT III
Norfolk, Nebraska

Personnel

Allan Carson
Lee Rupp

District Supervisor
Conservation Aide

INTRODUCTION

District III, comprised of twenty-three counties, is located in northeast Nebraska with headquarters at Norfolk. The eastern two-thirds of the District is primarily agriculture and the western one-third is primarily ranch land.

Farm ponds, small lakes, and warm-water streams are the primary fishery. Lewis & Clark Lake and the Missouri River form the north and east boundaries. The Loup and Platte Rivers form the southern boundary with the sandhills forming the western boundary. A limited trout fishery exists in the northwestern part of the District.

There are 5,694 miles of stream and 36,758 acres of public water. The fisheries personnel are responsible for the management of this water and assist upon request in the management of 26,369 acres of private water.

Management activities are carried out on most public and leased waters. Assistance is given by request on private waters. Management activities also deal in areas indirectly related to fish production; such as access points and diking.

This report summarizes the activities of the Fishery Personnel in District III during 1972.

Fish Populations

Lakes and ponds were surveyed with 150 foot experimental mesh gill nets, trap nets, bag seines, and boat mounted electro-shocker.

Lake North - Platte County - 200 acres

This is a reservoir owned and operated by the Nebraska Public Power District. The water source for the lake is the Loup River. Lake North was built in 1964. Because of no control over the movement of fish in and out of Lake North, it was decided to seine the lake to improve the crappie and carp population. The lake was seined a total of 7 times from 1965 through 1970. A report on the effects of seining is nearing completion.

The 1972 survey showed that the crappie population is in a stunted condition with 88 percent of the crappies sampled in the 6 to 8 inch class. A decision as to whether the fish in Lake North will be managed or not will be made in 1973.

Grove Lake - Antelope County - 45 acres

Sampling showed an excellent population of black bullheads and crappie. A news release was prepared in an attempt to stimulate bullhead harvest. Trout are stocked in Grove Lake to stimulate an ice fishery. The ice fishery usually harvests a considerable number of crappies also.

Pibel Lake - Wheeler County - 25 acres

Sampling showed an overpopulation of stunted bluegills and related hybrids. The largemouth bass population is very low and shows poor growth due to interspecific competition. Plans are for a partial renovation by chemicals or by seining in 1973.

Fremont State Recreation Area - Dodge County - 103 acres

A total of 15 sandpit lakes in the Fremont Recreation Area complex are managed for fishing. The main management problem is the tremendous fishing pressure on the area. In a single season the population in these lakes can go from one with a good population to one with an almost total absence of predators (usually largemouth bass). The forage species (usually bluegills) respond to the removal of all predators by bringing off a large and successful year class which becomes stunted due to intraspecific competition. Thus, lakes are in need of renovation about 3 years after restocking. Management plans in the future to combat the problem are: setting a size limit on largemouth bass on certain study lakes and partial renovation of lakes to remove the stunted bluegills only.

Fremont Lake # 1 - 11.5 acres

Overpopulation of stunted bluegills and the presence of bullhead, carp, and carpsucker have led to the decision to renovate the lake in 1973.

Fremont Lake #2 - 15.5 acres

A netting survey did not provide enough information to decide whether this lake needs renovation. The bluegill do not appear to be overpopulated or stunted.

Fremont Lake #4 - 5.8 acres

The overall condition of the fish population appears to be good.

Fremont Lake #7-8 - 10.0 acres

The bluegill population appears stunted. The largemouth bass and bullheads are found in good numbers and will provide fishing in 1973.

Fremont Lake #11 - 6.0 acres

An overpopulation of bluegill and absence predators led to the renovation of #11 in August 1972. It has been restocked with largemouth bass and channel catfish. Plans are to set a size limit on largemouth bass in an attempt to prolong good fishing.

Fremont Lake #12 - 6.2 acres

A good population of largemouth bass and fair growth on the bluegills were found in 1972.

Fremont Lake #13 - 4.1 acres

Although the bluegills are stunted and overpopulated the largemouth bass numbers are fair.

Fremont Lake #18E - 12.0 acres

This lake was renovated in 1968 and restocked with smallmouth bass, rock bass, and channel catfish. The 1970 survey showed good numbers of smallmouth bass and reproduction. The 1972 survey failed to pick up any smallmouths and an overpopulation of bluegills and crappie both stocked into the lake by people. Plans are to renovate the lake in 1973.

Fremont Lake #19 - 4.9 acres

The lack of adult predator fish and an overpopulation of white crappie and green sunfish led to the renovation of #19 in May 1972. It has been restocked with largemouth bass, channel catfish and fathead minnows.

Fish Population Surveys - Streams

The following streams were sampled for the Platte Level "B" Study; Elkhorn River, Logan Creek, Loup Canal, North Loup River, Middle Loup River, Loup River, Platte River and several small tributaries to Elkhorn River.

Partial Renovations

No Activity.

Complete Renovations

Fremont #19	4.9 acres
Fremont #11	6.0 acres
Pilger Dam	3.0 acres

Habitat Improvement

Aerators were operated in Fremont Lakes #2, 4, 12, and 13 in order to prevent winterkill.

Fish Tagging and Marking

During 1972 a total of 343 paddlefish were tagged in the Missouri River below Gavins Point Dam. The main reason for tagging paddlefish is to provide information on the size of the paddlefish population. A total of 9 tags were returned in 1972.

Hoop nets were set in the Loup Canal to evaluate tag retention on channel catfish.

Fish Culture

Plans were made in 1972 to rear northern pike to an advanced fingerling

size in small stock water ponds. They will be salvaged by seining and stocked into heavily fished state-owned waters.

Fish Salvage

See fish culture.

New Fish Introductions

No activity.

<u>TOTAL FISH STOCKED (excluding Federal fish for ponds)</u>	
<u>Species</u>	<u>Number</u>
Largemouth Bass	12,400
Channel Catfish	10,370
Bluegill	5,000
Northern Pike	18,000
Rainbow Trout	19,115
Brown Trout	5,200
Fathead Minnows	6 gallons

Creel Census

A creel census on the Gavins Point Tailwaters was begun October 3, 1972. Plans are to continue the census at least until the end of the paddlefish season (April 30, 1973). The creel is run on one-half of the weekends and holidays and one-fifth of the week days. The South Dakota Department of Game, Fish and Parks is cooperating and is providing the Creel Clerk for all weekends and holidays. The primary reason for the creel census is to determine the paddlefish harvest. Additional information is being collected on the harvest of other fish (mainly walleye and sauger) and lengths, weights, and jaw samples of paddlefish.

Plans were made for a creel census on the DeSoto Bend National Wildlife Refuge in 1972. It began with the 1973 ice fishing season and will run through the open water season during 1973.

The creel information will be collected by Refuge personnel and Iowa Conservation Commission personnel. Our main activity will be to project total use and harvest figures from the information collected.

New Fishing Areas

Skyview Lake on the northwest edge of Norfolk was filled and stocked in 1972. This 50 acre lake will be used as one of the study lakes for an experimental size limit on largemouth bass in 1973.

Vegetation Control

Due to lack of funds no vegetation control chemicals were used on a

State-owned Areas in 1972. The Nebraska Public Power District provided 30 gallons of aquathol plus which we applied to a bay area of Lake Ericson at Ericson, Nebraska.

Private Ponds

Technical assistance was provided to landowners who stopped at or called the District Office wanting information about managing their ponds.

Pollution and Fish Kills

<u>Date</u>	<u>Area</u>	<u>Remarks</u>
May 1972	Elkhorn River, Wisner	Oxbow off river, low D.O. due to high B.O.D. runoff.
May 1972	Grove Lake Trout Rearing Station	A total of 7,856 trout killed. Suspected cause low D.O. due to high B.O.D. runoff.
May 1972	Grove Lake	Approximately 500 fish (mostly crappies). Cause unknown.
May 1972	Elkhorn River, Fremont	Kill occurred during heavy runoff period. Distance of kill at least 10 miles. Cause and severity of kill unknown.
May 1972	Looking Glasss Creek, Monroe	Kill occurred during heavy runoff period. About 700 fish killed. Suspected cause fertilizer and pesticide runoff.
June 1972	Shell Creek, Newman Grove	Overloaded sewage treatment plant at Newman Grove has severely polluted Shell Creek for 10-15 miles downstream.
July 1972	Grove Lake Trout Rearing Station	More than 30,000 trout killed. Suspected cause low D.O. due to high B.O.D. runoff from feedlot.
July 1972	Shell Creek, Newman Grove	Two complaints were checked, no dead fish observed.

Programs Presented

Participated in Hunting and Fishing Day open house.

Program presented to Antelope County Rod and Gun Club concerning management of their lake.

Radio program with Platte County SCS personnel concerning pond management.

Technical Meetings and Conferences

Attended Great Plains Fishery Workers Assoc. meeting at Sheridan, Wyoming.

Attended Statistical Workshop Colorado State University, Ft. Collins, Colorado.

Meetings Related to Commission Activities

A total of 20 meetings were attended in 1972 concerning Game Commission activities.

Reports and Articles Completed or in Progress

Wrote article on burbot for NEBRASKAland magazine.

A report titled "Partial Removal of Rough Fish by Seining as a Management Tool in Lake North: was worked on in 1972 and will be completed in 1973.

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

DISTRICT IV
North Platte, Nebraska

Personnel

Monte L. Madsen
Steve Brezenski
Gerald Wehrer
Victor Matousek

District Supervisor
Specialist Aide
Conservation Aide
Conservation Aide

INTRODUCTION

The District IV Fishery Management Unit encompasses an eighteen and one-half county portion of southwest Nebraska. Reservoirs constitute the largest percentage of public waters within this District. Approximately 70,000 surface acres of public waters and 10,000 surface acres of private ponds and lakes are located in District IV.

With the exception of McConaughy Reservoir and Lake Ogallala, which support cold water fisheries, the District consists of primarily warm water management.

Paul Novak, who was appointed District IV Fisheries Supervisor in December of 1971, resigned in March, 1972 to accept a position with the Alaska Game and Fish Department. The resulting vacancy was filled in May, 1972, by Monte Madsen.

Fish Population Surveys - Lakes & Reservoirs

Hayes Center State Lake, 48 Surface Acres, Hayes County

A general survey using two gill nets and two trap nets was made in 1972. A report summarizing the survey was completed and submitted.

The lake's population structure appeared to consist primarily of black and white crappie.

Northern pike natural reproduction in 1970 and 1971 was documented.

Red Willow Reservoir, Bureau of Reclamation, 1,630 Surface Acres, Frontier County.

As a result of continuing complaints on the declining fishery in the Reservoir, a general net survey was made in 1972. A total of four trap nets and eight gill nets were set over a two-day period. A report summarizing this survey was completed and submitted.

Net composition data and the resulting age and growth summary indicated the lake's fish population structure consists primarily of slow growing black and white crappie. These fish are in a poor condition and not desirable to the angler.

Reproduction and/or recruitment of the walleye, northern pike, largemouth and smallmouth bass appears to be poor for the last three years.

Interstate Lakes

The following Interstate Lakes were surveyed during 1972 by means of gill and trap nets. Lake size dictated the number of nets set per

lake. The lakes are listed as follows by mileage marker number: 162N, 169.5S, 170N, 174N, 177S, 182N, 185S, 190N, 191S, Maranatha Bible Camp, 194N, 197S, 200S, 203.5N, 216S, 217.5S, 221S, 223S, 231N, 238N, 253.5N, 258S, 261.8N, 264.5N, 268.5S, 271N, 271.5N, 273S, 276.5N, 281S, 282.5S, 283S, 286N, and 291.5N.

Generally all lakes surveyed were providing a poor quality of fishing. Most lakes were found to contain non-stocked problem species, e.g. yellow perch, green sunfish, black bullhead. Also, most lakes contained excessive numbers of small forage species, primarily rock bass and bluegill. Smallmouth bass reproduction and adults were low in numbers.

Sandy Channel

A post-renovation survey using gill nets and trap nets was carried out on three lakes in this area. Only species stocked in 1971 were found present. Growth rates were considered normal for a gravel pit lake environment.

Interstate Lake 162N

A population estimate was made on black bullheads. The standing crop was calculated at 20.5 pounds of bullheads per acre.

Lexington City Park Lake

At the request of city officials this seven-acre lake was surveyed using gill nets and trap nets. A report summarizing the survey with future management recommendations was drawn up.

McConaughy Reservoir

McConaughy Reservoir was gill-netted three times during 1972. The purpose of the netting was to collect information on channel catfish, leech occurrence and the distribution of kokanee and coho salmon.

Fish Population Surveys - Streams

Otter Creek

This tributary to Lake McConaughy was sampled in conjunction with District I personnel to evaluate reproduction and spawning migration.

Frenchman River

A stretch of river immediately below Enders Dam was sampled jointly with B.S.F. & W. personnel in January and December. The purpose of the sampling was to observe changes in the river's fish population structure when flows were altered.

Tri-County Canal

Sampling was carried out in Lincoln and Dawson Counties in conjunction with the Natural Waters Specialist for the Level "B" Study.

Partial Renovations

Interstate Lakes

Following the surveys, the shoreline areas of certain lakes were treated with rotenone as a selective forage thinning technique. The lakes given this treatment are listed by mileage marker as follows: 177N, 190N, 191S, 199S, 223S, 238N, 259S, 261.8N, 264.5N, 271N, 271.5N, 276.5N, 281S, 282S, 284.5S, 286N, and 291.5N.

Treatment success ranged from fair to good. Only in one instance were several adult bass killed in conjunction with the treatment.

Lexington City Park Lake

Following the survey, this seven-acre lake was treated with 0.1 ppm rotenone for a selective shad-forage removal.

Good results were obtained with an estimated 150 pounds per acre of shad and sunfish killed.

Complete Renovations

Interstate Lakes

Two lakes were completely renovated during 1972. They were:

243.0S - 9 surface acres - treated at 1.6 ppm.

244.5S - 6.5 surface acres - treated at 2.7 ppm.

Lake Maloney Holding Ponds

Two ponds totaling three acres were treated with 4 ppm rotenone to eradicate gar. The ponds had been used for holding State Fair display fish.

Habitat Improvement

Otter Creek

An additional portion of the upper end of this stream was fenced off by a lease agreement with the landowner, Thad Patrick.

Interstate Lakes

Preliminary work on the placement of fish attractors was started in

December on selected Interstate Lakes. The bulk of the work will be carried out in 1973.

Fish Tagging and Marking

Assistance was given to District I personnel on tagging and fin clipping channel catfish at the Lewellen Weir.

Fish Culture

Fish culture activities for collecting walleye eggs and smallmouth bass fry from McConaughy Reservoir were coordinated with the North Platte Hatchery.

This information is summarized in the 1972 Hatchery report.

Fish Salvage

Fish salvage operations were carried out in irrigation supply canals during September, October and November. Sodium cyanide was used for all collections with excellent results.

The following numbers of fish were salvaged.

<u>Species</u>	<u>Size</u>	<u>Number</u>
Channel catfish	3"-20"	34,141
Flathead catfish	3"-18"	554
Northern pike	12" average	13
Walleye	12" average	130
Largemouth bass	6" average	23
White bass	10" average	17
Rock bass	6" average	3

New Fish Introductions

Striped bass were stocked in McConaughy Reservoir and Harlan County Reservoir in 1972.

This would be the eighth consecutive year for striped bass being stocked into McConaughy and the first year for stocking striped bass into Harlan County Reservoir.

<u>Reservoir</u>	<u>Size</u>	<u>No. of Bass Stocked</u>
McConaughy	2" - 3"	179,669
Harlan County	2" - 3"	51,423
Tailrace Canal, North Platte	12"	12

Total Fish Stocked

Stocking activities were coordinated with the North Plate, Valentine and Rock Creek Hatcheries.

The following table summarizes the 1972 fish stocking for District IV waters:

<u>Species</u>	<u>Size</u>	<u>Number</u>
Rainbow trout	4" - 9"	115,314
Walleye	12"	193
Northern pike	1½"- 6"	93,385
Channel catfish	3" - 20"	21,294
Largemouth bass	2" - 4"	61,462
Rock bass	1" - 2"	24,660
White bass	10"	23
Flathead catfish	3" - 18"	517
White crappie	3" - 4"	130
Striped bass	2" - 3"	231,092
Striped bass	12"	12

Creel Census

Fisherman contacts were carried out periodically at Lake McConaughy during the spring spawning run and also the late summer period for the purpose of determining white bass harvest.

A total of 302 fishermen who had completed their daily fishing trip were contacted. A total of 1,374 white bass were caught for a total of 4.5 fish per fisherman.

This information was summarized into report form.

Commission action placed a bag and possession limit of 25 and 50 on the white bass, statewide, for 1973.

New Fishing Areas

No new fishing areas were added to District IV during 1972.

Vegetation Control

No activities pertaining to aquatic vegetation control were carried out in District IV during 1972.

Private Ponds

A total of six private ponds were checked and management advice given. One private hatchery application was checked and approved. Numerous office contacts were carried out with people requesting pond management advice.

Pollution and Fish Kill Investigations

<u>Area</u>	<u>No & Species Killed</u>	<u>Cause</u>
Elfeltd Pond, Sutherland	1,250 Carp and Bullheads	Low DO, Feedlot
Private Pit Odessa	1,700 Platte River Compo- sitions	Summer Kill, Low DO
Ravenna State Lake Ravenna	200 Largemouth Bass	Summer Kill, Low DO

In addition, several reports of fish dying in McConaughy Reservoir during an extensive late summer algae bloom were received. All reports were checked and no evidence of fish loss was documented.

The South Platte River at the State Line was also checked for evidence of a pesticide kill originating in Colorado. No kill occurred across the State line.

An oil spill in Hitchcock County was checked with DEC personnel.

Programs Presented

<u>Group</u>	<u>Topic</u>
Platte Valley Engineers Society	Commercial Fishing
Student Group, North Platte High School	Fisheries as a Profession
McConaughy Lake Development Committee	White Bass limit

Technical Meetings

Nebraska Chapter AFS and Wildlife Society	Lincoln, NE
Commercial Fisheries Gear Workshop	Seattle, Wash.
North Platte River Basin hearing	Scottsbluff, NE
Great Plains Fishery Workers Assoc.	Sheridan, Wyo.
NPPD hearing on Gerald Gentlemen Plant (4 meetings)	North Platte, NE
Area Meeting, Level "B" Study	North Platte, NE

Meetings Related To Commission Activities

Annual Fisheries Division Meeting	Hastings
Commission In-Service Training Session	Lincoln
I & E Informational Meeting	North Platte
Hatchery Needs Study	Kearney

Reports Completed

Project Proposal, Commercial Fisheries Research
1971 Annual Report, Commercial Fisheries Project
1971 Annual Report, District IV
5 Year Summary, Lewellen Weir Operation
White Bass Bag Census Summary, Lake McConaughy
Winter Commercial Fishery Proposal, Johnson, Sutherland, Maloney
Reservoirs

Miscellaneous Other Activities

Several meetings were held throughout 1972 with representatives of Bio-test Laboratories in conjunction with the proposed NPPD fossil fuel plant to be located near Sutherland Reservoir.

The scale projector was rebuilt.

Several truckloads of rough fish were hauled from the Lewellen Weir to the North Platte Rendering Plant.

A cover crop assessment survey of diverted acres in Hayes, Hitchcock and Lincoln Counties was carried out in June, July and December.

Assistance was given on several occasions to Research Division on the parasitology study.

Assisted CSU physics staff with cosmic radiation study at Lake McConaughy.

Manipulated water level in Hayes Center, Wellfleet and Rock Creek State Lakes for biological population control of forage species.

Equipment maintenance and net repair were carried out as needed.

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

DISTRICT V
Lincoln, Nebraska

Personnel

Jim Johnson	District Supervisor
Larry Zadina	Conservation Aide
Gene Zuerlein	Conservation Aide

INTRODUCTION

District V is composed of the southeast 27 counties of Nebraska. The district has 59 public fishing lakes comprising a total 5,512 surface acres as well as 2,947 miles of flowing streams.

District V contains the states largest population concentration (over half of the state's 1972 resident fishing permits were sold in District V) and consequently is faced with acute shortages of angler capacity. Excessive angler use is therefore the District's most serious management problem.

Following is a review of the management activities of the District V Aquatic Wildlife Division during 1972.

Fish Population Surveys - Lakes and Reservoirs

Wagon Train Lake (SV #8) - Lancaster County - 315 Acres

A standard survey was conducted on Wagon Train Lake, primarily to evaluate the status of its white perch population. Catch statistics this year revealed that white perch are continuing to dominate the lake and are in an extremely stunted condition. Gizzard shad, in the absence of adequate numbers of predators, are also very abundant. However, a good population of channel catfish exists, and appears to have increased in numbers since the last survey in 1970. Populations of all other game species are severely depressed.

Stagecoach Lake (SV #9) - Lancaster County - 170 Acres

A single white perch was sampled by bottom trawl from Stagecoach in 1971. This was our first indication that white perch from Wagon Train may have invaded other Salt Valley Reservoirs. A standard survey conducted in 1972 confirmed that the white perch is indeed well established in Stagecoach. Although not presently in a stunted condition, the white perch population is clearly expanding and could become a serious problem. Stagecoach is a very popular sportfishing lake containing reasonably good populations of walleye, northern pike, and largemouth bass. It is hoped that with supplemental stockings of northern pike and walleye, predator species will be capable of checking further expansion of the white perch population.

Pawnee Lake (SV #14) - Lancaster County - 740 Acres

Catches of two trap nets and two gill nets, set as a demonstration for a University of Nebraska ichthyology class, revealed good populations of walleye and channel catfish. The wide range of sizes collected indicated these species are probably reproducing.

Branched Oak Lake (SV #18) - Lancaster County - 1,800 Acres

A night shocking study conducted on April 4, 1972 showed conclusively

that walleye are using the dam face to spawn. Branched Oak received stockings of walleye in 1968 and 1969. No direct evidence has yet been found that they are capable of reproducing in the reservoir, but the fact that they are utilizing the dam face is encouraging.

A gill net study was conducted in August to evaluate the success of a stocking of 41,000, six to eight inch channel catfish in 1971. A very good population of 10 to 16 inch channel catfish was sampled with an average of 15 catfish per gill net. Prior attempts to establish catfish in the reservoir were unsuccessful. A total of 300,000 fingerlings were stocked from 1969 to 1971 with no evidence of success. Apparently, the stocking of larger sizes can in some cases be the answer to heavy losses following stocking.

West Hord Lake (sandpit) - Hamilton County - 8.5 Acres

A standard survey revealed this lake to be overpopulated with slow growing bluegills. Numerous largemouth bass were sampled, but very few were of catchable size and they were getting very poor growth. A fair catfish population is present but not reproducing. Extensive angling pressure is closely cropping all game species. Unless bluegill numbers are thinned in the near future, the bass population will likely collapse altogether. This lake is slated for partial renovation in 1973.

East Hord Lake (sandpit) - Hamilton County - 14.2 Acres

A standard survey was also conducted on this lake. The results indicate that the lake is dominated by three species. Yellow perch were never stocked in the lake, but a very large 1971 year class now exists. The yellow perch, along with an abundance of gizzard shad, appear to be providing excellent forage for the lake's walleye population. The walleye, stocked as fingerlings in 1970, were averaging 20 inches by the fall of 1972. This is the only species presently providing a significant sportfishery for the lake. A more diversified game fish population would certainly be desirable.

Longbridge Lakes #1, #2, and #6 (sandpits) - Merrick County - 0.9 to 3.3 Acres

Standard surveys of these lakes indicated all are severely overpopulated with slow growing bluegill. Largemouth bass growth and recruitment is poor. Attempts to establish catfish in these small sandpit lakes have proven unsuccessful. Past attempts to improve the lakes by renovation have also proven unsuccessful. Owing to the extreme angling intensity these lakes must sustain, most largemouth stocked are cropped before they have the opportunity to reproduce. These three lakes will receive supplemental stockings of four inch largemouth in 1973.

Louisville Lake #2 (sandpit) - Cass County - 18.0 Acres

A standard survey revealed that the population of Louisville Lake

#2 consists almost entirely of gizzard shad and bluegill. This lake is to be partially renovated and restocked in 1973.

Verdon Lake - Richardson County - 30 Acres

A complete survey of Verdon Lake was conducted primarily to assess growth of its white crappie population. This highly fertile lake has had a history of population problems with this species. Presently the crappie population appears to be contained, owing to corrective seining in 1971. Largemouth bass are abundant, reproducing very well and getting good growth. Bluegill are growing exceptionally well. Verdon Lake should provide excellent fishing in 1973.

Memphis Lake - Saunders County - 45 Acres

A standard survey was conducted on this lake. High numbers of carp were sampled but they appeared to be getting poor growth. This overpopulation of carp is apparently hindering the reproduction of largemouth bass and bluegill. However, an excellent reproducing population of catfish was sampled and the lake's crappie population is also providing a good fishery.

Alexandria Lake #3 - Jefferson County - 23 Acres

Alexandria Lake #3 supports a surprisingly good sportfishery in view of the extensive angling pressure it must sustain. A standard survey revealed a very strong 1971 year class of largemouth bass and an expanding black crappie population. Both species are getting fair growth and providing a good fishery. Channel catfish, until recently the lake's main attraction, have practically left the scene. Bluegill are continuing to get good growth. However, the carp population is also doing very well and presents a threat to the lake's future.

Fish Population Surveys - Streams

A total of 29 man days were devoted to stream surveys in coordination with the Natural Waters Specialist.

Nineteen man days were spent inventorying fish populations of the Salt Creek Watershed during April, May, and June. During September and October, three man days were spent on the Big Blue Watershed, two man days on the Elkhorn, and five man days on the Republican River.

Partial Renovations

No partial renovations were conducted in District V this year.

Complete Renovations

The following waters received total renovations in 1972. Rotenone

was the toxicant used in all cases.

<u>Water</u>	<u>Acres</u>
Two Rivers Lake #1 & #2	8.3 (combined)
Two Rivers Lake #3	5.6
Two Rivers Lake #4	3.8
Two Rivers Lake #5 (Trout Lake)	6.5
Interstate Lake #306 N	15.1
Interstate Lake #307 N	16.9
Watershed of Papio project #16 (approximately 6 miles of flowing water)	

Habitat Improvement

Collected old culverts from the City of Lincoln and began making spawning habitat for catfish from them. The devices are intended for Verdon Lake and Alexandria Lake #3.

Fish Tagging and Marking

No tagging studies were undertaken in District V in 1972. Reports are in progress for the Blue River tagging studies.

Fish Culture Activities

Assistance was provided both state and federal hatchery systems in stocking some of the waters of District V.

The facilities of five private fish culture applicants were inspected.

The rearing pond at Burchard Lake was utilized this year to rear walleye fingerlings to approximately six inches. Boards were placed in the dam in March. The pond was filled by the time of arrival of 3,055 two-inch walleye on May 17th. An average size of approximately five inches was reached by the time the pond was drained into Burchard Lake on July 24. Survival was approximately 80 percent. Five man days were spent on the project by District V personnel. Final evaluation of success of the rearing pond will depend upon the degree of survival of the advanced fingerlings in Burchard Lake.

Fish Salvage

Approximately 85 white amur were removed from the premises of a private hatchery and returned to Lincoln for experimental purposes and disposal. The rearing pond from which they were seined was then heavily treated with rotenone.

Alexandria Lake #1 was lowered to facilitate removal of carp and bullheads by seining. A total of 1,500 pounds of carp and 100 pounds

of bullheads were salvaged from the lake and taken to Crystal Springs Lake at Fairbury. An additional 500 pounds of stunted black bullhead, bluegill, green sunfish, and crappie were removed and buried.

A private farm pond near Papillion was seined and 115, ten to twelve inch bullheads were salvaged for transfer to the Louisville #3 Lake.

Fish Introductions

No new species were stocked in District V waters during 1972.

Fish Stocked

The following species were stocked in District V waters during 1972.

<u>Species</u>	<u>Number Stocked</u>
Largemouth Bass	24,800
Channel Catfish	50,460
Walleye	15,455
Rainbow Trout	130,495
Northern Pike	144,190
Rock Bass	32,830
Bluegill	38,500
Carp	1,500 pounds
Bullhead	150 pounds
Fathead Minnow	5,000
Golden Shiners	5,800

Creel Census

No creel census data was collected by District V personnel during 1972.

New Fishing Areas

No new fishing areas were opened to the public in District V last year. However, site #16 (Military Reservoir) of the Papillion Creek flood control project near Omaha has been filling since November and should be ready for initial stocking by spring of 1973.

Vegetation Control

Copper sulfate was applied to the shoreline of the Trout Lake at Two Rivers to control algae growths.

Private Ponds

Assistance was provided to the Farm Pond Biologist in renovations of two farm ponds.

In conjunction with the River Basins Section of the B.S.F. & W., the lake at Soldiers and Sailors Home in Grand Island was seined to assess its carp population and to thin its bluegill and crappie numbers.

Technical advice was provided the Lyman-Richey Sand and Gravel Company concerning management of its sandpits.

Inspected the suitability of Falls City Park Lake for renovation and management as a sportfishery.

Water Pollution and Fish Kill Investigations

Lake or Stream	Location	Area Affected	Cause	Extent of Fish Kill
Lost Creek and Woods Sandpit	Schuyler	2 miles stream 3 acre sandpit	Spencer Food	Heavy (80%)
Beaver Creek	Beaver Crossing	---	Unknown	Light
Coon Creek	York	---	Feed Lot	Light
Bowling Lake	Lincoln	4 acres	Unknown	Heavy
Little Blue R.	Fairbury	---	Sewage Treatment Plant	Heavy
Delbert Biel Farm Pond	Gretna	4 acres	Use of Herbicide	Heavy
Beaver Creek	York	---	Anhydrous Ammonia Fertilizer	Light

Two Rivers Annual Report

Operations Statistics

Two Rivers Trout Lake was operated for its twelfth consecutive year in 1972. The table below illustrates its history through 1972.

Year	Days Open	Fishermen	Trout Stocked	Percent Caught	Income	Cost	Fishing Hours
1961		26,017					
1962	259	29,942	96,644		44,886.00	51,660.05	
1963	251	29,675	118,901	90.0	44,512.00	53,395.96	106,365
1964	254	30,843	112,149	94.0	46,264.50	54,715.00	105,079
1965*	230	31,169	109,650	95.0	46,753.50	43,666.05	111,732
1966	257	33,043	121,937	95.0	49,546.50	49,500.06	116,152
1967*	205	38,805	137,055	93.0	58,207.00	63,802.56	136,237
1968	254	52,937	182,231	94.0	79,405.00	80,919.14	188,656
1969	195	43,836	141,420	100.0	65,754.00	63,351.00	173,981
1970	254	47,743	158,170	95.0	71,614.00	90,394.55	172,381
1971	244	38,101	156,053	89.0	57,151.50	57,969.62	124,154
1972*	224	28,411	139,952	83.4	56,822.00	49,072.54	75,768

* Renovations

Management of the Trout Lake this year was not without its problems. A repeat performance of the 1971 decline in dissolved oxygen was encountered in July and August of 1972. The resulting poor catch rate and heavy losses of trout necessitated suspension of permit sales from July 25 through August 24. A total of 3,020 dead trout were observed. However, it was estimated that at least an equal number also died and, sinking to the bottom, were never observed. A portable irrigation pump was operated for 166 hours and approximately four feet of water was drawn from the lake. The lake then refilled with desirable trout water and was restocked in August. No further losses of trout were incurred during the remainder of the season.

Winter struck Nebraskaland unusually early this year and the lake was frozen by December 4. This for all practical purposes ended the fishing season, although the official closing date was not until December 15.

Because of the summer closure of the lake and inclement weather conditions during the fall, sale of tags at Two Rivers declined sharply from earlier years. During 1972, anglers bought 28,411 tags, averaged 2.66 hours per trip, and took 1.54 trout per hour for an average of 4.11 trout per trip. In all, 116,790 of the 139,952 trout stocked were caught by fishermen with tags for an average catch of 83.4% of the stocked trout, the lowest return in the history of the Trout Lake.

It was decided to increase the price of tags for 1972 from \$1.50 to \$2.00, and as a result, Two Rivers Trout Lake operated at a net profit of \$7,749.46.

This year's early winter would indicate that we are definitely gambling with the weather by trying to maintain the fishing season at Two Rivers until December 15. An earlier closing date would be advisable in the future. The Trout Lake was left with a surplus of approximately 6,000 fish at the close of the season owing to this unusually early development of ice cover.

Trout Lake Management Activities by District V Personnel

Investigated the possibility of dredging the Trout Lake to increase ground water flow. One man day.

Using sodium cyanide, 933 trout were salvaged from the Trout Lake prior to its renovation and transferred to Gretna Hatchery. Nine man days.

The Trout Lake was renovated in March of 1972 owing to the invasion of undesirable species during the spring flood of 1971. Two man days.

Purchased and applied potassium permanganate to speed detoxification of the Trout Lake. Counted numbers of fish killed. Set up live cages and had water samples analyzed to monitor rotenone toxicity of the lake. Eighteen man days.

Helped sell trout tags. Three man days.

Coordinated installation of an electrical outlet at the Trout Lake. Installed electric aerator and removed the aerator after it proved to be inadequate. Six man days.

Measured temperature and dissolved oxygen profiles. Twelve man days.

Copper sulfate was applied to the shoreline of the Trout Lake at Two Rivers to control algae growth. One man day.

Installed irrigation pump to draw down the lake level and stimulate flow of ground water. Five man days.

A total of 57 man days was spent by District V personnel on Two Rivers Trout Lake.

Programs Presented

Clinton Elementary School	Lincoln, Nebraska
University of Nebraska Wildlife Club	Lincoln, Nebraska
Lincoln High School	Lincoln, Nebraska

Technical Meetings and Conferences

Great Plains Fishery Workers Association	Sheridan, Wyoming
Nebraska Chapter American Fisheries Society	Valentine, Nebraska

Meetings Related to Commission Activities

Aquatic Division Meeting	Hastings, Nebraska
Aquatic Division Meeting on fishing regulations	Lincoln, Nebraska
Training Meeting for Game and Parks Personnel	Lincoln, Nebraska
Meeting on fish stocking policy	Kearney, Nebraska

Reports and Articles Completed or in Progress

Fish Population Survey Reports completed

Alexandria Lake #3
West Hord Lake
East Hord Lake
Louisville Lake #2
Verdon Lake
Burchard Lake
West Twin Lake
Two Rivers Lake #1 & #2
Two Rivers Lake #3
Two Rivers Lake #4
Lease Lake
Longbridge Lake #3
Longbridge Lake #5

Fish Population Survey Reports in progress

Branched Oak Lake
Longbridge Lake #1
Longbridge Lake #2
Longbridge Lake #6
Louisville Lake #2
Memphis Lake
Stagecoach Lake
Wagon Train Lake
Tag Retention, movement and harvest of channel catfish and carp
for both the Big Blue and Little Blue Rivers.

Other Activities

Sites #11 and #16 of the Papillion Watershed flood control project were inspected for the purpose of determining rotenone needs for watershed renovations.

Provided manpower and equipment during the seining of Holmes Park Lake for the body of a drown canoeist.

Mowed weeds at the District's tool shed.

Sent replies relating to tag returns from the Blue River tagging studies.

Assisted the U.S.G.S. with a time of travel study of Salt Creek.

Plugged a culvert at Two Rivers to keep high water from entering the newly renovated lakes.

Assisted in the transfer of the Limnology Lab from Hastings to Lincoln.

Assisted University of Nebraska personnel in attempting to determine if white perch have invaded the Missouri River. The white perch have a relatively clear avenue, via Salt Creek and the Platte River, to invade the Missouri from their source in the Salt Valley Reservoirs. Random sampling produced no white perch.

Shocked Branched Oak, Pawnee, Bluestem, Memphis, and East Twin Lakes to monitor the extent of walleye spawning runs.

Many small streams in the District were evaluated for possible stocking of northern pike.

Conducted routine maintenance of District V nets and other equipment.

Constructed a 150 gallon live box.

Assisted the Research Division with the operation of Bluestem spawning marsh.

Assisted in screening of government surplus supplies.

Began a dissolved oxygen monitoring program for District V Lakes.

Set up a detoxifying station in the stream below Two Rivers Recreation Area following renovation to Two Rivers Lakes #1, #2, #3, #4, and #5.

Trawled the Salt Valley Lakes during the fall in an attempt to document catfish and walleye reproduction.

Set up a display of Nebraska fishes at Two Rivers for National Hunting and Fishing Day.

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

POLLUTION
Lincoln, Nebraska

Personnel

Wesley F. Sheets Specialist

Pollution Specialist

The activities of this project were assumed in December, 1971. A variety of activities concerning pollution occurrence and abatement were conducted during 1972. Direct contact with the Department of Environmental Control and the Environmental Protection Agency has been maximized with relatively good relations existing.

Pollution Abatement

In keeping with the Nebraska Environmental Protection Act, a list of the monetary values of fishes was established and adopted by the Game and Parks Commission. It has not been tested in court, but should aid the recovery of damages incurred in pollution-caused fish kills.

Minor changes in the Water Quality Standards for Nebraska were made in 1972. Testimony was presented at the public hearing for the changes. Significant further changes will occur early in 1973. Numerous hearings for the adoption of rules and regulations pertaining to the Department of Environmental Control activities were attended.

Scrutinization of 73 applications for 1899 Refuse Act discharge permits was made, out of the 133 applications. Due to court injunctions and the Federal Water Quality Amendments of October 1972, this system has been curtailed. The 1972 amendment has provided for a new permit system for discharges of any kind into any waters. All old 1899 discharge permits will be incorporated into the National Pollutant Discharge Elimination System to be instituted during 1973 including everything, such as industrial pipes, sewage treatment systems, and agricultural wastes.

Interim plans for water quality management in all drainage basins for Nebraska were reviewed and commented upon. Numerous other planning documents, legislative proposals, etc. were reviewed.

Individual Pollution Case Participation

During 1972, a number of investigations were carried out, many in assistance to D.E.C. and our Department personnel. Legal enforcement actions were initiated on a few. Precedents were established in county court preliminary hearings with two pleas of guilty to violating Water Quality Standards and one plea of guilty to violating Statute 37-516. Administrative hearings by D.E.C. have resulted in several additional settlements out of court.

This represents 100% increase in enforcement action compared to previous years.

Fish Kills 1972

Fish kills reported to and investigated by our Department were 17

in number in which an estimated 144,128 fish were killed. Two occurrences of municipal sewage treatment plant overloads killed 75,486 fish. Eight feedlot problems accounted for 50,093 fish lost. The other 18,549 fish were lost for varied or unknown causes.

Training

Considerable time was spent being trained or assisting in training. School and seminars participated in were: Water Quality Studies (EPA, Cincinnati), Enforcement and Wildlife Services Sessions (Game and Parks Commission) two Oil Spill Schools (E.P.A.) two Street Use Schools (E.P.A.) and Defensive Driving (State Patrol).

Meetings Attended

Midwest Fish and Wildlife Conference, Des Moines Iowa
Central Mountains and Plains Wildlife Society, Halsey
(paper presented)
Game and Parks Commission Fishery Division Meetings.

Programs

Introduced Fish Species - Lincoln Ikes'
Eutrophication - Rainbow Boat Club
Pollution Problems - Lincoln Optimist Club

Miscellaneous Activities

Assisted district personnel on occasion.

Very numerous conferences with D.E.C., E.P.A., B.S.F.W.R.B., and other agencies.

Served as commission representative to several study committees such as, Ground Water Quality in Middle Platte Basin Committee, Salt Creek Basin Advisory Task Force.

Attended most Environmental Control Council meetings.

Assisted stream sampling crew (inventory) on occasion.

Assisted Fish Production to begin monitoring for R.A.P. discharge permits.

Surplus property screening trips.

Flew aerial surveillance of major streams for illegal sand and gravel pumpers.

Worked with Al Lopinot (Illinois) to set up list of fish values for United States.

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

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NATURAL WATERS
Lincoln, Nebraska

Personnel

Quentin P. Bliss
Steve Schainost

Specialist
Specialist Aide

Natural Waters Specialist

In 1972, this project finally started to function like a project. On April 24, Jim Johnson was hired as a Specialist Aide and made a welcome addition to the work force until September 1, when he became District V Aquatic Supervisor. Steve Schainost was promoted to Specialist Aide on December 1, and also was a welcome addition.

The majority of the time and effort of this project was spent on the statewide stream survey. It was felt that the stream survey could qualify to be funded with D-J funds. Therefore, the project was documented and submitted to federal service for approval. While the project statement was being reviewed by the federal service, it became apparent that if we applied we might qualify for money under a Level "B" Study of the Platte River Basin. Since this was 100 percent federal money, it was quickly decided that we would apply for it. We were successful in obtaining Level "B" money. After the Level "B" money was received, the D-J project had to be re-written and submitted again. After numerous attempts, we were able to get the D-J stream survey project (F-9-R) approved.

With the addition of the Level "B" funds, it was possible to hire four summer aides to survey streams, and one work study student to identify minnows in the laboratory. During the year sampling was carried out by the survey crews, district personnel, and the Specialist and Specialist Aide. All flowing streams in the following basins have been surveyed: Lower Platte, Middle Platte, Loup, Elkhorn, Republican, and Missouri Tributaries. In addition, the majority of the sampling has been completed in the North Platte and South Platte Basins. Limited sampling has also been carried out on the Niobrara and Big Blue Basins. Hopefully the statewide stream survey will be completed in 1973.

Time was also spent sampling the Frenchman River below Enders. The river was sampled once in May and once in December in an attempt to determine the effect on the fish population of additional dewatering during the winter months. The fish population in the Frenchman River below Enders had been so severely effected previously, that additional loss will be difficult to document.

Assistance was provided to District V in repayment for manpower supplied to the stream survey crews. Assistance was provided in the renovation of the five lakes at Two Rivers and in surveying Wagon Train Lake and Memphis Lake.

During 1972, the following reports were completed or in process of being completed:

- "Movement of Carp in Small Streams"
- "Tag Retention of Stream Residing Fish"
- "Movement of Channel Catfish in Streams"
- "Annual Report"
- "Platte River Basin Survey Report"

The following meetings or training courses were attended:

Aquatic Division Meeting	- Hastings
Aquatic Divison Meeting	- Kearney
American Fishery Society Meeting	- Hot Springs, Arkansas
Storet Computer School	- Kansas City, Missouri
IBM Computer Training Course	- Lincoln
Biologist Training Session	- Lincoln
Defensive Driving Course	- Lincoln

During 1972, a program on "Lake Management" was presented to the Bellevue Rod and Gun Club, and a program on Stream Management was presented to the Lincoln Chapter of the "Ikes".

STATE OF NEBRASKA
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AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

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RESERVOIRS
Lincoln, Nebraska

Personnel

Larry Messman

Specialist

Reservoir Specialist

Duties of Reservoir Specialist were assumed on September 1, 1972. The primary responsibilities of this position are development and assistance with administering a statewide program to maintain and enhance fishery resources associated with reservoirs, diversion dams, power dams and canals. However, the majority of the first year will be spent conducting and completing two Commercial Fishery Projects entitled Survey of the Commercial Fisheries Industry in Nebraska and Evaluation of an Electric Weir as a Harvest Method for Commercial Fish.

Survey of the Commercial Fisheries Industry in Nebraska (2-195-R)

A reporting system for bait vendors and private hatcheries who handled minnows, frogs, and crayfish was developed. The reporting forms have been mailed and results are being returned. In addition several bait vendors have been interviewed throughout the state. Their comments vary considerably but most seemed quite optimistic and cooperative.

Evaluation of an Electric Weir as a Harvest Method for Commercial Fish (2-196-R)

This project is programmed from January 1, 1973 to December 31, 1973. Only work accomplished during 1972 in regard to this project was meeting with personnel and discussing problems in sampling and recapturing the carp, carpsucker, and quillback.

In November, I met with Stan Peterson, Bureau of Commercial Fisheries, and Frank Smith, a private electrician who designed and built the pulsating boxes, in regard to the build-up of an electric field in front of the entranceway to the trap. They felt this problem could be corrected by tightening or drawing the extensions approximately four feet upstream. They also felt we should run a copper wire above the waterline from the north wing of the entranceway across to the south bank and ground it. The reason for the wire is that the field would pass through the area of least resistance and go through the copper wire rather than the water.

It was also decided to increase the power to the north channel where carp frequently break through the suspensions during peak migration. During the carp migration the north suspensions will receive alternating current which will allow no fish to pass upstream through the north channel.

Lewis and Clark

I attended a joint meeting with N.C.R.I. and South Dakota which focused on the current problems related to the poor sport fishery within Lewis and Clark. The discussion centered primarily on the fact that the lake was in dire need of a forage species whose life history could withstand the rapid water exchange. N.C.R.I. suggested the introduction of the spottail shiner.

Depending upon the 1972 year class, we are anticipating acquisition

of spottail shiners from Iowa in May, 1973, which will subsequently be stocked in Lewis and Clark.

Spottail Shiner

Since a decision has been made to acquire and introduce the spottail shiner in Lewis and Clark, it was felt that at least some of the literature regarding the life history of this species should be reviewed. Considerable information regarding the spottail shiner has been accumulated, however, to date no formal literature review has been written.

Channel Catfish Paper

Considerable time was spent preparing a paper in regard to channel catfish movement in the Republican River. This paper was presented at the Midwest Meeting in Des Moines.

Coho Paper

A report regarding the success of introducing the coho salmon in Nebraska was completed. This report was presented at the November Commission meeting. This report has been circulated to all districts.

Other Activities

Met with Larry Hutchinson regarding Merritt Reservoir with special emphasis on the alewife.

Assisted Natural Waters Specialist sample Salt, Fairfield, and Schlagel Creeks.

Traveled with Pollution Specialist on an inspection tour of the Great Western Sugar Beet factories in Scottsbluff. While on this trip, we investigated a fish kill on Nine Mile Creek believed to have resulted from silage liquor from a feedlot near Minatare. Assistance was also provided in checking pipes near South Bend and Norfolk.

Miscellaneous Activities

Reviewed applications for Specialist Aide position.

Put together new desks for Division.

Completed job description.

Pictures were taken for NEBRASKALand.

Time was spent with Jim Johnson familiarizing him with the activities in District V.

Wrote survey report for West Twin Lake.

Assisted in taking temperature and DO profiles on Stagecoach Lake.

STATE OF NEBRASKA
GAME AND PARKS COMMISSION

AQUATIC WILDLIFE DIVISION
BUREAU OF WILDLIFE SERVICES

ANNUAL REPORT

1972

LIMNOLOGY PROJECT
Hastings, Nebraska

Personnel

D. B. McCarraher

Limnologist

Field work related to updating the 1954 Sandhill Lake Survey Report was completed early in the year. Analysis of field data and preparation of the final report was then begun. A rough draft of the report was completed by late August.

Mr. McCarraher resigned in early September to take a position with the Fisheries Department in Queensland, Australia.

The rough draft of the Sandhill Lake Survey report was reviewed and a second draft was typed in late November. This copy of the manuscript was mailed to Mr. McCarraher in Queensland for his review and comments.