

2093

INVESTIGATION OF CROOK PROBLEMS



DEPARTMENT OF NATURAL RESOURCES

By

Office of the State Engineer;
Division of Water Resources
State of Colorado

INVESTIGATION OF CROOK PROBLEMS

THIS STUDY WAS CONDUCTED UNDER THE DIRECTION OF THE
OFFICE OF THE STATE ENGINEER

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Investigation of Crook Problems

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INVESTIGATION OF CROOK PROBLEMS

INTRODUCTION

AUTHORITY

On June 23, 1980, a letter was sent to Governor Lamm by the Board of Logan County Commissioners regarding the Tamarack Fish and Game Reserves', which is located along the South Platte River. The County Commissioners felt the wildlife practices in the area could be causing a flood problem in the Crook area. On June 24, 1980, a letter was sent to Governor Lamm from Congressman James Johnson's office requesting that the Governor send members of his staff to visit the site of the Crook problem area to see if the State of Colorado was responsible for the flood problems in the area. On August 25, 1980, Monte Pascoe, Executive Director of the Department of Natural Resources, Jeris A. Danielson, State Engineer of the Division of Water Resources, and Jack Grieb, Director of the Division of Wildlife, went to Crook at the request of the Governor, to meet with local officials. Following this meeting the Executive Director of the Department of Natural Resources assigned the responsibility for the investigation of the Crook problems to the State Engineer's Office.

PURPOSE AND SCOPE

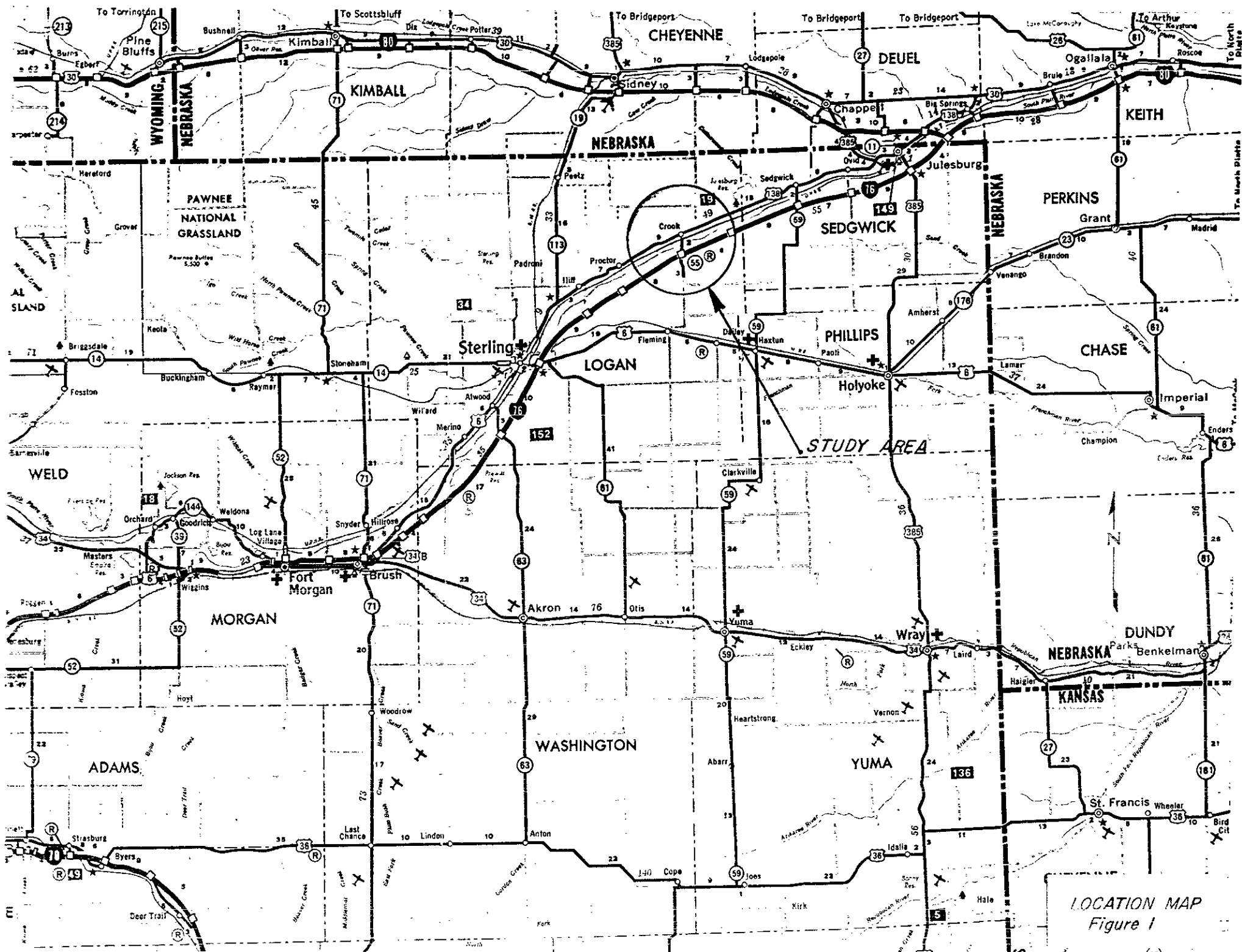
It has been the purpose of this investigation to determine if the Division of Wildlife is responsible for creating flooding, increased aggradation rates, and increased ground water levels as a result of their management practices in the Tamarack Fish and Game Reserve.

Studies made during this investigation were of a limited survey scope. Field investigations made by the State Engineer's staff, flood and river mechanics studies, ground water analysis, and other related studies were made to determine possible causes and offer possible solutions to the problems.

DESCRIPTION OF STUDY AREA

STUDY AREA DESCRIPTION

Crook is located 25 miles to the northeast of Sterling, Colorado and is located within the flood plain of the South Platte River as shown on Figure 1. The South Platte River in Logan County flows in a general northeasterly direction. Throughout the county, the South Platte River flows in a relatively well-defined channel. The channel is typically braided and is situated in a broad shallow valley ranging in width from about 7,000 feet to about 17,000 feet and is flanked by rolling plains. The streambed slope of the South Platte River in Logan County averages approximately 7 feet per mile. The drainage area of the South Platte River at Crook is 19,238 square miles. Flood plain development in the study area is primarily farmsteads and ranches. Major highways serving the Town of Crook are U.S. Highway 138, Interstate 76, and State Highway 55. The Division of Wildlife owns and operates the South Platte Wildlife Area in Logan County. The wildlife area was purchased during the years 1949 and 1964 and all tracts of land are adjacent to or within two or three miles of Interstate Highway #76. The property development has included fencing, water development, and wood and herbaceous plantings,



LOCATION MAP
Figure 1

in addition to allowing the river bottom to develop a heavy growth of grass, weeds, trees and underbrush for wildlife cover.

EXISTING WATER RESOURCE DEVELOPMENT

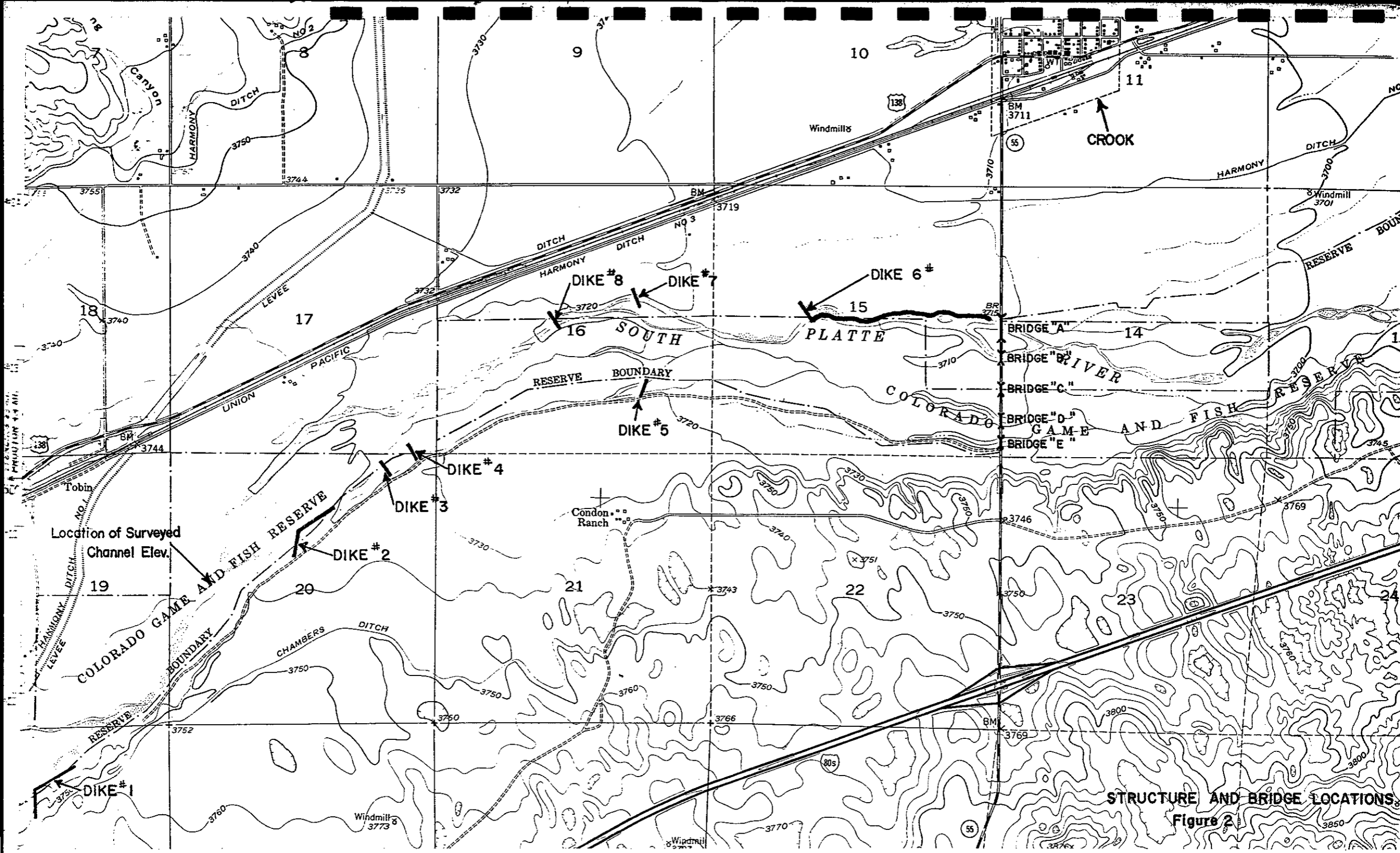
The water related projects that have been constructed or are being administered in the immediate vicinity of Crook are described in the following paragraphs.

Dikes on Tamarack Ranch Lands

The Division of Wildlife has, during the past 31 years, constructed five dikes on the Tamarack Ranch lands to protect their property from erosion. In 1980, three of the dikes were breached and at the present time, it has not been determined if they will be replaced. The location of these dikes are shown on Figure 2. The two remaining dikes, numbers 1 and 2, are approximately 900 feet and 1500 feet long. Dike #1 was constructed at least 30 years ago. The time of construction of dike #2 is uncertain, but it is thought that it may have been constructed after the 1965 flood. Dike #5 was constructed after the 1973 flood. The remaining two dikes, #3 and #4, were built in 1979.

Dikes on North Bank of River

Dike #6, which was constructed by land owners along the north side of the river, begins at State Highway 55 bridge and continues upstream approximately 0.6 miles. At the end of the dike a jetty was constructed to attempt to turn the river east. It was constructed following the 1973 flood. Two other dikes, #7 and #8, were also constructed sometime in the 1970's



STRUCTURE AND BRIDGE LOCATIONS
Figure 2

to protect the landowners from further erosion. Dikes #7 and #8, appears to be very successful in directing the South Platte River towards the alignment as shown in Figures 3 and 4.

Irrigation Canals

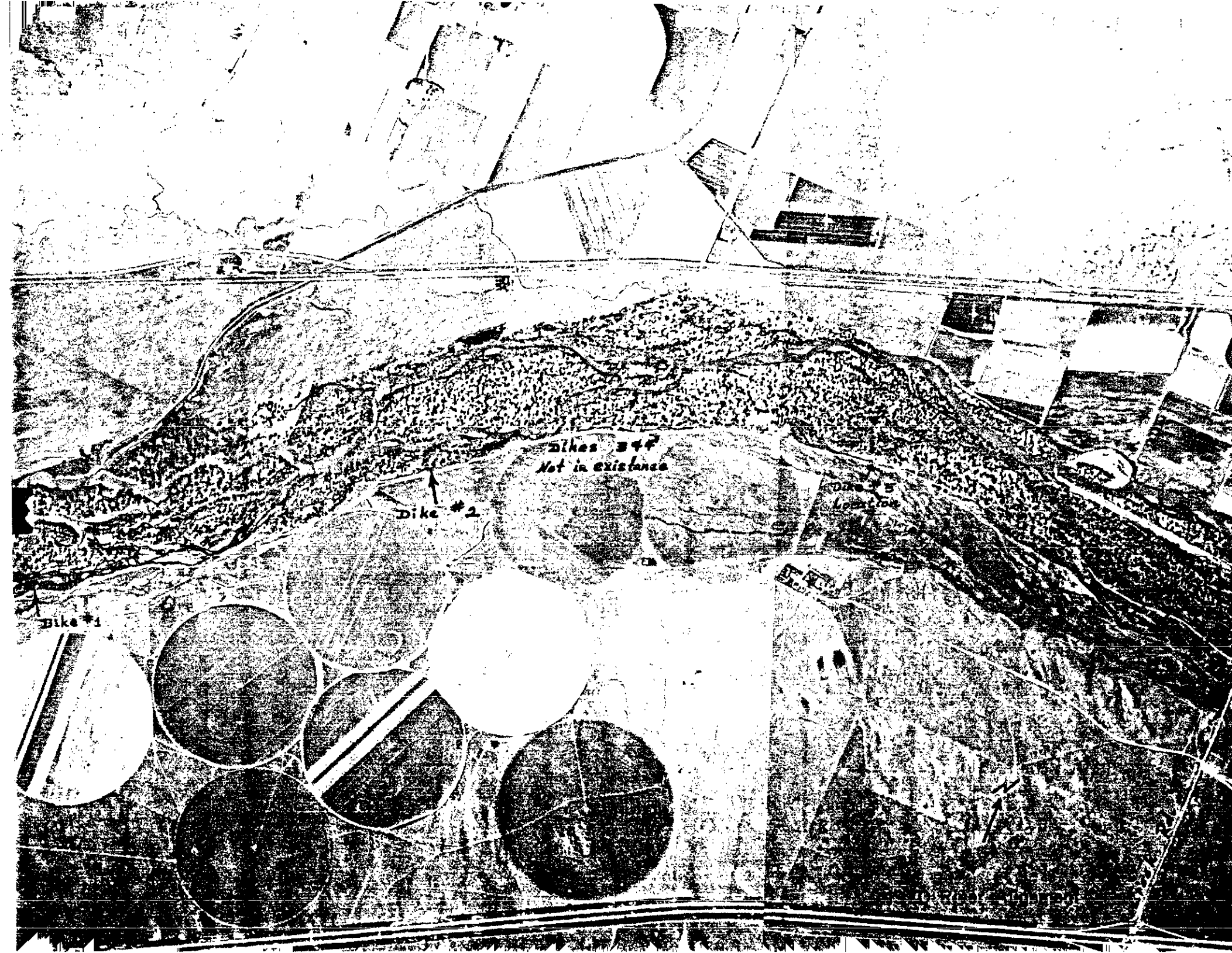
There are numerous irrigation canals in the immediate vicinity of Crook. Harmony Ditches 1, 2, and 3, irrigate the farmland to the north of the South Platte River in the immediate vicinity of Crook. Harmony Ditch No. 1 also diverts water from the South Platte River for storage in the Julesburg Reservoir. The Chambers and Tamarack Ditches irrigate the lands on the south side of the South Platte River in the vicinity of Crook.

Slough Recharge Program

The Division of Wildlife is diverting irrigation water into sloughs located on the project lands. The object of the program is to maintain the sloughs to provide a wildlife habitat for birds whenever the water is available.

GROUND WATER CONCERNS MENTIONED BY LOCAL OFFICIALS

There have been numerous statements by local landowners and officials that the Crook area has experienced a rising ground water table during recent years. These problems, they feel, are a combination of the slough development program mentioned earlier and streambed aggradation in the South Platte River which has resulted in a higher water level in the river bed. They feel that the South Platte River should be relocated to the south so that the middle three bridges, of the existing five bridges that cross the river, will carry the main flows of the river. The local officials feel that the rising ground water



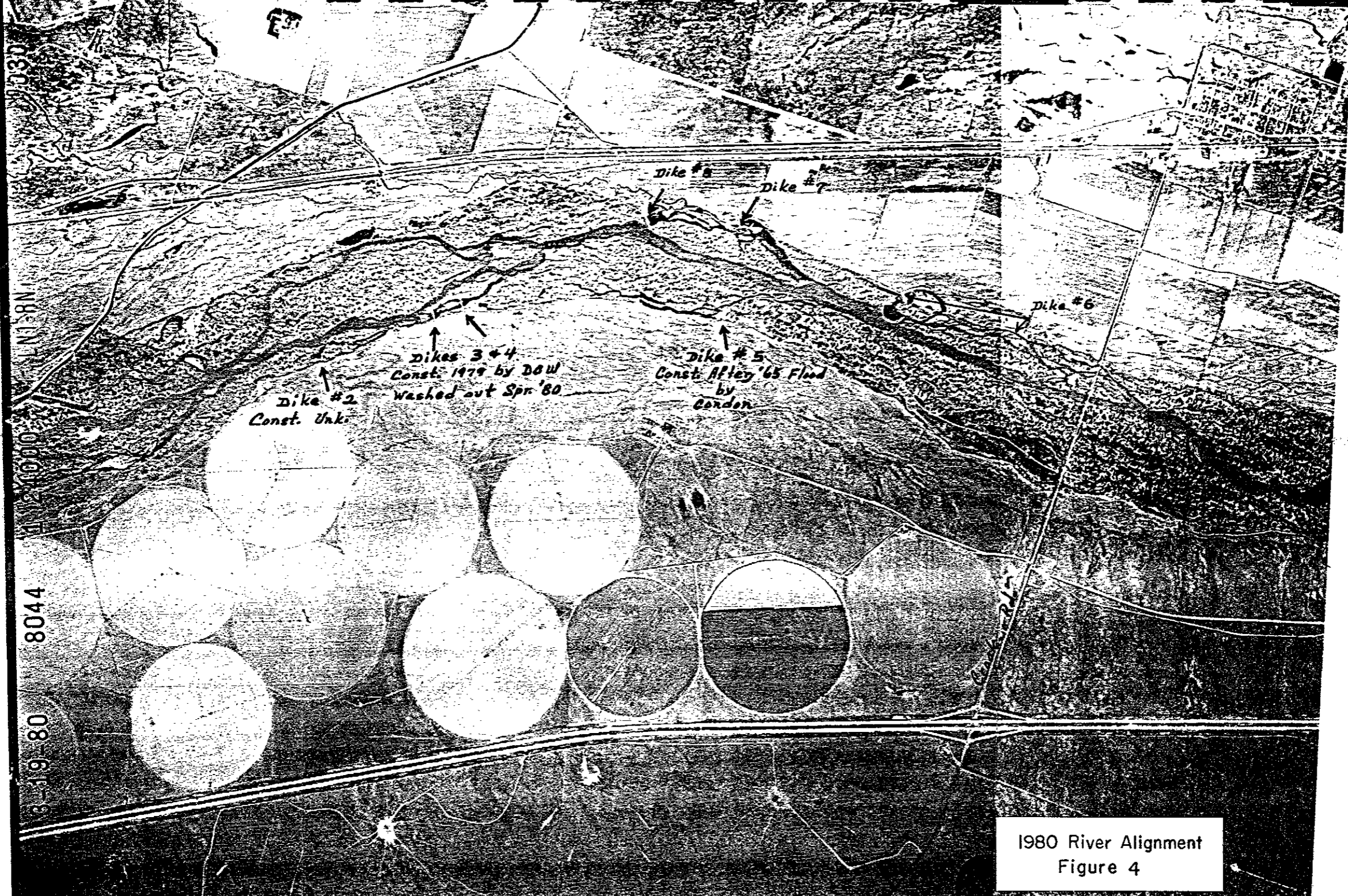
Dike #1

Dike #2

Dikes 344
Not in existence

Dike 5

Dike 6



330

11118N

121000

8044

3-19-80

Dike #2
Const. Unk.

Dikes 3 & 4
Const. 1979 by DOW
Washed out Spr '80

Dike #5
Const. After '65 Flood
by Condon

Dike #6

Dike #7

Dike #8

1980 River Alignment
Figure 4

problems and the associated problems of streambed aggradation are the result of Division of Wildlife management practices.

FLOODING PROBLEMS MENTIONED BY LOCAL OFFICIALS

The Town of Crook and the immediate vicinity either experiences or is threatened with flooding almost every year. During many years, the only reason that flooding did not occur in the area, was due to the emergency measures initiated by local officials, such as sandbagging and the construction of levees. Recently, the Town of Crook experienced flooding in 1965 and 1968. Previous studies of the South Platte River, by the Corps of Engineers, indicate that the Town of Crook is located within the 100 year flood plain of the river. Local officials feel that the sedimentation within the river and under the bridges has resulted in a reduced carrying capacity during periods of flooding. They claim that the management practices of the Division of Wildlife are the major cause of the sedimentation that is occurring in several of the braided channels of the river and that these practices have a tendency to create an area where debris has a greater chance of being trapped. They feel that this results in increased flood depths and thus flooding in the Crook area. They also expressed a concern that dikes #1 and 2 have reduced the effective carrying capacity of the river and thus have also added to the flood problems in the study area.

PROBLEM EVALUATION

GROUND WATER

The evaluation of rising ground water problems as described by local

officials involved collecting the data necessary to determine the scope of the ground water problem. The sources of information used are presented in the following paragraphs.

USGS Well Study

The USGS has had a well monitoring program along the South Platte River since 1947. The early data collected by this program was presented in the Geologic Survey Water Supply Paper 1378 in 1957. The well records in the vicinity of the Town of Crook have different length of record varying from the longest, 1949 through 1979, to the shortest, 1971 through 1975. Graphs of the wells that have been monitored in the immediate vicinity of Crook are shown on Figures 5, 6, 7, and 8. A comparison of the ground water levels in 1949 compared to the 1975 levels are presented in Figure 9.

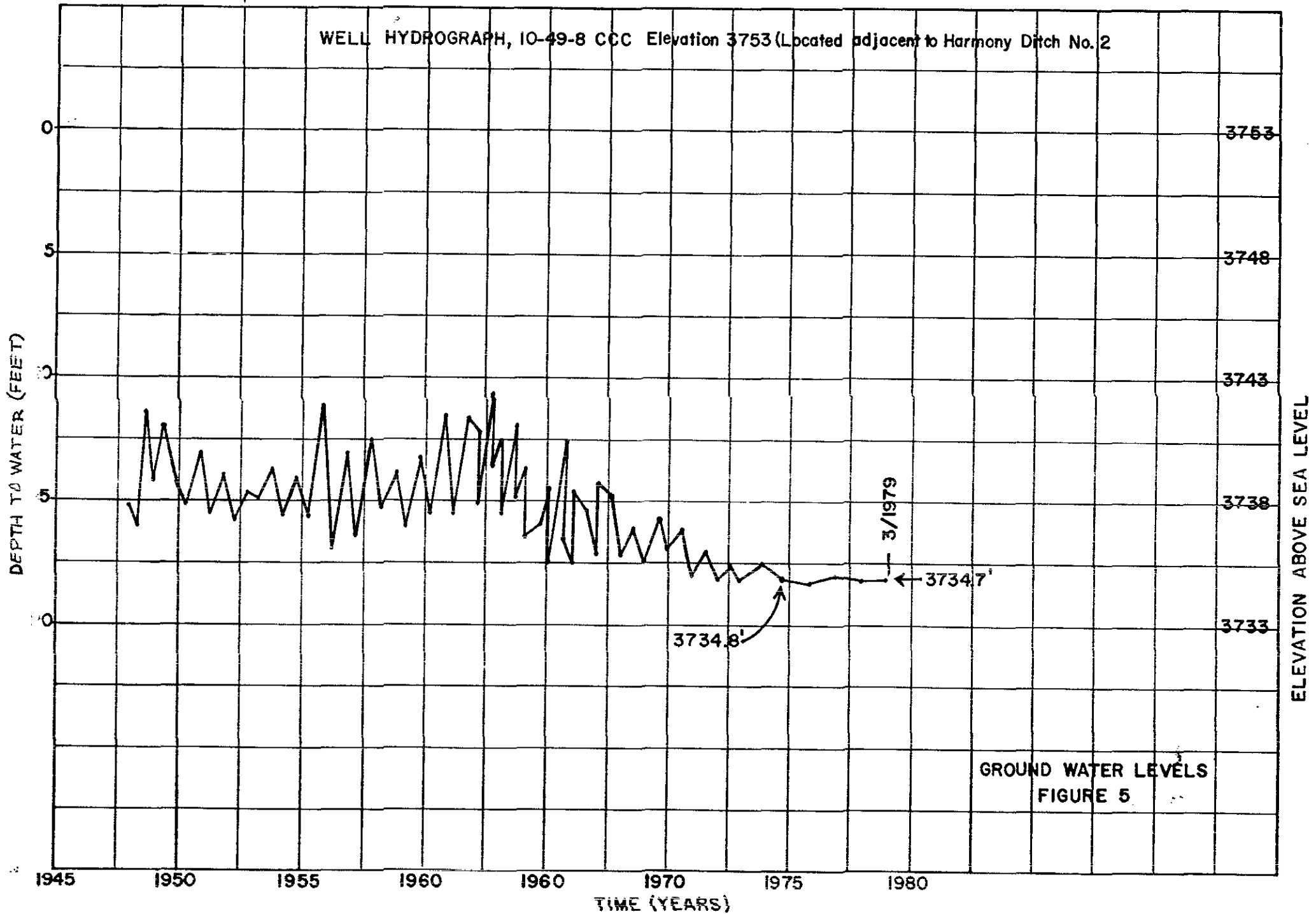
Alkalinity

Alkalinity is an indication of evaporation of the water on the surface. From an analysis of aerial photographs taken October 5, 1937 and March 19, 1980, Figures 10 and 11, it is evident that alkalinity problems have existed in the immediate vicinity of Crook since at least as early as 1937 which pre-dates development of the wildlife area. The photographs also confirm the existence of ponding or swampy areas in the Crook area since 1937. These swamps, ponds, and alkalinity areas are the result of high ground water or changes in soil type and permeability.

FLOODING

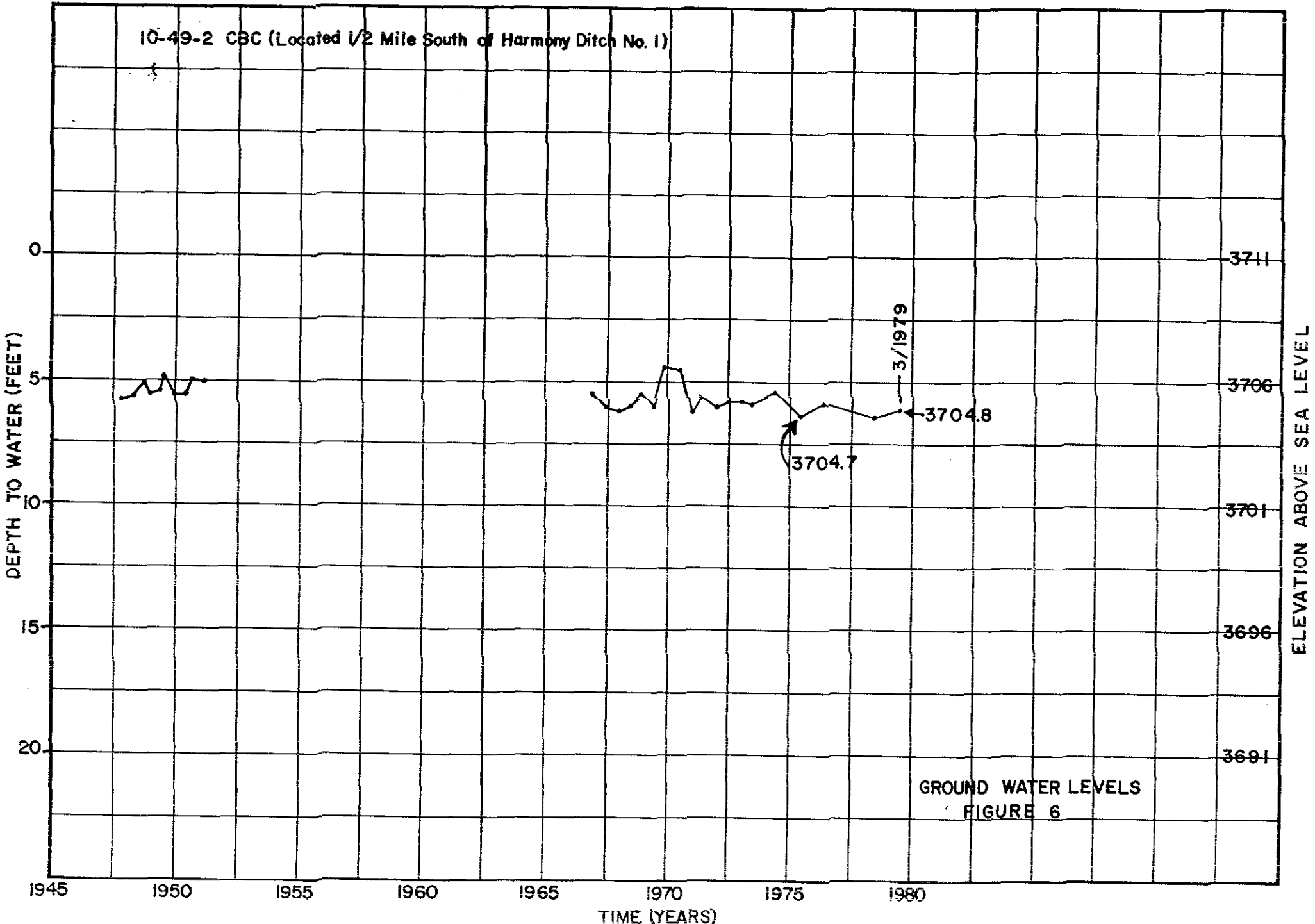
The evaluation of the flood problems and possible causes as mentioned by local officials involved the studies described in the following paragraphs.

WELL HYDROGRAPH, 10-49-8 CCC Elevation 3753 (Located adjacent to Harmony Ditch No. 2)

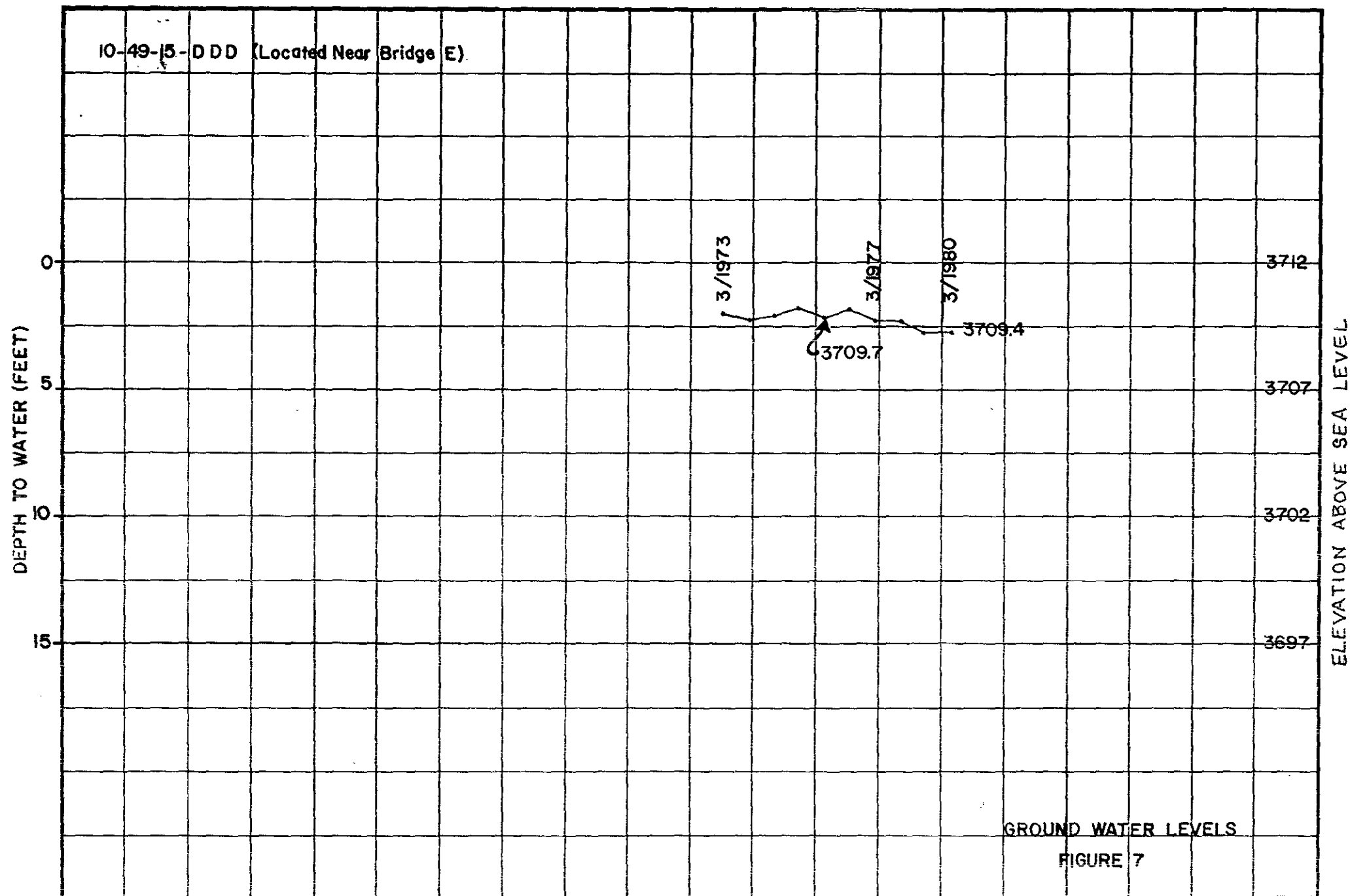


GROUND WATER LEVELS
FIGURE 5

10-49-2 CBC (Located 1/2 Mile South of Harmony Ditch No. 1)



10-49-15-DDD (Located Near Bridge E)



GROUND WATER LEVELS

FIGURE 7

1960

1965

1970

1975

1980

TIME (YEARS)

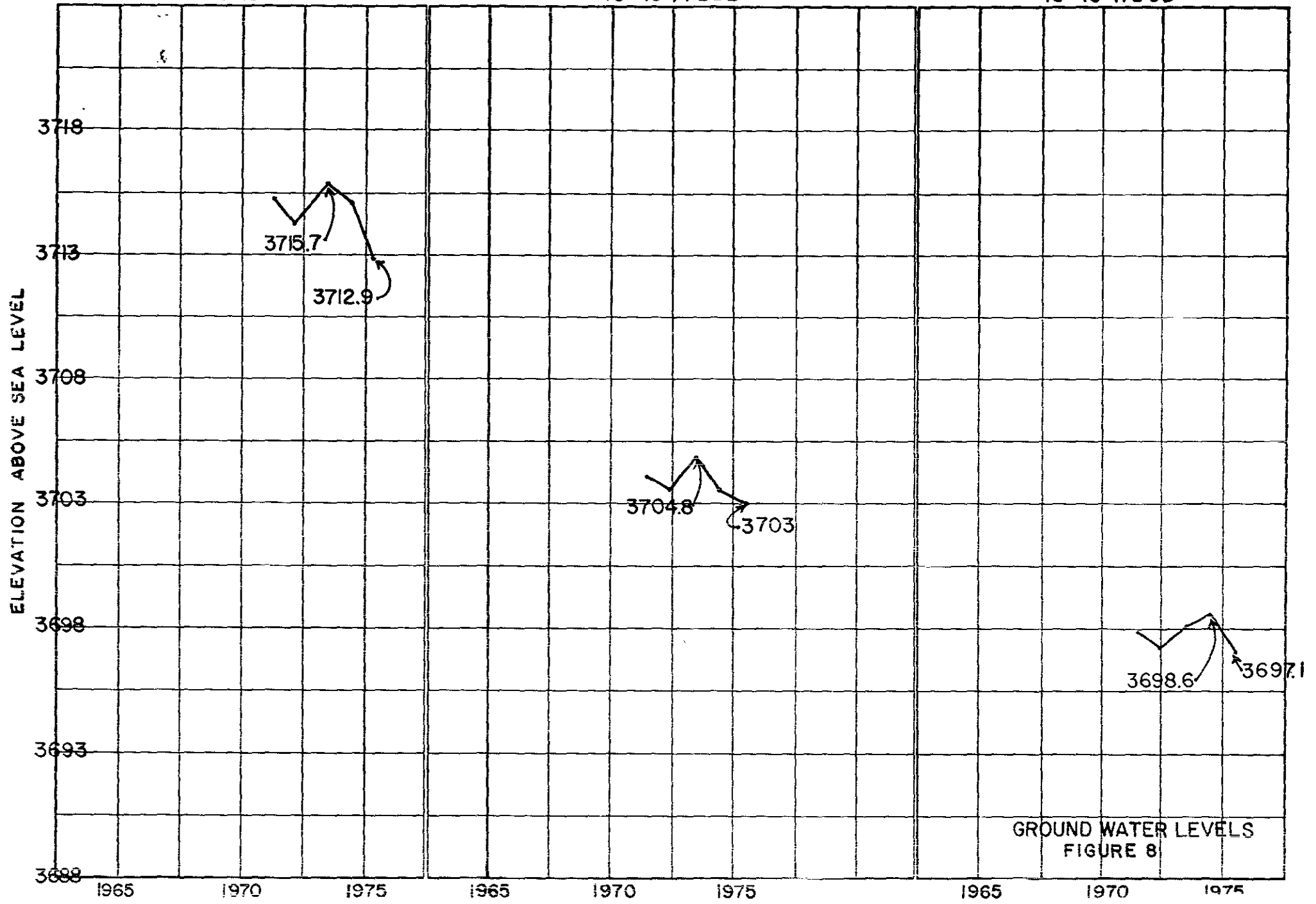
ELEVATION ABOVE SEA LEVEL

*Located Near Harmony Ditch Number 3

10-49-15 BBB*

10-49-14 BBB*

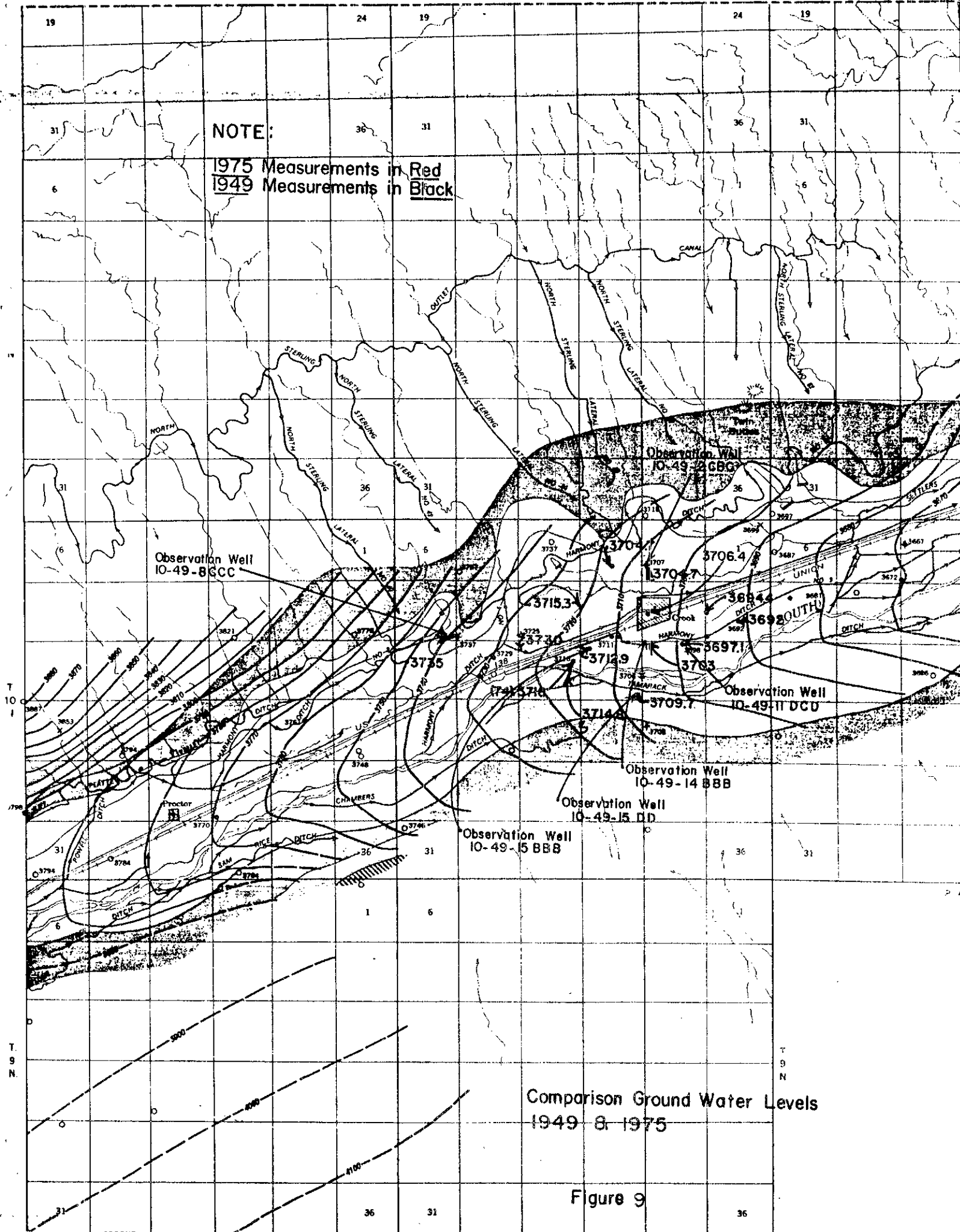
10-49-11 DCD*



GROUND WATER LEVELS
FIGURE 8

NOTE:

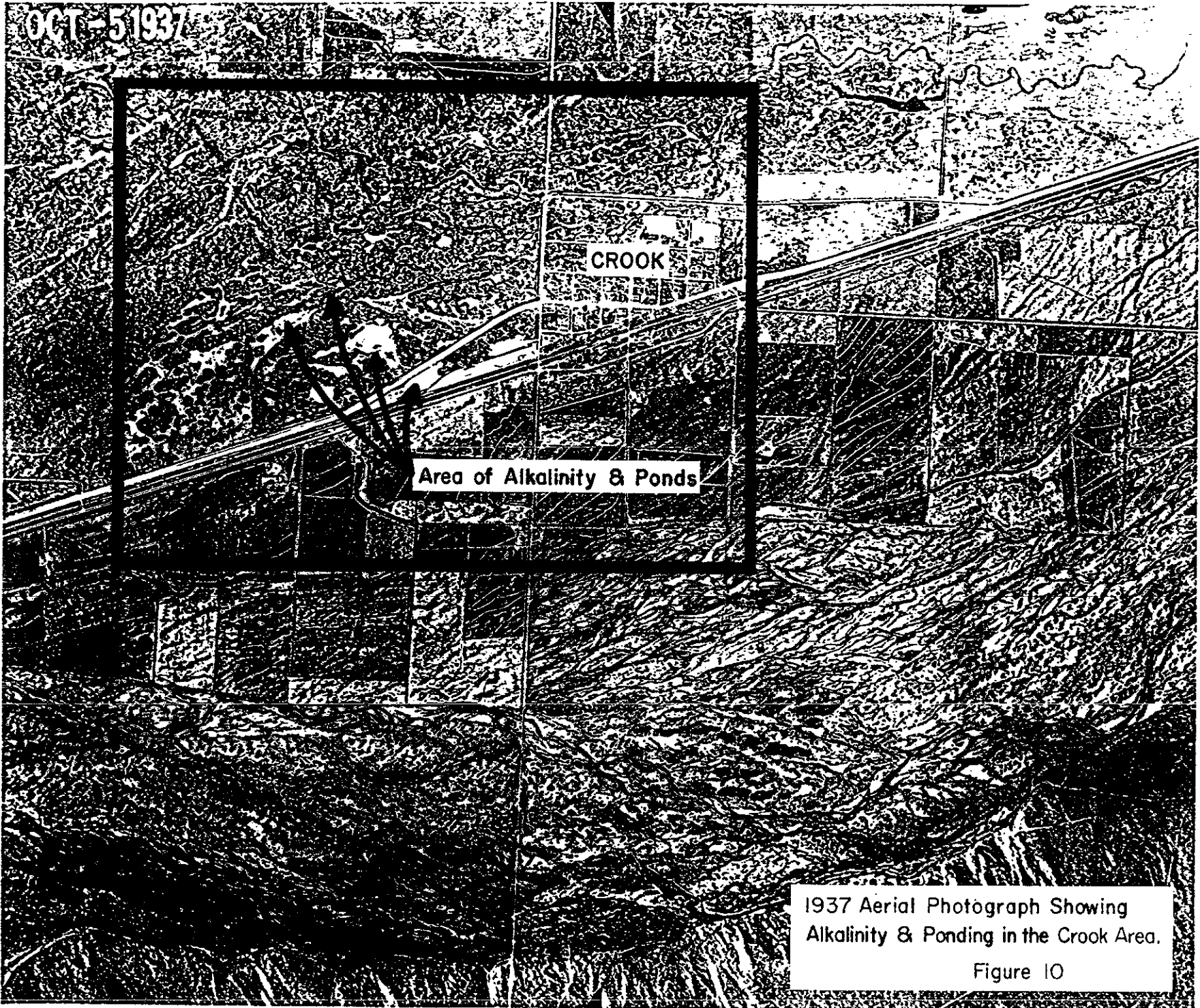
1975 Measurements in Red
1949 Measurements in Black



Comparison Ground Water Levels
1949 - 1975

Figure 9

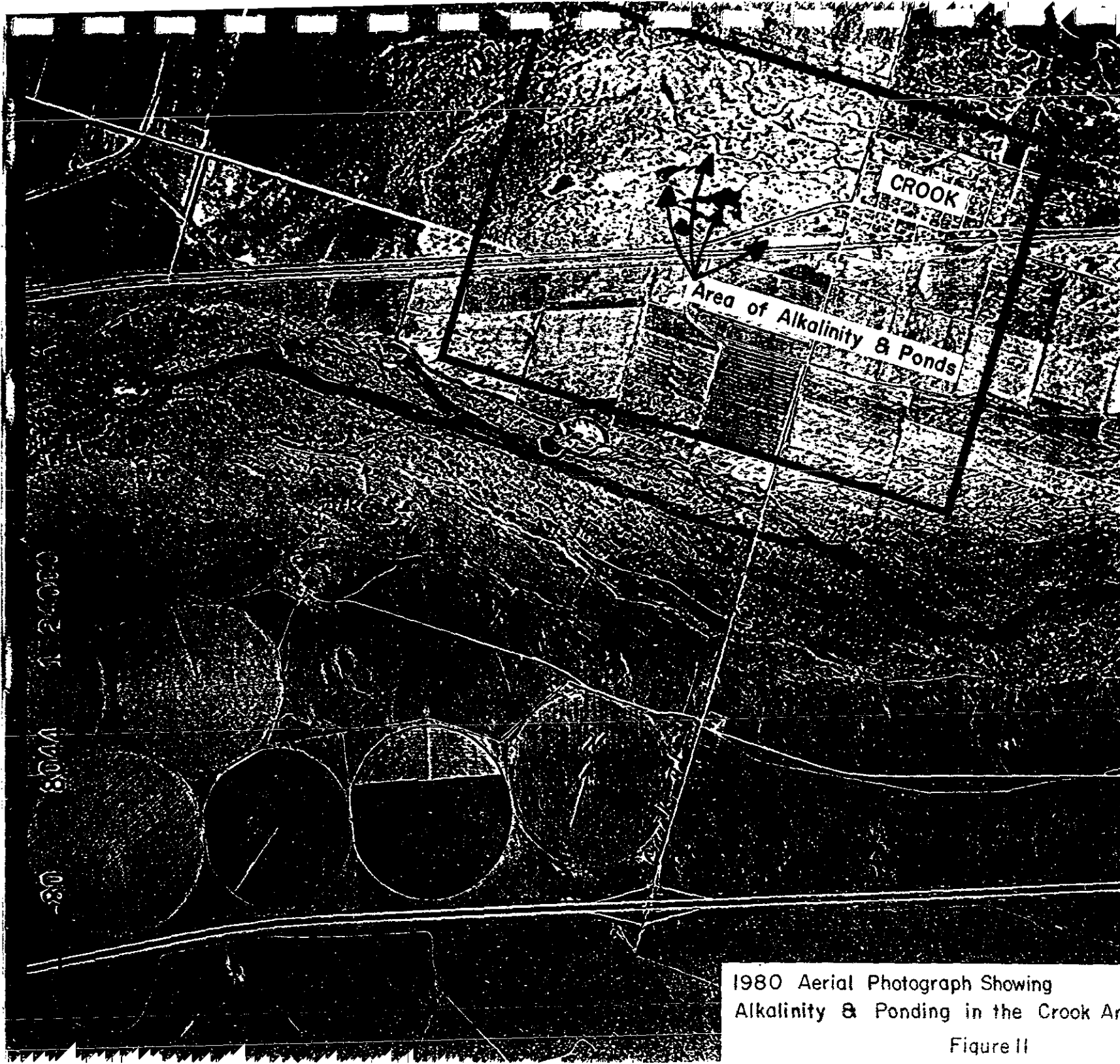
OCT-51937



CROOK

Area of Alkalinity & Ponds

1937 Aerial Photograph Showing Alkalinity & Ponding in the Crook Area.
Figure 10



80 12080
408
-80

USDA

1980 Aerial Photograph Showing Alkalinity & Ponding in the Crook Area.
Figure II

Bridge Analysis

State Highway 55 crosses the South Platte River in the vicinity of Crook by the use of five bridges as previously shown on Figure 2. The Colorado Highway Department has been measuring these bridges to determine the cross sectional area under each bridge since as early as 1948. The period of record for each bridge varies from 1948 to 1980 for bridges B & C, 1962 to 1980 for bridges A & E, and 1968 to 1980 for bridge D. Table 1 presents the change in the cross section under each bridge during the period of record available.

River Channel Analysis

Staff members from the Division of Water Resources went to the study area and surveyed a cross section of the flood plain along the alignment of a previous cross section taken by the Corps of Engineers in 1973. The elevation of the river channel at the location shown on Figure 2 was 3732.3 in 1973. The survey conducted in September of 1980 determined that the elevation of the river channel at the same location is now 3732.6. A field reconnaissance was also conducted on the Division of Wildlife lands to evaluate the effect of the management practices on the South Platte River's capacity to carry flood waters and to cause increased sedimentation.

CONCLUSIONS

GROUND WATER

As can be seen from the data collected for the analysis, we were not able to ascertain that there has been any marked increase in ground water

TABLE I

Changes in Bridge Opening Cross-Sectional Areas

<u>Year</u>	<u>AREA Bridge "A" (Sq. Ft.)</u>	<u>AREA Bridge "B" (Sq. Ft.)</u>	<u>AREA Bridge "C" (Sq. Ft.)</u>	<u>AREA Bridge "D" (Sq. Ft.)</u>	<u>AREA Bridge "E" (Sq. Ft.)</u>	<u>TOTAL AREA (Sq. Ft.)</u>
1948	-	844	1188	-	-	-
1954	-	802	1152	-	-	-
1962	1687	808	1200	-	860	-
1964	1743	697	1158	-	873	-
1966	1825	765	1175	-	1350	-
1968	1715	749	1178	833	1474	5949
1970	1575	723	919	836	1284	5337
1980	1470	597	664	801	874	4406

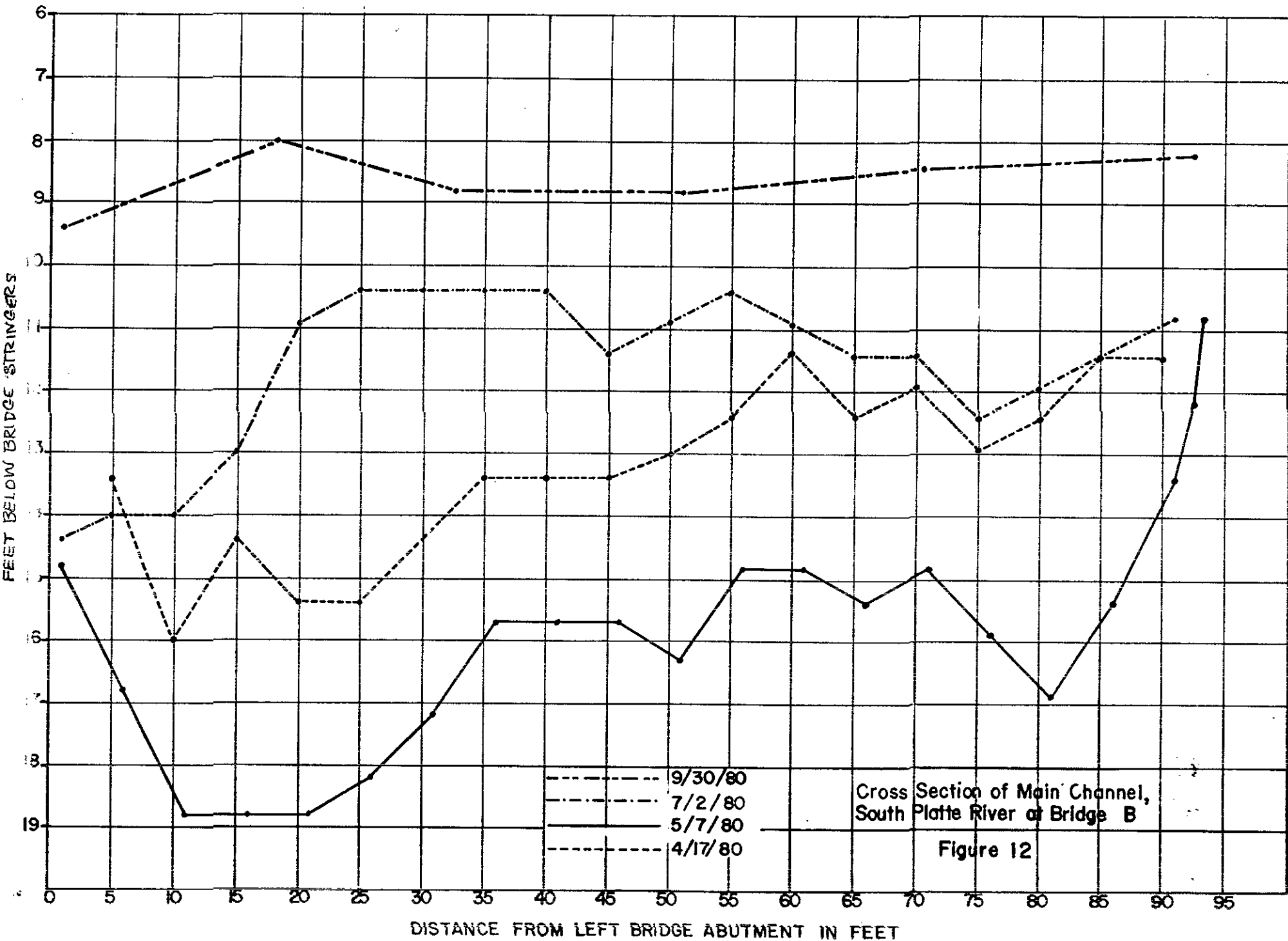
levels since 1949. Based on information published in a report entitled "Hydrogeologic Characteristics of the Valley-Fill Aquifer in the Julesburg Reach of the South Platte River Valley, Colorado", published in 1972 by the U.S. Geological Survey, ground water flow in this reach of the river is in a southeast to east-southeast direction. Since Crook is located north of the South Platte River and the wildlife lands, it would appear that the wildlife management practices would not have any significant impact on any increases in the ground water levels, if any has occurred. It seems apparent that the close proximity of the irrigation canals located on either side of the Town of Crook would have a more significant impact on ground water levels. The aerial photographs of the Crook area in 1937 show that there was a high ground water table in the area prior to the development of the wildlife area. The data collected does support the statements that there is a shallow ground water table in the area, however, this same data also shows that it is a natural condition that exists throughout the entire lower reaches of the South Platte River. The changes made in land use over the past 43 years have only served to point out the existence of the ground water problem to the individuals that have made the changes in land use.

FLOODING

The data collected does indicate that some of the State Highway 55 bridges have indeed experienced some significant reductions in their cross-sectional areas. Bridges "B" and "C" have experienced reductions of 29% and 44% in the period from 1948 to 1980. It would appear that the bulk of

these reductions have occurred in the last 12 years. The other three bridges have not experienced any changes greater than 13% since 1962. Bridge E did have a significant increase in its cross-sectional area in 1966, which was probably due to the 1965 flood flows. However, at the present time, the bridge's cross-sectional area has now returned to the previous area measured in 1962. It would appear that the most significant changes in the river channel have occurred in the immediate vicinity of Bridges "B" and "C". The South Platte River is an alluvial stream which is susceptible to erosion and thus also sedimentation. The meandering of rivers can be attributed to acceleration, excessive energy, changes in state, and flow disruption by a tree or irregular bankline, etc. Observations on natural streams show that a constricted reach of straight channel, such as exists where State Highway 55 crosses the South Platte River, with an erodible bed has a tendency to scour during high flows and to fill during low-water periods. This is dramatically shown on Figure 12 which graphically presents the observations made by the USGS of the cross-sectional changes on Bridge "B" during 1980.

The field reconnaissance indicates that there indeed are some fallen dead trees and thick underbrush on wildlife lands. However, there is not sufficient proof that the conditions that exist in this reach of the river are the major cause of flooding in the Crook area. It is true that the trees and underbrush can provide materials that can plug up the bridges in the area but at the same time they can also act as a trap for other materials that would have reached the bridges and caused flooding. The management practices can cause sedimentation to occur on project lands; however, as



shown during the 1980 flood, these practices do not prevent the river from eroding away major portions of the wildlife lands to develop new channels or return to old channel alignments.

It is evident from the investigation of available aerial photography and a knowledge of river hydraulics, that the South Platte River has an alignment that encourages flood flows to be directed to the north and for erosion to occur along the north bank. The only thing that will change the erosion pattern is the existence of a natural barrier such as a rock outcropping, the diversion of flows by manmade obstructions or bank protection, or the occurrence of a temporary diversion caused by debris which has temporarily plugged the river channel during periods of flooding.

The statement that dikes 1 and 2 are creating increased flood depths in the immediate vicinity of the diversion structure for Harmony Ditch No. 1 cannot be proven. Neither of these dikes are continuous levees which totally remove areas from the total flood carrying capacity of the South Platte River. They may cause a slight increase in flood depths due to backwater affects in the area immediately upstream of the projects; however, the impact of these increases in flood stage in the vicinity of Harmony Ditch # 1 would be insignificant.

The source of the sedimentation that has occurred in the vicinity of the State Highway 55 bridges cannot be easily identified as being the result of any one particular action or actions. Sedimentation is a natural process for an alluvial type stream such as the South Platte River. Discussions with the State Highway Department indicated that aggradation is being experienced

throughout the downstream reaches of the South Platte River in the vicinity of other State Highway bridges, which confirms the previous statement that aggradation is a natural process of the South Platte River. Unless these materials are removed by man regularly or high flood flows occur to flush out the channels, the change in channel characteristic will result in a decreased carrying capacity. The next step which is the natural progression of an alluvial type stream is the formation of an island or bank deposition which results in new river bottom lands. When the next occurrence of flooding occurs an alluvial type stream will seek to enlarge itself if the channel capacity is inadequate. The existing flood plain as we know it today is the result of the endless changes that have occurred in the past.

RECOMMENDATIONS

GROUND WATER

This study was unable to find anything that would indicate that the Division of Wildlife management practices have created any increase in ground water levels; or in fact that there has been any significant increase in ground water levels in the Crook area since 1949. In fact, some of the observation wells indicate that there has been a slight decrease in water levels. We, therefore, did not make any effort to solve what appears to be a natural condition for this reach of the river.

FLOODING

The study did find that there has been a change in the cross-sectional areas under the State Highway 55 bridges and thus a reduction in the carrying

capacities during periods of flooding. Sedimentation is a continual process of this kind of river and, therefore, will continue to cause problems in the future. We do not feel that wildlife management practices have created the sedimentation that has occurred in the past in the vicinity of the State Highway 55 bridges. The restrictive actions that have been taken in the past to not allow the removal of sediment from the channel leading to Bridge "C" may have caused a reduction in the carrying capacity of the river, however, the management practices did not cause the original sedimentation to occur. Any removal of this material would have also required obtaining a dredging permit from the Corps of Engineers under authority of the 404 permit program. The possible actions that could be taken to solve the flood problems at Crook are described in the following paragraphs.

Local Initiative With Division of Wildlife Assistance Provided

The local officials could obtain the above mentioned dredging permit and then proceed with volunteer labor to remove the materials in the immediate vicinity of Bridges "B" and "C". The enlargement would improve the carrying capacity of the river in the vicinity of the bridges. The Division of Wildlife has provided their bulldozers in the past when they were asked to remove materials from the river bottom and have helped construct dikes and levees on the north. They may be willing to provide the equipment again if requested by the Governor's office. The only drawback with this possible solution is that the work may not be a permanent solution to the problem. Further flooding will require immediate action by the local authorities to reopen the channels

in the future. It is going to have to be accepted that this type of action will be required whenever flooding has caused major sedimentation in the channels.

Replacement of the Bridges

The Colorado Highway Department has been looking at the replacement of three of the highway bridges during the last couple of years. The replacement of these bridges will include both lengthening and raising the bridges. This would help the carrying capacity of the river if the channel was also enlarged upstream of the bridges at the same time. However, it appears that the replacement of these bridges will only give temporary relief from flooding since the river will, in all likelihood, return to a gradual aggradation of the channel and thus reduce the effectiveness of these improvements. The bridges have been recommended for the 5-year replacement plan during the last few years but have been dropped from the final list of proposed projects each year. If the reduction in flood problems associated with the replacement of these bridges is stressed by locals, it may be possible that the bridges will be selected for construction.

Federal Assistance

The State Engineer's office has submitted a request for federal assistance to the Missouri River Basin Commission to fund the studies necessary to solve the problems in the study area. If this request is approved, it is hoped that the Corps of Engineers will be assigned the responsibility to arrive at a design for flood control that would be more permanent than the measures previously discussed. The probability of this

request being approved does not appear to be too likely, at this time, if the trend continues with the Federal Government passing the responsibility for solving problems like this to local authorities.

~~What is the~~

Crook

1. Nothing to indicate DOW mgmt. practices have increased GW levels
2. Do not feel that wildlife mgmt practices have created the sedimentation which the St. Hiway 55 bridges have clearly suffered
- us 3. DOW dikes on south side only (apparently); does not appear that these cause any additional flooding to Crook
4. Crook is well w/in the 100 yr. FP. - will have continuing prob. 2 w/ or w/out the dikes

1. Will need a much more thorough & complete study to identify the problem & potential soln (none of which may be economically feasible)
2. That will be our job

1. If DOW grazed it, would that reduce brush debris & accumulation of sediment in ungrazed grass
2. Comments confirmed Gene's judgment that rpt. won't be accepted
3. ^{They are} Convinced that brush & debris is the problem → noted that Crook bridge never goes out because is caught above it.

MEMORANDUM

COLORADO WATER CONSERVATION BOARD

J. William McDonald
Director

December 19, 1980

TO: Bill McDonald
Director

FROM: E. I. Jencsok, P.E. *E.I.J.*
Supervising Water Resource Specialist

SUBJECT: Evaluation of State Engineer's Study "Investigation of
Crook Problems"

I have reviewed the "Investigation of Crook Problems" report by the State Engineer's office. The following data were used in this evaluation:

1) Aerial photos from the following dates:

10-5-1937	12-14-1976
9-25-1953	6-16-1978
8-29-1969	3-19-1980
10-3-1970	6-13-1980 - Spring Flood
5-10-1973	

2) Various correspondence and newspaper articles relating to this investigation (attached).

3) There was no field investigation made by me and "problems" were not discussed with either local officials and residents or the Fish and Game Department. I do not, therefore, have detailed knowledge of all of the "problems". The study was very briefly discussed with Dick Stenzel from the State Engineer's office and Gary Frieauf of the Lower South Platte Water Conservancy District.

A technical review of the available photos indicates that numerous dikes and levees have been built in the floodplain of the South Platte River upstream, within, and downstream of the Fish and Game Reserve to protect agricultural lands. Apparently, however, the Fish and Game Department has built dikes only on the south side of the river and it does not appear that these dikes and the management practices by Fish and Game causes any additional flooding to Crook and the agricultural areas from flood flows which exceed channel capacity.

Memorandum to Bill McDonald
December 19, 1980
Page 2

In addition, as indicated by the 1937 through 1980 aerial photos, the flow of the river has been for the last 43 years against the north bank rather than the south bank where the Fish and Game dikes have been built.

The floodplain of the South Platte River, as shown in a Corps of Engineers Special Flood Hazard Information Report - South Platte River, Volume III, Logan County - Sedgewick County, Colorado, is very wide and the town of Crook is located well within the 100 year floodplain and can expect to have continuing flood problems with or without the existing dikes and levees.

The main channel upstream from Highway 55 has been significantly straightened between 1970 and 1976. Whether it was done by Fish and Game or someone else, it will most likely reduce the flood hazard at the more frequent flood flows but will probably not have a significant effect on the 100 year flood.

A dike (builder(s) unknown) along the north side of the river upstream from Highway 55 appears to have caused some ponding against the highway during the 1973 and 1980 floods. To determine how significant this ponding is at the 100 year flood and more frequent floods, will require field surveys and field inspection.

A major problem exists with the five bridges across the South Platte River near Crook. The capacity of these bridges have significantly decreased due to siltation of the channels and attendant increase in the flood hazard. However, it does not appear the Fish and Game management practices are responsible for this.

In general, I agree with the technical conclusions reached in the State Engineer's report; however, I do not believe that the problems described above have been as thoroughly evaluated as they should be.

Report Evaluation

I do not believe the report adequately addresses all the problems that have been raised by local residents. As indicated in the various correspondence and the newspaper articles, there is great concern in the Crook area over the flood hazard and whether the problem is caused by the Fish and Game Department or not, it needs to be resolved through a more thorough analysis and report. The report does not adequately address the true flood hazard problem; i.e., that the Town is within the natural floodplain and flooding will occur in the future as it has in the past.

The local residents will view this report as one state agency protecting another state agency, and it can be expected that they will continue to seek assistance from Congressman Johnson's office, the Governor and their legislators with this problem unless it is resolved in a more decisive manner.

Recommendation

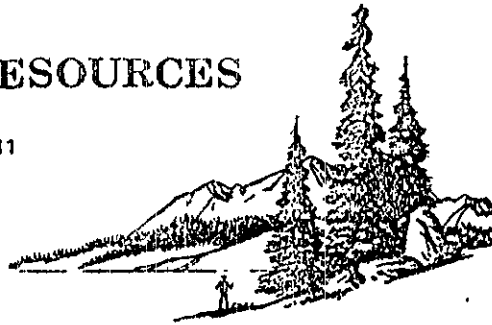
A more thorough study is needed to resolve the flood hazard problem in the Crook area. If the CWCB takes this on, the following needs to be done:

- 1) Contact Fish and Game and determine what exactly has been done by them in the past. (dikes, diversions, management plan, etc.)
- 2) Determine from local residents exactly what they think the problems and hazards are.
- 3) Try to determine why the five bridges across the South Platte River have silted in and what if anything can be done to mitigate the problem.
- 4) Evaluate the ground water problems in greater detail.
- 5) Prepare a detailed floodplain delineation study of the Crook area. This could be based on the COE study or could be done independently.
- 6) Maintain an annual surveillance of the channel and floodplain by field survey to determine channel and streambed movements.
- 7) Reach specific conclusions - i.e., Fish and Game Department is or is not responsible for "problems".
- 8) Make recommendations for solution of "problems".

A more thorough report should be prepared with the study well documented. The report should be presented to the Department of Natural Resources and the Governor's office and after their review, presented for a public meeting in Crook. Recommendations/alternate methods for mitigating the flood hazards should be made. It may well be that since the town and surrounding area are located in a natural floodplain area, there is no cost-effective method for protecting either the town or the surrounding agricultural area. The only effective protection may be the purchase of adequate amounts of flood insurance through the National Flood Insurance Program.

DEPARTMENT OF NATURAL RESOURCES

Monte Pascoe - Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 839-3311



Board of Land Commissioners
Division of Administration
Division of Mines
Division of Parks & Outdoor Recreation
Division of Water Resources
Division of Wildlife
Geological Survey
Oil and Gas Conservation Committee
Soil Conservation Board
Water Conservation Board
Mined Land Reclamation

August 14, 1980

Mr. Mac McGraw
Aid to Congressman Jim Johuson
230 Main Street, Room 9
Fort Morgan, Colorado 80701

RECEIVED
AUG 18 1980
WATER RESOURCES
STATE ENGINEER
COLO.

Dear Mr. McGraw:

Governor Lamm has forwarded your letter of June 24, 1980 regarding flood problems along the South Platte River, in particular in the vicinity of the Town of Crook. As you know, we are concerned about flooding this year along the South Platte River; and upon receipt of your letter and similar letters from the Logan County Commissioners and the Mayor of Crook, the Department of Natural Resources is looking at the problems you described.

I, as the Department's Director; Jack Grieb, who heads the Division of Wildlife; and the State Engineer, Jeris Danielson, will be looking at the area on August 25. We will be meeting at the Crook bridge at 10:30 that morning and you are most welcome to join us.

The State Engineer has contacted the Corps of Engineers in Omaha, Nebraska and was informed that the Corps could not, under most circumstances, economically justify any channelization project in an agricultural area unless an urban area is also affected which has experienced extensive damage.

Please accept our apologies for this belated reply. We do appreciate your contacting us and are hopeful the August meeting is helpful to all concerned parties.

Sincerely,

Monte Pascoe
Executive Director

RECEIVED

AUG 05 1980

WATER RESOURCES
STATE ENGINEER
COLO.

July 31, 1980

2141

Jerry --

Have we gotten anywhere on an answer for the Governor's signature to the Logan County Commissioners' letter on channelization of the South Platte and the problems posed by the Tamarack Fish and Game Reserve?

I have a state legislator pushing for a response.

Thanks much,

Sue O. *Sue O. [Signature]*

Called Nancy Hughes
on 8-8-80.

JAD

DRAFT FOR GOVERNOR

July 15, 1980

Board of Logan County Commissioners
County Courthouse
Sterling, CO 80751

Dear Commissioners:

This is to acknowledge receipt of your letter of June 23, 1980 regarding flood problems along the South Platte River, in particular, in the vicinity of the town of Crook. As you know, I am concerned about the recent flooding along the South Platte River and upon receipt of your letter and a similar request from Congressman Johnson's office, I asked the State Engineer, Mr. Jeris A. Danielson, to look at the problems you described.

The State Engineer feels there are many factors that could be causing the flooding the vicinity of Crook. He believes that a field trip to the problem area and a meeting with interested parties is warranted to obtain as much information as possible before he makes any recommendations regarding possible solutions.

I would request that you contact the State Engineer to arrange for such a meeting and field trip at the earliest possible date. He can be reached at the following address:

Jeris A. Danielson, State Engineer
Colorado Division of Water Resources
1313 Sherman Street, Room 818
Denver, CO 80203

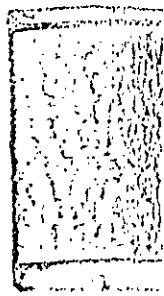
The State Engineer has contacted the Corps of Engineers in Omaha and was informed that the Corps of Engineers could not, under most circumstances, economically justify any channelization project in an agricultural area unless an urban area is also affected which has experienced extensive damage.

I appreciate your contacting me regarding your problems. I look forward to receiving the findings of the State Engineer which result from your joint investigation.

Very truly yours,

Richard D. Lamm
Governor

RECEIVED JUL 15 1980



FROM: Executive Director's Office
Terri

GOVERNOR'S LOG FORM

Date Received from Governor's Office 7/2/80

Sent to Water Resources for handling _____ for draft response ✓

Reply requested by 7/11/80

Sender's name and address Mr. McGraw
330 Main Street #9
Ft. Morgan, Indiana, 46701

Subject matter: assistance to avert flooding

This letter was received from the Governor's Office requesting a suggested reply. Please draft a response for the Governor's signature and send to this office for approval.

Your cooperation is greatly appreciated.

RESPOND BY 7/11/80

Office of the Governor
COMMUNICATIONS CENTER
127 State Capitol
839-2471

McGRAW

"Sam" Walls, Director
Annette Vigil, Assistant

REQUEST FOR ASSISTANCE

TO: Monte Pascoe
FROM: Governor Lamm / Sam
DATE: July 1, 1980
DEADLINE: July 11

Please X draft a response for Governor Lamm's signature

 respond and copy me

 other - Specific instructions: _____

regarding the following correspondence:

Type of Correspondence: Letter and News Articles (Sterling Journal)

Directed to: Governor Lamm

From: Mac McGraw, Aide to Congressman Johnson 230 Main Street, Room 9
(name, address, city, state, zip code) Fort Morgan, Colorado 80701

Dated: June 24

Re: Assistance to avert flooding in the future.

Date Rec'd: June 30

THANK YOU FOR YOUR ASSISTANCE

-----Please Do Not Write Below This Line-----

Governor's Office Use Only

Response Rec'd on: _____

Notes: _____

JAMES P. JOHNSON
4TH DISTRICT, COLORADO

COMMITTEES:

AGRICULTURE

INTERIOR AND INSULAR AFFAIRS

Congress of the United States
House of Representatives
Washington, D.C. 20515

June 24, 1980

The Honorable Richard D. Lamm
Governor of Colorado
State Capitol Building
Denver, Colorado 80203

Dear Governor Lamm:

At the request of Congressman Johnson, I visited the Crook area last Friday. The plain and simple fact is: THEY NEED SOME ASSISTANCE TO AVERT A MAJOR CATASTROPHE IN THE FUTURE.

In 1973 several farms were inundated in the same area. Our office tried to get them Federal help but were unsuccessful. I contacted Governor Vanderhoof and made an appointment for the farmers to see him. Senator Kinnie, Representative Sonnenberg, Mayor Maynard Yost and I accompanied the group. Officials were there from the Fish & Game Commission who readily admitted that the land they owned near Crook was partially responsible for the flooding. Johnny Van called that same evening saying that some of the emergency funds would be used to help solve the problem.

Fish and Game own most of the land south of river running up to Interstate 76, and from close to Proctor on the west to Red Lion Road east of Crook. There are five channels of the river southwest of Crook where the flooding problem is the greatest. None of these has any depth to carry an increased flow of water. This area could best be described as swampy, mosquito infested, and has a heavy growth of grass, weeds, trees and underbrush. Silt and sand have drifted in to make the channels extremely shallow, and there are dead trees and debris in the channels.

Farmers are also irritated because Fish & Game will not sell or allow the hay to be cut south of the river. This has been permitted in the past.

Won't you please have some of your staff members visit the site of the problem so they can actually see that the State of Colorado is partly to blame for the flooding? I don't mean just Fish & Game employees.

Enclosed are a story and an editorial from the Sterling Journal-Advocate.

We are contacting U.S. Corps Of Engineers to see if they can be of any help, but they contend the project is too small. State, county and individual assistance is needed to avert future disaster.

Your attention to this problem will be greatly appreciated.

Sincerely,

M. P. G. Aide to Congressman Johnson, Ft. Morgan, Colorado 80701

OFFICE ADDRESS:
2242 HAYDEN BUILDING
WASHINGTON, D.C. 20515
(202) 223-2075

DISTRICT OFFICES:
203 FEDERAL BUILDING
FORT COLLINS, COLORADO 80521
(303) 433-9132

FEDERAL BUILDING
GRAND JUNCTION, COLORADO 81501
(303) 243-1726

ROOM 9, 230 MAIN STREET
FORT MORGAN, COLORADO 80701
(303) 657-8909

713 GRAND AVENUE
GLENDWOOD SPRINGS, COLORADO 80501
(303) 943-6491

P.O. BOX 21203
DENVER, COLORADO 80221
(303) 837-5606

Summit
M. P. G.
CO
Some of the...
6/26
Day
6/30

Monday, June 24, 1980

Page 4

STERLING
JOURNAL-ADV

Editorial

Flooding Woes

Citizens of the Crook area are taking on the State Fish and Game Department in an effort to minimize flooding along the South Platte River which has threatened farm land.

Although citizens claim Fish and Game practices are contributing to the flooding, department officials deny the charges, blaming problems on local conditions and nature.

There is no doubt some truth to both sides of the story, but a recent discussion with Gene Cook, regional manager of the department for this area, points up the need for greater communication between such departments and the areas within which they work.

Cook claimed in a telephone interview he had never, in 15 years of visiting the area during high water, seen trees jammed under bridges. Maybe he was visiting the wrong river. Recent high water provided a great deal of proof that dead trees floating in the river indeed create problems of high water and can damage bridges.

Crook farmers claim those trees are coming down the river because the Fish and Game Department will

not allow trees to be cut in the portion of the river it owns.

That is the policy of the department, but Cook says there is no way of telling the trees are from Fish and Game land.

No doubt that is true, to a degree. But whether or not every dead tree that causes a problem comes from Fish and Game land is not the point. The fact is, if even one tree from their land causes a problem for farmers, the policy should be reviewed.

Besides, it is extremely difficult to believe none of the trees on Fish and Game land ever cause a problem.

It is equally hard to believe farmers would go to the lengths they have to publicize the situation in an attempt to get some relief if the state agency had been as helpful as it claims.

We invite Cook, his staff and area senators and representatives to visit the area together with Crook farmers and determine who may be right in the matter.

Banding about accusations from Denver to Fort Collins to Crook will not solve the problem. An honest, face-to-face appraisal of the situation may.

Fish, Game Deny Crook Area Charge

By PATRICIA WARREN
J-A News Editor

Regional manager for the State Fish and Game Department denies his office has contributed to flooding problems in the Crook area, as was alleged Wednesday by area farmers and Crook citizens.

Gene Cook, manager for the northeast region based in Fort Collins, said this morning the Crook residents have "maintained this for several years." He continued to say, "We've naturally maintained that we haven't created the problem and don't intend to create problems."

According to Cook, "Many of the problems naturally occur without us contributing. I don't believe high water is any worse in our area than anywhere else along the line."

Cook contends many of the flooding problems experienced in the area are of local origin, such as broken headgates and intake ditches

as well as bridge problems at Crook.

He said, "Various other things add to the situation regardless of whether we own the land or not. I've been out there during high water probably for the last 15 years, and I can't believe the lack of tree cutting has any influence on the bridges."

Cook said he was not aware of trees ever jamming up under bridges, but said if they do, "We don't know that's coming from our property. Those trees could be coming

See FISH Page 3

Fish, Game Deny Crook

Continued From Page One
anywhere from Denver on down."

The regional manager admitted the department has built two small dikes on the

south side of the river west of the Crook bridge. Responding to claims from area farmers those dikes are causing flooding on their land, Cook said, "If they are diverting water, I find it very hard to believe. It is not of enough consequence to really create the problem."

According to Cook, photos taken by his department in March and May indicate the problems are created by something or someone else, such as the inlet ditch breaks, bridge problems and high rainfall and spring run-off.

"I feel we've cooperated wherever we can," Cook said. "Bulldozers have worked the river bottoms when we've been asked, and we helped put dikes on the north side of the river which they (area farmers) have failed to mention."

He continued, "We will continue to cooperate. But these local problems must be taken care of on their level."

Cook said the division operates under the Department of Natural

Resources, which is under governor's office. department is funded license sales, according to Cook, not by taxes.

He said, "We answer state government as we to anyone else. We are w to cooperate and feel we in the past and will con to do so in the future."

Letter - please have a response drafted for the Governor.

Joe O.B

ALMA D. LANE
Secretary

LUCILLE STUMPF
Bookkeeper



COMMISSIONERS

ELDA M. LOUSCHIK
13701 Co. Rd. 37
Sterling, Colo. 80
Ph. 522-0595

TYSON W. PHILLIPS
10482 Co. Rd. 20
Sterling, Colo. 80
Ph. 522-1710

C. N. WILLIAMS
37296 Co. Rd. 14
Fleming, Colo. 80
Ph. 265-3932

County Clerk and
Clerk of the Board

RECEIVED
JUN 30 1980

WATER RESOURCES
STATE ENGINEER
REGA

COUNTY COMMISSIONERS
OF
LOGAN COUNTY

STERLING, COLORADO 80751

Phone (303) 522-0888

June 23, 1980

RECEIVED
JUN 24 1980
GOVERNORS OFFICE
FILE NO. _____

Rowe
O'Brien

Governor Richard Lamm
Colorado State Capitol Building
Denver, Colorado 80203

Dear Governor Lamm:

We wish to thank you for your concern regarding the flooding of the South Platte River during the past weeks.

We believe that our problems could be greatly minimized if the channel could be cleared of trash and debris. In addition if it could then be channelized through the agricultural areas, Weld, Morgan, Washington, Logan and Sedgwick counties would save millions of dollars from crop, bridges, roads and property losses each year.

Another problem which concerns Logan County is the Tamarack Fish and Game Reserve which is located along the river. It is their practice to allow the growth of underbrush for the protection of the wildlife and game, but in so doing causes a tendency to catch both debris and sand accumulation and this in turn causes the channel to fill in and spread through a large portion of the county.

It is our opinion that a project of this magnitude can only be done adequately and satisfactorily through the Corps of Engineers. Therefore on the basis of these reasons we respectfully ask for your help.

Thank you again for your past and present support.

Sincerely,

Board of Logan County Commissioners

cc: Senator Yost ✓
Representative Hastings ✓
Senator Gary Hart ✓
Senator Armstrong ✓

By: Tyson W. Phillips
Elda M. Louwager

DEPARTMENT OF NATURAL RESOURCES

Monte Pascoe - Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 839-3311



Board of Land Administration
Division of Administration
Division of Mines
Division of Parks & Outdoor Recreation
Division of Water Resources
Division of Wildlife
Geological Survey
Oil and Gas Conservation Commission
Soil Conservation Board
Water Conservation Board
Mined Land Reclamation

August 14, 1980

RECEIVED

AUG 18 1980

WATER RESOURCES
STATE ENGINEER
COLO.

The Honorable Duane Kuskie
Mayor, Town of Crook
Crook, Colorado 80726

Dear Sir:

Governor Lamm has forwarded your letter of June 10, 1980 regarding flood problems along the South Platte River, in particular in the vicinity of the Town of Crook. As you know, we are concerned about flooding this year along the South Platte River; and upon receipt of your letter and a similar request from Congressman Johnson's office, the Department of Natural Resources is looking at the problems you described.

I, as the Department's Director; Jack Grieb, who heads the Division of Wildlife; and the State Engineer, Jeris Danielson, will be looking at the area on August 25. We will be meeting at the Crook bridge at 10:30 that morning and you are most welcome to join us.

The State Engineer has contacted the Corps of Engineers in Omaha, Nebraska and was informed that the Corps could not, under most circumstances, economically justify any channelization project in an agricultural area unless an urban area is also affected which has experienced extensive damage.

Please accept our apologies for this belated reply. We do appreciate your contacting us and are hopeful the August meeting is helpful to all concerned parties.

Sincerely,

Monte Pascoe
Executive Director

DEPARTMENT OF NATURAL RESOURCES

Monte Pascoe - Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 839-3311



Board of Land Commissioners
Division of Administration
Division of Mines
Division of Parks & Outdoor Recre
Division of Water Resources
Division of Wildlife
Geological Survey
Oil and Gas Conservation Commis
Soil Conservation Board
Water Conservation Board
Mined Land Reclamation

August 14, 1980

The Honorable Board of County Commissioners
Logan County Courthouse
Sterling, Colorado 80751

Dear Commissioners:

Governor Lamm has forwarded your letter of June 23, 1980 regarding flood problems along the South Platte River, in particular in the vicinity of the Town of Crook. As you know, we are concerned about flooding this year along the South Platte River; and upon receipt of your letter and a similar request from Congressman Johnson's office, the Department of Natural Resources is looking at the problems you described.

RECEIVED
AUG 18 1980
STATE ENGINEER
NATURAL RESOURCES

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Please accept our apologies for this belated reply. We do appreciate your contacting us and are hopeful the August meeting is helpful to all concerned parties.

Sincerely,

Monte Pascoe
Executive Director

Editorial

Tues., Aug. 26, 1980 — Sterling Journal-Advocate —

Wheels Moving

With any luck, at least the wheels are finally turning to gain a solution to the problem of flooding along the South Platte River near Crook.

Many of the factions involved in the controversy met for the first time Monday to discuss flooding and possible solutions to it.

Answers were not forthcoming as rapidly as area residents would like. However, the situation was discussed and many representatives from the state level of agencies involved took the time to visit the area, tour on foot and meet with local people.

It's definitely a step in the right direction — but not yet a stride toward a solution.

The answer given Monday was the need for a complete study of the situation. Monte Pasco, director of the Division of Natural Resources, made sense when he said it would be ridiculous to barge in and spend sums of money on a solution that might not even be the answer to the problem.

Jack Grieb, director of the State Wildlife Division, echoed that sentiment, and went a step further than other representatives of his department when he said it would consider removing diversions from the river or removing trees, if a complete study would show those activities would help solve the flooding problem.

Much credit for getting the opposing factions together must go to Rep. Melba Hastings, D-Sterling, who has worked for months on the flooding issue and personally set up the tour and public meeting.

Tempers sometimes flared at the meeting, and it was obvious there are opposing viewpoints which will probably never converge.

Nonetheless, contact has been made. It is seldom state bureaucrats travel to a small town such as Crook, and Monday's trip was nearly historical in that regard. We, and we are sure the citizens of Crook, appreciate the time to tour the area.

We will also appreciate the help in solving the problem.

ING ADVOCATE

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Colorado — Home of Northeastern Junior College

Colo. 80751

20*

20 Pages, 7 Sections

Weather

Northeast Colorado —
Cloudy, widely scattered
showers. Clearing tonight.
Mostly sunny, warmer
Wednesday. Lows tonight low
to mid 50s. Highs Wednesday
mid 70s-80s.

More weather Page 2

Crook Solution Nags "Experts"

By PATRICIA WARREN

J-A News Editor

CROOK — After touring areas near Crook where flooding was experienced this spring, various state officials said Monday they see there is a problem, but all are unsure at this point how to correct it.

Monte Pasco, director of the State Department of Natural Resources, headed the tour. Also on hand were Logan County Commissioners, Rep. Melba Hastings, D-Sterling, and Sen. Maynard Yost, R-Crook.

Other state representatives included Jack Grieb, director of the State Division of Wildlife, and Jerry Danielson, state water engineer. Crook Mayor Duane Kuskie guided the tour and a subsequent public meeting.

Following the tour, Pasco said, "This is the first time I have seen in detail what people have talked about. I can't say I know how to do it (solve the flooding problem). We could probably help if we had unlimited money."

All factions representing the state agreed they wanted a study done of the area before it is determined how to best solve the problem. As Grieb said, "I would like to see some studies done by unbiased people. I think we are totally speculating here. I would rather see somebody

south side of the river, apparently by the State Wildlife Division. Grieb said he understands a more-or-less permanent dam was constructed on the south side of the South Platte about 30 years ago.

He said, "I think it was put in to protect our right-of-way. I'm not sure they're the ones throwing the water over (to the north)."


While state officials say a major channelization project from below Sterling to at least the state line is needed, local residents claim taking out these diversions and

clearing undergrowth from the river will go a long way to solve the problem.

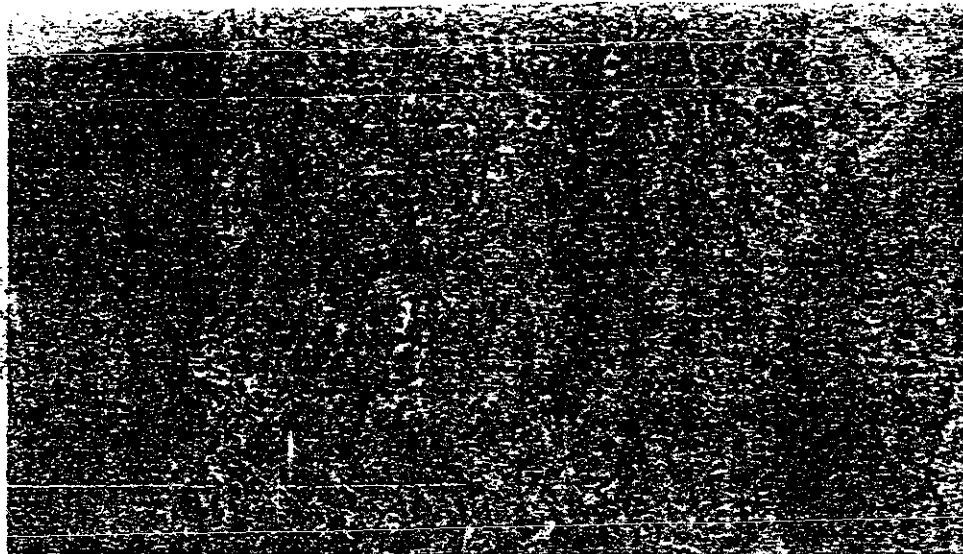
One resident at the meeting even proposed the use of private funds and machinery to clean out accumulated silt from the riverbed, but Pasco says such an undertaking requires a dredging permit from the federal government.

Area farmers have said a recent policy of the State Wildlife Division that does not allow trees to be taken from the river has made the problem worse. State officials say, however, there

See CROOK Page 2



at Crook where flooding of
led to familiarize state of-
Pasco (left), director of
Mayor Duane Kuskie ex-
to the Jumbo Reservoir
ing the river to cut a new



SURVEYING PROBLEMS — A tour Monday in the area near Crook where flooding of the South Platte River occurred this spring was conducted to familiarize state officials with problems and to seek a possible solution. Monte Pasco (left), director of the State Division of Natural Resources, listens as Crook Mayor Duane Kuskie explains how work done by Union Pacific near an intake ditch to the Jumbo Reservoir may have helped divert water that comes from Proctor, causing the river to cut a new ditch. — J.A. Photo by Patricia Warren.

the 1930s. Also on hand were Logan County Commissioners, Rep. Meiba Hastings, D-Sterling, and Sen. Maynard Yost, R-Crook.

Other state representatives included Jack Grieb, director of the State Division of Wildlife, and Jerry Danielson, state water engineer. Crook Mayor Duane Kuskie guided the tour and a subsequent public meeting.

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All factions representing the state agreed they wanted a study done of the area before it is determined how to best solve the problem. As Grieb said, "I would like to see some studies done by unbiased people. I think we are totally speculating here. I would rather see somebody that's an expert in this field tell us what to do."

One of the main controversies comes down to what is causing the flooding to get worse as year go by. Danielson says, "This is not a local problem, it is a regional problem. I don't think you can say dikes have created the entire problem. Maybe they are a factor."

The dikes Danielson referred to are some built on the

While state officials say major channelization projects from below Sterling to at least the state line is needed, local residents claim to out these diversions