16-7-18 R.7

Allied Paper, Inc./Portage Creek/ Kalamazoo River Superfund Site Kalamazoo, Michigan

Final Technical Memorandum 14 Biota Investigation

Appendix B Field Documentation

January 2002

Technical Memorandum

"Rite in the Rain"®

ALL-WEATHER

FIELD

MAXI-NOTEBOOK

No. 351-MX

Kalamazoo
Aquatic Biota

Div. 12
Blasland & Bouck Engineers
6723 Towpath Rd. Box 66
Syracuse NY 13214

BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

OBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Battle Creek - Ceresco Impoundment				

Site Location #1

Oct 10, 1993 Crew: KDS, BKC, TF Oversight: R. Hunter
Battle Creek - Put in at Wattles Park Access Ramp
* Collect complete sample of W. suckers from riffle area (mid-channel) between Wattles Road Bridge and Island immediately downstream.
* Collect complete sample of sm bass from both E & W banks between island imm. downstream of Wattles Road Bridge upstream to location 1/4 mile above (upstream) M-94 Bridge.
* Carp sample could not be collected. The River in this location is swift and steep banked w/ few backwater or slow/stagnant areas. Carp habitat was scarce. All available carp habitat was in an extensive reach of River from former Oxbow area upstream of Beadle Lake Rd to 1/4 mile above M-94 Bridge. Only two v. large carp were seen and captured in this entire reach.

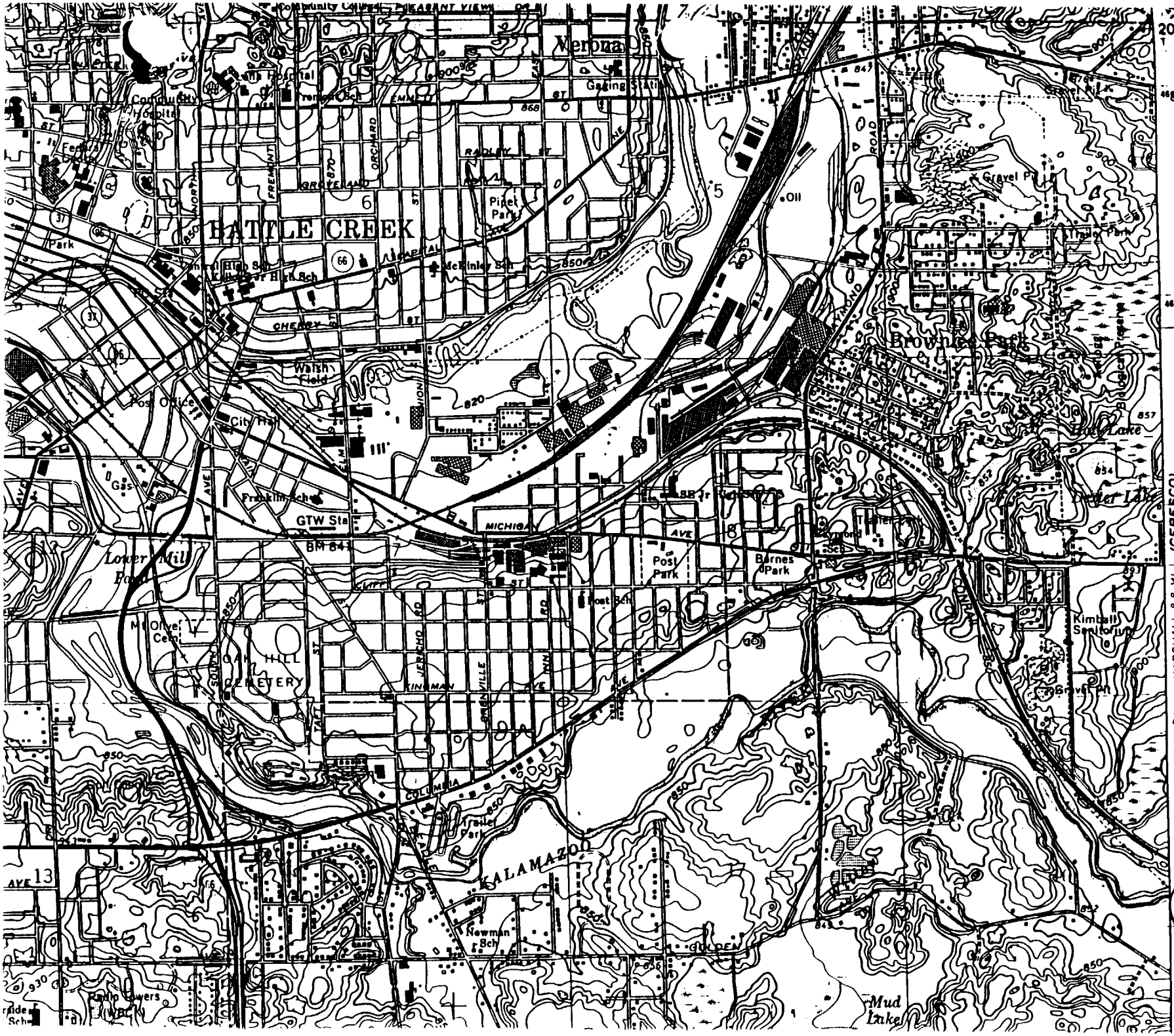
Oct 14, 1993 Crew: DKR, RJF, (KDS, DWH on shore) Oversight: Laura Gresell
Battle Creek - Put in at Wattles Park Access Ramp
* Sampling for carp from Wattles Road Bridge upstream to limits of navigation (w/ boat) at riffles just below 11 Mile Road Bridge. No carp observed/captured. Large G. Redhorse suckers taken and sent to Aquatec as a possible substitute sample species for this location.

Nov. 9 1993 Crew: KDS, DWH, DKR Oversight: R. Hunter.
Ceresco Impoundment - put in on W. Bank adjacent to dam (undeveloped access)
* Collected complete carp sample from impoundment in area immediately upstream of Isthmus-like land formation feature. Carp taken from both banks beginning at isthmus, continuing up to a distance of approx. 1/4 mile upstream.

Site Descriptions / Other Observations

Battle creek location - high banked, rather shallow (< 6 ft deep), swift current, many riffle areas (some shallow). Wattles Park appears to be heavily used. Suckers v. common (Hog, Redhorse, White), sm bass large & numerous.

Ceresco Impoundment - water was low (approx 4 ft below historical levels). Impoundment itself was v. shallow (1-2 ft deep in lower section, deeper further up). Many large redhorse, catfish spp. v. common, carp abundant, sm bass few & for between, sm suckers not common. Limited habitat for bass, difficult to sample due to shallow depth.



Site #1

10/10/93
Carp sampling

TBSA #10

worm sampling 10/21/93

Site 1: BKC, organic, moist (Adjacent to TBSA 10-2)
(15cm × 105cm × 25cm) 2:30 - 3:30 KR-SX-1-59

Site 2: DKR, BKC, NJZ sandy, wet soil with shells (Adjacent to TBSA 10-3)
(218cm × 112cm × 25cm) 3:30 - 5:00 KR-SX-2-60

Site 3: DKR, BKC, NJZ wet, silt/clay (3m N of SW corner stake)
(192cm × 195cm × 25cm) 5:00-5:35 KR-SX-3-61

Small Mammal Trapping

10/21/93 2:00 ptly sunny; 55°F

Trap 3	white-footed mouse	KR-SX-3-42	juvenile	(discarded)
6	white-footed mouse	KR-SX-6-43	juvenile	(discarded)
16	white-footed mouse	KR-SX-16-44	adult	
47	white-footed mouse	KR-SX-47-45	adult	
44	white-footed mouse	KR-SX-44-46	sub-adult	(discarded)
39	white-footed mouse	KR-SX-39-47	adult	
36	white-footed mouse	KR-SX-36-48	adult	
37	white-footed mouse	KR-SX-37-49	adult	
33	white-footed mouse	KR-SX-33-50	adult	
29	white-footed mouse	KR-SX-29-51	adult	
26	white-footed mouse	KR-SX-26-52	adult	
19	water rat (released)			
48	water rat (released)			
28	short-tail shrew (dead)			

DJR 10/22/93

10/22/93 1:00-2:00 DKR, BKC, NJZ
sunny, 65°F

Trap 6 juvenile Perimiscus (released)
12 adult (no tail - escaped)
21 adult (deceased - discarded)
20 short-tail shrew (deceased)
15 adult white-footed mouse KR-SX-15-57
24 adult white-footed mouse KR-SX-24-58
46 adult white-footed mouse (released)
47 juvenile white-footed mouse (released)
48 adult white-footed mouse (released)
38 adult white-footed mouse (released)
36 adult white-footed mouse (released)
25 adult white-footed mouse (dead - discarded)

DKR 10/22/93

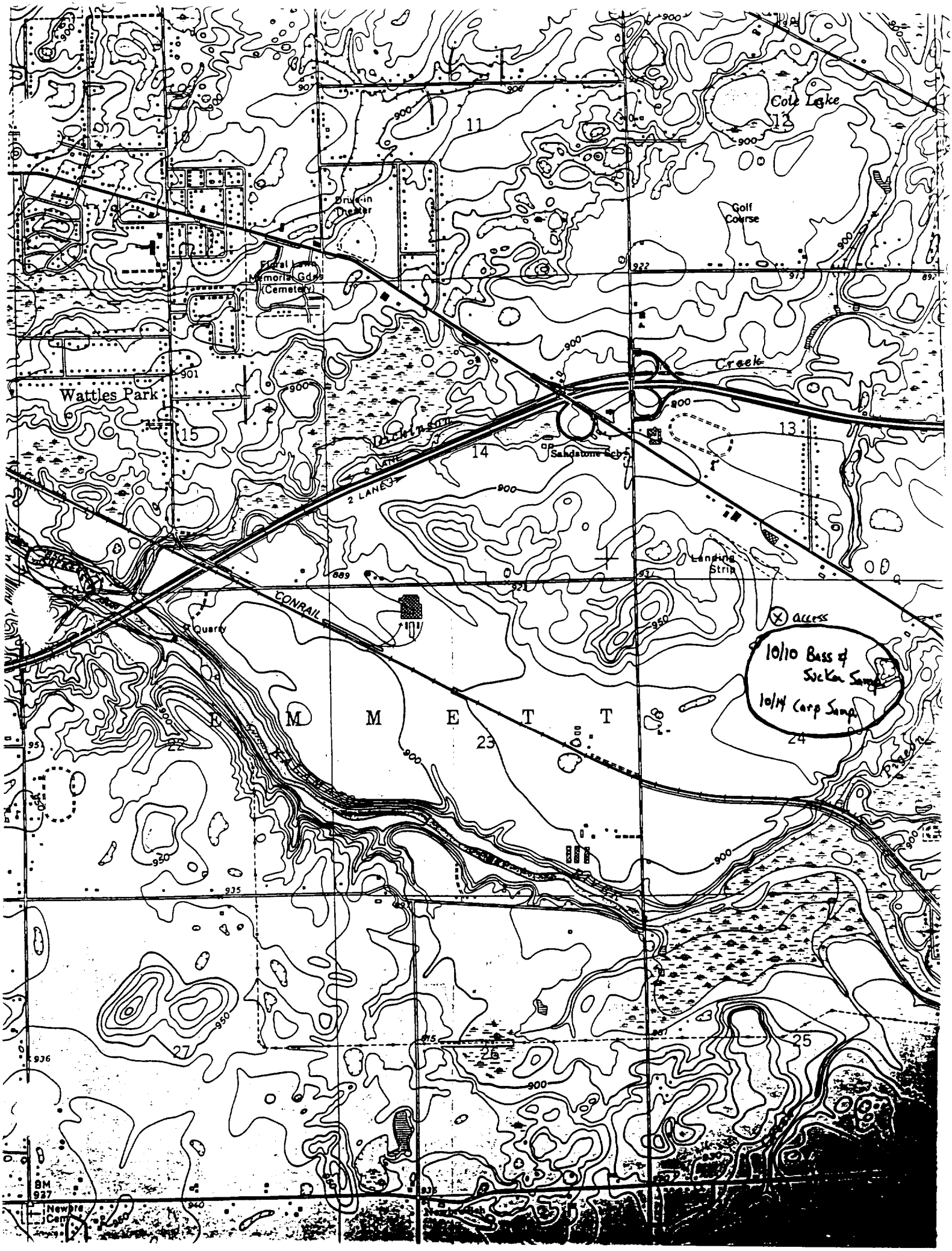
TBSA #11

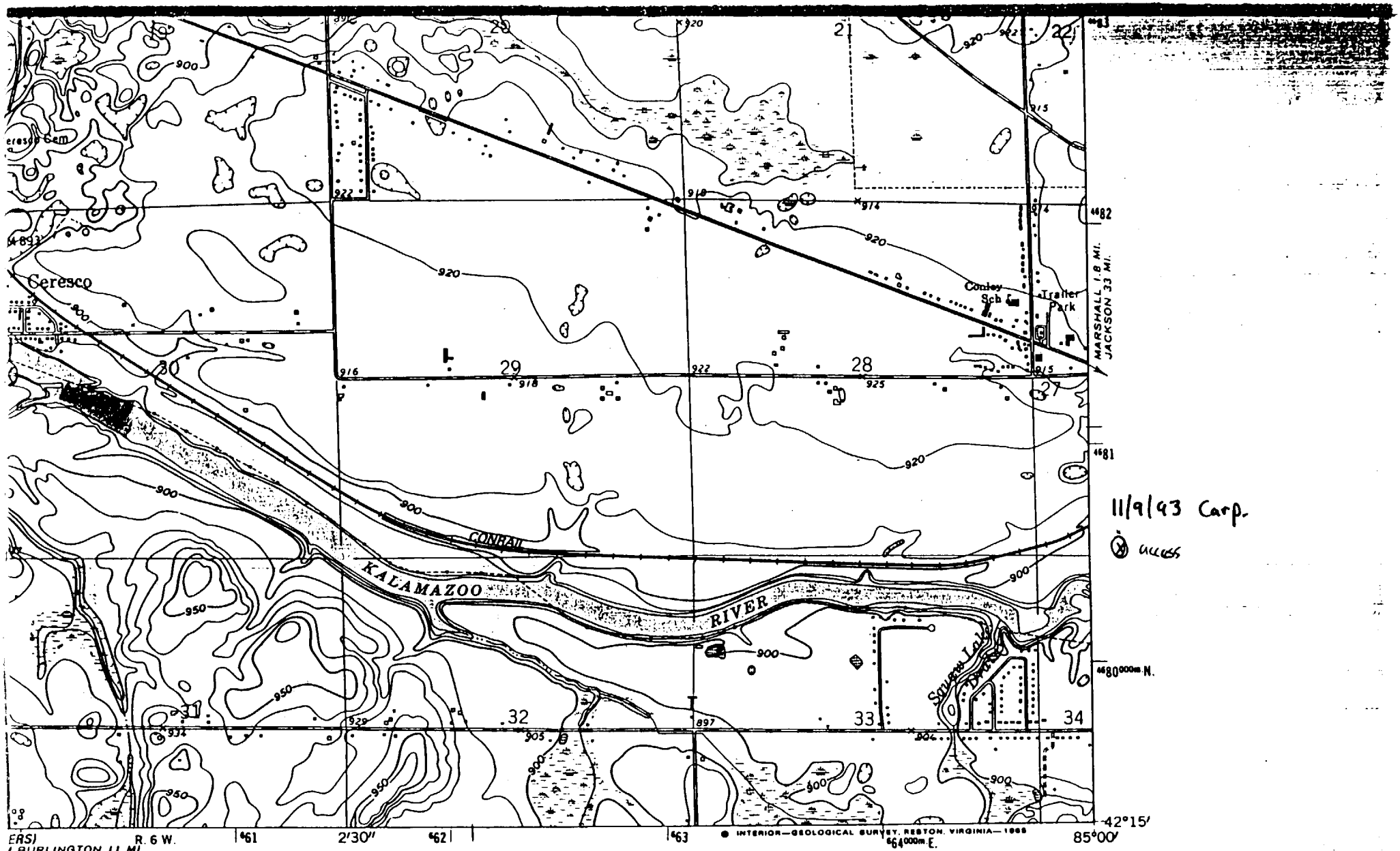
10/24/93 DKR, ALP ; sunny, 60°F 8:15-9:15

Trap 8 short-tailed shrew (dead)
42 white-footed mouse KR-SX-42-67 (adult)
48 white-footed mouse (sacrificed, discarded)
50 short-tail shrew (dead)
55 short-tail shrew (dead)
62 white-footed mouse KR-SX-62-69 (y. adult)
61 white-footed mouse KR-SX-61-70 (y. adult)
68 white-footed mouse (juvenile - released)
67 white-footed mouse KR-SX-67-71 (y. adult)
71 white-footed mouse (juvenile - released)

9:15-10:00 pulled up traps, back to office to process samples.

DKR 10/24/93


Cole Lake
Golf Course
Drive-in Theater
Floral Lawn Memorial Gdns (Cemetery)
Wattles Park
Dickinson
2 LANE
Sandstone Sch
Creek
Landing Strip
CONRAIL
Quarry
E M M E T T
access
10/10 Bass & Sucker Samp
10/14 Carp Samp
Newport Cem
North Creek


Ceresco
Conley Sch
Trailer Park
MARSHALL 1.8 MI.
JACKSON 33 MI.
CONRAIL
KALAMAZOO
RIVER
Squaw Lake
Spring
11/9/93 Carp.
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1965
R. 6 W.
2'30"
42°15'
85°00'
BURLINGTON 11 MI.
1 MILE
4000 5000 6000 7000 FEET
1 KILOMETER
10 FEET
DATUM OF 1929
MICHIGAN
QUADRANGLE LOCATION
ROAD CLASSIFICATION
Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route
CERESCO, MICH.
SE/4 BATTLE CREEK 15' QUADRANGLE

BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Morrow Pond Site Location #2				

Aug. 24, 1993 Crew: KDS, DWH, DKR Oversight: T. Grendusa / J. Haug

~~* collected Sampled E bank~~

Morrow Pond - Put in at Boat Ramp on E bank at

* Sampled along Entire E bank of Pond & headwaters up to 35th St. Bridge. Sampled upto 1/4 mile upstream of 35th st Bridge both banks. Collected entire carp sample, 4 sm bass and sucker samples (15 suckers in all). Also sampled midchannel along Islands near 35th St Bridge and small portion of W bank of Pond

Aug 25, 1993 Crew: KDS, DWH, DKR Oversight: T. Grendusa / J. Haug.

Morrow Pond - Put in at Boat Ramp on E bank at

* Sampled E bank of Pond & headwaters up to 35th st. Bridge, also up to 1/4 mile upstream of 35th St. Bridge (both bank(s). Collected 7 sm bass (4 of which were less than 10 inches in size) also 2 sucker samples (4 fish in all).

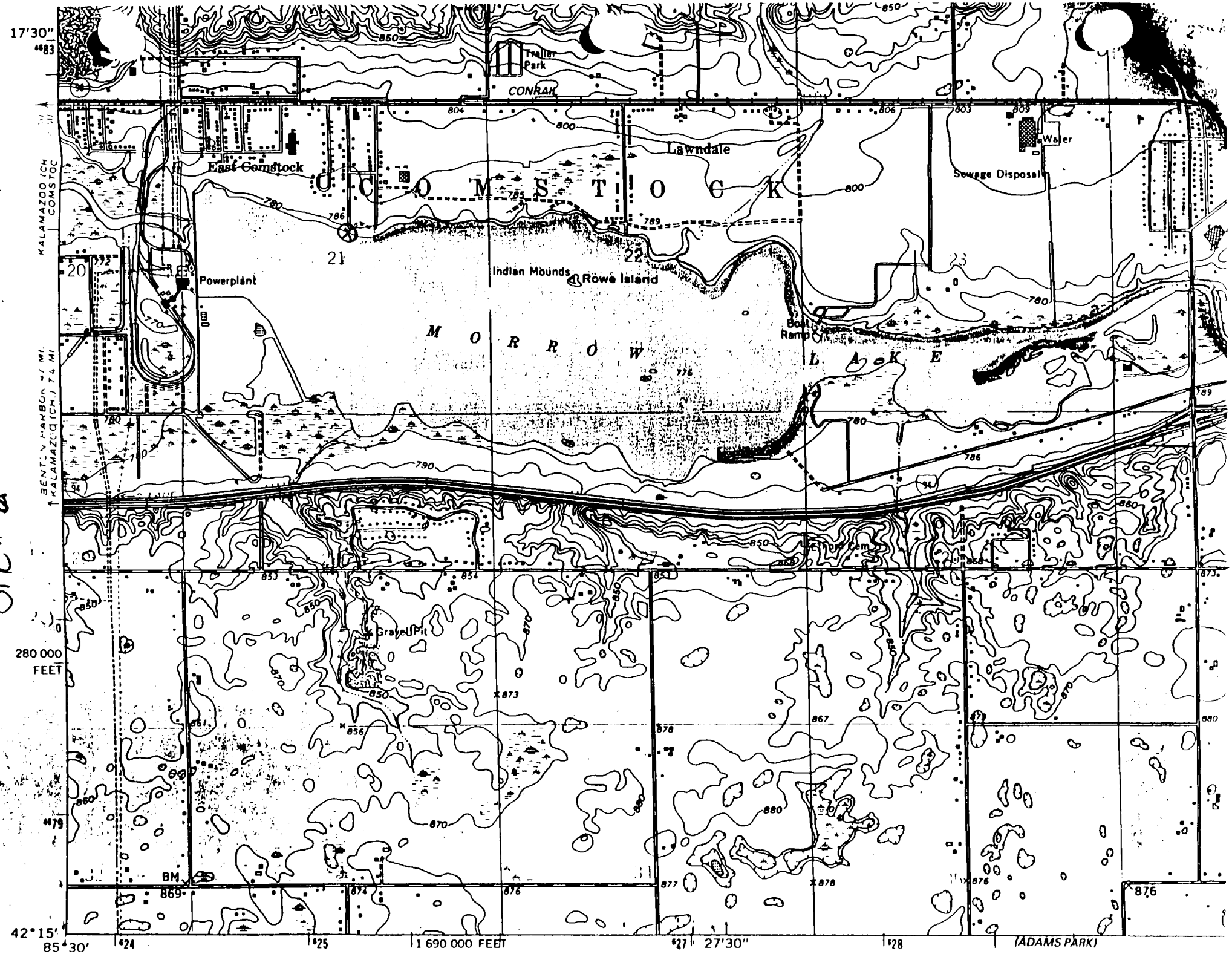
Oct 15, 1993 Crew: DWH, DKR, RJF Oversight: L. Gesell.

Morrow Pond - Put in at Boat Ramp on E bank at

Sampled E bank of Pond & headwaters up to 35th St. Bridge. Collected 4 sm bass & 3 MDNR ~~suckers~~ walleye.

Observations

Access is good. Lake/Pond is rather shallow (< 6 ft) w/ many stumps & submerged trees - v. difficult to navigate in some areas. Headwaters are shallow w/ west bank v. difficult almost impossible to sample. Sm fish not too abundant, walleye relatively abundant, carp & suckers abundant. Best habitat on E bank of headwaters.


17'30"
Trailer Park
CONRAIL
Lawndale
Water
Sewage Disposal
East Comstock
C O M S T O C K
KALAMAZOO (CH.)
COMSTOC
21
22
23
20
Powerplant
Indian Mounds
Rowe Island
Boat Ramp
M O R R O W
L A K E
Gravel Pit
280 000 FEET
BM 869
42°15'
85°30'
1 690 000 FEET
27'30"
(ADAMS PARK)

Site #8

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SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Below Morrow Dam Site Location #3				

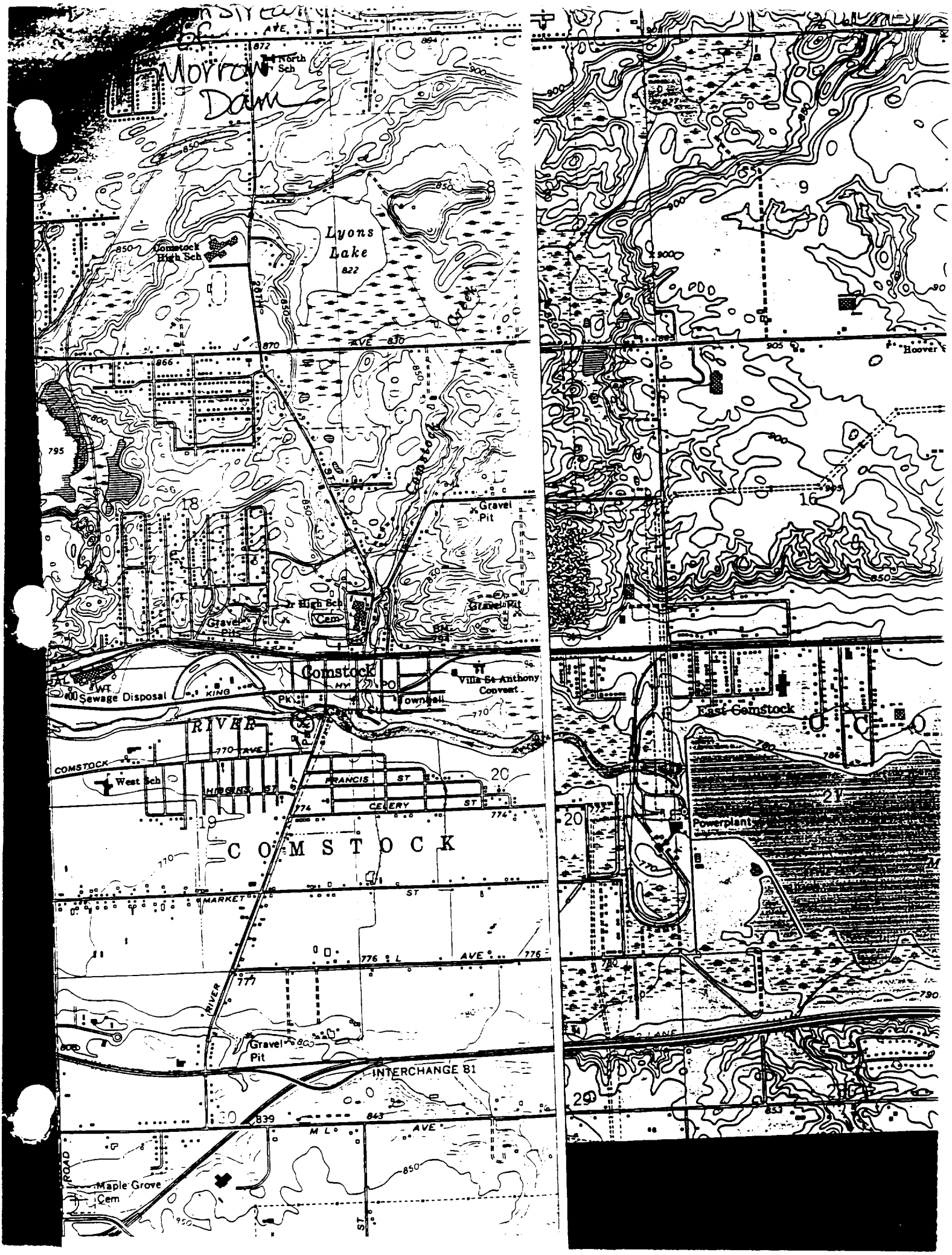
May 26, 1993 Crew: KDS, DKR, DWH Oversight: J. Hayes.

Below Morrow Dam - Put in at Merrill Park Boat Ramp.

* Sample from Riffle area immediately below Boat Ramp up to base of Morrow Dam. Complete carp, sm bass and sucker samples (Hog Sucker). Sample both E & W banks concentrating at most productive areas near River St. bridge and pool area at base of dam.

Observations

Carp taken throughout reach, bass most abundant at base of dam, abundance of N. Pike also at base of dam. Small suckers (white) difficult to locate.


Morrow Dam
North Sch
Lyons Lake
Comstock High Sch
Gravel Pit
High Sch
Cem
Comstock
Villa St Anthony Convent
Sewage Disposal
KING
RIVER
COMSTOCK
West Sch
FRANCIS ST
CELERY ST
COMSTOCK
MARKET ST
L AVE
INTERCHANGE 81
Maple Grove Cem
East Comstock
Powerplant
Hoover

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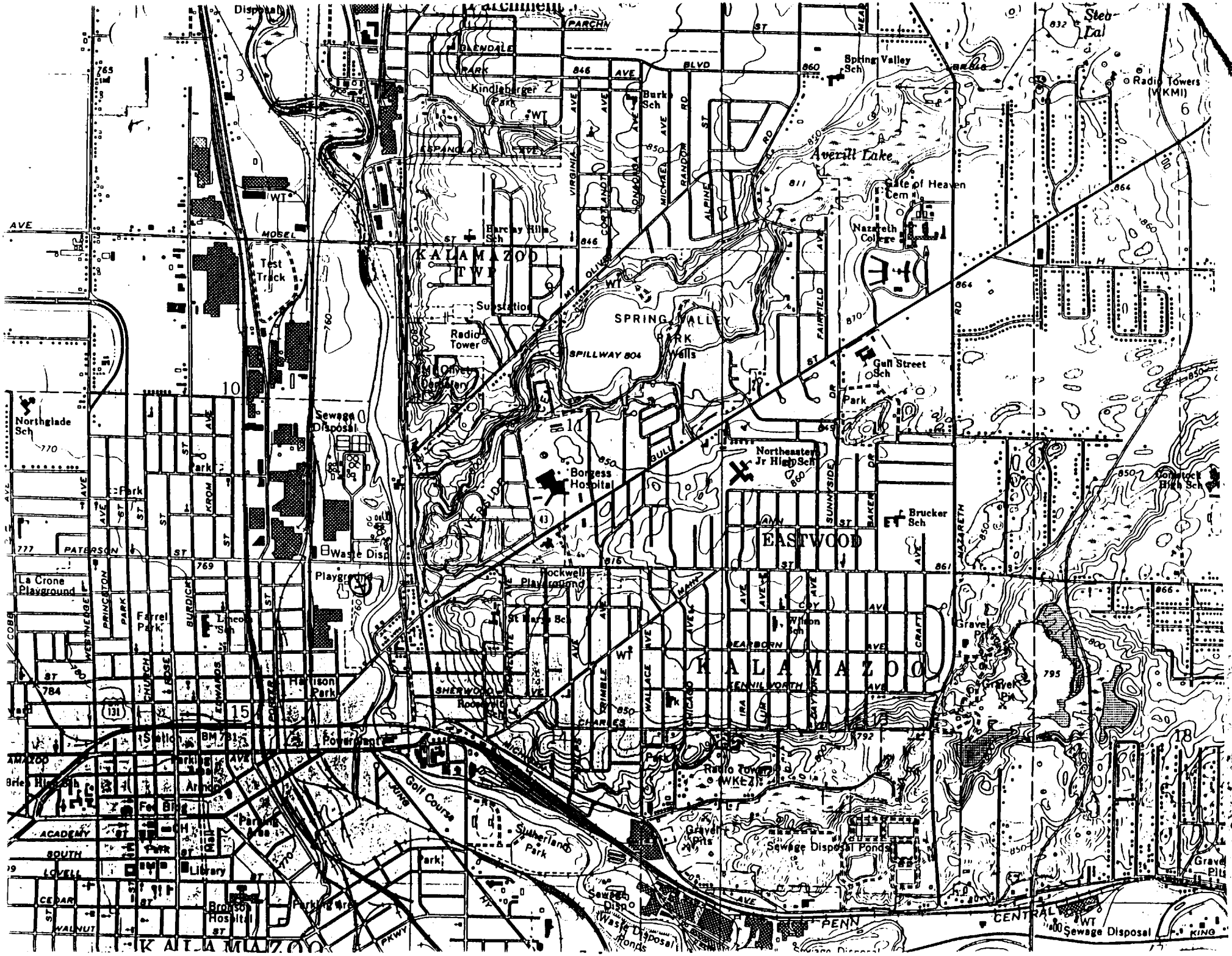
SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Mosel Ave. Site Location #4				

Sept 1, 1993 Crew: KDS, DKR, RJF Oversight: J. Hung; M. Geitka MDNR
Mosel Ave - Put in at Verbury Park Boat Ramp
* Sample from approx. 1/4 mile upstream of Mosel Ave Bridge to approx 1/4 mile downstream of 2nd RR trestle. Complete sample of carp obtained throughout entire reach. Sm bass taken at Mosel St. bridge, 1st RR trestle downstream of bridge, complete bass sample obtained. Small suckers (4-8 in) difficult to locate, some success in riffle/grassy areas immediately upstream & downstream of 2nd RR trestle. Sucker sample incomplete. Kept 3 walleye for MDNR.

Oct 15, 1993 Crew: DWH, DKR, RJF Oversight: L. Gesell
* Sampled vicinity of Mosel Ave bridge to pick up one carp needed due to a miscount on 9/1/93. Sampled riffle areas near 2nd RR trestle to obtain additional suckers to complete sample for this location. Sucker sampling was easy to complete due to increase in acceptable sucker size since last effort.

Observations
Access is good. 1st RR trestle is low, but boat can fit underneath, need to be careful during periods of high flow. Many pictures & video taken by MDNR on 9/1/93. Met MPB & US Congressman at Mosel Ave. Bridge (also present were MDNR personnel) on 9/1/93 also. Lots of good habitat throughout river. Surprized at number of walleye seen in this section of the River.


Parchment
Spring Valley Sch
Radio Towers (WKMI)
Kindleberger Park
Burke Sch
Averill Lake
Gate of Heaven Cem
Nazareth College
Barkey Hills Sch
KALAMAZOO TWP
Test Track
Substation
Radio Tower
SPRING VALLEY PARK
SPILLWAY 804
Wells
Gull Street Sch
Park
Northglade Sch
Sewage Disposal
Northeastern Jr High Sch
Borgess Hospital
Brucker Sch
EASTWOOD
Waste Disp
Playground
Rockwell Playground
La Crone Playground
Farrel Park
Lincoln Sch
St Mary's Sch
Wilson Sch
Gravel Pit
KALAMAZOO
Harrison Park
Roosevelt Sch
Power Plant
Radio Towers (WKZO)
Golf Course
Sutherland Park
Sewage Disposal Ponds
Library
Bronson Hospital
Sewage Disp
Waste Disposal Ponds
PENN
CENTRAL
Sewage Disposal
KALAMAZOO

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SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Plainwell Dam Site Location # 5				

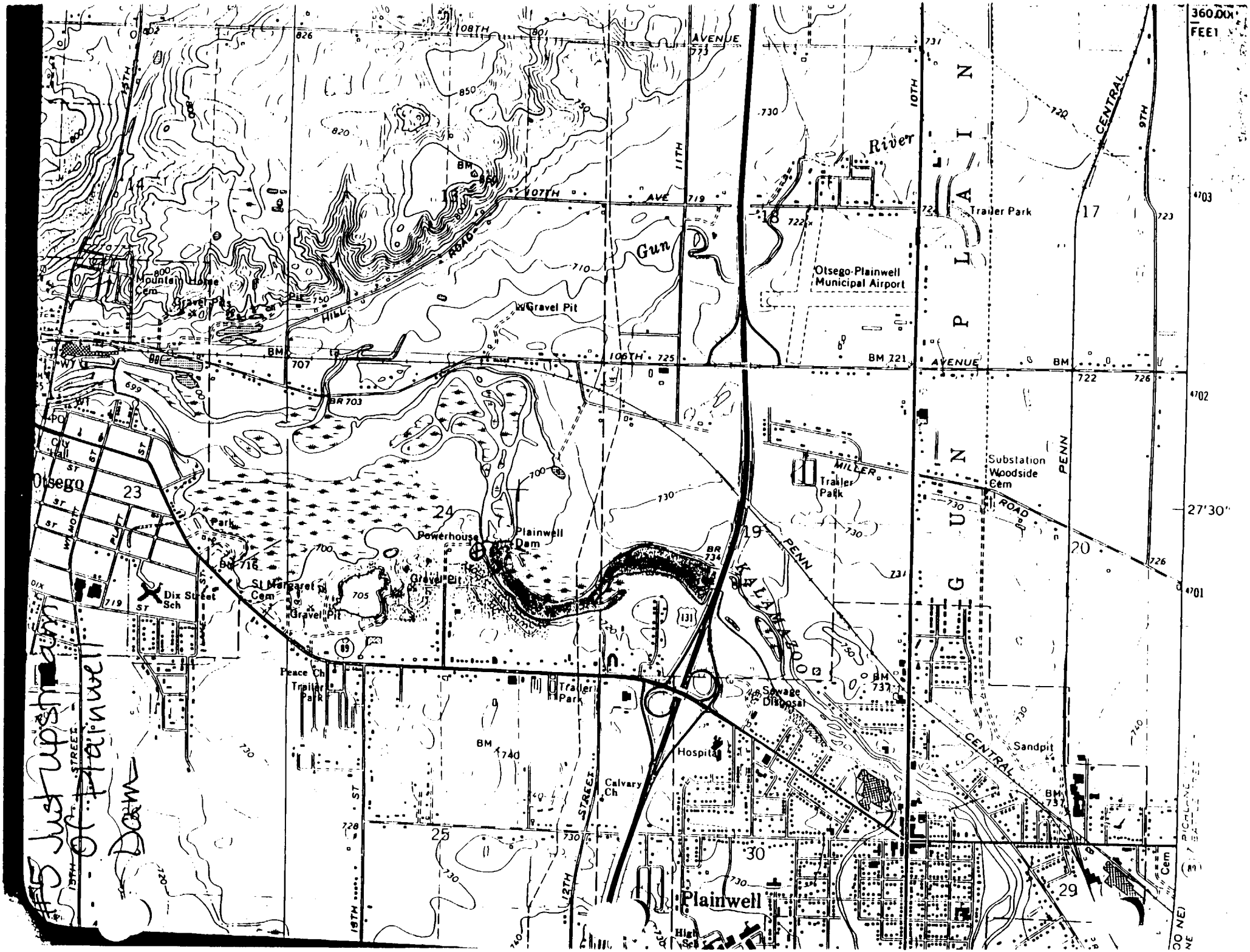
Oct. 14, 1993 Crew: KOS, DWH, DKR Oversight: L. Gesell

Above Plainwell Dam – Put in next to dam, W shore. Undeveloped Access

* Sampled former impoundment area and river up to riffles just below Rt. 131 Bridge. Obtained complete sample of carp & bass from former impoundment area. Suckers taken from impoundment area and from riffle area near Rt. 131 bridge.

Observations

Access at this location v. difficult, required help from a wrecker to get boat in properly and to take it out.


#5 Just upstream of Plainwell Dam
Otsego
Plainwell
Gun River
Kalamazoo River
Otsego-Plainwell Municipal Airport
Trailer Park
Mountain Home Cem
Gravel Pit
Hill Road
Dix Street Sch
St Margaret Cem
Powerhouse
Plainwell Dam
Peace Ch
Sewage Disposal
Hospital
Calvary Ch
Sandpit
Substation
Woodside Cem
Miller Road
Penn Central
Penn Central
108TH Avenue
107TH Ave
106TH Avenue
Wyo Street
Mott Street
Dix Street
Park Street
12TH Street
10TH
11TH
9TH
15TH
16TH
Cemetery
City Hall
Hwy 131
Hwy 89
360,000 FEET
27'30"
4703
4702
4701

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ENGINEERS & GEOSCIENTISTS

SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Otsego City Dam Site Location # 6				

Aug. 30, 1993 Crew: KDS, DKR, RJF Oversight: J. Haug.

Above Otsego City Dam (Menasha Dam) – Put in at Jewel St (undeveloped access) – Take out next to the Dam behind Church. (had to get winched out)

* Sample E & W shore up to base of Plainwell Dam (W side of island). Collect 6 carp, 5 bass and approx 30+ suckers (white, redhorse, hog) from ~~entire area~~ throughout stretch of river sampled. Most suckers taken in riffle area below Plainwell Dam (this same riffle prevented us from getting into the pool immediately below Plainwell Dam. Surprisingly few fish were taken from west side of island of base of plainwell Dam. Had a v. difficult time locating large carp

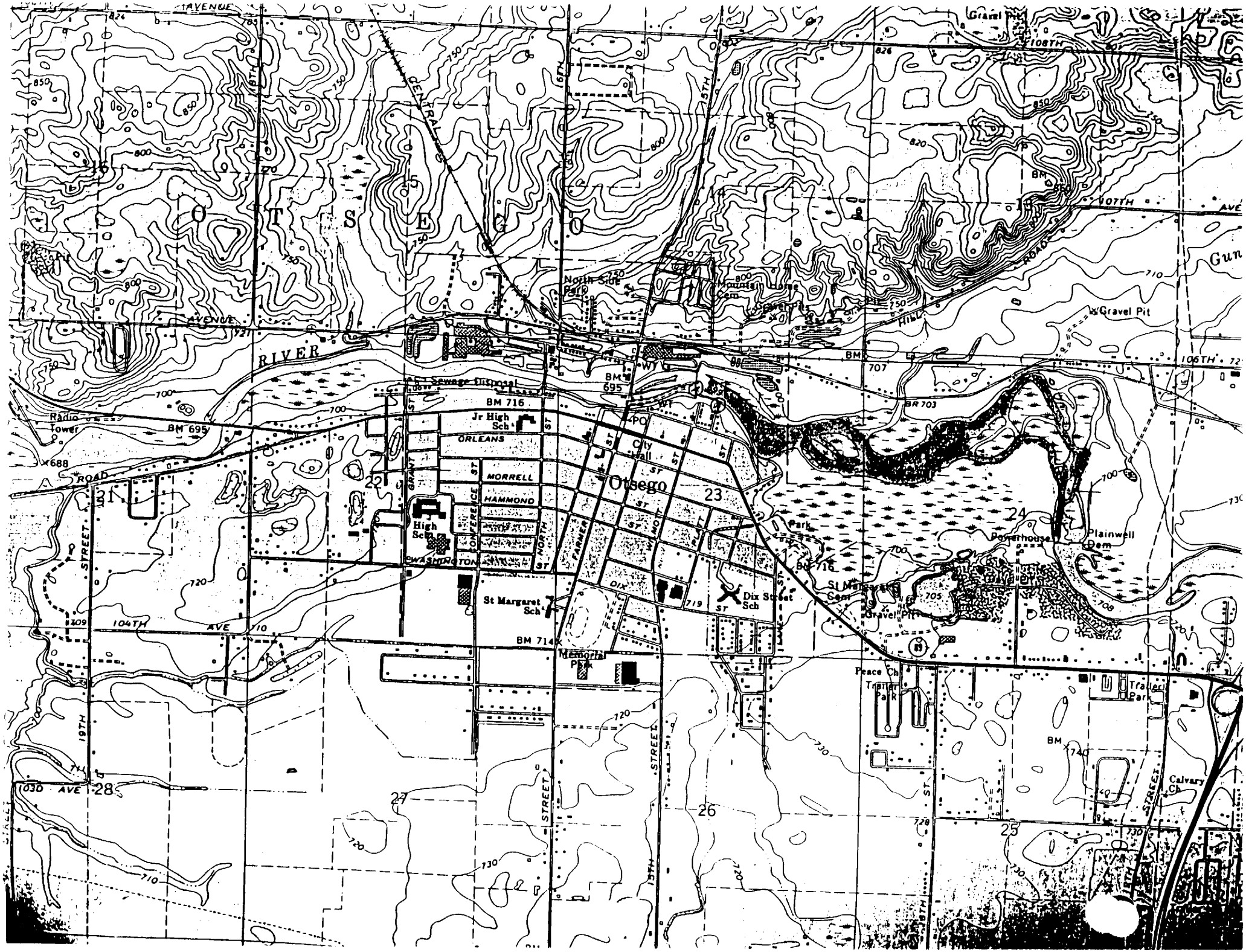
Oct. 11, 1993 Crew: KDS, DKR, BKC Oversight: R. Hunter.

- Above Otsego City Dam – Put in at access point next to dam. (had to get winched out)

* Sampled to complete carp, bass and sucker sample. Located a v. productive spot on west bank of river just prior to 1st set of islands. Caught many bass here. Also kept two walleye for MDNR. Did not have to travel v. far upstream to obtain our samples (6 bass, 5 large carp, Redhorse) also surprisingly found large suckers in a short period of time.

Observations

~~The~~ Access to this sampling area is a problem. Location next to Menasha Dam is easy to get into but v. steeply graded and almost impossible to get out of. There is a thick layer of silt throughout the impounded area also (from 1 to 3 feet deep). The Jewel st access point is even less preferable than the Menasha Dam spot. Jewel st. is not as steep but there are problems with the deep layer of mud here – the trailer does not go in even (mud is deeper on one side and its v. difficult to get out once your in. This area has a good population of fish and is not fished much (no evidence of fishing activity seen). Number and size of walleye were surprising


O T S E G O
Otsego
RIVER
CENTRAL
AVENUE
108TH
107TH
106TH
104TH
AVE
ROAD
STREET
19TH
16TH
15TH
Gravel Pit
North Side Park
Mountain Lake Cem
Sewage Disposal
BM 716
BM 695
BM 707
BM 703
BM 714
Jr High Sch
ORLEANS
MORRELL
HAMMOND
WASHINGTON
GRANT
CONFERENCE
NORTH
PARMER
WALNUT
DIX
City Hall
Radio Tower
High Sch
St Margaret Sch
Dix Street Sch
Memorial Park
Park
Powerhouse
Plainwell Dam
St Mary's Cem
Peace Ch
Trailer Park
Calvary Ch
16
15
14
13
21
22
23
24
28
27
26
25

BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record/ Otsego Dam Site Location #7				

Oct. 12, 1993 Crew: KDS, DKR, BKC (pm only) Oversight: R. Hunter, N. Zygmont

Above Otsego Dam - Put in at make-shift access in Otsego Fire Co. BBQ Grove on E bank immediately upstream of North St. bridge.

* sampled from just upstream of dam to just above confluence/discharge of Pine Creek. Sampled both banks and midchannel. E bank most productive for bass, most suckers taken further upstream from riffles in vicinity of M-89 Bridge. Carp taken throughout. All bass & carp taken from within former impoundment area. Complete samples of all 3 species & some suckers obtained this effort.

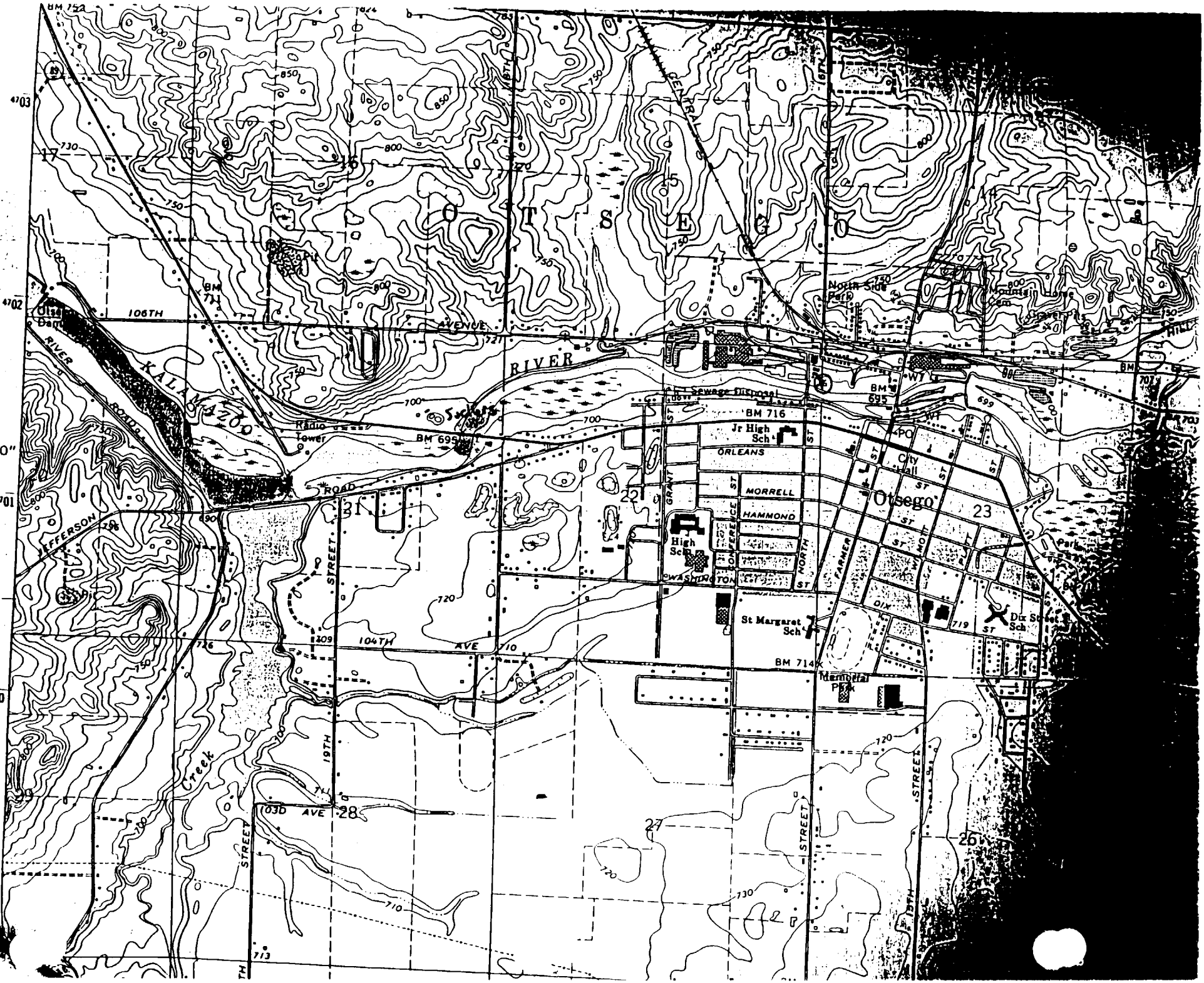
Observations

Access at this location relatively easy. Navigation down to sampling area more difficult. Rapids in vicinity of M-89 bridge difficult to get through (going up stream).

ite #7

tsego

am



BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Trowbridge Dam Site Location # 8				

OCT 13, 1993 Crew: KDS, DKR, BKC (am), RJF (pm). Oversight: R. Hunter, L. Gesell

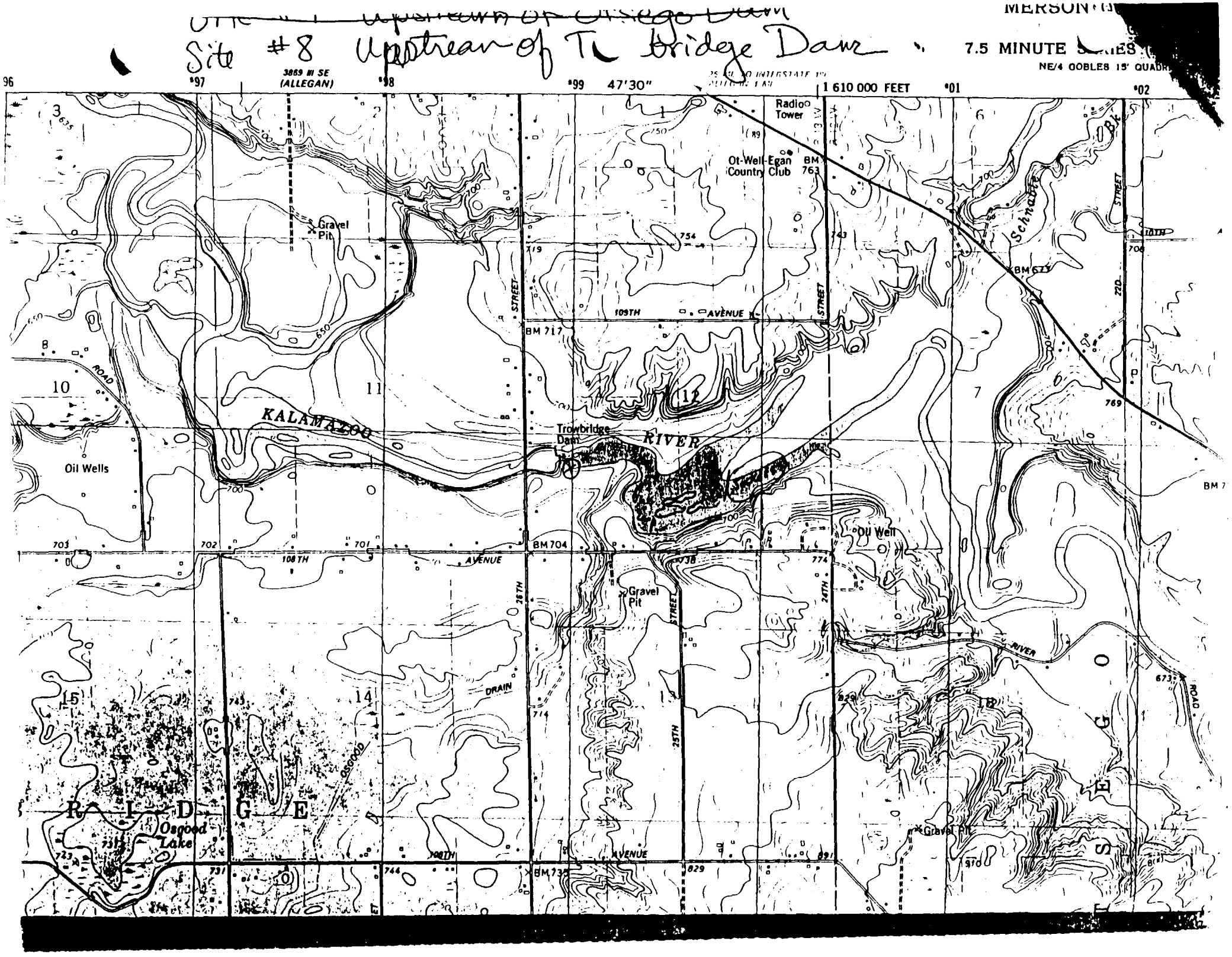
Above Trowbridge Dam - Put in next to Dam on MDNR Ramp (W Bank) - loose gravel - needed a tow out.

* Collected complete samples of carp & bass from former impounded area. Carp taken throughout, bass and a large portion of carp were captured between islands mid channel and the west bank. This area was shallower than the main channel and had better habitat (more structure). An abundance of carp in these backwater areas. Suckers were taken further upstream from along east bank and mid channel in areas with abundant growths of submerged vegetation (grasses). East bank of former impounded area more productive than W. bank.

Observations

Boat ramp next to dam is difficult to get out of due to fresh gravel that is still v. loose. Much river-based activity in this area - fishing above & below the dam. Waterfowl hunting immed. upstream of former impounded area. Large parking area next to boat ramp (I understand that the gate allowing access to parking/ramp is only open during hunting season.

Site #8 Upstream of Trowbridge Dam



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ENGINEERS & GEOSCIENTISTS

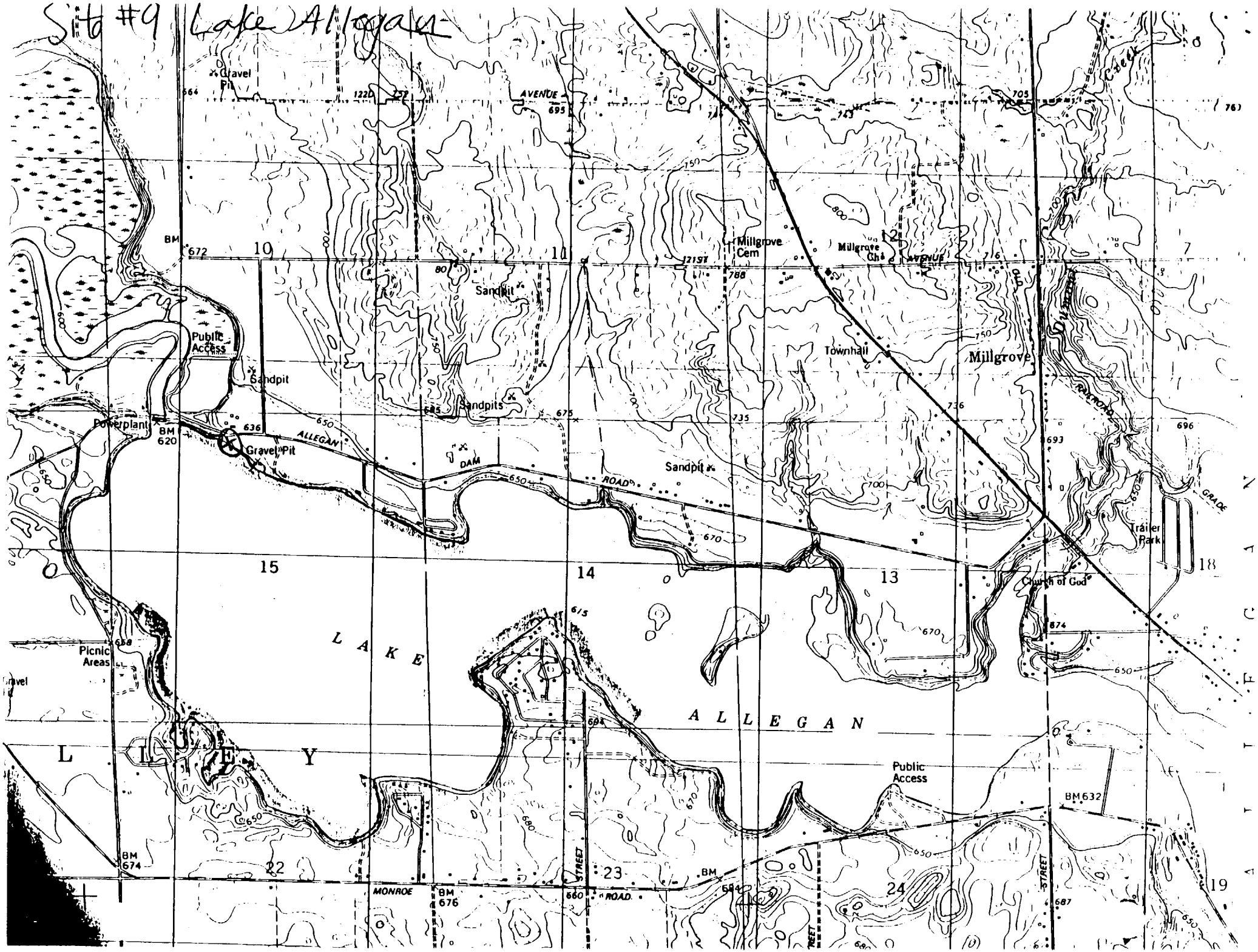
SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Lake Allegan Site Location #9				

Sept. 16, 1993 Crew: KDS, RJF Oversight: R. Hunter.

Lake Allegan - Put in at Lake Access on E shore off of Allegan Dam Road.

* Collect complete samples of carp, sm bass, w. suckers from both E & W lakeshores. Carp & suckers taken along bank throughout sample locations. Bass taken around areas of structure (including submerged structure) All carp were stunted, trophy-size sm mouth, also 1st cove where white suckers were really numerous. Also kept one walleye for MDNR.

Site #9 Lake Allegan



BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Below Allegan Dam - Site Location #10				

Sept. 21, 1993 Crew: KDS, DKR, BKC Oversight: R. Hunter

Below Allegan Dam - Put in at DNR ramp just below Dam.

* Collect 7 carp, 8 bass and from River between Swan creek and the boat ramp. Also kept two walleye for DNR. Both carp and bass taken from throughout this sampling area. Both banks sampled. Sampling cut short this day due to problems with engine transmission

Oct. 5, 1993 Crew: KDS, DKR (early pm); KDS, RJF, BKC (late pm) Oversight: M. Gettka (MDNR)
R. Frech (COM)
Eileen Helmer (USEPA)

Below Allegan Dam - Put in at DNR ramp just below Dam.

* Collected 4 carp and 3 bass to complete these samples from area around TBSA #1 down to swan creek. Continued lack of success in locating small suckers (< 12 in) begin sampling (keeping) only sucker species relatively abundant w/ individuals ≈ 12 in. or less this being quillback carpsuckers. Keep 5 quillbacks between 11 and 12 inches in length. Shock on extensive reach of River today, looking for suckers. Go down past large island in Sand Creek Marsh near M-89.

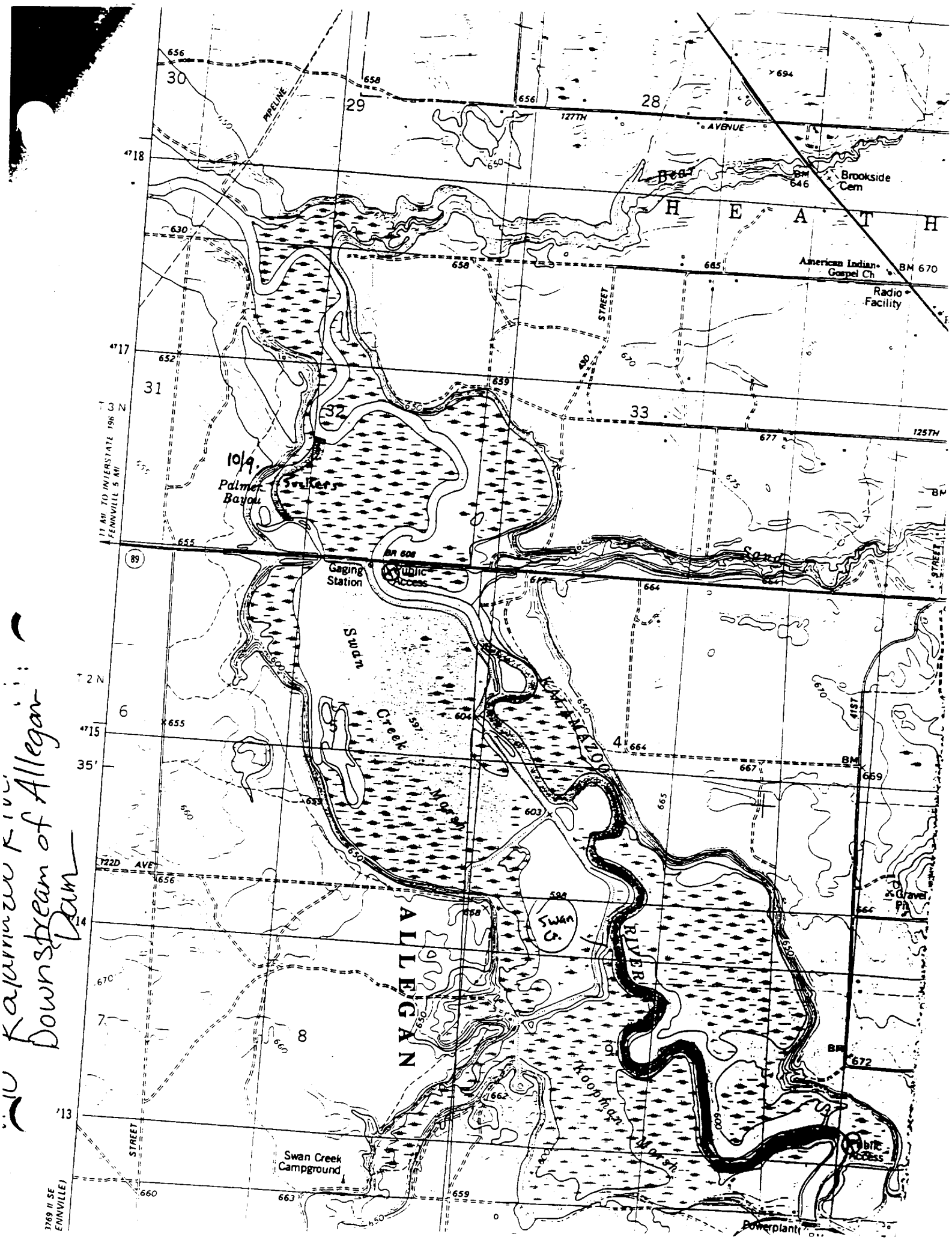
Oct. 9, 1993 Crew: KDS, BKC, T.F Oversight: R. Hunter.

Below Allegan Dam - Put in at undeveloped access on E bank next to M-89 Bridge in Swan Creek Marsh.

Collected 11 spotted suckers to complete sucker sample. Sample suckers from first significant backwater channel downstream of M-89 bridge. (W bank of river). Small white and redhorse suckers still nowhere to be found.

Observations

River channel between M-89 and Allegan Dam is v. deep w/ v. steep/cut off banks, virtually no shallow areas anywhere. No small suckers observed during any sampling activity in main channel. Large numbers of migratory fish in the river (inc. chinooks, steelhead). V. large redhorse & white suckers common as are large quillbacks. Heavy fishing pressure at below allegan dam. Avoided most of this by sampling below the boat ramp. Most shore-based angling occurring between dam & boat ramp. Still a fair amount of boat traffic below the ramp. Large numbers of N. Pike and yearling LM bass in backwater. Fished 10/9. Disposed of quillbacks, saved spotted suckers for chem. analysis. Spotted suckers taken from stagnant waters as opposed to flowing water. Good structure throughout reach between Swan creek and dam.


Kalamazoo River
Downstream of Allegan Dam
HEATH
Brookside Cem
American Indian Gospel Ch
Radio Facility
127TH AVENUE
125TH
PIPELINE
STREET
11 MI TO INTERSTATE 196
FENNVILLE 5 MI
Palmer Bayou
Sulkers
Gaging Station
Public Access
Swan Creek
Swan Cr.
KALAMAZOO RIVER
ALLEGAN
Kooman Marsh
Swan Creek Campground
Gravel Pit
Powerplant
41ST
722D AVE
3769 II SE FENNVILLE

BASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

SUBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Near Saugatuck Site Location #11				

Oct. 6, 1993 Crew: KDS, BKC Oversight: R. Hunter

Near Saugatuck - Put in at New Richmond DNR Ramp.

* Collect complete carp sample (11) in stretch of river immediately downstream from boat ramp. Collect 3 spotted suckers in slow water next to RR tracks, tag 3 bass in vicinity of 58th St. Bridge. Also keep one Walleye for DNR. Break an anode array during early pm, shock with only one array rest of day. Many carp, small suckers & bass not v. abundant.

Oct. 7, 1993 Crew: KDS, BKC, LAE Oversight: R. Hunter.

Near Saugatuck - Put in at New Richmond.

* Collect 6 smallmouth from general area near 1st sidechannel (W-bank) flowing into Morrison Bayou. Bass taken alongside structure in main channel and in side channel. Go looking for shallow water with submerged vegetation in hopes of finding suckers. Shock sidechannel in Morrison Bayou, this is not productive. Generator fuel pump konks out. Find suckers (white) in shallow weedy areas of 2nd sidechannel going off main channel into Morrison Bayou. Collect complete sample of w. suckers.

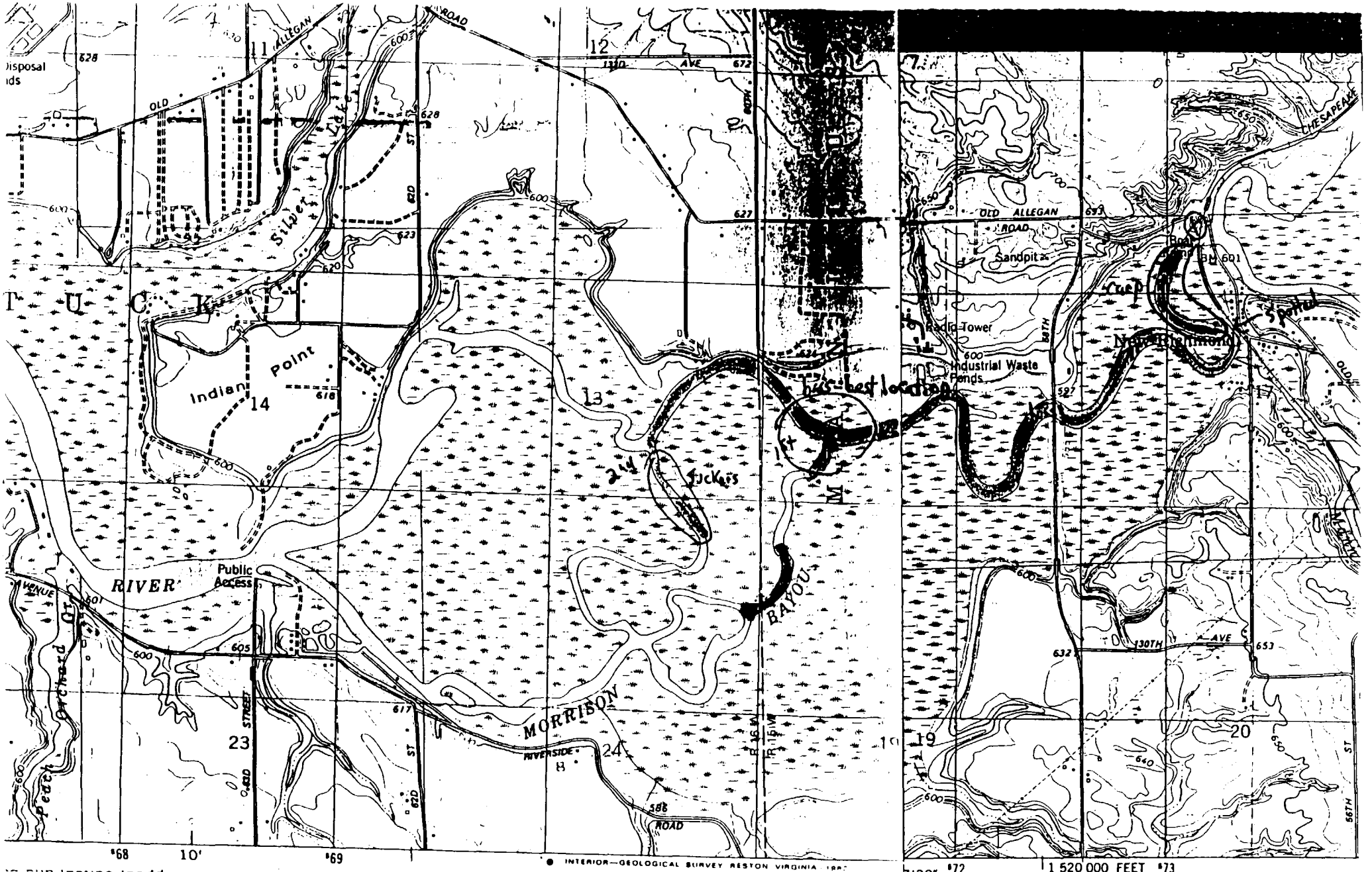
8, 1993 Crew: KDS, BKC Oversight: R. Hunter.

Near Saugatuck - Put in at New Richmond.

* Break prop in am, spend all morning getting new prop put on and fuel pump (for generator) fixed. Fish in pm and get 4 bass (2 needed to replace undersized fish taken 10/6 & 7) to complete bass sample. Bass again taken in vicinity of 1st sidechannel going into Morrison Bayou. Keep one walleye for DNR.

Observations

Heavy fishing pressure in vicinity of Boat Ramp at New Richmond. River in this area is v. deep (10-20 ft) with few shallow areas and limited structure in the upper reaches. Good structure near 1st sidechannel down to 2nd sidechannel. Catfish spp. were abundant in this reach, also took a fair number (5+) of large mouth bass, especially near 58th st. bridge. Access to 2nd sidechannel is v. difficult (shallow, obstructions) much of Morrison Bayou marked as private property.



Site #11 - near Saugatuck

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1976. Field checked 1978. Map edited 1981

Projection and 10,000-foot grid ticks: Michiga[illegible] [illegible]linate system, south zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, [illegible]16

Site #11 - #25

BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

JBJECT	PROJ. NO.	BY	DATE	SHEET
Fish Sampling Record / Portage Creek (Former Bryant Mill Pond)				

Site Location #12 - Mark / Recapture

July 26, 1993 Crew: KDS, DWH, DKR Oversight: No oversight

Allied OU - access on foot 2 locations. At power line crossing near landfill and stormwater retention pond also via small creek bed midway between old power house & landfill.

* using the backpack unit we fished/sampled approx 80% of the former Bryant Mill Pond area of creek flow. Target species (carp, suckers, gamefish) were tagged with a blue floy tag and fin clipped (R or L pelvic) = marked 24 carp, 46 white suckers & 1 edible-size rock bass. No smallmouth bass were observed all day.

July 27, 1993 Crew: KDS, DWH, DKR Oversight: No oversight

Allied OU - access via power line and creek bed as described above.

* using backpack unit, sampled 100% of former Bryant Mill Pond Area. Marked 27 carp and 63 white suckers. Again no smallmouth bass were observed.

Nov. 8, 1993 Crew: KDS, DWH, RJF Oversight: R. Hunter

Allied OU - access via creek bed and powerline as described above.

* using the backpack unit until batteries ran out, we sampled upper Portage Creek (S of isthmus) and a portion of the lower section capturing 11 marked carp and 7 marked W. suckers. Again saw no edible-size gamefish.

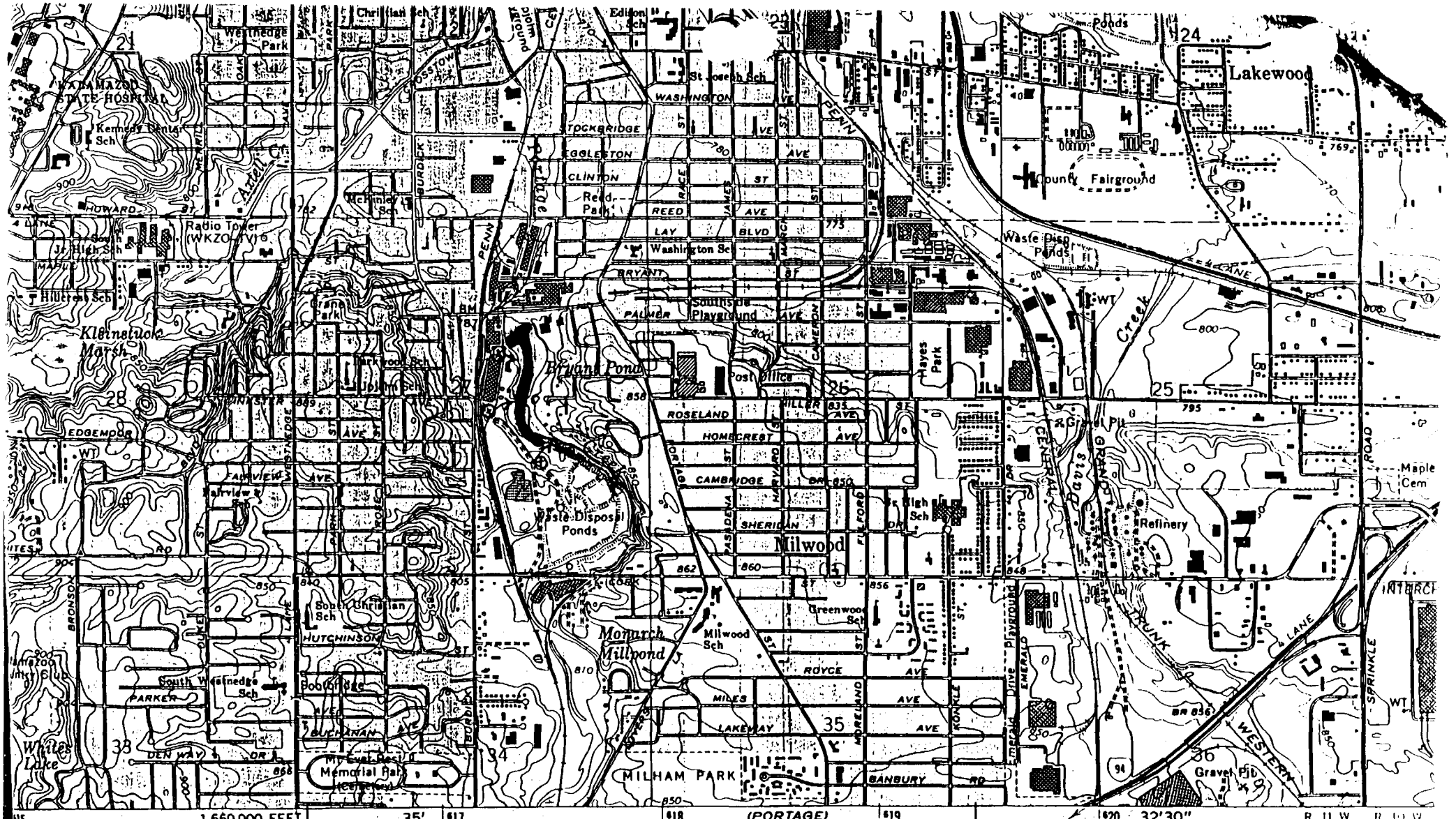
Nov 9, 1993 Crew: KDS, DWH, RJF Oversight: R. Hunter

Allied OU - access via creek bed (as described above) and new location behind former mill buildings, a Second Feeder stream near old power house bld. behind stack.

* Using backpack unit sampled lower Portage Creek (N of isthmus) and captured 4 marked W. suckers to complete the sucker sample. No edible-size gamefish observed.

Observations

This stretch of P. Creek offers poor habitat for resident fish species. Majority of stream is shallow depth over unconsolidate substrate (sand, paper residue). Limited in-stream structure, banks were low w/some overhanging vegetation. Some areas of in-stream macrophytic growth. During marking efforts all carp were floy tagged & fin clipped, suckers were only fin clipped to reduce stress to these smaller fish. During recapture not one floy tag was observed remaining in any carp. Marked carp were easy to locate, unmarked carp were common but not particularly numerous. Marked suckers were more difficult to locate, unmarked suckers were common and v. numerous outnumbering marked individuals by approx. 7 or 10 to 1.



Location #12
portage creek
Bryant Mill Pond.

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND GEOLOGICAL SURVEY DIVISION
MICHIGAN DEPARTMENT OF NATURAL RESOURCES, LANSING, MICHIGAN 48909

To place on the predicted North American D
move the projection lines 1 meter north and

7/26

Crew: RDS/DWH/DKF 11:10 - 5:30

Shocking on Portage Creek/Bryant Mill Pond using Backpack unit.

Covered 80% of area of former Bryant Mill Pond.

Tagged 24 Carp
46 White Sucker
1 fillettable size rock bass

Fish were tagged with blue floy tags, tagged posterior to dorsal fin, also fin clipped R or L pelvic.

Portage creek in study area, varying substrate ranging from gravel to paper mill residue. Large areas of emergent macrophytes. Carp taken from weedy areas and along bank.

Portage Creek - Range 20-40 ft wide, deepest hole 3-4 ft at at riffle between lakes (isthmus)

Creek was mostly shallow to medium depth run, broken by an occassional deep cut and v. shallow riffle.

O-[illegible] real riffle areas were at access points up & downstream [illegible] cess points. Upstream by landfill, small riffle just [illegible] of where you put in. Downstream access, riffle at isthmus area.

Species Observed

7/26 Carp
White Sucker
Rock Bass
Blacknose Dace
Common Shiner
Creek Chub
1 Small Largemouth
Darter spp. (Johnny / Tessellated)
Crayfish
2 snapping turtles

7/27 Brown trout
Brown Bullhead
Bluegill

7/27

Covered 100% of Portage Creek / former Bryant Mill Pond area.

Tagged 27 Carp
63 W. Suckers

Total tagged fish 51 carp
109 White Sucker

This stretch of Portage Creek running through the former Bryant Mill Pond area offers poor habitat for resident fish species. The majority of this stretch runs shallow (< 2 ft. depth) over unconsolidated substrate composed of sand and paper residue. Canopy coverage ranges from 0-20%. Several areas of gravelly substrate and deep runs/cuts are interspersed with the more common unconsolidated areas. Only two riffle areas were present in the entire stretch of creek shocked. These were located 1) immediately upstream of the landfill access point 2) immediately downstream [illegible] tributary access point at the former isthmus area. A single deep pool was located just downstream of a small [illegible] like obstruction (appears to be sheet metal). This obstruction spanned the creek in the former isthmus area. In stream structure consisted of a few deadfalls and snags on the many steel rods spaced along (within) the creek. In general, carp were taken in weedy areas (> 1 ft deep) and along undercut banks with overhanging vegetation. Suckers were common in deep runs/cuts and also along the stream banks. Both carp and suckers were taken in the few locations where in-stream structure was present.

August 24 1993

cK Morrow Lake - 1st day of Shocking
Crew: KDS, DWH, DKR
Oversight Present: Tony Gerdusa, Joe Haig CDM; Scott Cornelius MDNR
Clear sunny hot high 80s steady Breeze 1-2 ft waves on lake

Shocked entire N shore from Dam Breast to beyond 35 St. Bridge
also islands in middle of Pond lake. some of S shore in headwaters, S shore limited due to shallow depth of lake.
Start approx 10:00 am finish approx 7:00 pm
Caught 4 small mouth
12 carp 6 18-22" 5 > 23"
18 W. suckers. all ≤ 8"

Small mouth taken in headwaters of lake.
Carp taken all along N shore w/largest indiv (>23 in) taken in Headwater area near 35th St Bridge
W. suckers taken around 1st island and near dam breast.

other species observed
Walleye - had 2 nice 20+ inches in boat
Bowfin - 2
Sunfish - reasonably abundant - small size
Shiner spp. - common but not really abundant
Bullhead - common but not abundant
large suckers - abundant
large mouth Bass - not common - a couple v. big and some v. small
Lake was shallow throughout (usually < 4 ft) with some deep holes
near S shore across from ___ park
near 35th st bridge

many small 4-8 in small mouth.

Keeping for S. Cornelius for MDNR lab analysis of Anomolies.
W. Sucker w/ lesions ventrally.

August 25

Shock Morrow Pond - 2nd Day
Crew: KDS, DWH, DKR
Oversight Present: Tony Gendusa, Jim Haig COM
Clear sunny Hot, no wind

Caught
7 smallmouth
4 w. suckers Keeping 1 w. sucker w/lesions for MDNR

Shocked southern shore w/no luck
also shocked old river channel through pond w/no luck.
Took our smallmouth and white suckers in the vicinity of 35th St. bridge.

Called LTI and got word on minimum sample sizes for sucker composites
These were PCBs/pesticides/Total Mercury - 10-12 g
PCDDs/PCDFs 20 g
I am going to send 35 g samples

Observed
No new species from yesterday.

Processed fish and worked on turtle traps.

Aug 26

Shocked Below Morrow Dam -
- Put in at Merrill Park
crew KDS, DKR, DWH
Oversight present: Joe Hovey - T.G. left to go back to WY.
Overcast w/ thunderstorm mid afternoon.

Shocked river from Merrill Park (Riffle) up to Morrow Dam.
Substituted sm Bass for Walleye. Took 3 walleye in mid-river channel up near dam. Missed perhaps 3 more. Smallmouth not particularly plentiful but much more abundant than Walleye. Had very difficult time w/ white suckers < 8 in.
~~Other spec~~
Fish taken:
11 carp - full sample
10 sm bass + 1 undersize
1 W. sucker composite
5 H. sucker composite + 2 oversize (>8 in < 9 in) H. Sucker composites
Hog suckers much more plentiful than W. suckers. W. suckers taken in mid-channel in weedy areas.

Other species observed:
Bowfin - many - some v. large
Northerns - not so common - so v. large >25 in. (2 or 3)
Sunfish
Shiner spp.
L.M. Bass
Catfish (channel)
Bullhead
Crappie
Set turtle traps above Plainwell Dam (3 traps set) in PM

Aug 27

crew: KDS, DKR oversight: Joe Hainy weather: Hot, muggy

Turtle trapping Above Plainwell Dam.

Caught 4 snapping turtles

1 v.small carapace < 6"

3 larger – 2 keepers 14" carapace 10" plastron

2 throw backs

carapace length	Plastron length
9½"	7"
11½"	8" ← Keep this one

6 painted turtles.

All turtles were alive

Checked turtle traps in AM and reset to be checked Monday AM.
bought processing equipment and processed turtles & fish from Thursday.
Fed Ex & Flight out.

Turtles took much longer than expected, count on approx. 1 hr per turtle.

8/30/93
Crew: KDS / DKR / RJF

Crew: KDS, DKR, RJF
Oversight Joe Hovey
Hot, muggy, overcast,

DKR, RJF check turtle traps in AM - bring back one Keeper from above Plainwell Dam
KDS - on phone to work out sampling schedule for Alcoa & Kalamazoo in AM.
DKR & RJF build another turtle trap to be put in above Plainwell Dam.

In PM put in Boat above the Otsego City Dam
Put in at Jewel St - v. muddy w/ deep cuts - almost lost boat off of trailer getting it in. Shoak River up to Plainwell Dam. V. poor habitat w/ little structure / cover and v. shallow. Fishing v. poor. River v. braided after Plainwell dam w/ many shallow channels and dead ends. Main channel is to the right

Species Kept.
8 carp all < 23 in
5 bass, one is undersize
4 w. sucker sump. + 4 oversize (< 10 in)
9 Hog sucker (all < 8 in.)

Saw 1 person fishing at Plainwell dam. Tried to get downstream of dam direct to shoak pool but couldn't get up into pool because of shallow depth and swiftness of current.

Species Also Observed
sunfish
catfish (channel / white ?)
Walleye (one v. large >26 in, many small < 9 in)
1m bass (few - not numerous)
Shiner spp.
bowfin - still v. common.
rock bass

Took out at pt. immed. upstream of Otsego city dam - too steep got truck / trailer stuck mostly because of drop-off in river bank (≈ 2 ft), soft clay and steep bank. Had to get pulled out.

Checked turtle traps in PM and got one more Keeper (#4) from above Plainwell Dam.

8/31/93

crew KDS, OKR, RJF
assist: Joe Hauy
steady rain, cool in AM, clearing warmer pttly cloudy w/some sunshine in PM

AM

OKR & J Hauy check turtle traps in AM and take new trap out to be set. Bring back one Keepers (#5)

RJF works on new turtle trap

KDS in office to straighten out Alcoa Moss and work on Stakeholders scheduling

PM process turtles & fish take to Fed Ex.
Build portable ramp for boat
get ready for Wednesday.

9/1/93

Crew: KDS, DKR, RJF

Oversight: Joe Hay CDM, S. Cornelius, Mary Gettka; Chuck Mehne MDNR

Hot Warm

AM

Sample Mosel Ave - Access at Verbeck Park

DKR & JH go check turtle traps - no keepers this morning

KDS & RJF launch Boat at Verbeck and begin Shocking N bank of River down to Mosel Ave Bridge Meet w/ DNR, DKR & JH & MPB & G.P. people at Bridge

Shock till 12:00

Take lunch - call in to get Status on DWH - DWH will not arrive until

Keeping 3 Walleye For DNR

weight (g)	length (cm)
2,100.0	59
2,500.0	63
1000.0	48

9/2/93 Thursday.

Crew: KDS, DWH, DKR, RJF
Assist: Joe Hauer, COM
Rain - heavy, Cool

Process

* Have reidentified original W. Sucker samples as golden redhorse. These are most numerous of all suckers present and we will continue to use this species.

9/16/93 Thursday

· Shock Lake Allegan

Save 1 walleye for MDNR

weight (g)	length (cm)
1732	53 cm

9/20/93 Monday

Cloudy - intermittent showers, cool

Rebait + move traps above Plainwell Dam
No captures

Cloudy, cool 55-60°F little to no wind

Placed traps below Allegan Dam

Check traps above Plainwell Dam
2 female painted turtles
2 snapping turtles over 10"

Process K 42008-5-ST

9/22/93 Wednesday

Below Allegan Dam - Cool, slightly breezy, overcast

NO CAPTURES

Above Plainwell Dam

- 1 painted turtle

9/23/93 Thursday

Cool, warming to upper 60's in afternoon
Partly cloudy to clear with a moderate breeze

Below Allegan Dam
1 Painted turtle

Above Plainwell Dam
1 Painted turtle
1 Snapping turtle

Process turtle (K42010-5-ST)

9-24-93 Friday

Sunny cool in the morning, warming in the Afternoon

Trap will No captures

9-27-93 Monday

Crew: RJF
Weather: Cool, Intermittent showers, & breezy

Allegan - no captures
Plainwell - Female painted turtle

9-28-93 Tuesday

Cold, cloudy
new - RJF

Allegan - no captures
Plainwell - no captures - ~~use~~ 3 traps for Battle Creek
Battle Creek - install 6 traps

9-29-93 Wednesday

Cold, cloudy, winds from west.
Crew: RJF, BC

Plainwell – no captures
Allegan – no captures, moved location to Ottawa Marsh

9-30-93 Thursday

Crew: RJF BC

Weather: Cool in morning w/ frost, warming to 50's in afternoon.
Overcast in morning to partly sunny in afternoon.

Battle Creek: no captures

Alligan: no captures in traps
1 Channel Catfish on a trotline 20-21" long

Plainwell: no captures

10-1-93 Friday

Cool, Partly cloudy

Crew: RJF BC

Battle Creek: no captures
Above Plainwell Dam: no captures
Below Allegan Dam: no captures.

10-4-93 Monday

Crew: RJF BKC

Plainwell: no captures

Allegan: no captures

Battle Creek: ~~no captures~~ due to time, was not able to check traps.

Weather: Sunny, warm

10.5.93 Tuesday

Crew: RJF, BKC

Plainwell: no captures
Allegan: no captures
Battle Creek: no captures

Weather: Sunny & warm

10-6-93 Wednesday

Crew: RJF,

Plainwell: no captures
Allegan: no captures
Battle Creek: no captures

Weather: Sunny & Warm

Plainwell: set 2 traps below surface of water.
Will be checked twice daily

10-7-93 Thursday

Crew: RJF

Plainwell; 1st check: male map turtle in trap set w/edge above water.
Allegan: no captures
Battle Creek: no captures
Plainwell 2nd check: 16-17" carp in same trap as turtle

Weather: Sunny & warm

10-8-93 Friday

Crew: RJF

Plainwell: Female map turtle captured in trap completely submerged. Turtle released unharmed.
Submerged traps moved to new locations w/portion exposed to air for the weekend.

Allegan: One female painted turtle, and one male map turtle in separate traps.

Battle Creek: no captures.

10-11-93 Monday

Crew: RJF

Little Creek: pull traps, no captures.
Allegan: pull traps;
captured one male painted turtle, carapace length "< 3½"
Turtle could crawl through mesh, and was captured because
it was using chicken wire funnel as a basking
location.

10-12-93 Tuesday

Crew: RJF

Planwell: Remove last 3 traps.
Capture 2 female map turtles in same trap
Trap was suspended in water column next to snag in water

Weather cool + sunny

5/17/94 sunny, warm 60°F DKR RJF, JH, SG

9:00 AM Plainwell H_2O 62°F

trap 9 ① ♂ painted turtle
10 empty
13 ① ♀ Map turtle
14 ② ♂ Painted turtle

10:00 am Allegan (below MB9) sunny, warm 60°F H_2O 62°F
17 empty
16 empty
19 empty
24 empty
12 empty
15 empty
11 2 snappers
(no #) ~~14~~ empty
23 empty
18 empty
21 empty
20 empty (no bait)

2:01 PM Battle Creek sunny warm H_2O 63°
#1 empty
#2 empty
#3 empty
#4 empty

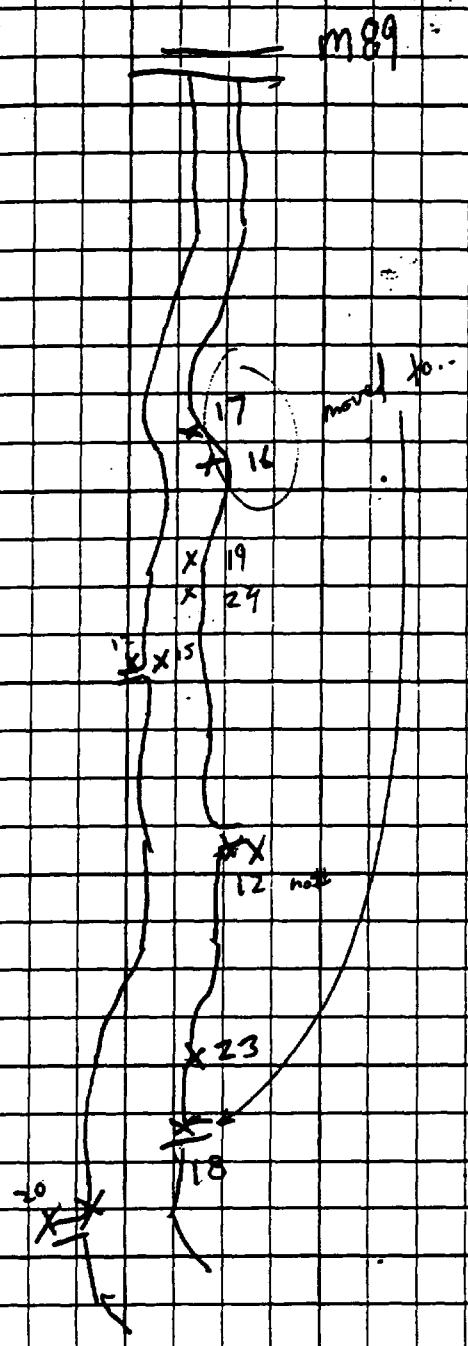
#6 empty
#10 empty
#7 stink pot
#8 empty

4:10pm Plainwell sunny, warm
#9 empty
#10 empty
#13 empty
#14 empty

DKR 5/17/94

PLAINWELL

Battle Creek



#19	empty
#24	empty
#12	empty
#15	empty
#11	empty
#unn	empty
#17	empty
#16	empty
#23	empty
#18	empty
#21	empty
#20	empty

5/17/94

DKR, RJF, JH, SG

5-18-94

Battle Creek 9:20 AM Sunny, cool H_2O 59°F

Trap

#1 empty

#2 ♀ Map turtle

#3 empty

#4 empty

#5 empty

#6 vandalized

#7 vandalized (moved 50 yds downstream

#8 stolen

#5

#6

#7

#8

Plainwell Dam 11:30 am sunny, warm 50°F H_2O:

#13 2 snappers: ♀ 7 3/4" (released); ♀ 9" (retained

#

#9 ♀ painted turtle

Allegan

9 empty - moved next to sandbank dock

14 empty

15 empty

12 empty - moved back into back wash

11 empty

Unm empty

17 empty

16 1 snapper 10 1/2" ♀

23 moved

18 empty

4 empty

20 empty

DJ DR 5/18/94

/18/94 5:00 pm

Battle Creek

- 4 traps @ 100 yds above bridges. (9, 10, 13, 14)
- traps 2, 3, and 4 moved downstream
- trap 2 empty
- 4 moved to across from big lake
- 5 empty
- 6 empty

DMR 5/18/94

5/19/94 9:30 am sunny, warm 60°F RJF, DKR, JH, SG, MD (DNR)

24 empty (moved 20' upstream)
5 "
" "
9 "
11 "
" (moved 20' into bayou)
7
3 males, 1 female (map turtles)
8 empty (moved to below Allegan Dam)
21 empty
0 empty (moved to below Allegan Dam)
23 3 map turtles, ~~1 painted turtle~~ DKR
(2 ♀, 1 ♂)

DMR 5/19/94

9/19/94 2:00 pm BATTLE CREEK

9: empty
10: 1 snapper 8½"
13 empty
14 empty
1 map turtle
empty
5 empty moved
2 empty
3 empty
2 painted turtles (♀)

DMR 5/19/94

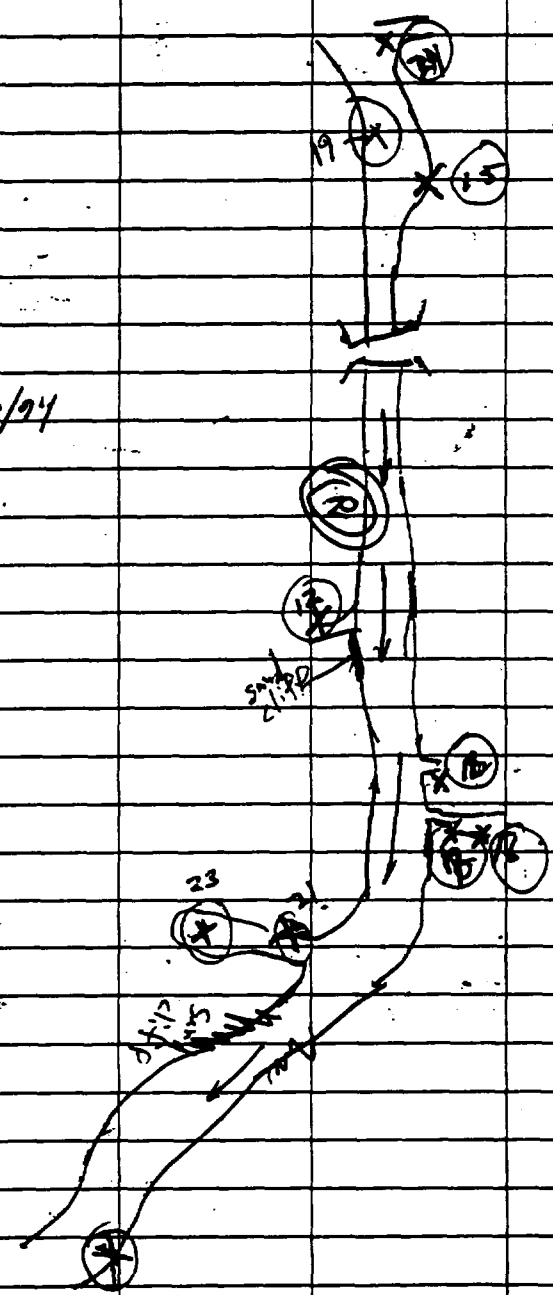
DKR, SG

5/20/94 ~~DAJ~~ ALLEGAN DAM

10:30 am sunny, warm 65°F

8 empty (put sardines in trap)
0 empty " " "
19 empty (moved above bridge)
5 empty (" " ")
1 1 map turtle
1 empty
3 empty
8 empty
5 empty
4 empty (moved above bridge

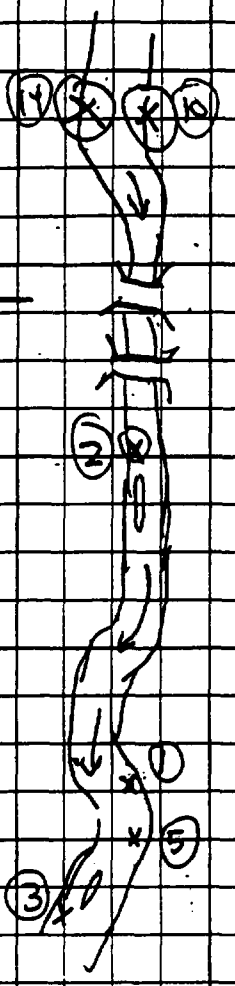
DKR 5/20/94



DKR, RJF, JH

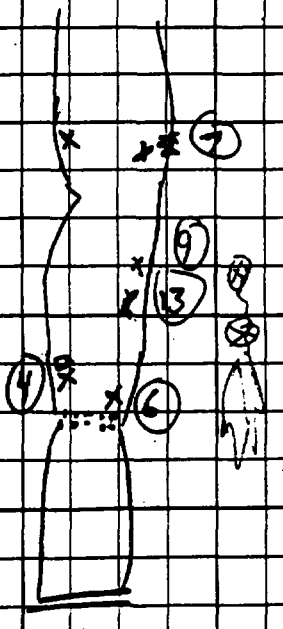
5/21/94 BATTLE CREEK 9:00 am, sunny 55°F

empty (moved across river)
empty
empty (moved 10' upstream)
empty (moved)
empty (bowfin)
Blandings turtle



CERESCO IMP. (DKR, JH) 11:35

(empty)
empty
1 8 1/16" snapper
empty
empty
(released) 1 map turtle



5/21/94 ALLEGAN (DKR, JH) sunny, 75°F
2:30 pm
empty
empty

15 empty
19 (moved 20' upstream; opposite bank)
unmarked (empty - moved 20' downstream)
18 empty (moved 50' upstream)
18 empty
17 empty
16 empty
23 empty (moved)
21 empty

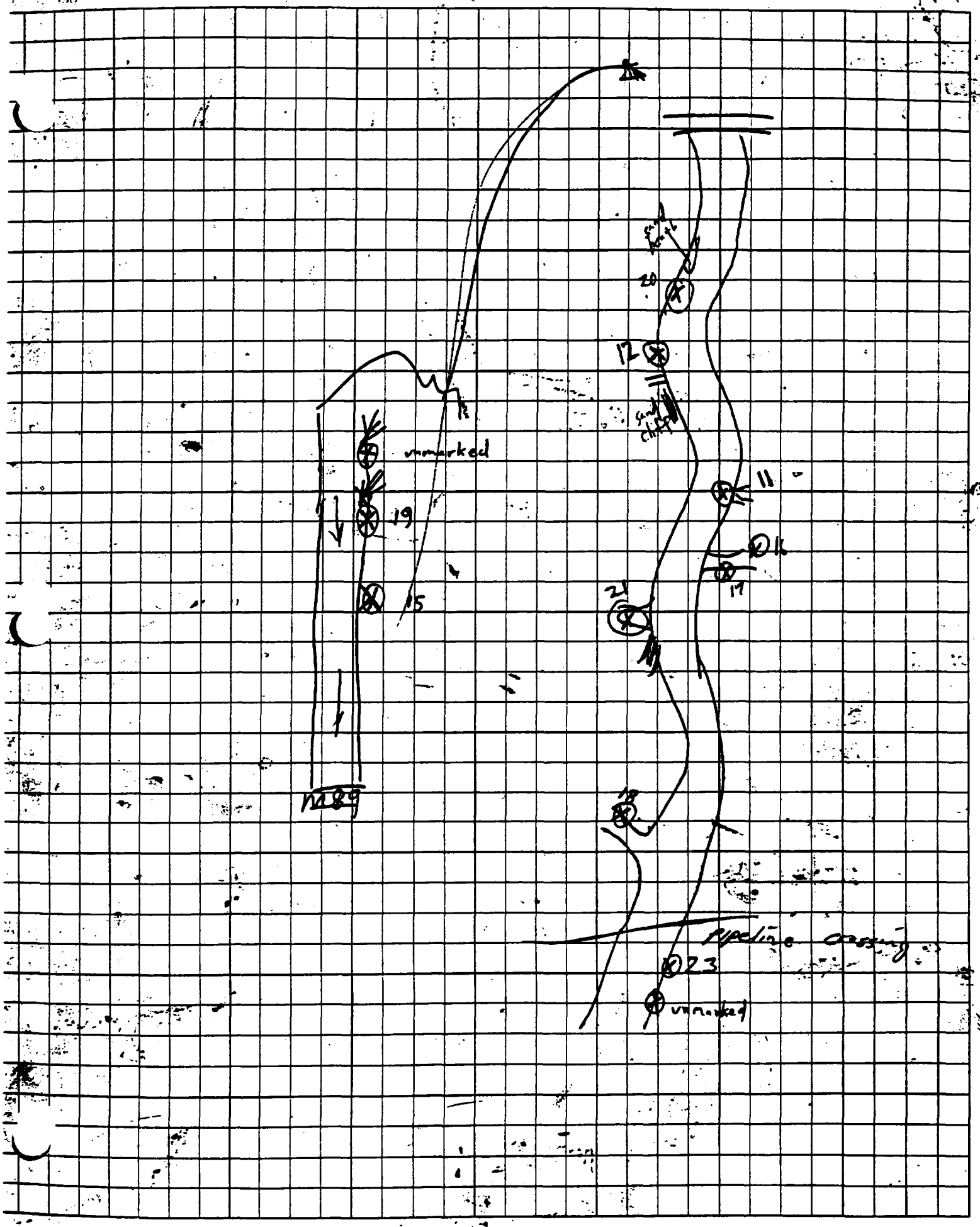
D1 Rigg 5/21/94

5/22/94 CERESCO LAKE sunny 65°F (DKR, JH)
9:15 am
4 1 painted turtle
4 empty
1 snapper (5½" - released)
9 1 spiny turtle
4 2 painted turtles

1:00 pm below ALLEGAN DAM (DKR, SG) Sunny 85°F
18 empty } moved to below M-89
20 empty }

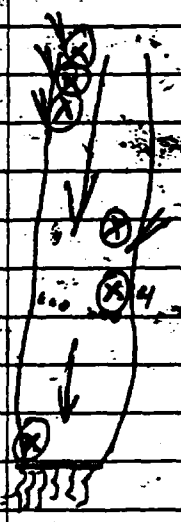
3:00 pm at M89 below ALLEGAN
15 ~~empty~~ (1 map turtle)
19 empty
set 20 (see map)
set 18 (see map)
unmarked (empty)
23 empty
empty

D1 Rigg 5/22/94


unmarked
19
15
N289
20
12
11
14
17
21
13
pipeline crossing
23
unmarked

5/23 TERESCO 9:30 am (DKR, JH) Sunny 75°F

4 map turtle
13 empty
7 big turtles, 1 painted turtle
1 empty
3 empty
marked empty



DKR JH 5/23/94

ALLEGAN (DKR, JH)
3:15 pm Sunny, 80°F

20 empty
12 ~~empty~~ (1 map turtle) moved 50' upstream
11 1 big map turtle (below double logs)
17 empty
16 3 maps (1 snapper - kept) moved across river
21 empty (moved to 25' down from cave
18 empty (moved across cove)
22 empty
marked empty

DKR JH 5/23/94

5/24/94 ALLEGAN (DKR, SG) Sunny, 60°F
4:00 pm

15 empty
20 empty
12 1 map turtle
11 empty
17 empty (moved 10' out to river)
16 River redhorse (moved 300' downstream) 2nd tree of double logs
21 empty
18 empty (moved to cove north, behind log)
23 1 painted turtle
19 empty
marked empty

DKR JH
5/24/94

5/25 ALLEGAN 11:30 am (DKR, SG) sunny 65°F

(empty, moved)
1 map turtle (moved)
empty (moved)
empty
empty
1 painted turtle
empty (moved)
empty (moved)
empty (moved)
empty (moved)
empty (moved)

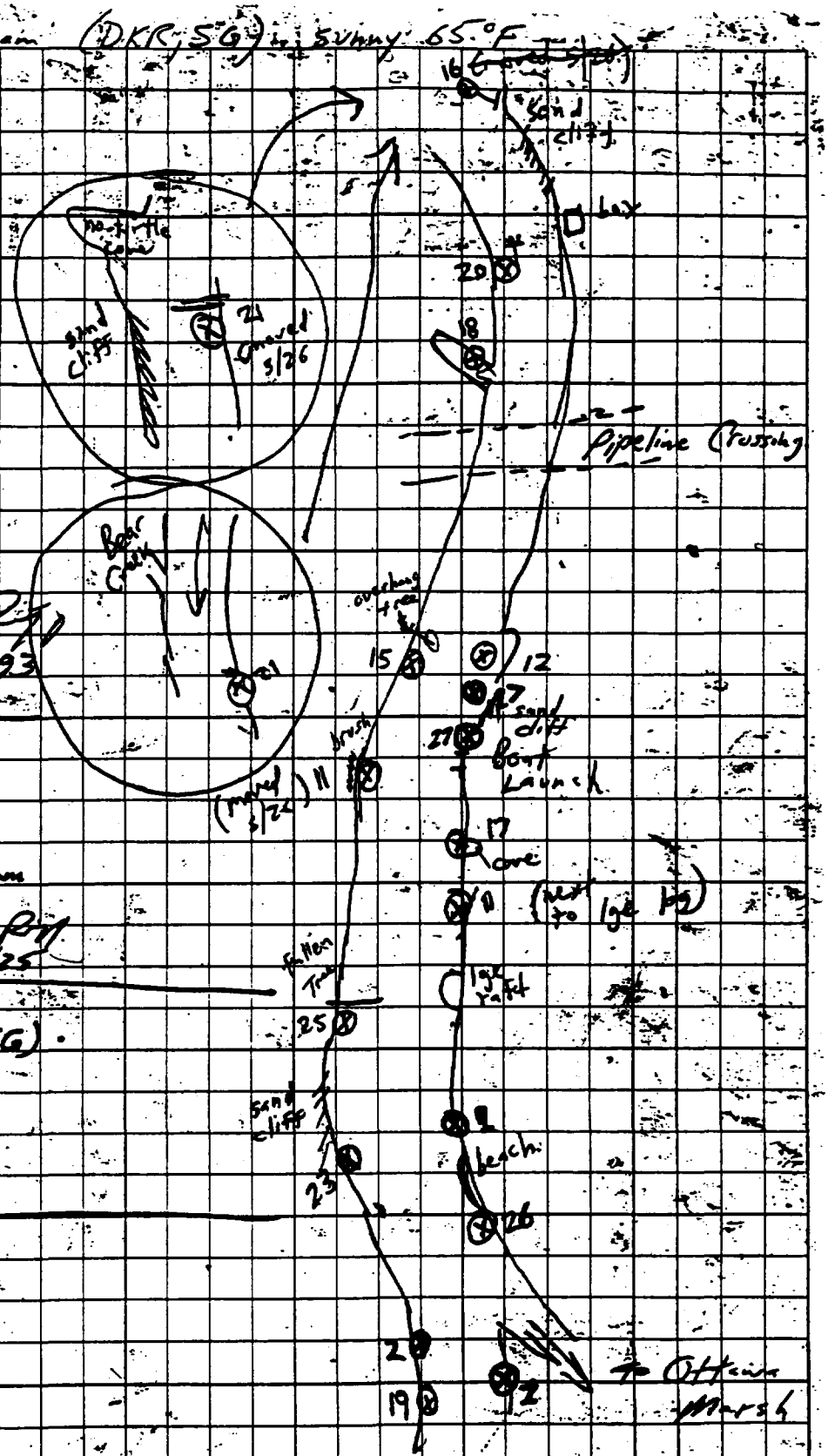
DKR
5/25/93

5/25 8:30 pm
2 traps at Plainwell Dam

DKR
5/25

5/26 Plainwell Dam (DKR, SG)
overcast 45°F
1 painted
2 painted

Allegan
empty
1 map / softshell
empty
empty
empty (1 carp)
1 snapper (7½", released)
empty (moved – see map)
empty
2 snappers, 1 soft shell
empty
empty
empty



DKR 5/26/94

126

PM Trap Check: ALLEGAN (DKR, JH)

overcast, 55°F

19 carp
empty
1 snapper (8 3/4")
25 empty
11 empty
17 empty
12 1 painted
18 empty
20 1 spiny, 1 map
16 empty
21 empty
15 empty

DJR 5/26/94

∞ pm Plainwell (DKR, JH)

1 8 1/4" snapper; 1 sm. snapper, 6 painted turtles
2 small snappers (7"; 5")
empty
painted, 1 Blanding's
empty

DJR 5/26/94

5/27 8:15 -- ALLEGAN (DKR, RTE, JH)

sunny, 55°F

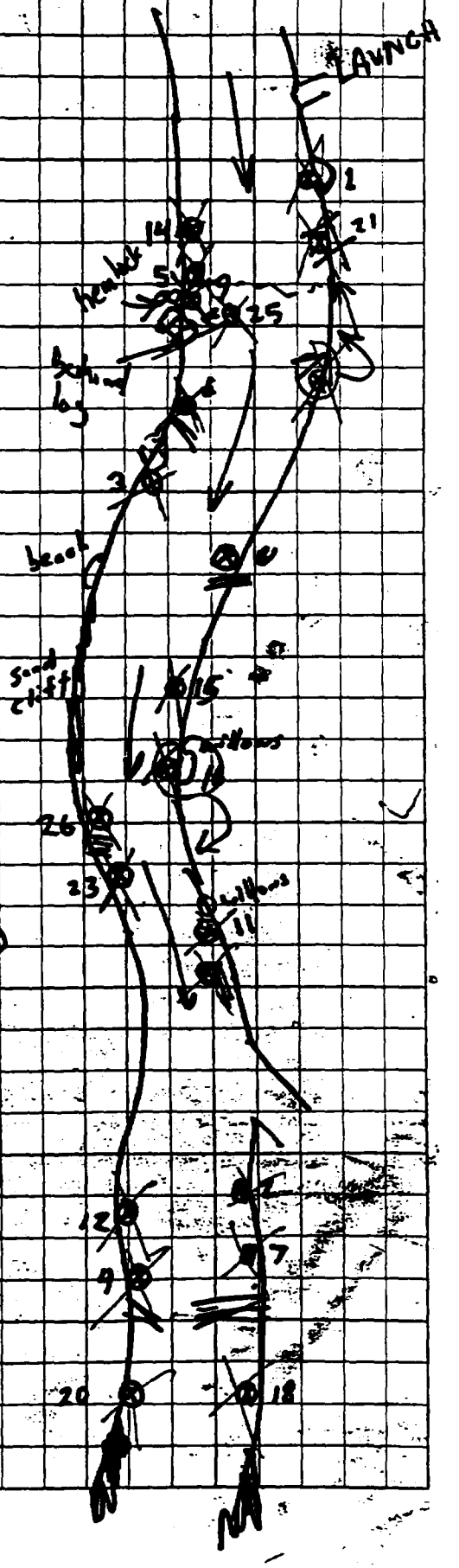
19 1 snapper
2 empty
26 empty
9 empty
1 empty
3 1 map turtle
5 1 carp
1 empty
7 empty
1 empty
2 empty
8 empty
empty
2 empty
5 empty
7 empty
7 empty

DJR 5/27/94

Tuesday 5/31 ; Sunny 65°F (DKR, RJF, DDD) (1:30 - 5:00)
- set traps below M89 - Allegan

Wednesday 6/01/94 ; Sunny, 60°F (DKR, RJF, DDD)
8:30 am

empty
empty
2 painted; 1 snapper
empty
empty
1 painted
5 empty
empty
empty
7 2 map turtles
6 empty
5 4 map turtles; 1 painted turtle
6 empty
empty
2 snapper
2 snapper; 1 painted
1 empty
7 empty
9 empty
0 1 carp, 1 Blanding's turtle, 1 sm. snapper (released)
empty
1 1 map turtle



"Rite in the Rain"®

ALL-WEATHER

FIELD

MAXI-NOTEBOOK

No. 351-MX

KALAMAZOO
TERRESTRIAL
BIOTA

Div 12

Blasland & Bouck Engineers
6723 Towpath Rd Box 66
Syracuse NY 13214

7/14/93

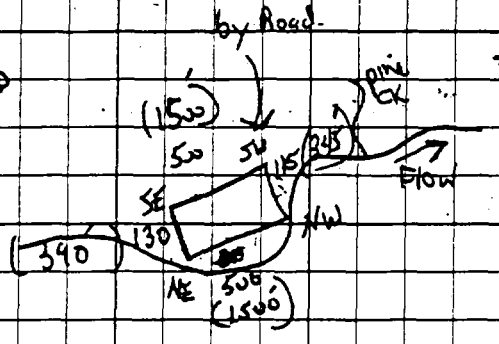
- Pine Creek from Opposed Pine Lake (?) drained!

Location of TBSAs

BSA #7

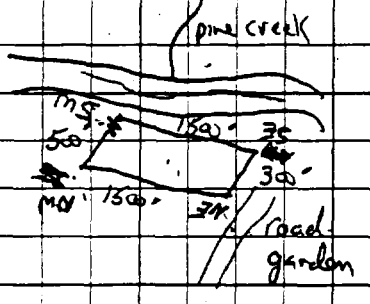
on S bank of River upstream from Pine Creek confluence look for access rd/pull off
500 ft deep into floodplain - 1500 ft long adjacent to river bank just before Pine Creek
Actual Area =

SW corner adjacent to
~~[illegible]~~
Jefferson Rd.

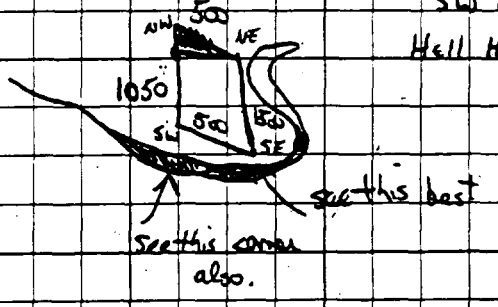


* good Flagging on NE corner

TBSA #6 N bank of River
SW stake immediately across from Pine Creek Confluence
Flagging at SW stake also see good area for trapping

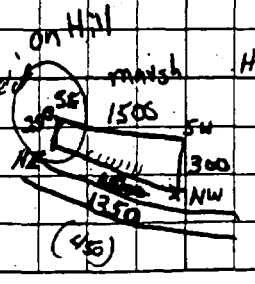


TBSA #5 - on N bank of River can see marker for
SW corner & for SE corner
Hell Hole.



7/15/93

TBSA #4
on south bank of river
just downstream from TBSA #5
Nice trapping area. good woods
by river.



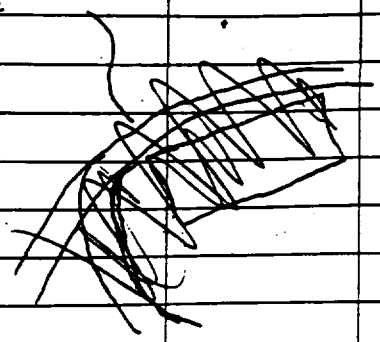
almost

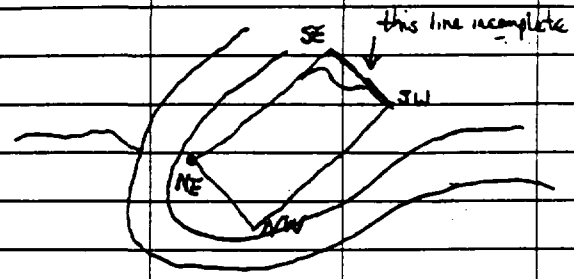
7/15/93

TBSA #3

Full size

another Hell Hole



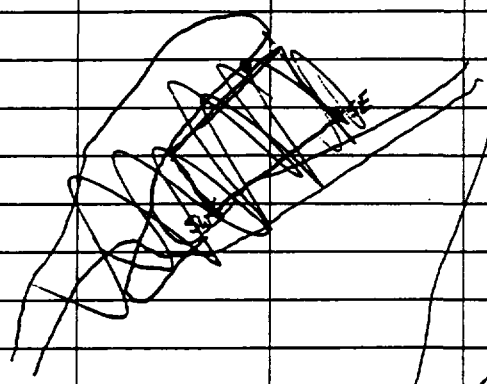


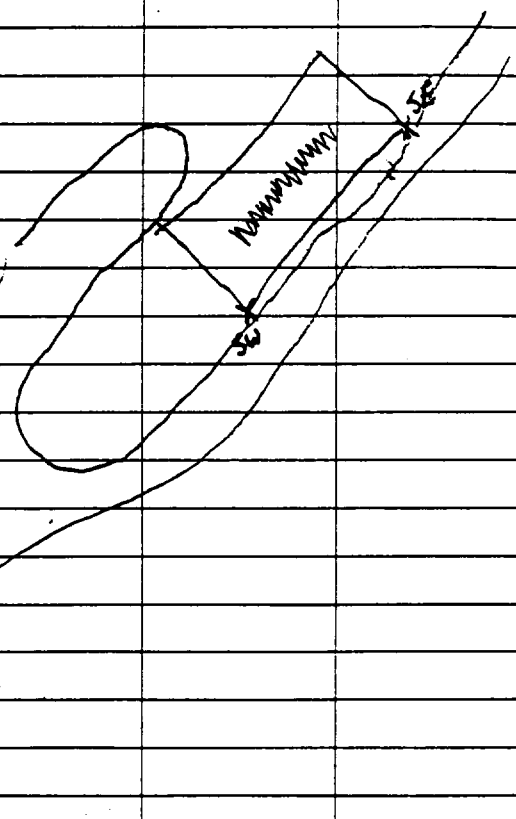
TBSA #2

Full size v. nice area down by duck blinds

access at both SE & SW corners - good woods in center

good trapping





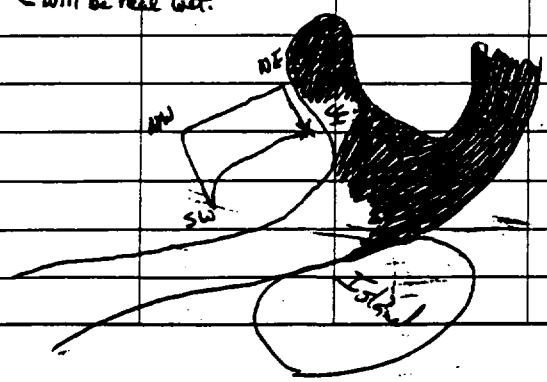
TBSA #12

SE corner by old oxbow - only good access

lots of flooded areas - look for flags. - will be real wet.

SW corner dropped down

Full size



7/7/93

TBSA #11

located behind Comfort Quality Inn Rt. 89 Plainwell -

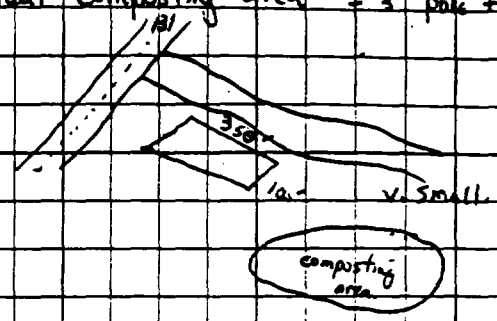
SE corner behind telephone pole - go through leaf composting area - 3rd pole from highway (flagged)

long side runs SE → SW

NE → NW

NE corner by river - might be able to see.

- has been down sized -



TBSA #10

put in above dam

look for old pipeline where you can stand on River and see McDonalds Sign

this is SE corner plot runs deep SE to NE

SW to NW

may also be able to see SW corner from River

BSA #9

SW corner by fence at dam

v. long & thin running SW to NW

SE to NE

SE corner back along power line (this is short side)

7/8/93

TBSA #1

going downriver from Allegan Dam - If you go to swan creek you've gone too far

split into 3 locations 200 x 250 ft.

1st area on left bank - long side along river } all full size

2nd area go around bend - on right side

3rd area on left bank -

SE corner almost even w/ NW corner of 2nd area. (see flagging along bank)

but go into NE corner - best access & flagging

7/14/93

access at both SW & SE

7/28/93 KDS, DKR, M. Harris (MDNR), R. French (CDM)
7/29/93 KDS, DKR, R. French.

traps set groups of 3 (1 each type) 6 x 4 grid 20 ft intervals

Preliminary Small Mammal Trapping

	Caught	Traps Destroyed
+ 74 traps in TBSA #1 (upstream grid)		
25 large Sherman	2	1
25 Sm "	1	4
24 Museum Special	1	1
	4 mice total.	

Recommend large Shermans – Cant on 2 days / site
Buy 100 large Sherman Traps.

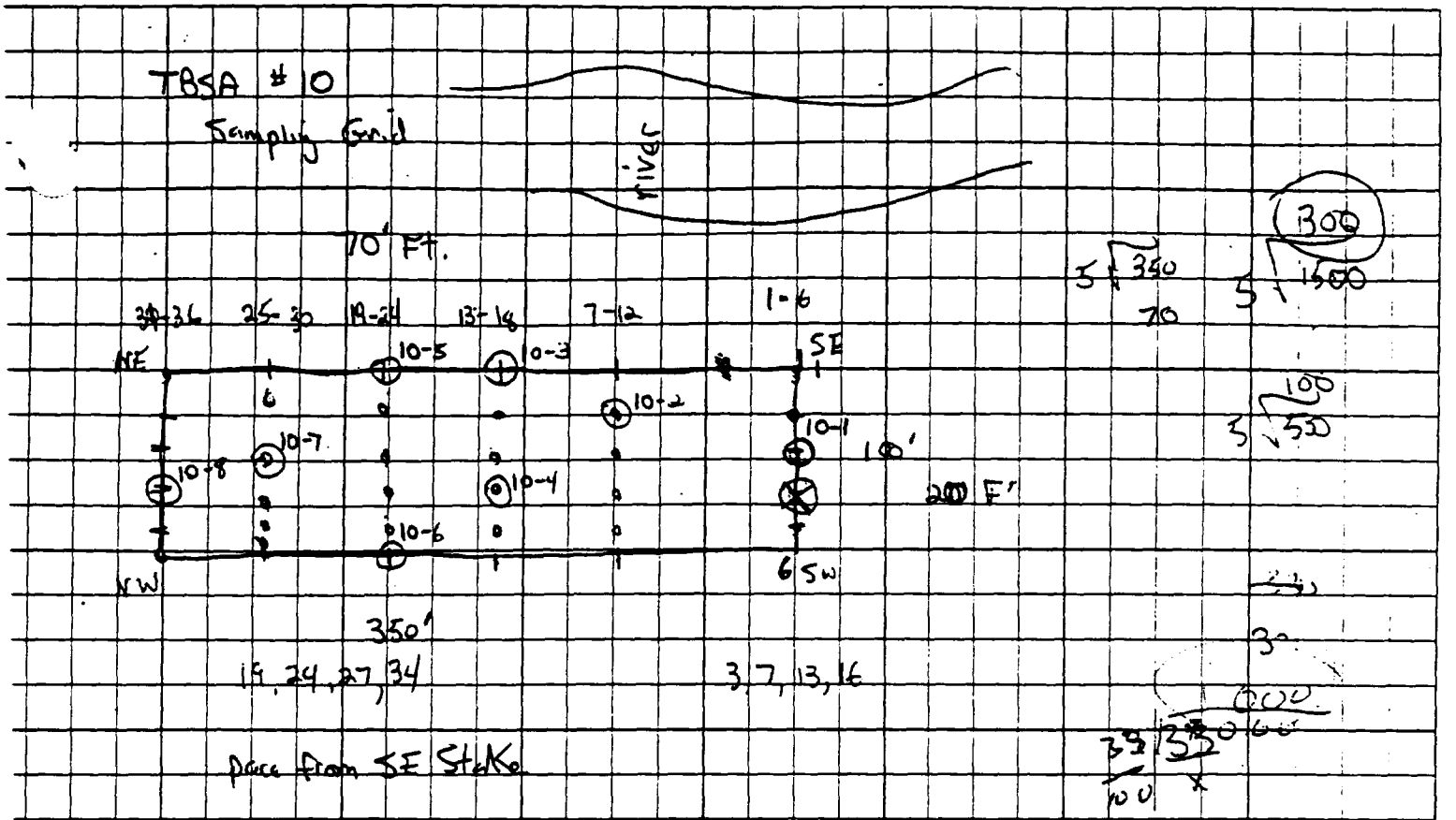
looks like raccoon damage was responsible for loss of traps and general unsuccessful results for museum special.

Ron locks keys in car, wants to get an early flight out – not interested in trapping another night
Recommends we use large shermans
might want to consider some type of predator control for these trapping efforts (live traps). Ron also feels that we may increase trapping efficiencies by securing Shermans so that they can't be knocked over by marauding Raccoons.

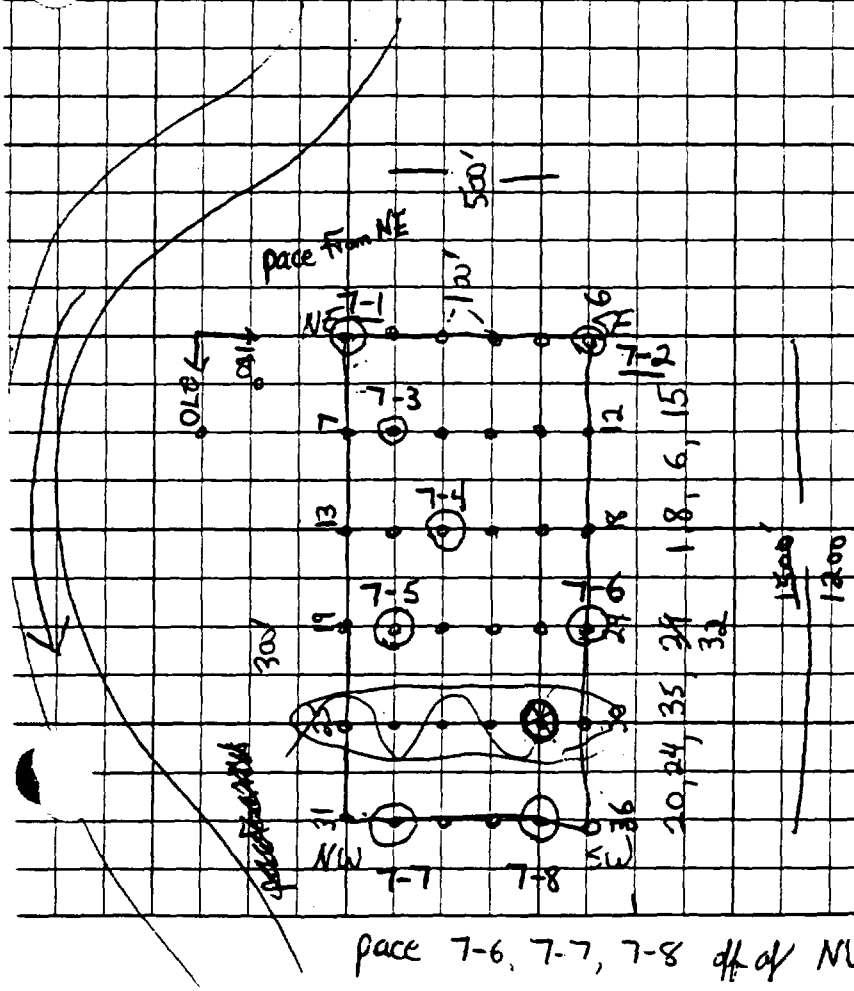
Harris provides River Transport w/ MDNR Canoe on 7/28, Ron fails to inform me that MDNR will be helping out on 7/28 only. We rent boat & motor for in anticipation of full days trapping on Thursday.

TBSA #10

Sampling Grid



TBSA #7 Sampling Grid



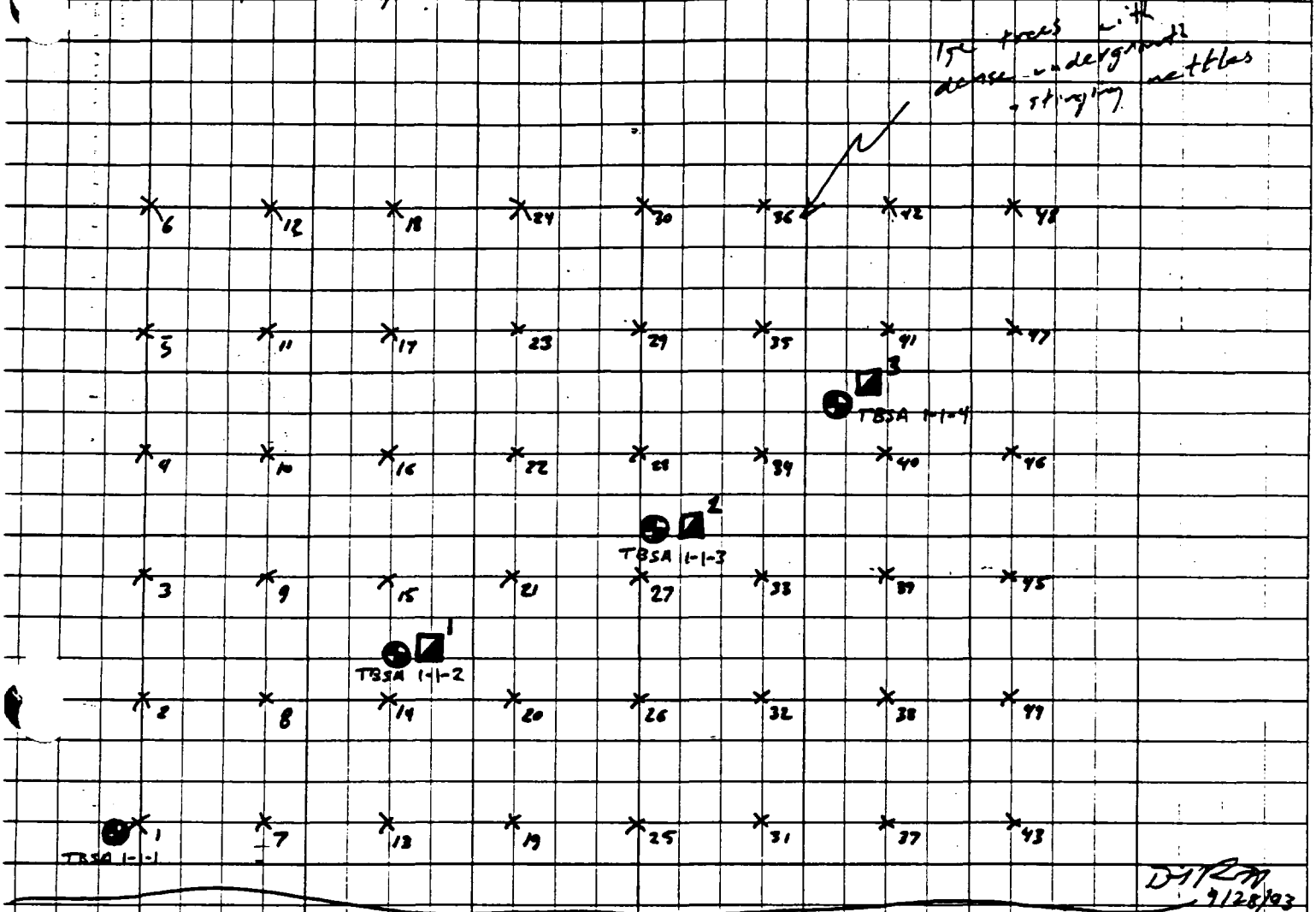
pace 7-6, 7-7, 7-8 off of NW corner (not located 9/23/93)

9/29/93	10:45 am ; DKR ;(lt rain, 55°F)						
2	white-footed mouse	24.0 g			KR-SI-02-01		
3	white-footed mouse	19.5			KR-SI-03-02		
12	white-footed mouse	14.0			KR-SI-12-03		
25	white-footed mouse	21.0			KR-SI-25-04		
15	white-footed mouse	22.0			KR-SI-15-05		
14	white-footed mouse	14.0	(Juvenile)		KR-SI-14-06		
22	white-footed mouse	26.0			KR-SI-22-07		
34	white-footed mouse	19.0			KR-SI-34-08		
35	white-footed mouse	12.0	(Juvenile)		KR-SI-35-09		
42	white-footed mouse	19.0			KR-SI-42-10		
							DK Ray 9/29/93
9/30/93	10:50 am ; (sunny 58°F) DKR						
20	white-footed mouse	19.0			KR-SI-20-11		
22	white-footed mouse	17.0			KR-SI-22-12		
							DK Ray 9/30/93

TBSA #1

Set: 9/28/93
Crew: DKR, BC
Weather: lt. rain, 60 °F

Approximately 1500 yds downstream of Allegan Dam.



DKR 9/28/93

River

Worm Sampling
10/05/93 sunny; 65°F EPA & COM oversight

Site 1: 3:00 - 3:20 (adjacent to TBSA 1-1-2) KR-SI-01-15
dk brown, moist soil, many worms
(32" x 16" x 6")

Site 2: 3:30 - 3:45 (adjacent to TBSA 1-1-3) KR-SI-02-16
dk. brown, moist soil, many worms
(19" x 19" x 6")

Site 3: 4:00 - 4:45 (adjacent to TBSA 1-1-4) KR-SI-03-17
dk brown, moist soil, many worms
(19" x 19" x 6")

DKR 10/05/93

10/05/93 10:39 am (sunny, 60°F)

46	white-footed mouse	19.0 g	KR-STII-46-13
24	white-footed mouse	21.0 g	KR-STII-24-14
1	red-meadow vole (dead)		

DH Rai
10/05/93

10/06/93

21	meadow vole		
23	white-footed mouse	14.0 g	KR-STII-23-18
34	meadow vole (dead)		
40	meadow vole (released)		
46	white-footed mouse	17.0 g	KR-STII-46-19

DH Rai
10/06/93

10/07/93 10:00 am (Sunny, 70°F) DKR

3	white-footed mouse	18.5 g	KR-STII-03-20
6	white-footed mouse	24.5 g	KR-STII-06-21

DH Rai
10/07/93

10/08/93 11:45 am (sunny; 70°F) DKR

~~18~~ 10	white-footed mouse	16.0 g	KR-STII-~~42-26~~ 10-27
~~13~~ 6	white-footed mouse (escaped)		
~~29~~ 42	white-footed mouse	31.0 g	KR-STII-~~10-27~~ 42-26
~~37~~ 5	short-tail shrew (almost dead; released)		
15	short-tail shrew (dead)		
21	short-tail shrew (released)		
45	meadow vole (released)		

DH Rai
10/08/93

10/09/93 1:00 pm (cloudy; cold 50°F)

44	meadow vole (dead)	21	meadow vole (dead)
48	short-tail shrew (dead)	14	meadow vole (dead)
37	meadow vole (~~dead~~ released)	3	white-footed mouse (juven.; releas
33	short-tail shrew (dead)	6	white-footed mouse (escaped)
25	meadow vole (dead)	17	white-footed mouse
28	white footed mouse		
20	meadow vole (released)		

DH Rai
10/09/93

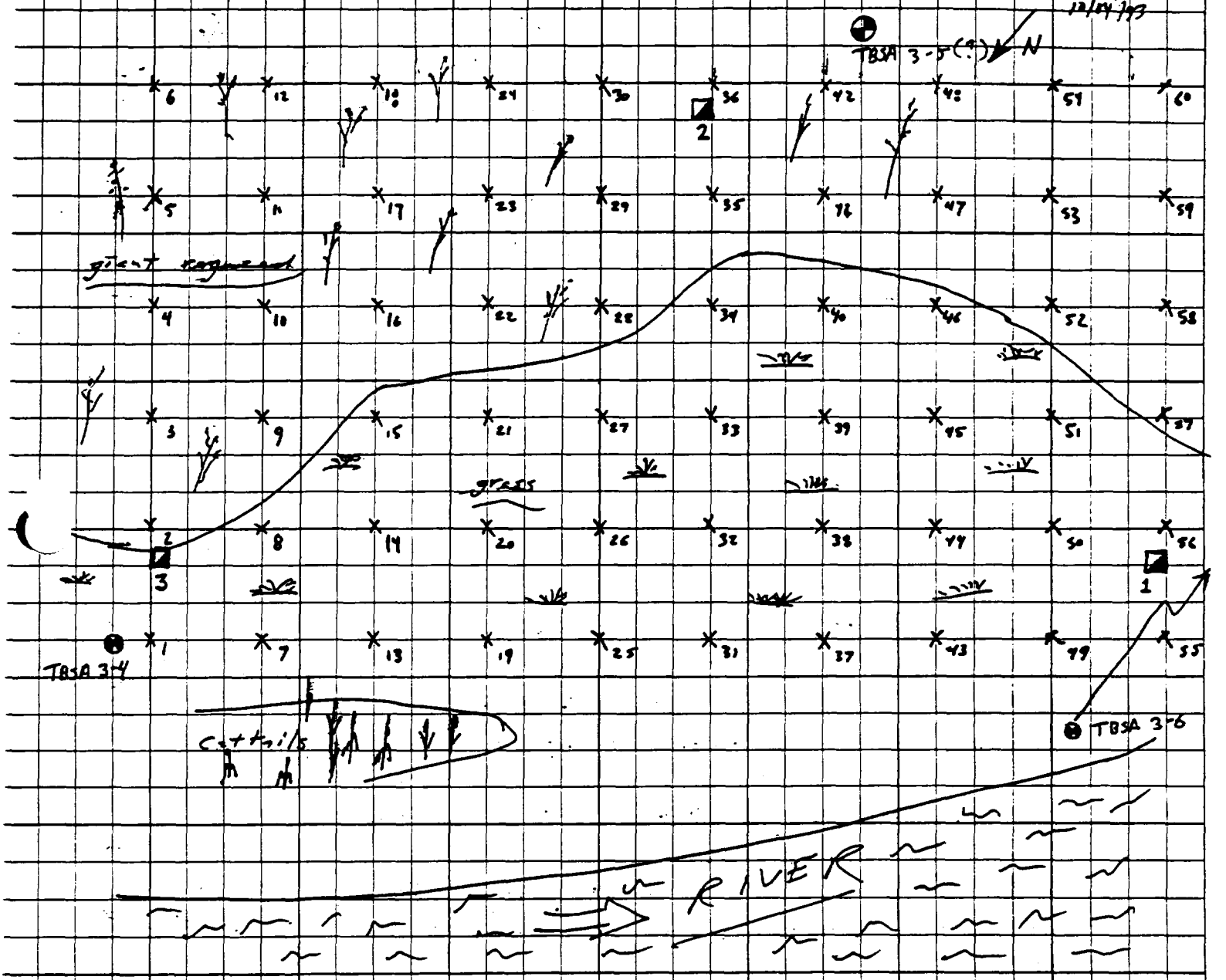
TBSA # 3

Directly across from confluence of Schnabble Brook.

Set: 10/04/93 2:00 pm pt'ly cloudy, 60°F; DKR

10/05/93 Place traps 5, 6; DKR

10/06/93 Extend grid from 48 traps to 60 traps; DKR



10/10/93 worm sampling 10:00 am. (sunny; 50°F)

Site 1: 10:00 am - 12:15 pm (5 m E. of TBSA 3-6) KR-SIII-1-36
moist grey; clay - few worms (155 cm × 125 cm × 25 cm)

Site 2: 12:30 - 1:00 (at mammal trap #36) KR-SIII-2-37
dry, grey clay - lots of worms (135 cm × 170 cm × 25 cm)

Site 3: 1:15 - 1:45 (at mammal trap #2; 10 m S of TBSA 3-4) KR-SIII-3-38
dry, grey clay - high diversity/abundance (85 cm × 100 cm × 25 cm)

TBSA #5

10/08/93	10:00am ; (~~sunny~~ 60°F) DKR						
18	WF	15g					KR-5V-18-22
13	white-foot	27g					KR-5V-13-23
29	white-foot	16g					KR-5V-29-~~29~~ 24
37	white-foot	29.5					KR-5V-37-25
							DKR 10/08/93
10/09/93	10:50 am ; (Cloudy, 45°F) ; DKR						
20	short-tail shrew		(dead)				
28	short-tail shrew		(dead)				
27	white-footed mouse		20.5g				KR-5V- ~~18-22~~ 27-30
26	white-footed mouse		21.5g				KR-5V- ~~13-23~~ 26-31
34	white-footed mouse		20.0g				KR-5V- ~~29-24~~ 34-32
40	short-tail shrew		(dead)				
38	white-footed mouse		16.0g				KR-5V- 38-33
44	white-footed mouse		19.5g				KR-5V- 44-34
48	white-footed mouse		15.5g				KR-5V- 48-35
47	white-footed mouse		(pregnant; released)				DKR 10/09/93

Worm Sampling 10/22/93 Sunny; 65°F DKR,

Site 2: 3:10-4:15 (3m E. of Worm Sample #1) KR-5V-02-65
dry, gray crumbly clay; few worms; (250cm × 225cm × 25cm)

Three 1m plots dug around TBSA 5-7 - No worms

KR-5V-03-66

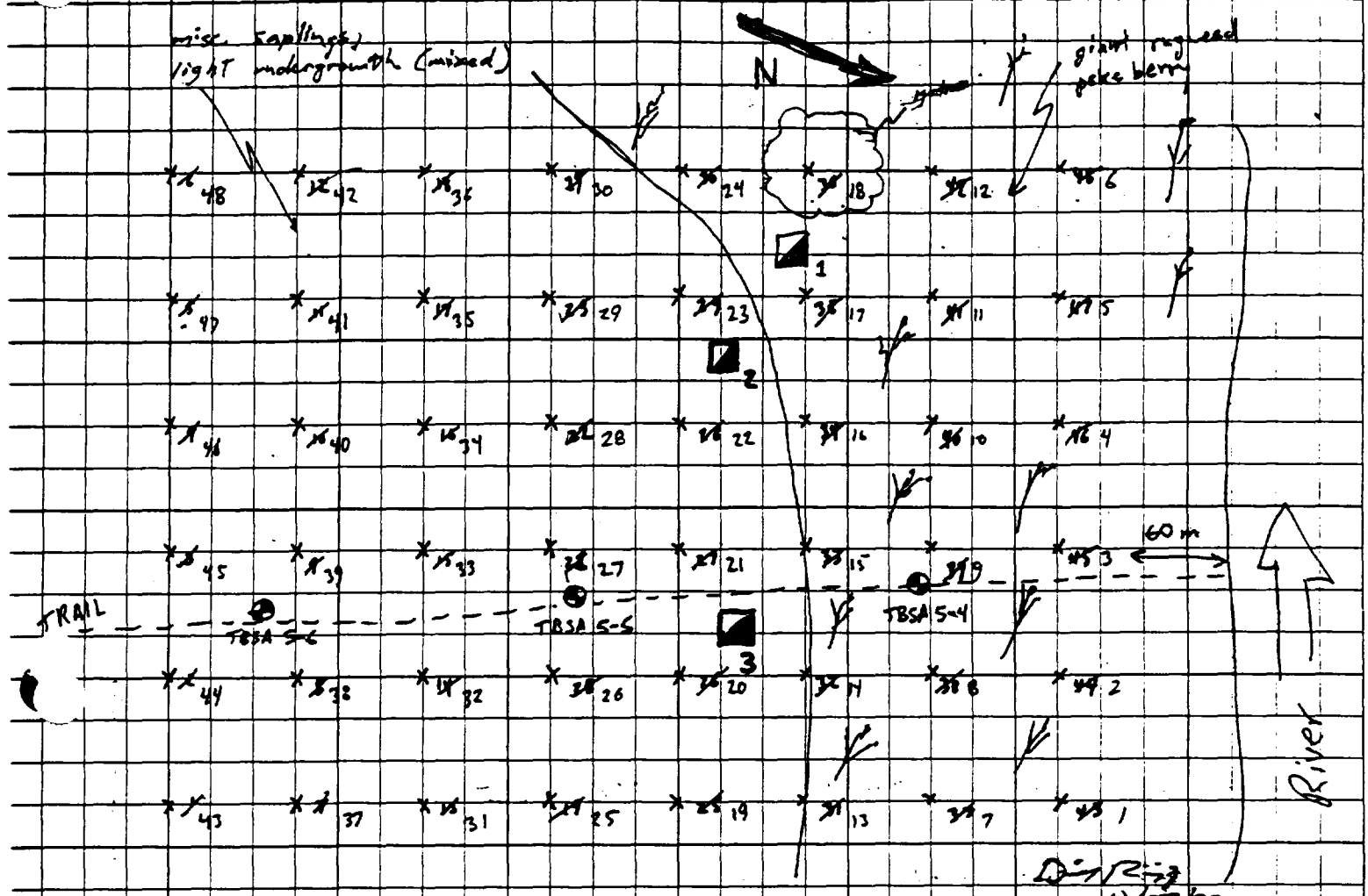
Site 3: 4:15-5:06 (15m E. of Worm sample #2) (10m N of TBSA 5-5)
dry, grey crumbly; few worms (192cm × 228 × 25cm)

DKR
10/22/93

TBSA #5

Set: 10/07/93
Sunny, 70°F

Around sharp bend in River, approximately 2000 yds downstream of River Road access point.



Dir Ring 10/07/93

Worm Sampling: 10/10/93 Sunny; 60°F

Site 1: 2:45-3:20 (1m. S of trap # 17) KR-SV-1-39
dry; grey crumbly clay; few worms. (16cm x 15cm x 25cm)

~~Site 2~~ 3 1-m² plots excavated at TBSA 5-5, and 3-1-m² plots at 5-6; no worms.

Dir Ring 10/10/93

10/21/93 cloudy, windy, 55°F 9:15 – DKR, BKC, NJZ

20 white-footed mouse KR-SXI-20-40
19 white-footed mouse KR-SXI-19-41
26 Perimiscus sp. (escaped)
38 Perimiscus sp. (escaped)
47 short-tail shrew (dead)

Photos 31 looking E from TBSA 11-1 DKR 10/21/93
32 looking SE from TBSA 11-1

10/22/93 sunny; sl. wind, 60°F 9:15-10:00 DKR, BKC, NJZ

Cap 19 adult white-footed mouse KR-SXI-19-53
30 sub-adult white-footed mouse KR-SXI-30-54
50 adult white-footed mouse KR-SXI-50-55
64 adult white-footed mouse KR-SXI-64-56

– placed more traps at SE corner

DKR 10/22/93

10/23/93 sunny; 65°F 8:11-9:00 DKR, BKC, NJZ

Cap 13 Flying squirrel (dead)
47 short-tail shrew (dead)
50 short-tail shrew (dead)
55 Perimiscus (dead-discarded)
71 Perimiscus (released)

– drove back to phone, call DWH, RE to see about putting out more traps
– rebaited traps 1-48, drove back to office for more traps.

10/23/93 sunny, 65°F 3:15-4:15 DKR, NJZ DKR 10/23/93

– Rebaited traps 48-72, checked ALL traps – No Captures

Set additional traps 73-84

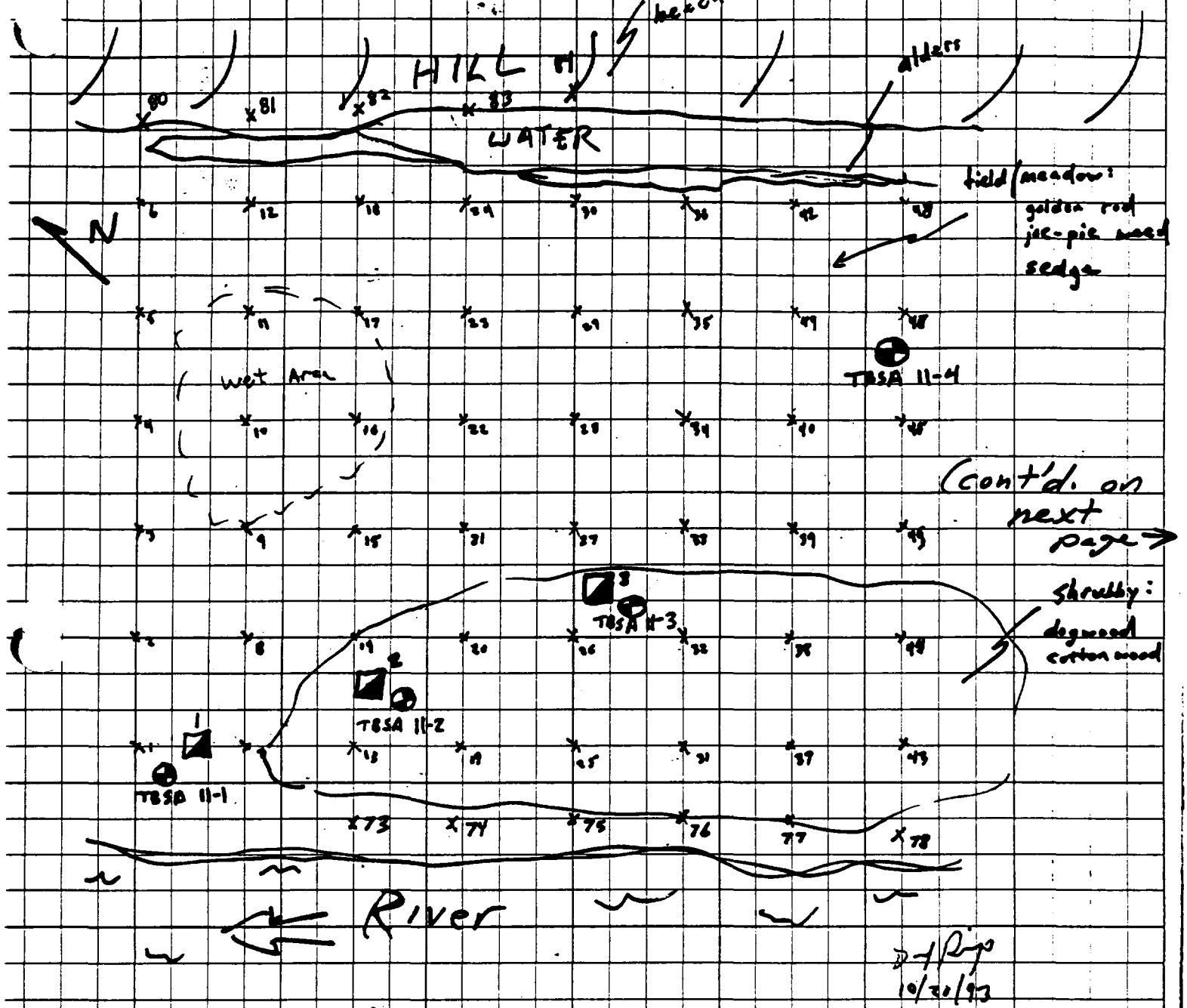
TBSA #11

Upstream of Rt. 94 ≈ 1/2 mile on N. bank of Kalamazoo River

Date: 10/20/93 cloudy, 60°F

Time: 13:00 DKR, NJZ

Hill: steep red oak beech



Cont'd. on next page →

DKR 10/20/93

Worm Sampling 10/21/93 : 9:00 am

Site 1: 1m. E of TBSA 11-1. Brown soil, sandy, moderate organic, mod. dry (54cm × 115cm × 25cm) 9:00 - 11:00 KR-SXI-1-62

Site 2: Adjacent to TBSA 11-2. Brown, moist soil, silty, moist (75cm × 105cm × 25cm) 11:15-12:00 KR-SXI-2-63

Site 3: Adjacent to TBSA 11-3. Clay, silt, sand, organic matter, dry (73cm × 120cm × 25cm) 12:00-12:30 KR-SXI-3-64

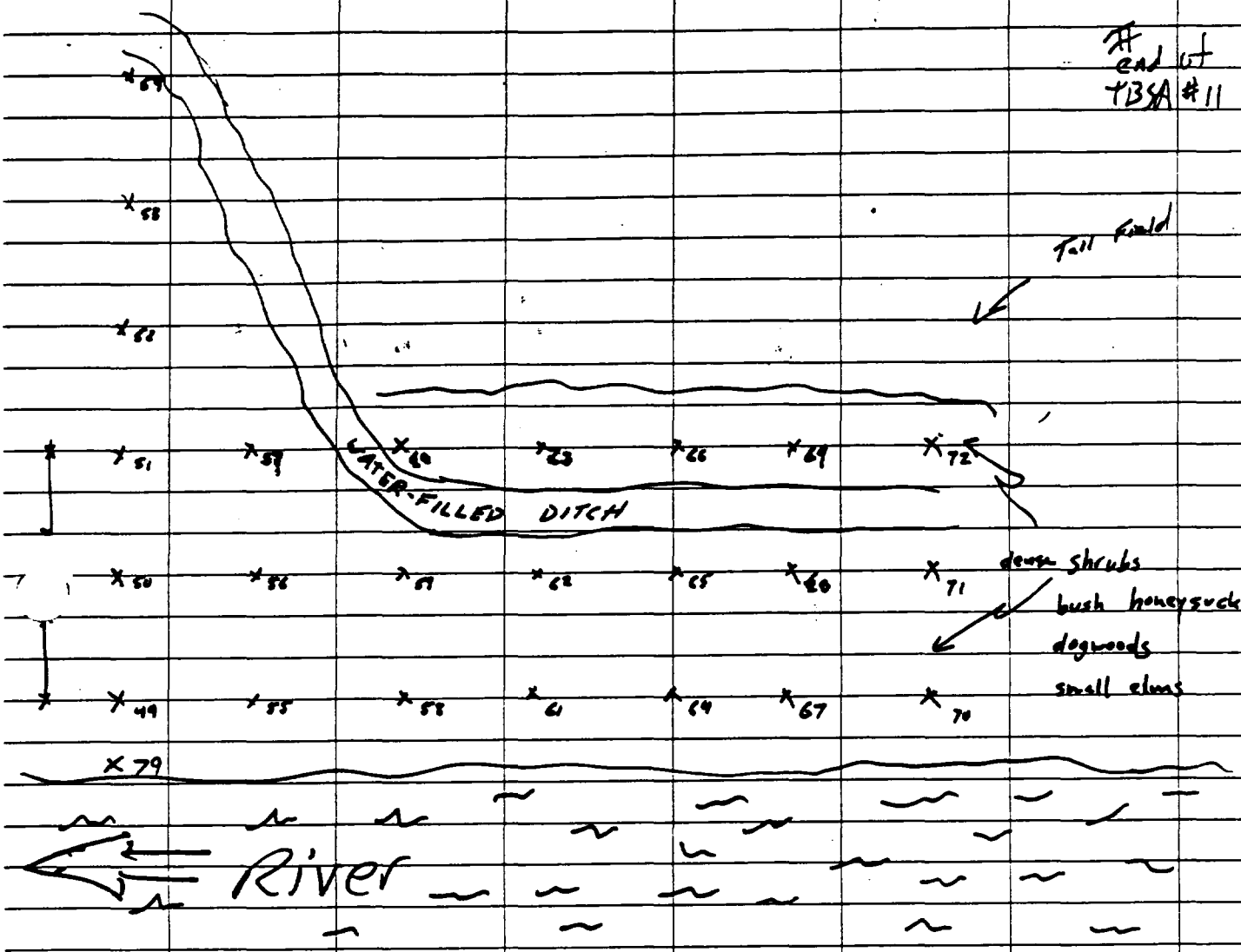
DKR 10/21/93

TBSA # 11

- traps added 10/22/93
#49-66

- traps added 10/22/93
67-72

end of TBSA #11

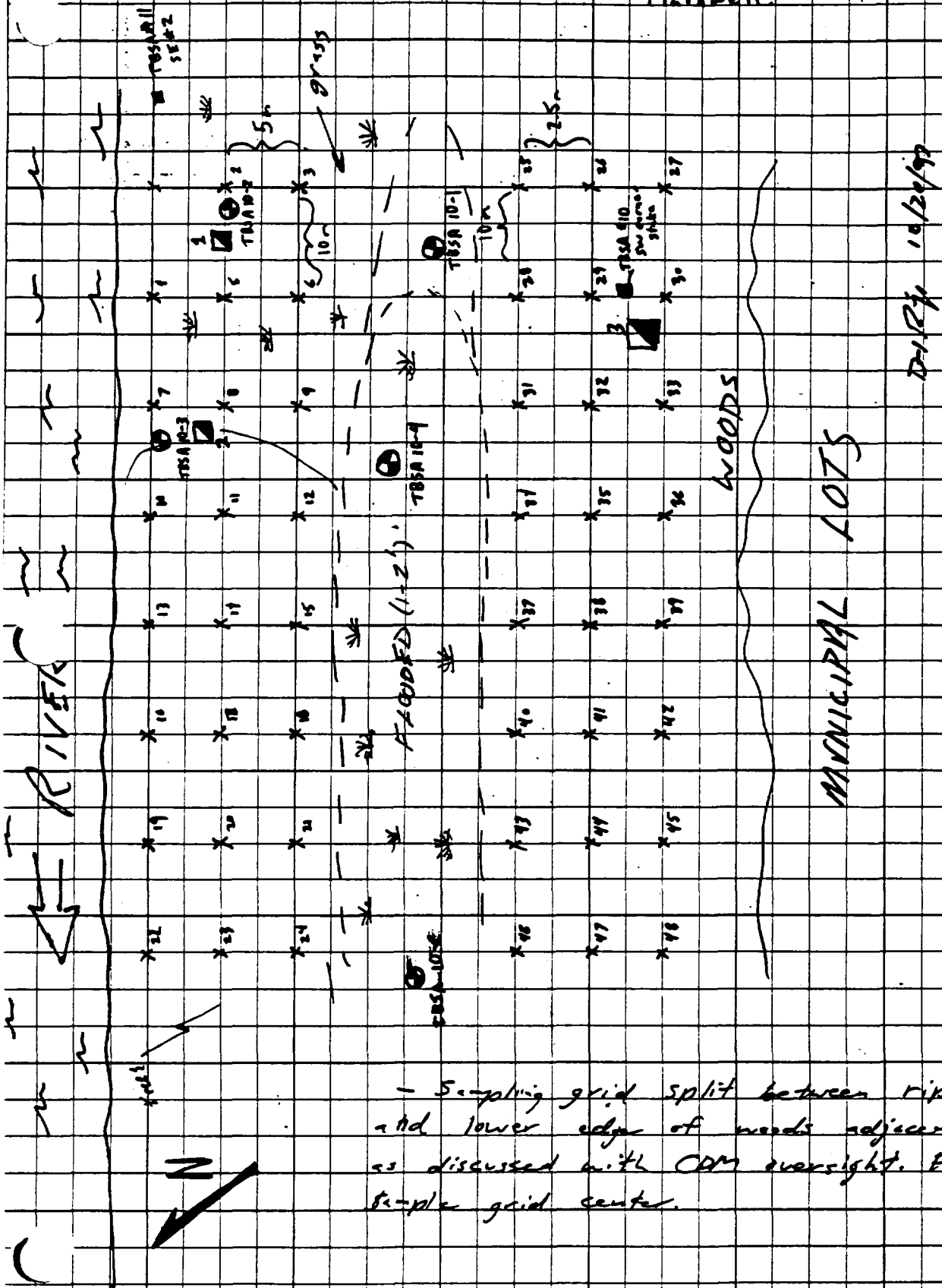


DJ/RJ 10/22/93

TBSA #10

Set: 10/20/93 rainy, 60°F

– S. Bank of Kalamazoo River behind Comfort Inn/ Municipal Facility in Plainwell.



– Sampling grid split between riparian habitat and lower edge of woods adjacent to floodplain as discussed with CDM oversight. Flooding of sample grid center.

Aquatic Full Lig #2
KALAMAZOO

DIETZGEN

ENGINEERS' LEVEL BOOK

No. S410V

INDEX PAGE

JOB NO.	PROJECT	PAGE NUMBER

5-20-94 Crew RJF
owner JH
Battle Creek Sunny, warm

Trap 2 1 large ♂ snapper
7 empty
3 1 small map
5 1 painted
1 ♂ Spiny
1 Snapper
#1 empty
9 1 small Map
4 empty
6 empty
8 - found in bushes
10 empty
13 empty
14 empty

Moved to Oaresco Res.
7, 9, 8, 4, 13, 6

Crew RJF Owe: SG

5-22-94

#2 empty

1 empty

5 1 painted

3 empty

14 - pulled out of H_2O

10 - disturbed ~~by~~ ~~[illegible]~~ to moved

~~[illegible]~~ ? out of H_2O

5-23-94 sunny - warm

Battle Creek

Crew RJF Owe- SG

#14 ♀ Map turtle - moved upstream

10 empty - moved upstream

2 empty

5 ♀ painted - moved D/S

1 ~~[illegible]~~ empty

3 ♂ snapping turtle (keeper)

5/24/94 Crew RJF

Owe- JH

Tray intermittent light rain

14 2 ♀ map turtle overcast, cool

10 2 keeper- Snappers

42022, 42023

2 empty

1 empty

3 musk turtle

5 empty

Ceresco

6 empty

4 empty

8 (unmarked) 1 snapper 42024

1 map turtle

13 empty

9 1 musk turtle

7 empty

5/25/94 Battle Creek

Crew: RJF over JH

cool, sunny, clear

Ceresco

7 empty - moved u/s

9 empty

13 empty

4 1 ♀ Map turtle

8 empty - moved to plainwell

6 " " "

Battle Creek

2 empty - moved to log jam

3 1 musk - moved D/S

5 empty

1 empty

14 empty

10 3 snappers

{ 2 keepers snapper
{ 1 7½" snappers

RJF

5/26/94 Battle Creek

14 empty Cool, cloudy

10 empty Crew: RJF

1 1 map turtle over: JH

a dumping location was noted opposite trap 10. There were around 25 or so 5 gal cans of roundup & Lasso in a small mound

2 empty

3 empty

5 empty - was baited w/whole carp - ½ was missing

Ceresco:

7 ~~empty~~ 1 musk
2 painted 1 painted box

13 1 musk

7 carp + keeper snapping turtle

4 empty

- pulled 9, 13, 7 & 4 to be moved

RJF

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time ~~8/24/93~~ 9:00-7:30

Collection Date 8/24/93

Water Body Kzoo River

Sampling Location Morrow Pond. Collected By KDS/DKR/DWH

Processed By KDS/DKR/DWH

Sampling Method Electroshocking - Boat

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
~~K 0017-2 WS~~	W. Sucker	# in composite 2	53.2	—	WB Composite	—
~~K 0018-2 WS~~	"	2	60.6	—	"	—
~~K 0019-2 WS~~	"	2	53.2	—	"	—
~~K 0020-2 WS~~	"	2	72.0	—	"	—
~~K 0021-2 WS~~	" This sample lost in transit	2	58.0	—	"	—
~~K 0022-2 WS~~	"	2	92.5	—	"	—
~~K 0023-2 WS~~	"	2	40.5	—	"	—
~~K 0024-2 WS~~	"	2	69.0	—	"	—

Replace 1/12/94

9 Fish - GR - Sam Lx. #2 - Discard. 1/12/94

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 10:30 - 3:30

Collection Date 8/25/93

Water Body Kzoo River

Sampling Location Morrow Pond. Collected By KAS/DWH/KOS

Processed By KAS/DWH/DKR

Sampling Method Electrofishing - Boat

Dimension and Mesh Size of Seine (if applicable) NA

31 cm = 12 in 3 smallmouth + 4 undersize ; 2 white Sucker

	Sample #	Species	Total Length (cm)	Weight (g)	Gender	Sample Type	Comments	
K	~~0025-SB~~	~~Smallmouth~~			—	~~Fillet/w.Body~~		
K	0025-2-SB	Smallmouth	38.5	690.0	—	Fillet/W.Body	NM	
K	0026-2-SB	"	36.0	570.0	—	"	NM	
K	0027-2-SB	"	33.5	420.0	—	"	NM	
* K	0028-2-SB	"	23	110.0	—	"	NM	X discarde initial-
* K	0029-2-SB	"	22.5	110.0	—	"	NM	X discarde
* K	0030-2-SB	"	20.5	100.0		"	NM	X discarde
* K	0031-2-SB	"	19.5	90.0	—	"	NM	X discarde 11/12/94
			# in composite					
K	~~40032-2-WS~~	W. Sucker	2	56.1	—	W Body Composite		Replace 11/12/94
K	~~40033-2-WS~~	"	2	54.4	—	"		"

* Undersize

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time ~~7:00~~ 9:00-7:30

Collection Date 8/24/93

Water Body ~~Morrow Pond~~ Kaw River

Sampling Location Morrow Pond Collected By KAS/DWH/DKR

Processed By KAS/DWH/DKR

Sampling Method Electroshock Boat

Dimension and Mesh Size of Seine (if applicable) NA

11 carp, 4 smallmouth, 9 W.S.

	Sample #	Species	Total Length (cm)	Weight (g)	Gender	Sample Type	Comments
	K-40001-2-CP	carp	66	3,400.0	—	Fillet/WB	NM
	K-40002-2-CP	"	69.5	5200.0	—	"	Marks
K	-40003-2-CP	"	57.5	2500.0	—	"	NM
K	-40004-2-CP	"	58.5	2200.00	—	"	Marks
K	40005-2-CP	"	53.5	1900.00	—	"	Marks
K	40006-2-CP	"	56.0	2300.0	—	"	NM
K	40007-2-CP	"	70.0	4600.0	—	"	NM
K	40008-2-CP	"	76.0	6,500.0	—	"	NM
K	40009-2-CP	"	69.0	4,600.0	—	"	NM
K	40010-2-CP	"	52.0	1,400.0	—	"	NM
K	40011-2-CP		52.0	1,300.0	—	"	Mark
K	40012-2-SB	Bass	45.5	1,100.0	—	"	NM
K	40013-2-SB	"	39.0	900.0	—	"	NM
K	40014-2-SB	"	34.5	540.0	—	"	NM
K	40015-2-SB	"	31.5	390.0	—	"	Mark
			# in Composite				
K	40016-2-WS	~~W. Sucker~~	2	60.0	—	WB Composite	—

Replace 1/12/94

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 10:00 am - 3:30 pm

Collection Date 5/26/93

Water Body Kzoo River

Sampling Location Below Morrow Pond Dam Collected By KDS/DKR/DWH

Processed By KDS/DKR

Sampling Method Electrofishing - Boat

Dimension and Mesh Size of Seine (if applicable) NA

11 carp; 10 bass + 1 undersize; 1 w. sucker; 5 H. sucker + 2 oversize.

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K	40034-3-CP	Carp	59.0	2900.0	-	F.Fillet w. Body.	NM
K	40035-3-CP	"	62.5	3100.0	-	"	NM
K	40036-3-CP	"	64.5	4000.0	-	"	NM
#1 K	40037-3-CP	"	55.0	2000.0	-	"	NM
K	40038-3-CP	"	59.0	2100.0	-	"	NM
K	40039-3-CP	"	59.0	2700.0	-	"	NM
K	40040-3-CP	"	50.5	1600.0	-	"	NM
K	40041-3-CP	"	50.5	1800.0	-	"	NM
K	40042-3-CP	"	48.0	1500.0	-	"	NM
K	40043-3-CP	"	53.5	1800.0	-	"	NM
K	40044-3-CP	"	52.5	1800.0	-	"	NM
K	40045-3-SB	Smallmouth	39.5	730.0	-	"	NM
K	40046-3-SB	"	37.0	640.0	-	"	NM
K	40047-3-SB	"	34.0	500.0	-	"	NM
K	40048-3-SB	"	36.5	580.0	-	"	NM
K	40049-3-SB	"	33.5	450.0	-	"	NM
K	40050-3-SB	"	33.0	450.0	-	"	Marks
K	40051-3-SB	"	29.5	320.0	-	"	NM

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time ~~8/26/93 AM~~ 10:00 am - 3:30 pm

Collection Date 8/26/93

Water Body Kzoo River

Sampling Location Below Morrow Dam Collected By KDS/CKR/GLW

Processed By KDS/CKR

Sampling Method Electroshocking

Dimension and Mesh Size of Seine (if applicable) NA

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K	40052-3-SB	bass	30.5	330.0	-	Fillet/ Whole body	Marks	
* K	40053-3-SB	"	29.0	320.0	-	"	NM	
K	40054-3-SB	"	30.5	320	-	"	NM	
K	40055-3-SB	"	30.5	310	-	"	NM	
K	40056-3-HS	~~White Sucker~~ Hog Sucker	~~# IN COMPOSITE~~ 3	133.1	-	Whole Body Composite	NM	X 1/12/94 discard ~~1/13/94~~
K	40057-3-HS	Hog Sucker	2	169.9	-	"	NM	Replace 1/13/94
K	40058-3-HS	"	2	146.9	-	"	NM	
K	40059-3-HS	"	2	145.0	-	"	NM	
K	40060-3-HS	"	2	122.7	-	"	NM	
K	40061-3-HS	"	2	134.7	-	"	NM	
☆ K	40062-3-HS	"	2	242.1	-	"	NM	
☆ K	40063-3-HS	"	2	261.4	-	"	NM	Replace 1/13/94
		Discard	3 fish former	# 40063 &	one fish from	40062		

☆ Lengths between 8 1/4" and 8 3/4"

** Undersize

3 Fish - Hog Sucker - From Location #3 To Be Discarded 1/13/94

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 12:30- 6:00 p.m.

Collection Date 8/30/93

Water Body Kzoo River

Sampling Location Above Otsego City Dam Collected By KDS/DKR/RJF

Processed By KDS/DKR/RJF

Sampling Method Electrofishing (Boat)

Dimension and Mesh Size of Seine (if applicable) NA

6 carp; 4 bass + 1 undersize; 4 W. Sucker + 4 oversize; 9 Hog Sucker (all < 8 in.)

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K	40064-6-CP	Carp	56.5	2700.0	–	Whole Body/Fillet	NM
K	40065-6-CP	"	51.5	2000.0	–	"	NM
K	40066-6-CP	"	48.5	1500.0	–	"	NM
K	40067-6-CP	"	49.0	1900.0	–	"	Male K
K	40068-6-CP	"	56.5	2600.0	–	"	NM
K	40069-6-CP	"	50.5	1600.0	–	"	NM
K	40070-6-SB	SM Bass	36.5	620	–	"	NM
K	40071-6-SB	"	35.5	610	–	"	NM
K	40072-6-SB	"	32.0	420	–	"	NM
K	40073-6-SB	"	30.5	360	–	"	NM
* K	40074-6-SB	"	27.5	300	–	"	NM
K	~~40075-6-WS~~		# in Composite	~~64.4~~			Need 7-GR
K	40075-6-WS	Rainbow Hog Sucker	2	64.4	–	Whole Body Composite	NA
K	40076-6-WS	"	2	56.1	–	"	NA
K	40077-6-WS	"	2	56.1	–	"	NA
K	40078-6-WS	"	3	58.2	–	"	NA
** K	40079-6-WS	"	2	325.0	–	"	NA
K	40080-6-WS	"	2	340.0	–	"	NA

Rainbow Sp. + Hog Sucker

* undersize

** > 8 in. - < 10 in.

*** > 10 in. - < [illegible] in.

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 12:30-4:00 pm

Collection Date 8/30/93

Water Body Kalamazoo River

Sampling Location Above Otsego Cty. Dam Collected By KDS/DKR/RJF

Processed By KDS/DKR/RJF

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) NA

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments		
** K	40081-6-WS	White Sucker Redhorse	# in composite 2	280	—	whole body Composite	NA		Replace Spl. 1/13/94
** K	40082-6-WS	"	2	400		"	NA		Eliminate 1/13/94
K	40083-6-HS	Hog Sucker	2	150	—	"	NA	X	discarded 1/18/94
K	40084-6-HS	"	2	158.7	—	"	NA	X	
K	40085-6-HS	"	2	163.3	—	"	NA	X	
K	40086-6-HS	"	2	132.8	—	"	NA	X	
K	40087-6-HS	"	2	40.4	—	"	NA	X	
K	40088-6-HS	"	2	54.0	—	"	NA	X	
K	40089-6-HS	"	2	73.9	—	"	NA	X	
K	40090-6-HS	"	2	72.3	—	"	NA	X	
K	40091-6-HS	"	2	85.0	—	"	NA	X	discarded 1/18/94

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00am - 5:30 pm

Collection Date 9/1/93

Water Body Kalamazoo River

Sampling Location Mosel Ave Collected By KDS, DKR, RJF

Processed By KDS, DKR, RJF

Sampling Method Electrofishing (Boat)

Dimension and Mesh Size of Seine (if applicable) NA

58.5 = 23." on grounds

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K	40092-4-CP	Carp	55.5	2800.0	–	Whole Body Fillet	NM
K	40093-4-CP	"	64.5	4100.0	–	"	NM
K	40094-4-CP	"	65	3700.0	–	"	NM
K	40095-4-CP	"	59.5	3200.0	–	"	NM
K	40096-4-CP	"	64.0	3700.0	–	"	NM
K	40097-4-CP	"	57.5	2800.0	–	"	NM
~~K~~	~~40098-4-CP~~	~~"~~	~~64.0~~	~~4200.0~~	~~–~~	~~"~~	~~NM~~
K	40099-4-CP	"	55.5	2800.0	–	"	NM
K	40100-4-CP	"	60.5	3100.0	–	"	NM
K	40101-4-CP	"	56.0	2700.0	–	"	NM
K	40102-4-CP	"	54.5	2200.0	–	"	NM
K	40103-4-SB	Smallmouth Bass	34.0	460.0	–	"	NM
K	40104-4-SB	"	31.5	390.0	–	"	NM
K	40105-4-SB	"	31.0	380.0	–	"	Marks
K	40106-4-SB	"	31.0	360.0	–	"	NM
K	40107-4-SB	"	31.0	340.0	–	"	NM
K	40108-4-SB	"	43.0	830.0	–	"	NM
K	40109-4-SB	"	32.5	430.0	–	"	NM

MDNR Walleye 59 cm 2.1 kg
63 cm 2.5 kg
48 cm 1.0 kg

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00am - 5:30pm

Collection Date 9/1/93

Water Body Kalamazoo River

Sampling Location Mosel Ave Collected By KDS/DKR/RJF

Processed By KDS/DKR/

Sampling Method

Dimension and Mesh Size of Seine (if applicable)

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K	40110-4-SB	Smallmouth Bass	36.5	590.0	–	Whole Body/ Fillet	MGWKS	
K	40111-4-SB	"	32.5	430.0	–	"	NM	
K	40112-4-SB	"	30.5	300.0	–	"	NM	
K	40113-4-SB	"	30.5	340.0	–	"	NM	
K	40114-4-GR	Golden Redhorse Sucker	# in Composite ≥8in 2	120.7	–	Whole Body Composite	NA	Recurrence
K	40115-4-GR	"	2	86.6	–	"	"	Discard Fish
K	40116-4-GR	"	2	89.7	–	"	"	Discard Fish
K	40117-4-GR	"	2	62.2	–	"	"	Discard Fish
K	40118-4-GR	"	8-12 in 2	455.0	–	"	" eliminate =	Recurrence
								eliminate #40118
								Recycle #s 40115-117
		[Discard 6 Fish formerly 40115, 40116, 40117]						

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 2:00 pm - 7:00 pm

Collection Date 9/16/93

Water Body ~~Allegan Lake~~ Kzoo River

Sampling Location Lake Allegan Collected By KDS/RJF

Processed By KDS, RJF

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K	40119-9-CP	Allegan Lake Carp	48.0	1590.0	–	Fillet/whole Body	NM	
K	40120-9-CP	"	45.5	1136.0	–	"	NM	
K	40121-9-CP	"	47.0	1278.0	–	"	NM	
K	40122-9-CP	"	47.0	1306.0 ~~1278.0~~	–	"	NM	
K	40123-9-CP	"	44.0	1108.0	–	"	NM	
K	40124-9-CP	"	47.5	1476.0	–	"	NM	
K	40125-9-CP	"	45.0	1108.0	–	"	NM	
K	40126-9-CP	"	48.0	1022.0	–	"	Eviscerated	
K	40127-9-CP	"	45.5	1392.0	–	"	NM	
K	40128-9-CP	"	44.0	1192.0	–	"	NM	
K	40129-9-CP	"	44.5	1079.0	–	"	NM	
K	40130-9-SB	Lake Allegan Smallmouth	45.0	1306.4	–	Fillet/whole body	NM	
K	40131-9-SB	"	38.0	738.4	–	"	NM	
K	40132-9-SB	"	37.5	766.8	–	"	NM	
K	40133-9-SB	"	38.0	852.0	–	"	NM	pilot study ♀
K	40134-9-SB	"	37.5	795	–	"	NM	
K	40135-9-SB	"	37.0	681.6	–	"	NM	pilot study ♂
K	40136-9-SB	"	35.0	596.4	–	"	NM	pilot study

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 2:00pm-7:00pm

Collection Date 9/16/93

Water Body Kzoo River

Sampling Location Lake Allegan Collected By KDS/RJF

Processed By KDS/RJF

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K	40137-9-SB	Lake Allegan Smallmouth	~~[illegible]~~ 35	~~[illegible]~~ 624.8	–	Fillet/whole Body	NM	pilot study ♀
K	40138-9-SB	"	33.0	426	–	"	NM	pilot Study ♂
K	40139-9-SB	"	29.0	349.8	–	"	NM	
K	40140-9-SB	"	29.5	284.0	–	"	NM	pilot study ♀
K	40141-9-WS	White Sucker	19.5	76.0	–	Whole Body	NM	
K	40142-9-WS	"	21.0	95.0	–	"	NM	
K	40143-9-WS	"	20.0	81.0	–	"	NM	
K	40144-9-WS	"	19.5	81.0	–	"	NM	
K	40145-9-WS	"	18.0	71.0	–	"	NM	
K	40146-9-WS	"	20.0	82	–	"	NM	
K	40147-9-WS	"	20	73	–	"	NM	
K	40148-9-WS	"	19	64.0	–	"	NM	
K	40149-9-WS	"	18.5	63.0	–	"	NM	
K	40150-9-WS	"	18.0	64	–	"	NM	
K	40151-9-WS	"	17.0	53	–	"	NM	
	MDNR	WALLEYE	53.0	1732g				

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 10:30 - 2:45

Collection Date 9/21/93

Water Body Kzoo River

Sampling Location Below Allegan Dam Loc. #10 Collected By KDS, DKR, GKC

Processed By KDS, DKR, GKC

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

7 carp (> 23") 8 bass

	Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K	40152-10-CP	Below Allegan Dam Carp	54	2200.0	–	Fillet/W.Body	NM
K	40153-10-CP	"	61	2900.0	–	"	NM
K	40154-10-CP	"	57.5	2800.0	–	"	NM
K	40155-10-CP	"	51.5	2200.0	–	"	NM
K	40156-10-CP	"	48.5	1900.0	–	"	NM
K	40157-10-CP	"	51.5	2100.0	–	"	NM
K	40158-10-CP	"	52	1800.0	–	"	NM
K	40159-10-SB	Below Allegan Dam SM Bass	42	1300.0		"	Marks
K	40160-10-SB	"	36.5	630.0	–	"	NM
K	40161-10-SB	"	40.5	980.0	–	"	NM
K	40162-10-SB	"	34	580.0	–	"	NM
K	40163-10-SB	"	34.5	595.0	–	"	NM
K	40164-10-SB	"	30.5	450.0	–	"	NM
K	40165-10-SB	"	30.5	420.0	–	"	NM
K	40166-10-SB	"	30.5	400.0	–	"	NM
K	40167-10-SB						
K	40168-10-SB						

MDNR Walley 40 cm 730 g
62.5 cm 2200 g

16 ounces per pound

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 2:00-6:00

Collection Date 10/05/93

Water Body Kalamazoo River

Sampling Location Below Allegan Dam Collected By DKR/KDS

Processed By DKR/LAE

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	(Kilograms) Weight (g)	Gender	Sample Type	Comments	
K40167-10-CP	Below Allegan Carp	75 cm	7.25 K	-	Fillet	Lesions	16 lb 3 oz
K40168-10-CP	↓	84.5 cm	11.28 K	-	↓	NM	25 lb 3 oz
K40169-10-CP	↓	74.5	8.68 K	-	↓	NM	19 lb 6 oz
K40170-10-CP	↓	74.0	7.5 K	-	↓	NM	16 lb 13 oz
K40171-10-SB	Below Allegan Sm. Bass	41.0	.84 K	-	↓	NM	1 lb 14 oz
K40172-10-SB	↓	37.0	~~.76 K~~	-	↓	NM	1 lb 9 oz
K40173-10-SB	↓	33.0	.48 K	-	↓	NM	1 lb 1 oz
~~K40174-10-QB~~	~~Below Allegan Quillback C.S.~~	~~29.5~~	~~.28 K~~	~~-~~	~~Whole Body~~	~~NM~~ x	discard
~~K40175-10-QB~~	↓	~~29.5~~	~~.34 K~~	~~-~~	↓	~~NM~~ x	discard
~~K40176-10-QB~~	↓	~~29.5~~	~~.28 K~~	~~-~~	↓	~~NM~~ x	discard
~~K40177-10-QB~~	↓	~~28.5~~	~~.31 K~~	~~-~~	↓	~~NM~~ x	discard
~~K40178-10-QB~~	↓	~~29.5~~	~~.28 K~~	~~-~~	↓	~~NM~~ x	discard
~~K40179-10-QB~~							
~~K40180-10-QB~~							

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 11:00 - 6:30

Collection Date 10/0[illegible]/93 10/6/93

Water Body Kalamazoo River

Sampling Location Saugatuck Collected By KDS, BLC

Processed By BLC, RJF, KDS

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length (cm)	Weight (g) (Kilograms)	Gender	Sample Type	Comments
K40179-11-CP	Saugatuck coop	65.5	4.6 Kilos	—	Fillet/whole body	NM
K40180-11-CP		75.5	8.5 K			NM
K40181-11 CP		61.0	3.7 K		—	NM
K40182-11-CP		70.5	5.6 K			NM
K40183-11-CP		62.0	3.7 K			NM
K40184-11-CP		55.0	2.1 K			NM
K40185-11-CP		55.0	2.3 K			NM
K40186-11-CP		50.5	1.8 K			NM
K40187-11-CP		50.0	1.7 K			NM
K40188-11-CP		50.5	1.7 K			NM
K40189-11-CP		48	1.7 K			NM
K40190-11-SB	Saugatuck Sm Bass	25.5	.196 K			NM
K40191-11-SB		25.5	.224 K			NM
K40192-11-SB		24	.196 K			NM
K40193-11-SS	Spotted sucker	30	.308 K			NM
K40194-11-SS		25	.168 K			NM
K40195-11-SS		38.5	.448 K			NM

Collar #1

Collar #2

7oz

8oz

Discard 7oz

x discard 1 oz

x discard 6 oz

x discard 6 oz

WDNR Walleye 44.5 cm

868 g

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

1:30 - 6:30

Collection Time ~~[illegible]~~ pm

Collection Date 10/7/93

Water Body Kzo River

Sampling Location Near Saugatuck

Collected By KDS, LAE, BKC

Processed By DKR

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40196-1/2-SB	Saugatuck Smallmouth	28.5	336		Whole Body/ Fillet	NM	12 oz
K40197-1/2-SB	"	27.0	224		"	NM	8 oz
K40198-1/2-SB	"	27.0	252		"	NM	9 oz
K40199-1/2-SB	"	25.5	196		"	NM	7 oz
K40200-1/2-SB	"	25.5	168		"	NM	6 oz
~~K40201-1/2-SB~~	~~"~~	~~23.5~~	~~140~~		~~"~~	~~NM~~	~~5 oz~~ discard
K40202-1/2-WS	White Sucker	28.0	224		Whole Body	NM	8 oz
K40203-1/2-WS	"	27.0	196		"	NM	7 oz
K40204-1/2-WS	"	24.0	140		"	NM	5 oz
K40205-1/2-WS	"	23.0	112		"	NM	4 oz
K40206-1/2-WS	"	24.0	140		"	NM	5 oz
K40207-1/2-WS	"	22.5	112		"	NM	4 oz
K40208-1/2-WS	"	23.0	112		"	NM	4 oz
K40209-1/2-WS	"	23.0	112		"	NM	4 oz
K40210-1/2-WS	"	24.0	140		"	NM	5 oz
K40211-1/2-WS	"	21.5	112		"	NM	4 oz
K40212-1/2-WS	"	21.0	84		"	NM	3 oz
					"		

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 2:00-7:00

Collection Date 10/8/93

Water Body Kzoo River

Sampling Location Near Saugatuck Collected By KDS, BKC

Processed By TF, BKC

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40213-11-SB	Smallmouth bass	31.5	475g	—	~~whole body~~ BKC fillet	NM
K40214-11-SB		26.6	285g			NM
K40215-11-SB		35.6	800g			NM
K40216-11-SB		41.8	1100g			NM

MDNR Walley length 48 cm
wt 1100 g

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time ~~9:00 - 12:30~~ 11:00 - 4:00 a.m.

Collection Date 10/08 9

Water Body Kalamazoo River

Sampling Location Below Allegan Dam Collected By ~~BKC, KDS, TF~~

Processed By BKC, KDS, DKR

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length (cm)	Weight (g)	Gender	Sample Type	Comments
K40217-10-SS	Spotted sucker	23.5	140 g	–	~~whole~~ ~~body~~ BKC	NM
K40218-10-SS		22.5	120 g		~~fillet~~	NM
K40219-10-SS		19	60 g		w. body.	NM
K40220-10-SS		26.5	230 g			NM
K40221-10-SS		27	240 g			NM
K40222-10-SS		29	290 g			NM
K40223-10-SS		26.5	230 g			NM
K40224-10-SS		26.5	220 g			NM
K40225-10-SS		28.5	290 g			NM
K40226-10-SS		30.0	360 g			NM
K40227-10-SS		29.5	325 g			

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:30-4:00

Collection Date 10/~~20~~ 10

Water Body Kalamazoo River

Sampling Location ~~Above~~ Battle Creek Collected By BKC, KDS, Tom Field

Processed By BKC, KDS, DKR

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40228-1-WS		27.5	220g		~~whole~~ ~~body~~ BKC	NM	
K40229-1-WS		25.5	170g		fillet	NM	
K40230-1-WS		23.5	150g			NM	
K40231-1-WS		25.5	170g			NM	
K40232-1-WS		29	280g			NM	
K40233-1-WS		~~35.5~~ 30	~~320~~ 320g			NM	
K40234-1-WS		18	53g			NM	
K40235-1-WS		18	55g			NM	
K40236-1-WS		16	35g			NM	
K40237-1-WS		17.5	45g			NM	
K40238-1-WS		18	55g			NM	
~~K40239-1-WS~~	BKC						
K40239-1-SB		37.5	1000g			NM	
K40240-1-SB		39.5	1000g			NM	pilot study ♂
K40241-1-SB		38	900g			NM	pilot study ♂
K40242-1-SB		40.5	1000g			NM	pilot study ♀
K40243-1-SB		35.5	800g			NM	
K40244-1-SB		36	740g			NM	

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:30-4:00

Collection Date 10/~~09~~ 10

Water Body Kalamazoo River

Sampling Location Battle Creek Collected By BKC, KDS, DKR

Processed By BKC, KDS, DKR

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40245-1-SB		38	800	—	~~whole~~ fillet ~~body~~	NO RIGHT EYE	pilot study ♀
K40246-1-SB		37	900			NM	~~pilot study ♀~~
K40247-1-SB		35	800			NM	~~pilot study ♂~~
K40248-1-SB		33	660			NM	
K40249-1-SB		30	470			NM	
~~K40250-1-SB~~	BKC	~~78.5~~	~~6400~~	BKC			
~~K40250-1-CP~~		~~78.5~~	~~6400~~			~~Lamprey Eel Marks~~	dead
~~K40250-1-CP~~		~~62.5~~	~~3600~~			~~Lamprey Eel Marks~~	dead

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 9:30 - 12:30

Collection Date 10/11/93

Water Body Kzoo River

Sampling Location Above Otsego City Dam Collected By BKC, KDS, DKR

Processed By BKC, JJH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40252-6-SB	SM Bass	31.5	550	–	Whole body/fillet	NM
K40253-6-SB		34.0	630			NM
K40254-6-SB		36.0	800			NM
K40255-6-SB		39.0	860			NM
K40256-6-SB		41.5	950			NM
K40257-6-SB		33.5	525			NM
K40258-6-CP	Carp	58.0	2650			NM
K40259-6-CP		59.5	3000			NM
K40260-6-CP		59.0	2900			NM
K40261-6-CP		58.5	2850			NM
K40262-6-CP		57.0	2350			NM
~~K40263-6-WS~~	~~White Sucker~~	~~26.0~~	~~200~~			~~NM~~ X Discard
K40264-6-GR	Golden Redhorse	23.5	170			NM
K40265-6-GR		17.5	55			NM
K40266-6-GR		15.0 ~~14.0~~ JJH	35			NM
K40267-6-GR		14.5	35			NM
JJH ~~K40268-6-GR~~						
J ~~K40269-6-GR~~						

MONR Walleye 40.5 cm 710 g
52.5 cm 1250 g.

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time _____

Collection Date 1-12-93

Water Body Kalamazoo River

Sampling Location Above Otsego Dam (?) Collected By DKR, KDS

Processed By RJF, JJM, LAE

Sampling Method Electro Fish

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40268-7-CP	Carp	62.0 cm	2.9 Kg	—	Whole body/ Fillet	NM
K40269-7-CP	Carp	63.5	3.6 kg	—	"	NM
K40270-7-CP	"	60.5	3.6	—	"	Small deformities + lg. lesion on tail
K40271-7-CP	"	54.5	2.1	—	"	NM
K40272-7-CP	"	49.0	1.5		"	NM
K40273-7-CP	"	49.5	1.5		"	NM
K40274-7-CP	"	47.0	1.3		"	NM
K40275-7-CP	"	49.0	1.7		"	NM
K40276-7-SB	Smallmouth bass	32.5	0.4		"	NM
K40277-7-SB	"	33.5	0.5		"	NM
K40278-7-SB	"	38.0	0.7		"	NM
K40279-7-SB	"	37.0	0.6		"	NM
K40280-7-SB	"	44.0	1.1		"	NM
K40281-7-SB	"	40.5	0.9		"	NM
K40282-7-SB	"	37.5	0.7		"	NM
~~K40283-7-WS~~	~~White Sucker~~	~~340.0~~	~~0.3~~		~~"~~	~~NM~~ discard 1/15/93
K40284-7-CP	Carp	47.5	1.4		"	NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time _____

Collection Date 10-12-93

Water Body KALAMAZOO RIVER

Sampling Location ABOVE OTSEGO DAM (7) Collected By DKR, KDS

Processed By RJF, JJA

Sampling Method ELECTRO FISH

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40285-7-CP	CARP	63	3.3 kg	—	WHOLE BODY	NM
K40286-7-CP	↓	58	2.3 kg		FILLET	NM
K40287-7-SB	SM MOUTH BASS	38	0.7 kg			NM
K40288-7-SB		31	0.3 kg			NM
K40289-7-SB		29.5	0.3 kg			NM
K40290-7-SB		36	0.5 kg			NM
K40291-7-GR	GOLDEN REDHORSE	30	0.3 kg			NM
K40292-7-GR		30	0.3 kg			NM
K40293-7-GR		28.5	0.2 kg			NM
K40294-7-GR		29.5	0.3 kg			NM
K40295-7-GR		27.5	0.2 kg			NM
K40296-7-GR		26	0.2 kg			NM
K40297-7-GR		27	0.2 kg			NM
K40298-7-GR		17.5	56 g			NM
K40299-7-GR		15.5	36 g			NM
K40300-7-GR		15.5	36 g			NM
K40301-7-GR		15	35 g			NM

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 11:00am – 2:00 pm

Collection Date 10/13/93

Water Body Kzoo River

Sampling Location Just Upstream of Trowbridge Collected By KOS, BKC, DRR

Processed By BKC, JJH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40302-8-SB		33	400g		whole body/ fillet	NM	
K40303-8-SB		38	600g			NM	
K40304-8-SB		34.5	500g			NM	pilot study ♂
K40305-8-SB		35	500g			NM	pilot study ♀
K40306-8-SB		34	500g			NM	pilot study ♂
K40307-8-SB		30.5	300g			NM	
K40308-8-SB		30	300g			NM	pilot study ♀
K40309-8-SB		33	400g			NM	pilot study ♂
K40310-8-SB		30	300g			NM	pilot study ♀
~~K40311-8-GR~~		~~27~~	~~200g~~		whole body	NM	Discard
~~K40312-8-GR~~		~~26.5~~	~~200g~~			NM	Discard 1/25
~~K40313-8-GR~~		~~23~~	~~100g~~			NM	Discard
~~K40314-8-GR~~		~~15.5~~	~~35g~~			NM	Discard
K40315-8-CP		56	2200g		whole body/ fillet	NM	
K40316-8-CP		64.5	3500g			NM	
K40317-8-CP		68.5	3900g			NM	
K40318-8-CP		55	2200g			NM	pilot study ♂
K40319-8-CP		54.5	2000g			NM	pilot study ♀
K40320-8-CP		48	1500g			NM pilot study ♂	
K40321-8-CP		51.5	1700g			NM pilot study ♀	
K40322-8-CP		48	1500g			NM	

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 1:00 - 2:00 pm

Collection Date 10/13/93

Water Body Kzoo River

Sampling Location Trowbridge Dam Collected By KDS, BKC, DKR

Processed By BKC, JJH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40323-8-SB	Smallmouth bass	38	670g		wholebody/fillet	NM	
K40324-8-SB		31.5	450			NM	
K40325-8-CP	Carp	61.5	3100g			NM	
K40326-8-CP		62.5	2900g			NM	pilot study ♂
K40327-8-CP		66.5	2800g			NM	pilot study ♀
K40328-8-WS	White suckers	24.5	150g		whole body	NM	
K40329-8-WS		26	190g			NM	
K40330-8-WS		23	130g			NM	
K40331-8-WS		29	260g			NM	
K40332-8-WS		21	120g			NM	
K40333-8-WS		21	90g			NM	
K40334-8-WS		19	70g			NM	
K40335-8-WS		19.5	80g			NM	
K40336-8-WS		19	70g			NM	
K40337-8-WS		19.5	90g			NM	
K40338-8-WS		19	70g			NM	

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00 – 1:00

Collection Date 10/14/93

Water Body KZOO RIVER

Sampling Location BATTLE CREEK Collected By ~~[illegible]~~ DKR, ~~DWH~~, ~~[illegible]~~ RJF

Processed By BKC, JJH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
~~K40339-1-GR~~		59	2500g.	—	Whole Body/Fillet	NM	Discard
~~K40340-1-GR~~		57.5	2300g			NM	Discard
~~K40341-1-GR~~		56.5	2200g.			NM	Discard
~~K40342-1-GR~~		61	2700			NM	Discard
~~K40343-1-GR~~		59	2300			NM	Discard
~~K40344-1-GR~~		57.5	2300			NM	Discard
~~K40345-1-GR~~		59	2500			NM	Discard
~~K40346-1-GR~~		58.5	2400			NM	Discard
~~K40347-1-GR~~		62.5	2900			NM	Discard
~~K40348-1-GR~~		58	2300			NM	Discard
~~K40349-1-GR~~		57.5	2300			NM	Discard
~~K40350-1-~~		59	2600			MISSING RIGHT EYE (BKC)	

10/25/93

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 3:40- 5:00

Collection Date 10/14/97

Water Body Kalamazoo River

Sampling Location Above Plainwell Dam Collected By DWH, DKR, KVS

Processed By RJF, BKC, JH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40350-5-CP	Carp	52 cm	2.1 kg		fillet/wholebody	NM	Pilot study ♂
K40351-5-SB	Smallmouth bass	38.5 cm	810 g				pilot study ♂
K40352-5-SB	"	29.5 cm	290 g				pilot study ♂
K40353-5-SB	"	29 cm	290 g				pilot study ♀
K40354-5-SB	"	29 cm	310 g				pilot study ♀
~~K40355-5-WS~~	White sucker	~~27 cm~~	~~250 g~~		wholebody		Discard
~~K40356-5-WS~~		~~26 cm~~	~~240 g~~				Discard
~~K40357-5-WS~~		~~28.5 cm~~	~~250 g~~				Discard
~~K40358-5-WS~~		~~20 cm~~	~~95 g~~				Discard
K40359-5-CP	carp	60 cm	3200 g		wholebody/fillet		pilot study ♀
K40360-5-CP		63 cm	3800 g				
K40361-5-CP		61 cm	3100 g				pilot study ♀
K40362-5-CP		62 cm	3100 g				pilot study ♀
K40363-5-CP		54.5 cm	2150 g				pilot study ♂
K40364-5-CP		54.5 cm	2100 g				pilot study ♂
K40365-5-CP		58 cm	2550 g				
K40366-5-CP		54 cm	2200 g				
K40367-5-CP		~~50~~ 49.5 cm	1500 g				
K40368-5-CP		52 cm	2100 g				

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 5:00 – 6:00

Collection Date 10/14/93

Water Body KZOO RIVER

Sampling Location Above Plainwell Dam Collected By DWH, DKR, KDS

Processed By BKC, RJF

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40369-5-SB		38 cm	790 g		SMALL MOUTH BASS	NM	pilot study, ♂
K40370-5-SB		35.5 cm	635 g				pilot study, ♀
K40371-5-SB		36 cm	615 g				
K40372-5-SB		33.5 cm	535 g				
K40373-5-SB		39 cm	810 g				
K40374-5-SB		36 cm	610 g				
K40375-5-SB		33.5 cm	510 g				
~~K40376-5-GR~~ BKC		~~21 cm~~	~~98 g~~				
K40376-5-GR		21	88 g		Golden Redhorse		
K40377-5-GR		17	58				
K40378-5-GR		18	61				
K40379-5-GR		17.5	57				
K40380-5-GR		17	50				
K40381-5-GR		16	49				
K40382-5-GR		16.5	46				
K40383-5-GR		16.5	44				
K40384-5-GR		16	44				
K40385-5-GR		16	47				
K40386-5-GR		15	37				

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time ~~9:00 - 11:00~~

Collection Date 10/15/93

Water Body KZOO RIVER

Sampling Location MORROW POND 2 Collected By DWH, DKR, RJF

Processed By BKC, JJH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length (cm)	Weight (g)	Gender	Sample Type	Comments
K40387-2-SB		32 cm	460	—	Whole body fillet	NM
K40388-2-SB		31 cm	430	—		NM
K40389-2-SB		29 cm	300	—		NM
K40390-2-SB		29 cm	320	—		NM
MDNR	Walleye	46	800 g			
		46.5	800 g			
		51	1100 g			

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00-11:00

Collection Date 10/~~14~~ 15

Water Body KZOO RIVER

Sampling Location MOSEL AVE 4 Collected By DWH, DKR, RJF

Processed By BKC, JJH

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K4891-4-GR		50.5	1300		~~whole body/fillet~~	NM
K4892-4-GR		21	110		whole body	NM
K4893-4-GR		17.5	60			NM
K4894-4-GR		17	50			NM
K4895-4-GR		16.5	50			NM
K4896-4-GR		17	50			NM
K4897-4-GR		15.5	40			NM
K4898-4-GR		15.5	40			NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 12:30 - 4:00 PM

Collection Date 11/8/93

Water Body Portage Creek

Sampling Location Portage Creek Collected By RJF, DWH, KDS

Processed By RJF

Sampling Method Backpack Electro shocking

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40399-12-CP	Carp	60.5	3.4 KG				
K40400-12-CP		48.5	1.9 KG				pilot study ♀
K40401-12-CP		48.0	1.8 KG				pilot study ♀
K40402-12-CP		52.5	2.0 KG				
K40403-12-CP		52.5	2.3 KG				
K40404-12-CP		52.0	2.1 KG				pilot study ♀
K40405-12-CP		49.0	1.7 KG				pilot study ♂
K40406-12-CP		48.5	1.6 KG				pilot study ♂
K40407-12-CP		47.0	1.7 KG				
K40408-12-CP		48.0	1.7 KG				pilot study ♂
K40409-12-CP		47.0	1.3 KG				
K40410-12-WS	White Sucker	27.0	220 G				
K40411-12-WS		24.5	160 G				
K40412-12-WS		24.5	180 G				
K40413-12-WS		23.0	120 G				
K40414-12-WS		21.0	110 G				
K40415-12-WS		18.0	54 G				
K40416-12-WS		16.0	39 G				

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time _____

Collection Date 11/9/93

Water Body Portage Creek - Allied

Sampling Location " Collected By KDS, DWH RJF

Processed By DWH RJF

Sampling Method Backpack Electrofisher

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
P K40417-12-WS	Wh. Sucker	21	87			Fin clipped
P K40418-12-WS	WH. SUCKER	18	48			
P K40419-12-WS	WH. SUCKER	16	37			
P K40420-12-WS	WH. SUCKER	15	32			

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time _____

Collection Date 11-9-93

Water Body CERESO, Kzoo River

Sampling Location _____ Collected By KDS RJF

Processed By DWH, RJF

Sampling Method _____

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments	
K40421-1-CP	Ceresco Kzoo CARP	65.0	3.2 KG				pilot study ♀
K40422-1-CP	"	59.0	2.8KG				pilot study ♀
K40423-1-CP	"	58.5	3.0 KG				~~pilot study ♀~~
K40424-1-CP	"	61.0	2.9 KG				
K40425-1-CP	"	58.5	2.6 KG				
K40426-1-CP	"	55.0	2.2 KG				~~pilot study ♂~~
K40427-1-CP	"	51.0	1.7 KG				pilot study ♂
K40428-1-CP	"	54.0	~~2.7~~ 1.8 KG				pilot study ♂
K40429-1-CP	"	53.5	2.2 KG				
K40430-1-CP	"	55.0	2.1 KG				
K40431-1-CP	"	53.0	2.2 KG				

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time Split Sicker Composites

~~Collection~~ Date 1/12/94

Water Body Kaw River

Sampling Location Morrow Cond. - Golden Redhorse Collected By _____

Processed By KDS

Sampling Method _____

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
~~K40007~~						
K40016-2-GR	Redhorse	14.5	36.5 g	—	w. body	Formerly 40026
K40017-2-GR	"	13.0	26.4 g	—	"	Formerly 40020
K40018-2-GR		15.8	44.3	—	"	Formerly 40022
K40019-2-GR		15.5	39.0	—	"	Formerly 40032
K40020-2-GR		13.5	29.1	—	"	Formerly 40016
K40021-2-GR		16.0	51.7			Formerly 40024
K40022-2-GR		13.0	25.4			Formerly 40052
K40023-2-GR		13.5	27.7			Formerly 40052
K40034-2-GR		14.0	29.3			Formerly 40033
K40032-2-GR		14.0	29.4			Formerly 40018
K40033-2-GR		13	24.2			Formerly 40[illegible]

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time Split Sucker Composites

~~Collection~~ Date 1/13/94

Water Body Below Morrow Dam – Hog~~nose~~ Sucker

Sampling Location ↓ Collected By

Processed By KDS

Sampling Method

Dimension and Mesh Size of Seine (if applicable)

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40057-3-HS	Hog~~nose~~	19.5	88.6	–	whole Body	Formerly 40057
K40058-3-HS	"	18.5	74.7	–	"	Formerly 40057
K40059-3-HS		18.7	78.7			Formerly K40058
K40060-3-HS		17.5	61.0			Formerly 40058
K40061-3-HS		19.0	75.8			Formerly 40059
K40062-3-HS		17.5	61.5			Formerly 40059
K40063-3-HS		17.0	54.5			Formerly 40060
K40432-3-HS		17.6	59.5			Formerly 40060
K40433-3-HS		19.8	91.0			Formerly 40061
K40434-3-HS		15.0	39.2			Formerly 40061
K40435-3-HS		22.0	125.8			Formerly 40062

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time Split Sucker Samples

Collection Date

Water Body Kzoo River

Sampling Location Above Otsego City, Conn Collected By

Processed By KDS 1/13/94

Sampling Method

Dimension and Mesh Size of Seine (if applicable)

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40075-6-GR	G. Redhorse	25	187.8	–	w. body	Formerly 40052
K40076-6-GR	"	25.5	194.1	–		Formerly 40052
K40077-6-GR	"	24.5	153.4	–		Formerly 40054
K40078-6-GR	"	21.3	109.3	–		Formerly 40054
K40079-6-GR	"	24.5	157.2	–		Formerly 40055
K40080-6-GR	"	23.5	166.3	–		Formerly 40056
K40081-6-GR	"	23.0	153.0	–		Formerly 40079
	Discarded	10 fish from	samples	40075-79	all Redhorse	

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time _____

Collection Date Rearrangement 1/15/94

Water Body Kzoo River

Sampling Location Mosel Ave Collected By _____

Processed By _____

Sampling Method _____

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40114-4-GR	G. Redhorse	26.0	215.0	—	whole Body	Formerly 40118
K40115-4-GR	"	26.0	228.5	—	"	Formerly 40118
K40116-4-GR	"	16.5	62.8	—	"	Formerly 40114
K40117-4-GR	"	16.0	53.9			Formerly 40114

1-1
254

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time AM / overnight

Collection Date 8/27/93

Water Body Kalamazoo River Sampling Location Above Plainwell dam

Collected By KDS/DKR Processed By KDS/DKR

Sampling Method Trapping

	Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K	42001-5-ST	Turtle	35.5	12,000.0	MAIE	~~whole body~~ Muscle	Marks
K	42002-5-ST	"	28.5	4,700.0	MAIF	whole body	NM

* Total length of carapace.

7/30/93
393439M

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time 8:30 am

Collection Date 8/30/93

Water Body Kalamazoo River Sampling Location above Plainwell Dam

Collected By DKR/RJF Processed By DKR

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K-42003-5-ST	Snapping Turtle	26.5	4800	Female	Whole Body Muscle	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time 6:30 pm

Collection Date ~~8/30/93~~ 8/30/93

Water Body Kalamazoo River Sampling Location above Plainwell Dam

Collected By DKR/RJF Processed By RJF

Sampling Method Trap.

	Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K	42004-5-St	Snapping Turtle	27.5	3800.00	M	~~Whole Body~~ Muscle	NM
K	42005-5-St	"	29.2	4600.00	M	Whole Body	

8/31/93 am

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time 10:00 am - 11:00 am

Collection Date 9/3/93

Water Body Kalamazoo River Sampling Location Above Plainwell Dam.

Collected By KDS/RJF/DWH Processed By KDS/RJF

Sampling Method Trapping

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42006-5-5	Snapping Turtle	29.0	6000.0	Male	Whole Body - Shell	Marks

* Total length of carapace.

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time 9:30 am

Collection Date 9/14/93

Water Body KZOO River Sampling Location Above Plainwell Dam.

Collected By KDS Processed By RJF

Sampling Method Trapping

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K H2007-5-ST	Snapping Turtle	38.3	11,000.0	Male.	Muscle	Mark

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time 2:30 pm

Collection Date 9-21-93

Water Body Above Plainwell Dam Sampling Location Kalamazoo River

Collected By RJF, ECR Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42008-5-ST	Snapping turtle	32	8.5 Kg	female	~~whole body~~ muscle	NM
K42009-5-ST	Snapping Turtle	29	5.3 Kg	female	~~whole body shell~~ muscle	NM

* Total length of carapace.

* muscle & whole (shell) muscle

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time 1400

Collection Date 9-23-93

Water Body ~~Above Plainwell Dam~~ Kalamazoo R. Sampling Location Above Plainwell Dam

Collected By RJF, ECR Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42010-5-9T	Snapping turtle	29	5.4 Kg	female	whole body minus shell	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time [illegible]

Collection Date 5/17/94

Water Body Kaw River Sampling Location Below Allegan Dam

Collected By RJF / DKR Processed By KNS

Sampling Method Trapping

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
42011-10-ST	Snapping turtle	25 cm	3.55 Kg	♀	Muscle	NMS
42012-10-ST	"	12 3/4 inches 32.4 cm	5.4 Kg	♂	"	NMS

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time 5/18/94 5/19/94

Collection Date AM

Water Body Kaw River Sampling Location Plymell Dam.

Collected By RTF DKR Processed By KDS

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K12013-5-ST	Soft Shell Turt.	9 in 23 cm	3.1 Kg	♀	W. Body. ~~Muscle~~	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time 5/18/94

Collection Date PM

Water Body Kalamazoo R. Sampling Location Below Allegan Dam

Collected By DER RJF Processed By KDS

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K-42014-10-51	Sno Turt	10" 25cm	4.5 Kg	♀	W. Body	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time PM

Collection Date 5/19/94

Water Body Kzoo River Sampling Location Battle Creek

Collected By RJT/JKR Processed By KDS

Sampling Method Trapping

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
15-4-2015-1-55	Snapper	8 1/2" 21.5cm	2.3 Kg	♂	W. Body	

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time AM

Collection Date 5/20/94

Water Body Kzoo River Sampling Location Battle Creek

Collected By RJF Processed By

Sampling Method Trapping

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K4Q016-1-ST	Snapper	8 3/4" 22cm	2.55 Kg	♀	Whole Body	
K4Q017-1-ST	Snapper	14 1/4 36.2	11.1 Kg	♂	Muscle	

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time AM

Collection Date 5/21/94

Water Body Kakanawa River Sampling Location Battle Creek

Collected By DKR, RJF Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K 42015-1-ST	Snapper Turtle	8"	1.75 Kg	Male	Muscle	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time AM

Collection Date 5/23/94

Water Body Kalamazoo River Sampling Location Battle Creek

Collected By RJF Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42019-1-ST	Snap. Turt.	11.5"	5.8 kg	♂	whole body	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time PM

Collection Date 5/23/94

Water Body Kalamazoo River Sampling Location Below Allegan Dam

Collected By DKR, RJF Processed By RJF

Sampling Method Trap.

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42020-10-ST	Snap. Turt.	9 3/4"	3.4 kg	♂	whole body	NM
K42021-10-ST	"	10 3/4"	4.9 kg	♂	whole body	Marks.

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time AM

Collection Date 5/24/94

Water Body Kalamazoo R. Sampling Location Battle Creek

Collected By RJF Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42022-1-5T	Snap. Turt	10 3/4"	4.1 kg	♀	muscle	NM
K42023-1-5T	"	10 3/4"	4.25	♂	muscle	NM
K42024-1-5T	"	9 1/2"	3.8 kg	♀	whole body	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time PM

Collection Date 5/25/94

Water Body Kalamazoo River Sampling Location Battle Creek

Collected By RJF Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K420251-1-ST	Snap. Turt.	10¼"	4.1 kg	♀	muscle	NM
K420261-1-ST	"	12½"	6.65	♂	muscle	NM

* Total length of carapace.

93
39H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time AM

Collection Date 5/26/94

Water Body Kalamazoo River Sampling Location Battle Creek

Collected By RJF Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42027-1-ST	Snap Turtle	12"	1.4kg	♂	wholebody	

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time 4PM

Collection Date 5/23/94

Water Body Kalamazoo River Sampling Location Below Allegan

Collected By DKR Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42028-16-SI		11.5"	6.7 Kg	♂		
K42029-16-SI		10"	4.9	♀		

* Total length of carapace.

10/93
3439H

ATTACHMENT A-2

TURTLE COLLECTION FIELD DATA SHEET

Collection Time PM

Collection Date 5/26 1994

Water Body Kalamazoo River Sampling Location Plainwell

Collected By DKR Processed By KJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K42030-~~80~~5-ST	Snp. Turtle	8 1/4"	2.2 kg	♂	whole body	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time PM

Collection Date 5/26/94

Water Body Kalamazoo River Sampling Location Allegan

Collected By DKR Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
K4203-10-ST	Snap. Turt.	8 3/4"	2.7 kg	♂	whole	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time AM

Collection Date 5/27/94

Water Body Kalamazoo River Sampling Location Below Allegan Dam

Collected By RJF, DKR Processed By RJF

Sampling Method Trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
KYZ032-10-ST	Sno. Turtle	11"	6800	♂	Whole	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-2

TURTLE COLLECTION
FIELD DATA SHEET

Collection Time AM

Collection Date 6/01/94

Water Body Kzoo River Sampling Location Below Allegan Dam

Collected By DKR/RJF Processed By RJF

Sampling Method ~~Net~~ trap

Sample #	Species	Total Length(cm)*	Weight (g)	Gender	Sample Type	Comments
SK42033-10-ST	Sn. Tt.	11 1/2"	6.2 kg	M	muscle	NM
SK-42034-10-ST	"	9 3/4	3.45 kg	F	muscle	NM

* Total length of carapace.

7/30/93
393439H

ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species Carp

Fish No (s). 15-40002-2-CP

Collection Date

Length

Collection Site

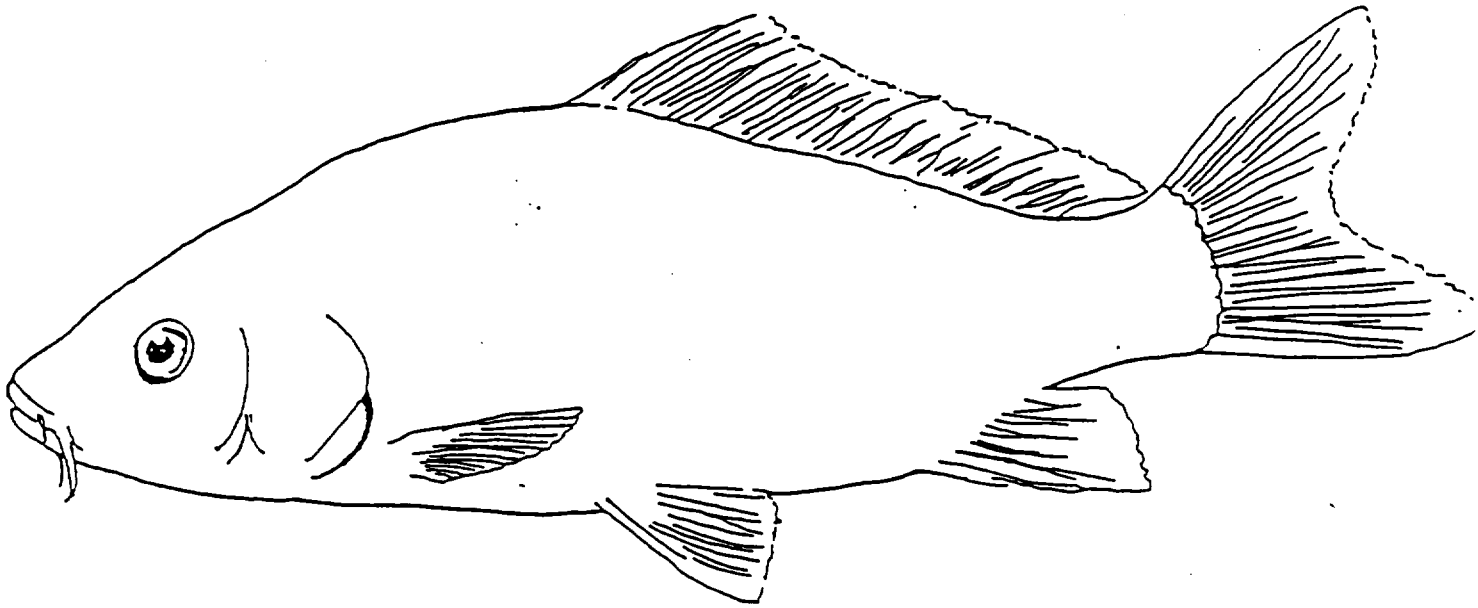
Weight

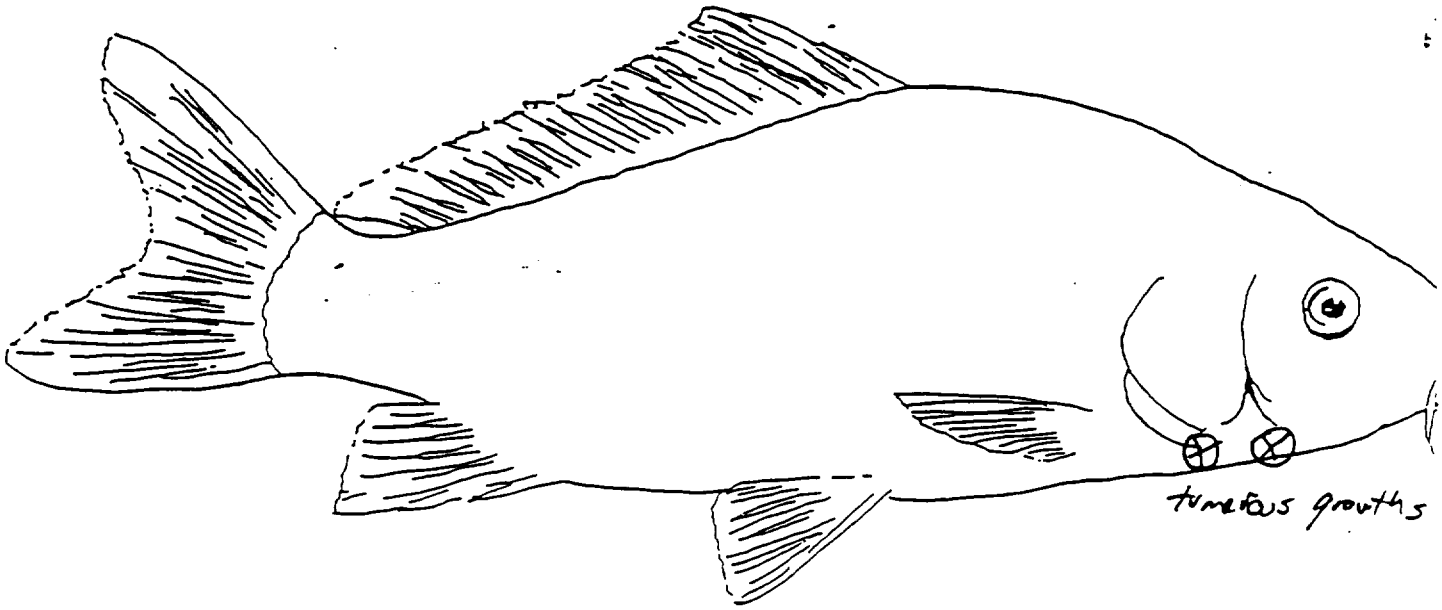
Collection Method

wrong side to see anomaly

Photographs: Yes No Frame No(s). Description

Age of Fish Spine, Scale, Ray Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K-40004-2-CP

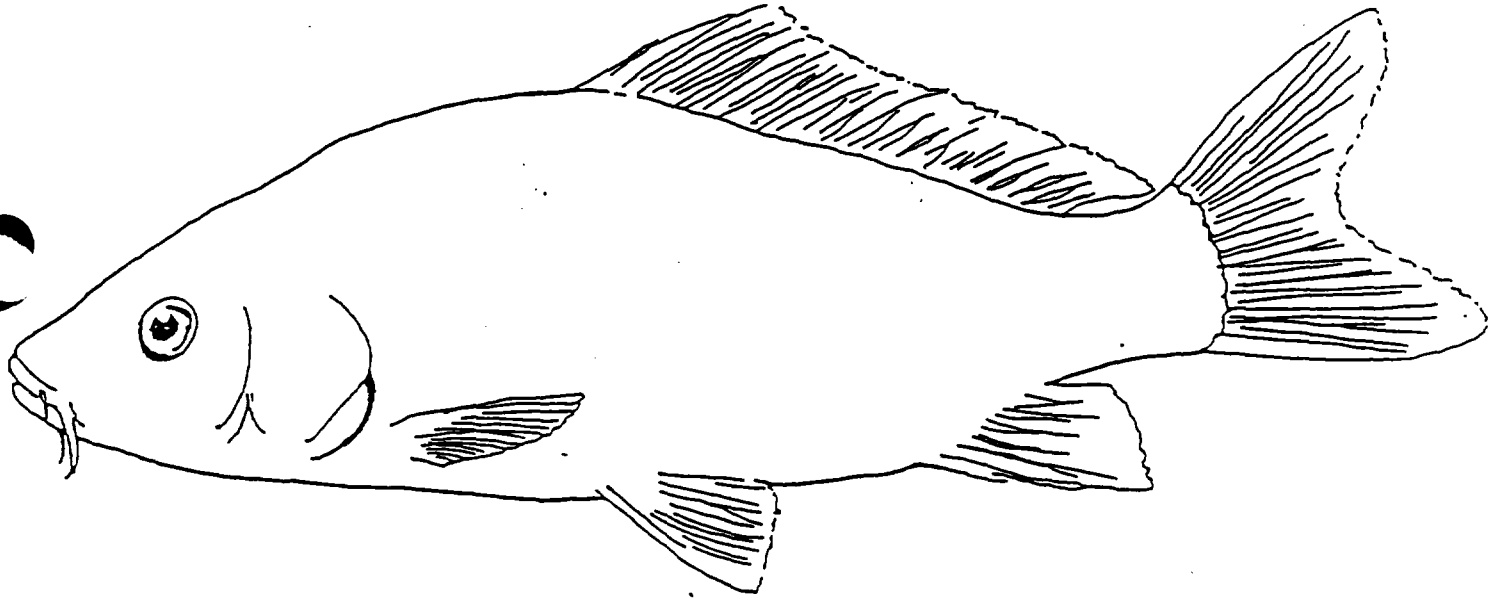
Collection Date _____ Length _____

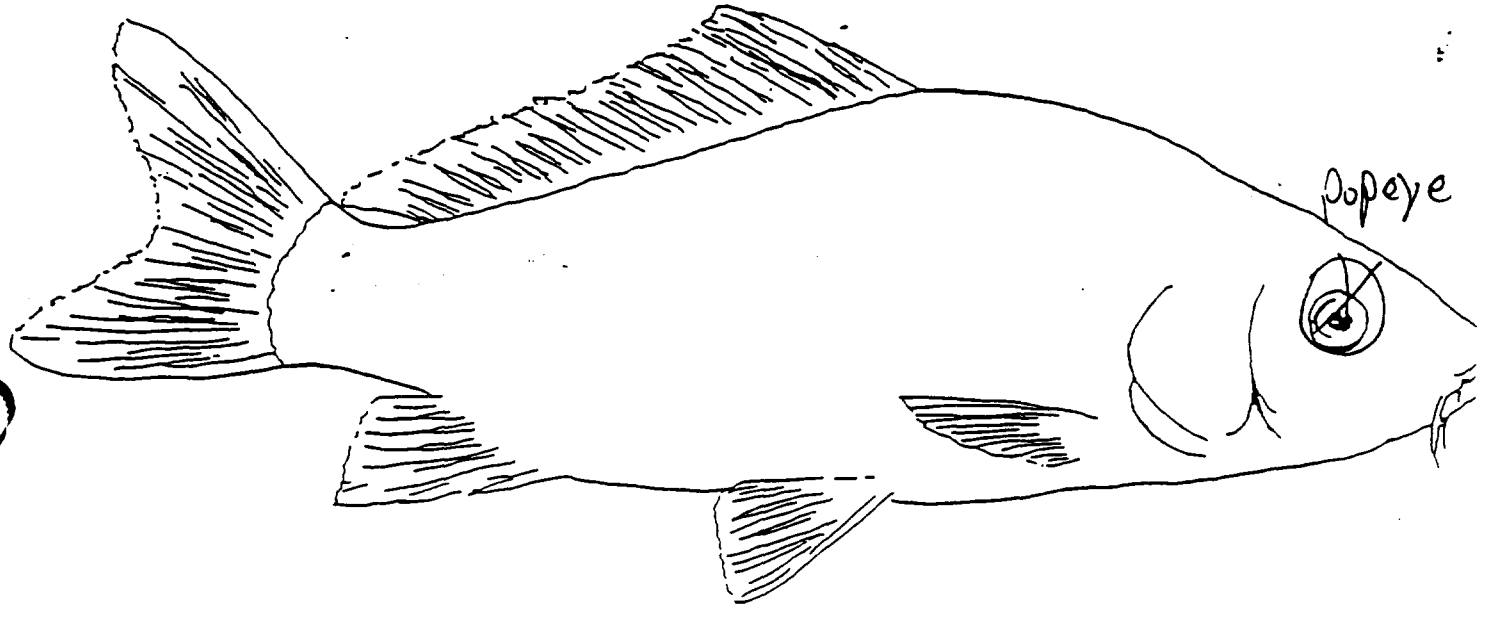
Collection Site _____ Weight _____

wrong side to see anomaly. Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Fish No (s). K-40005-2-CP

Species _____

Length _____

Collection Date _____

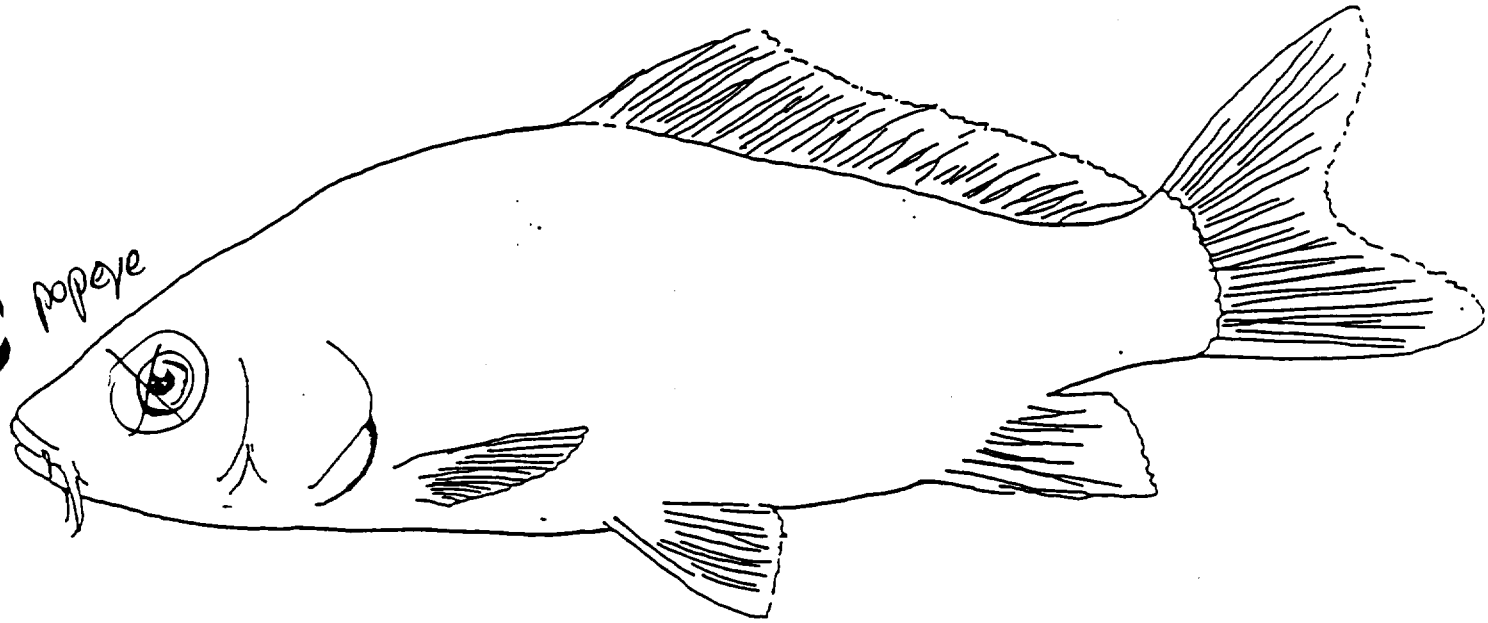
Weight _____

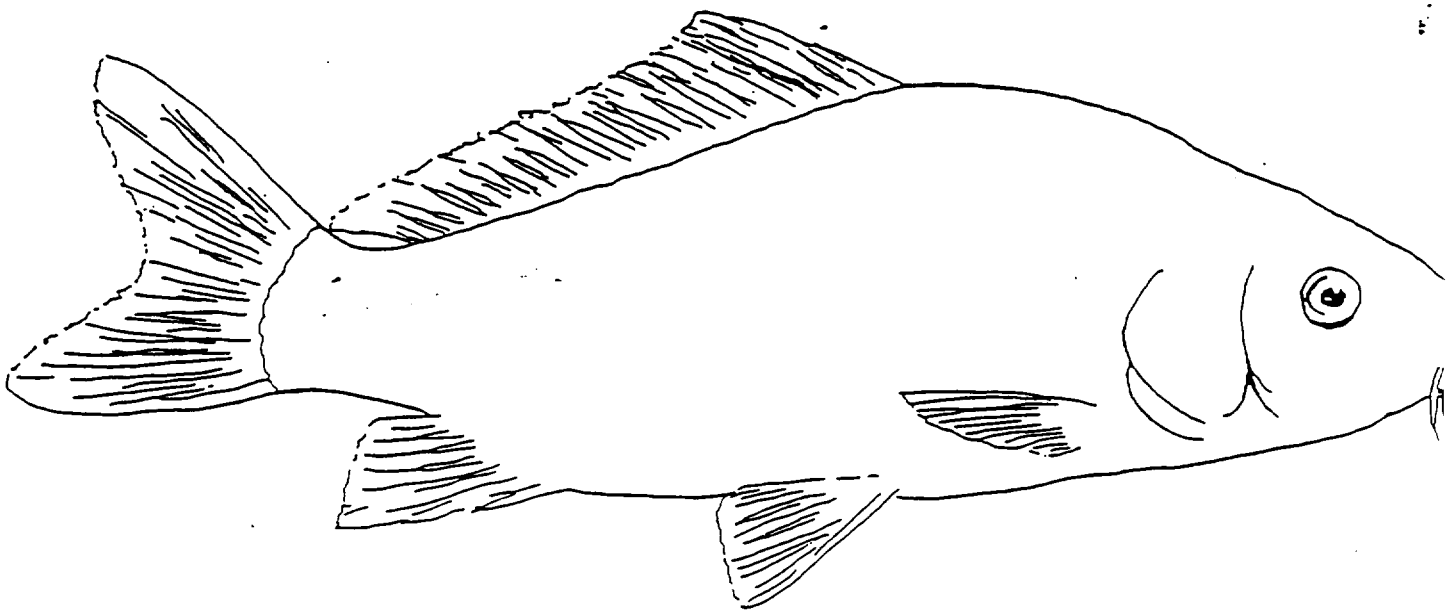
Collection Site _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). IK-40011-2-CP

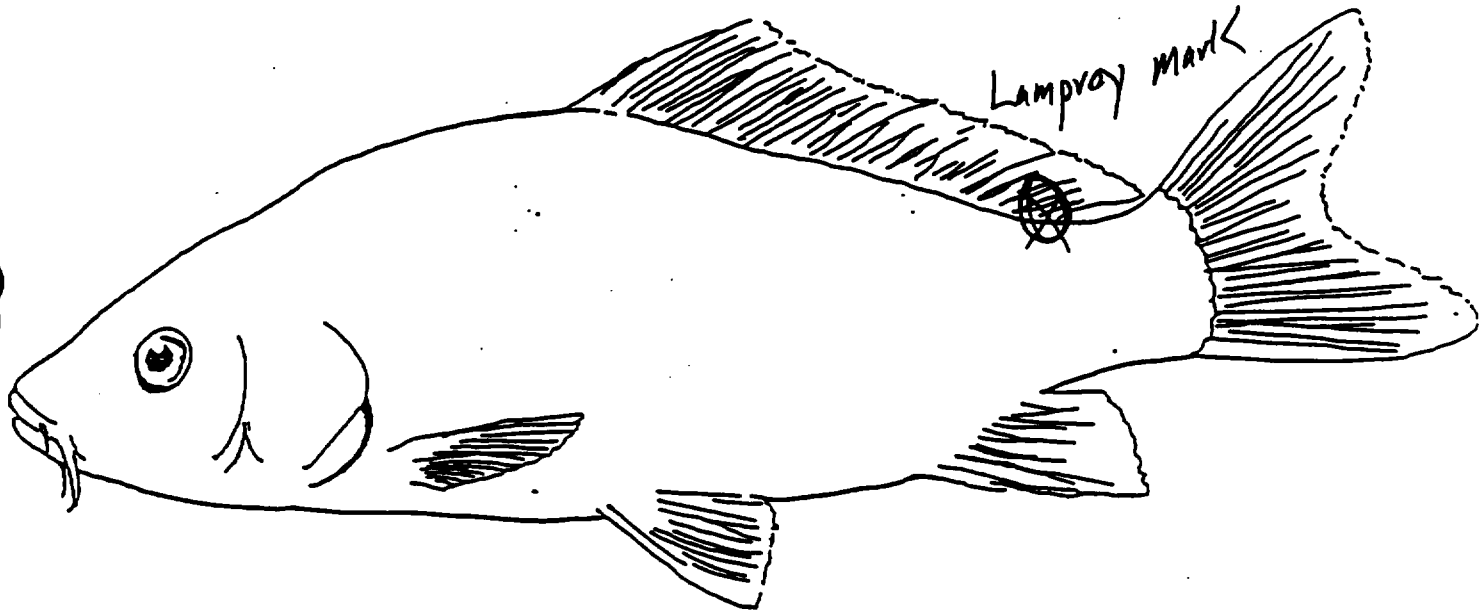
Collection Date _____ Length _____

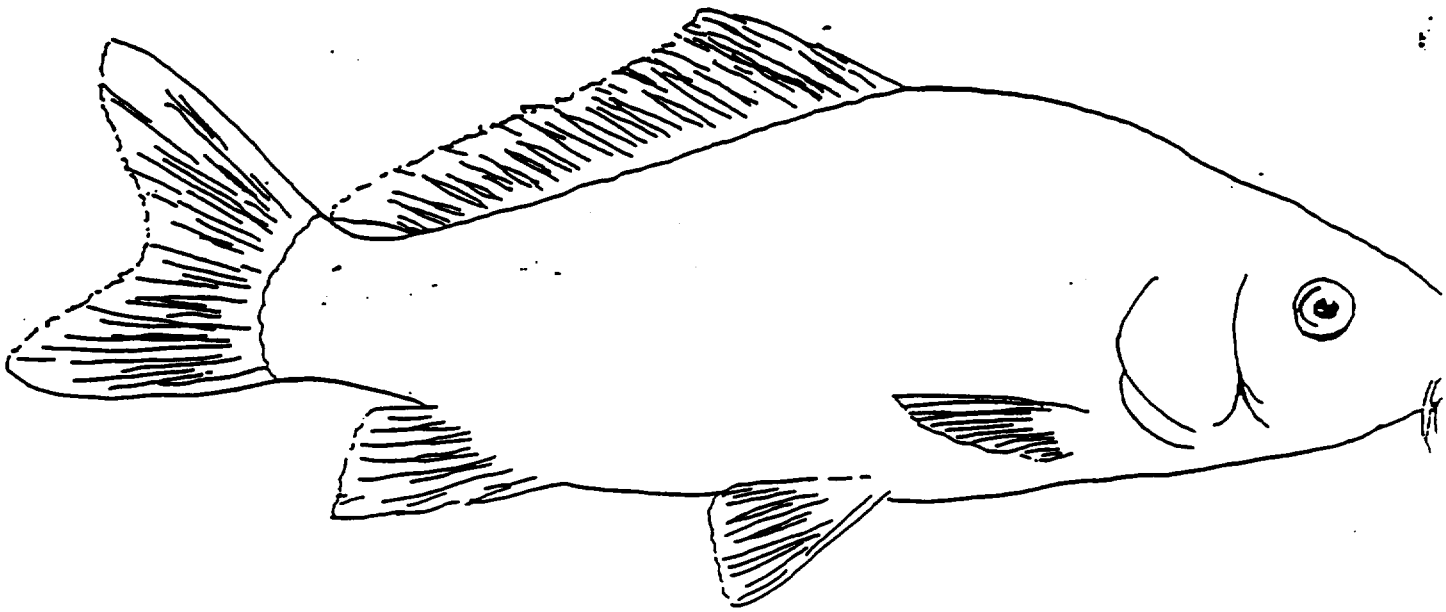
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40067-6-CP

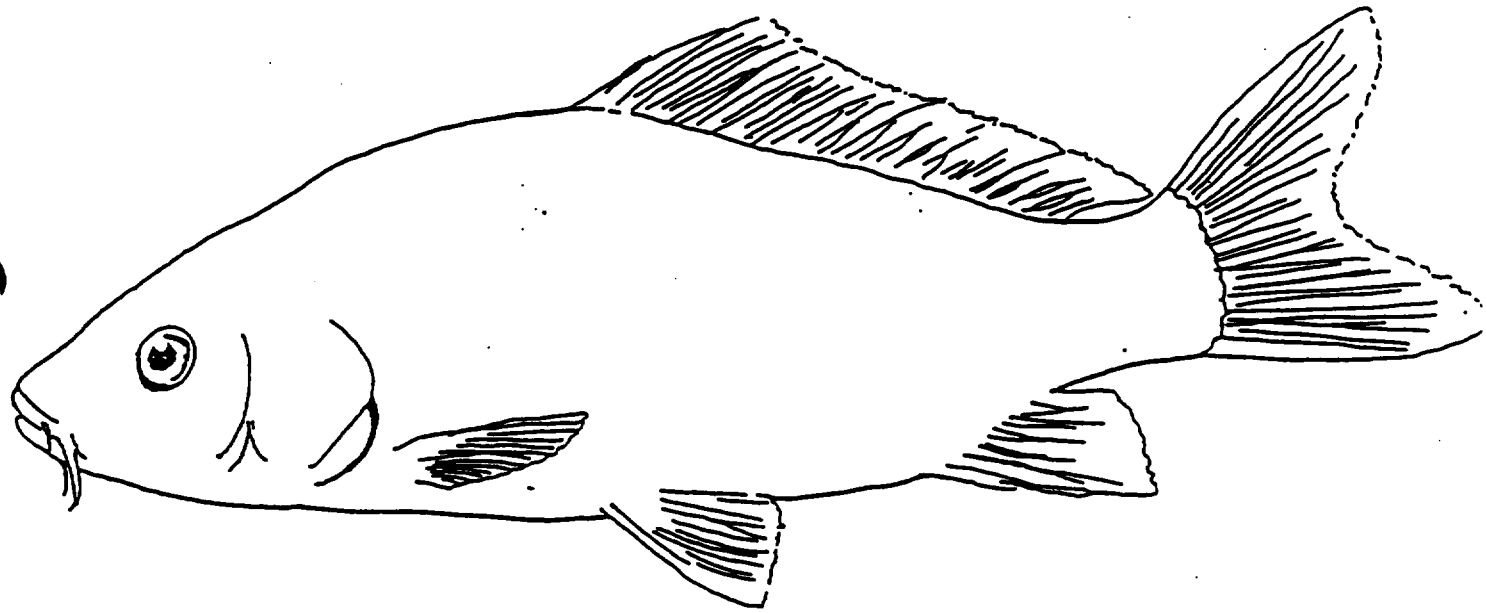
Collection Date _____ Length _____

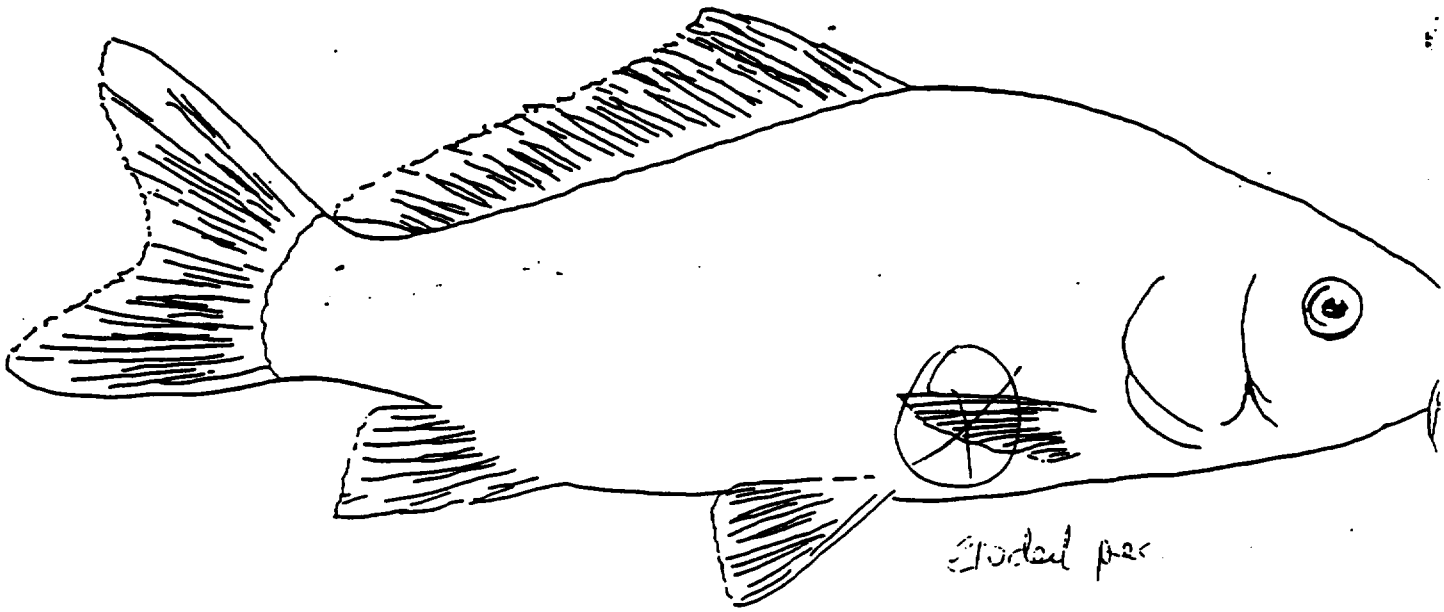
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40B6-9-CP

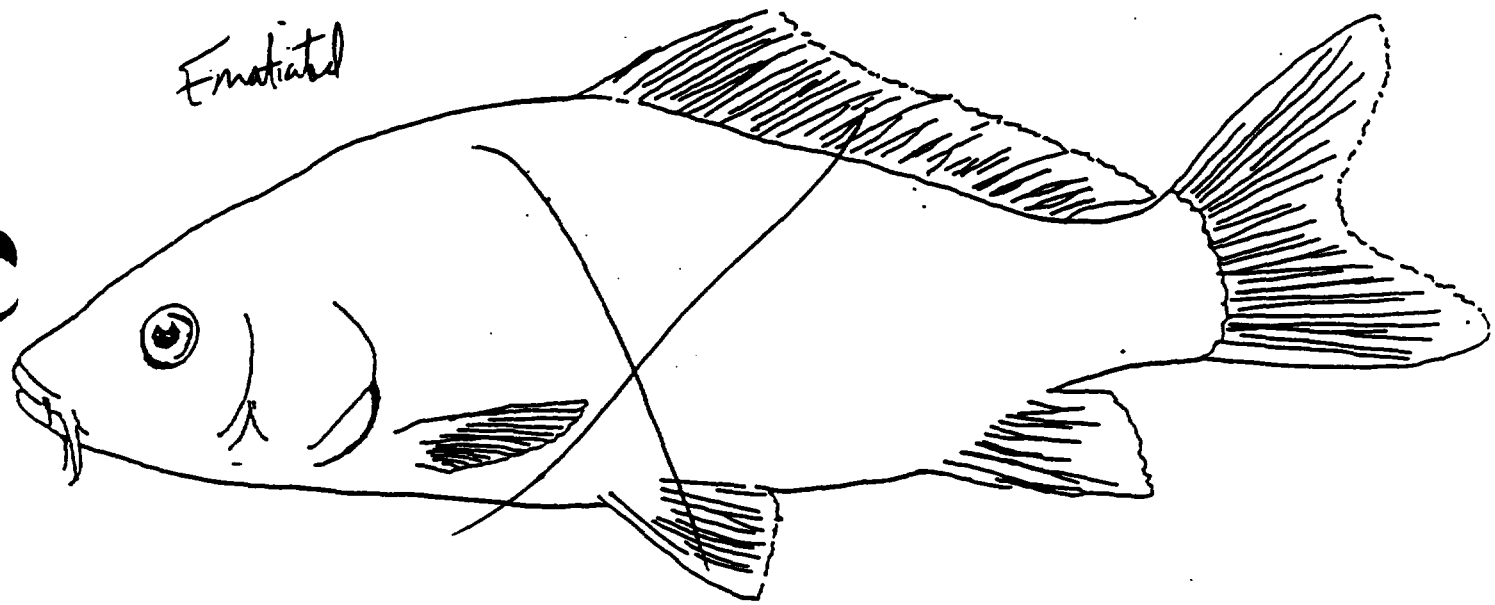
Collection Date _____ Length _____

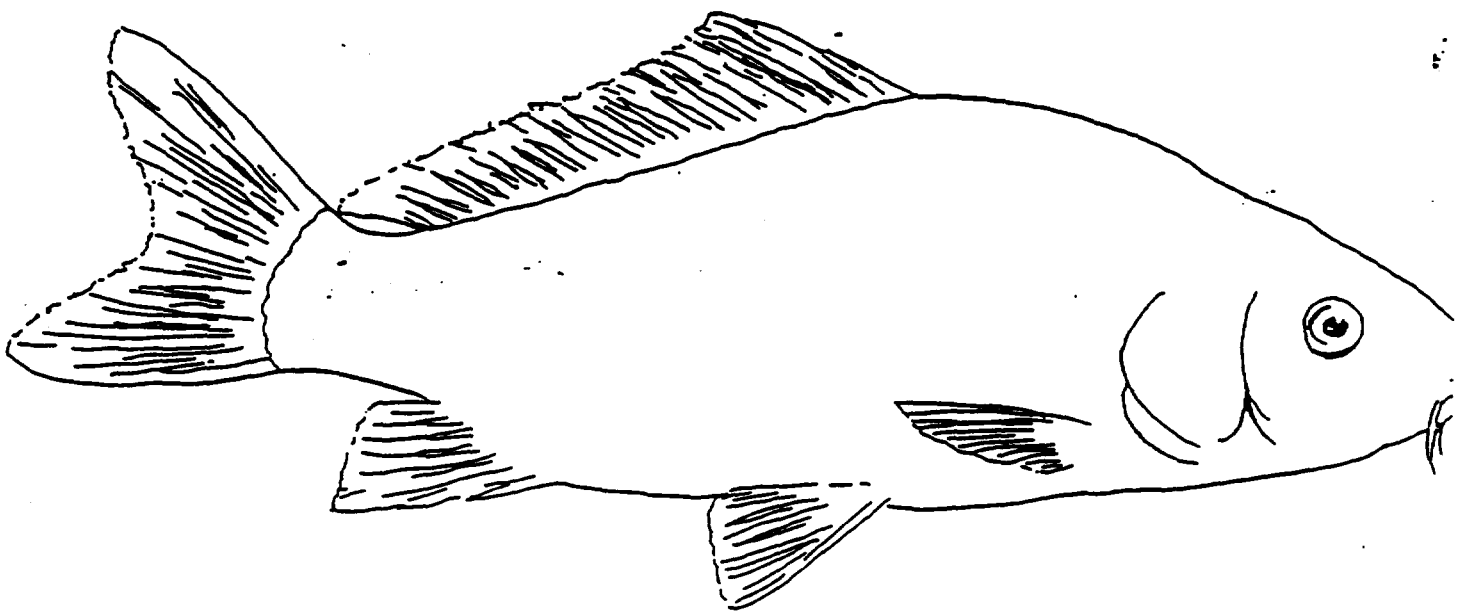
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





Roll #8
photo #23

ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40167-10-CP

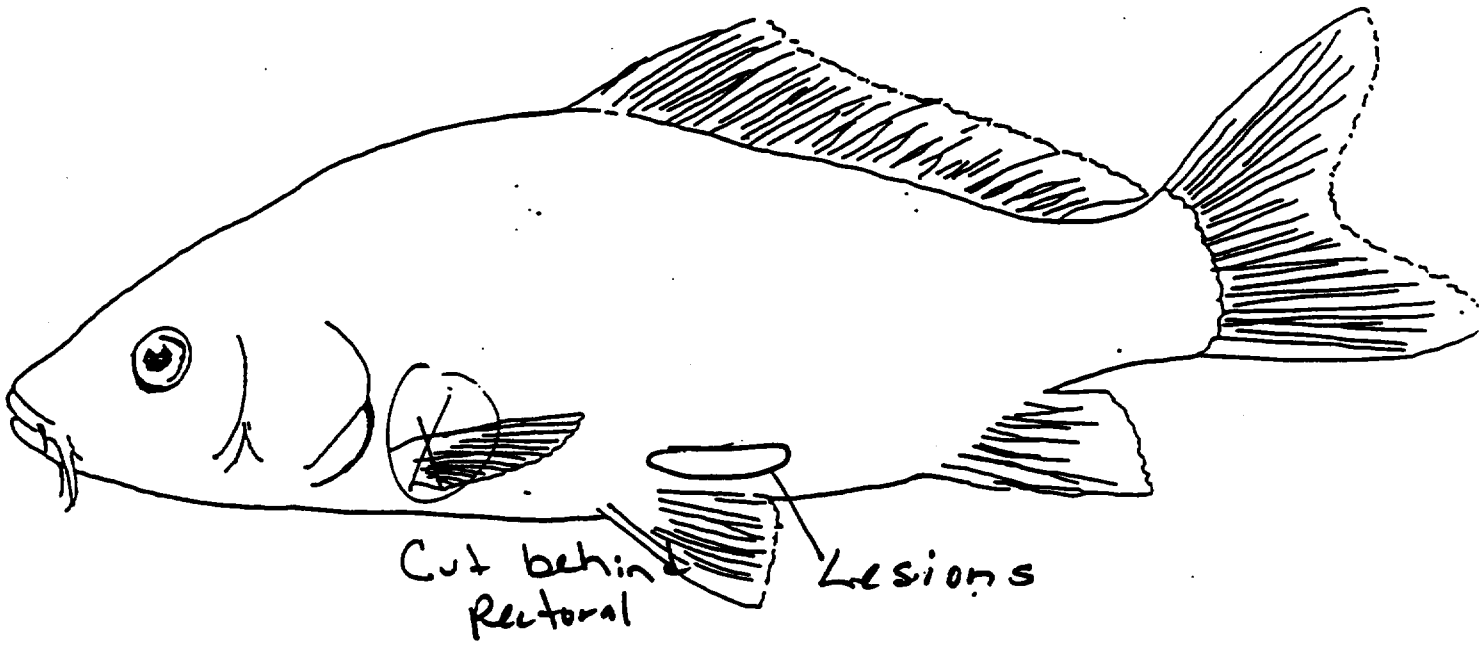
Collection Date _____ Length 75 cm

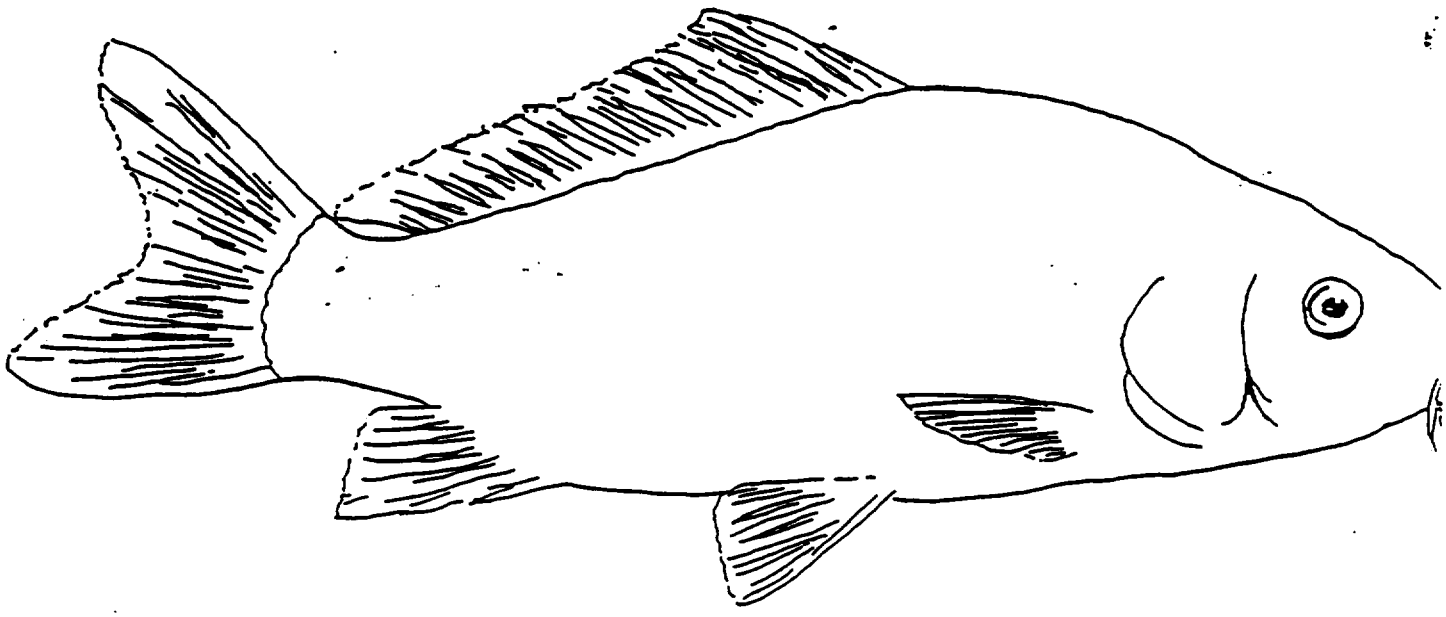
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40270-7-CP

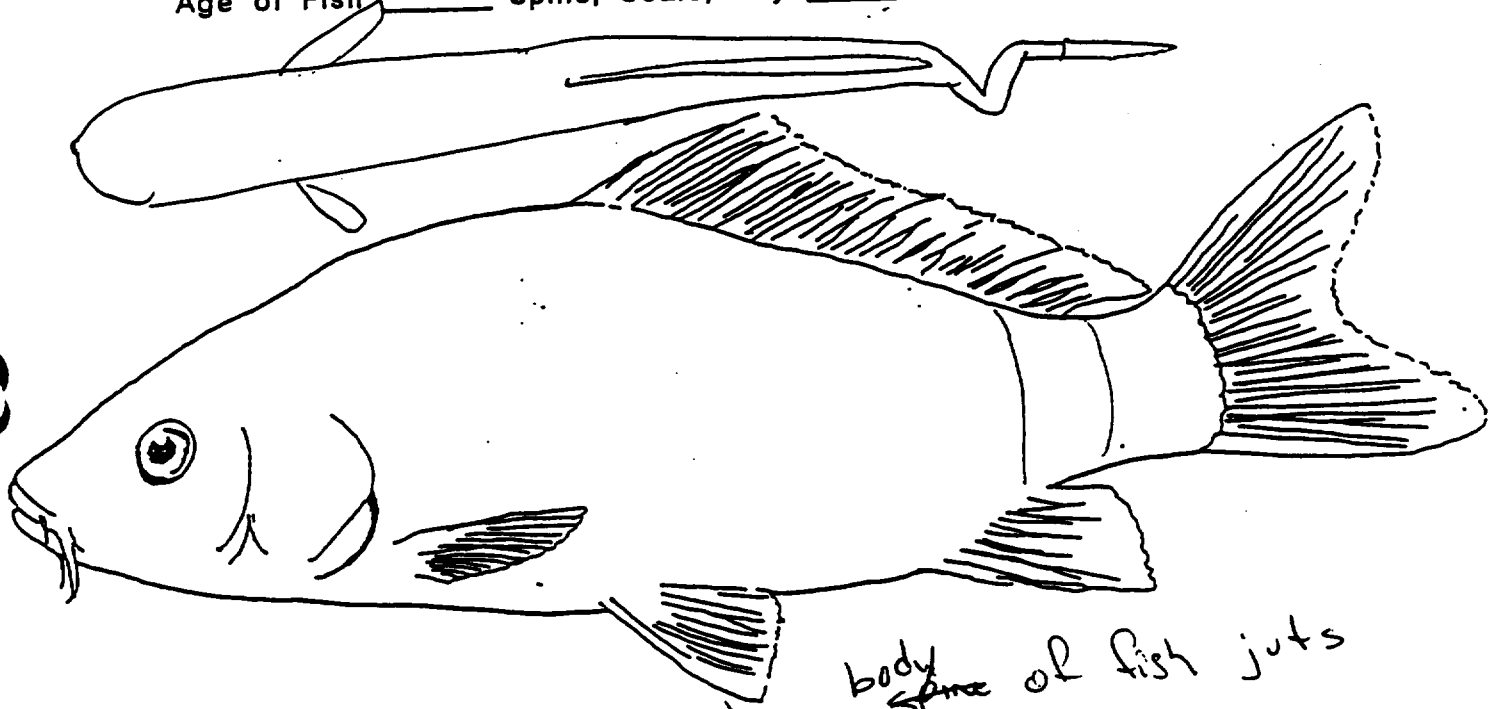
Collection Date _____ Length _____

Collection Site _____ Weight _____

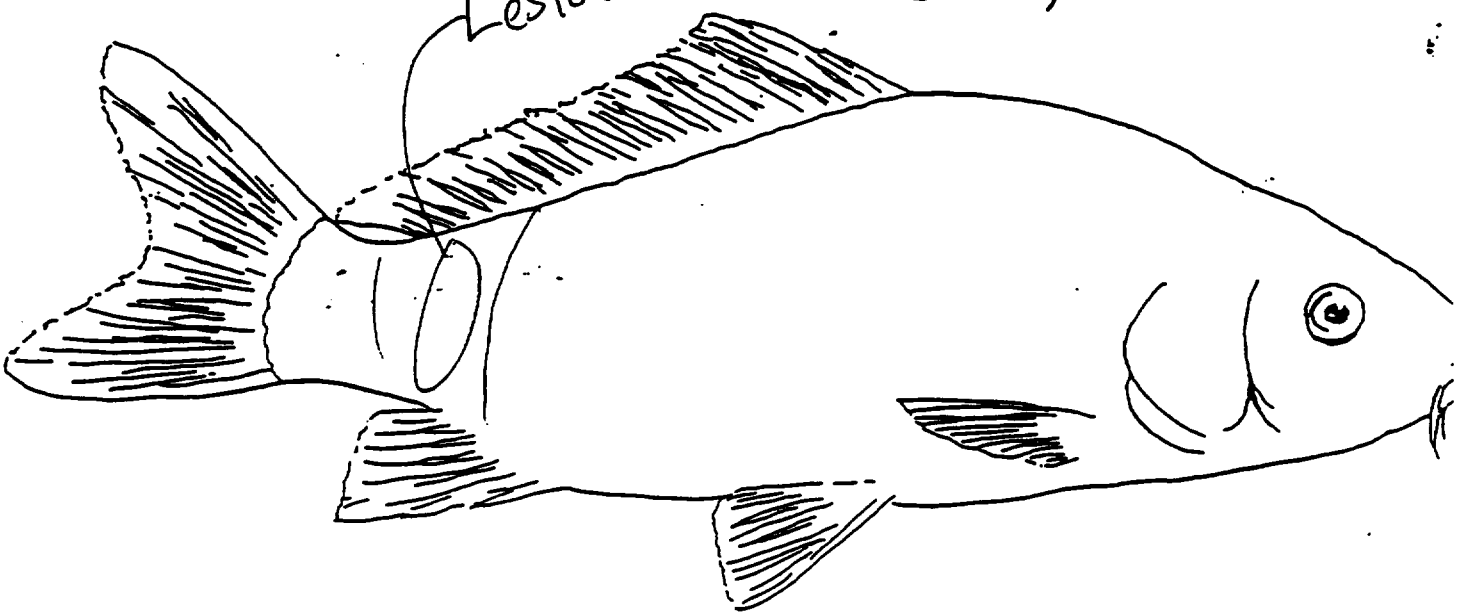
Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



Lesion where body ~~spine~~ of fish juts sideways



ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K-400~~0~~15 - 2-5B

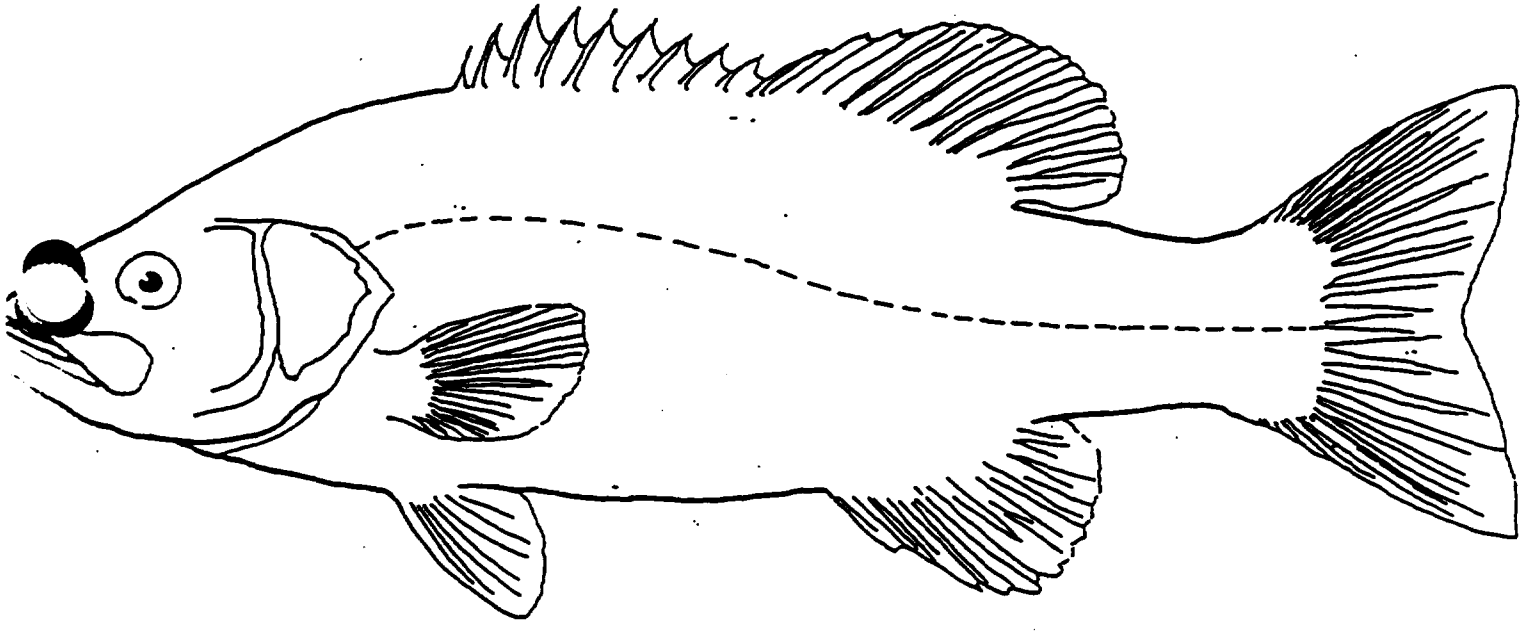
Collection Date _____ Length _____

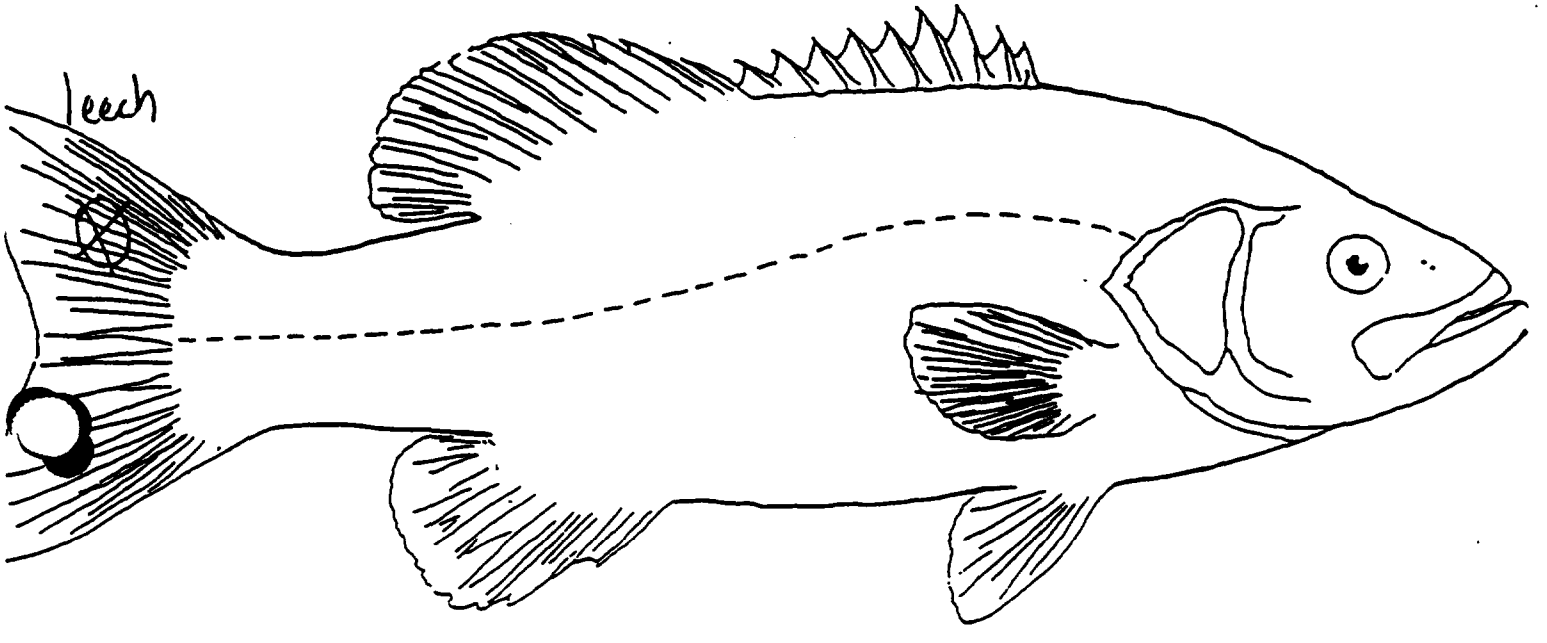
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K-40050-3-5B

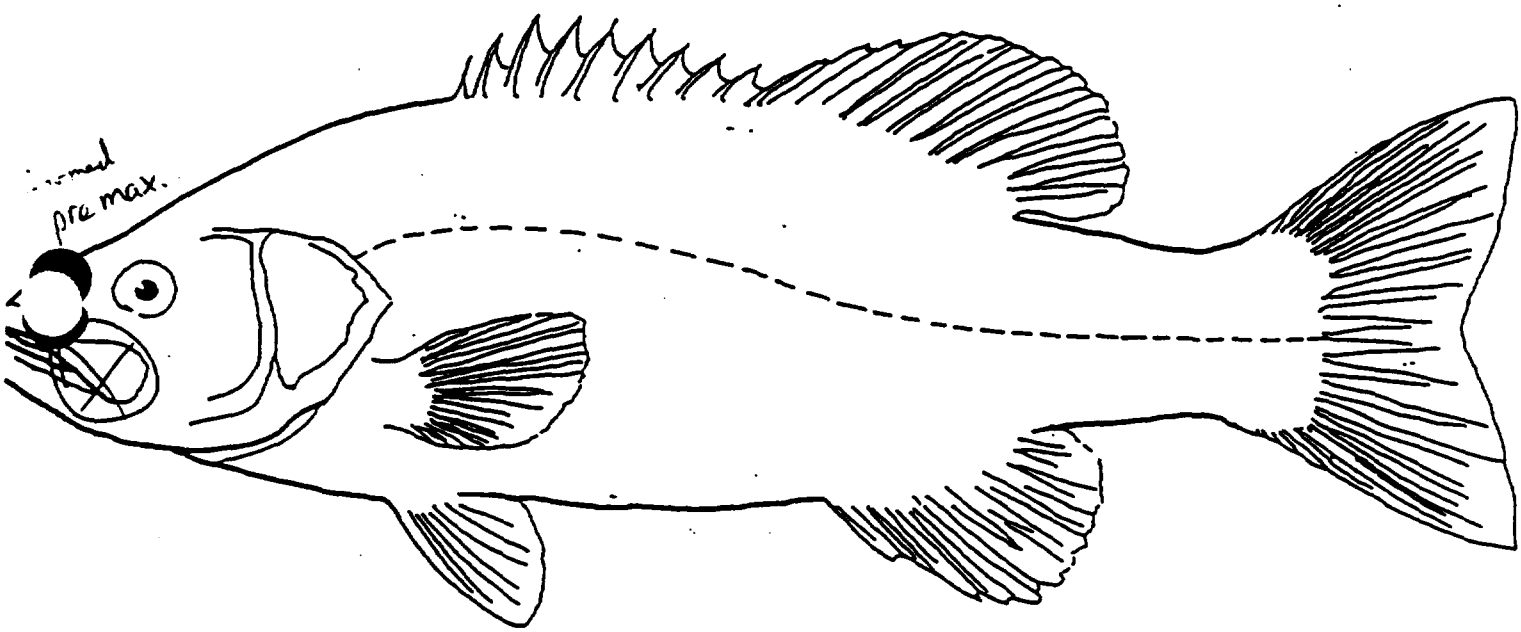
Collection Date _____ Length _____

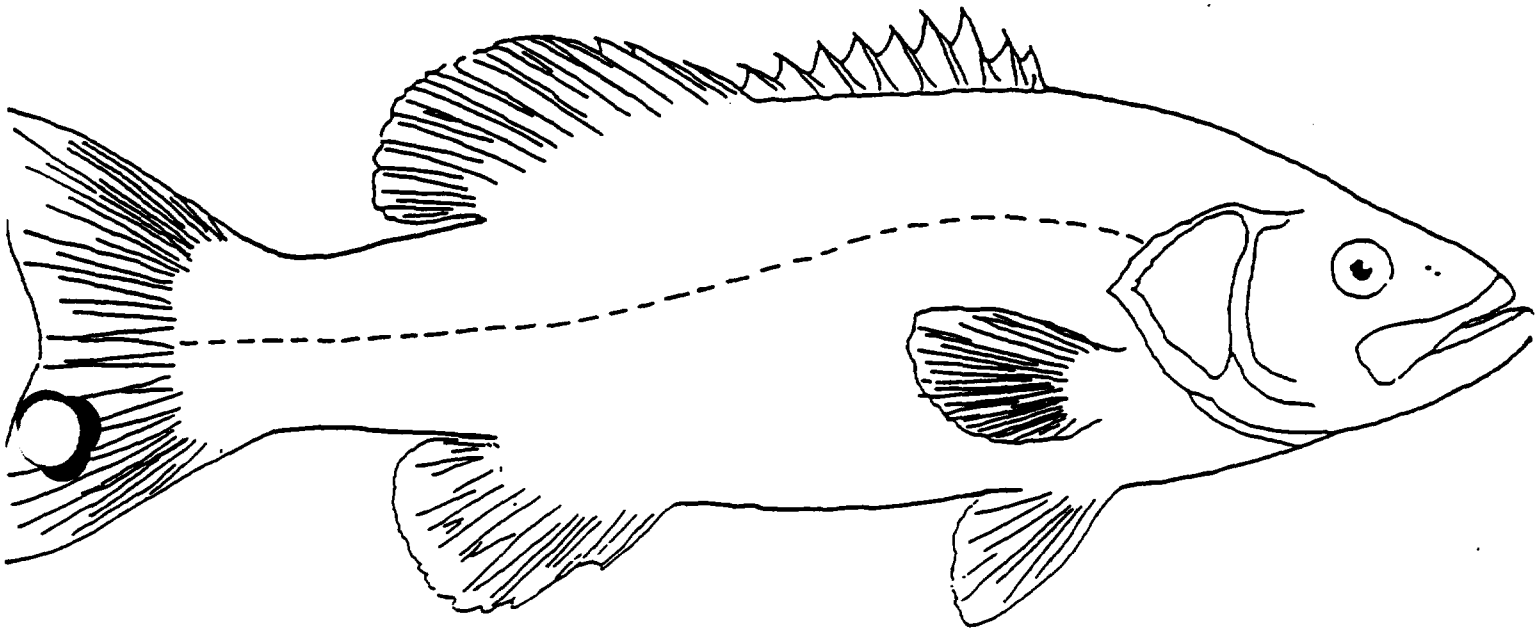
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K-4 0052-3-5B

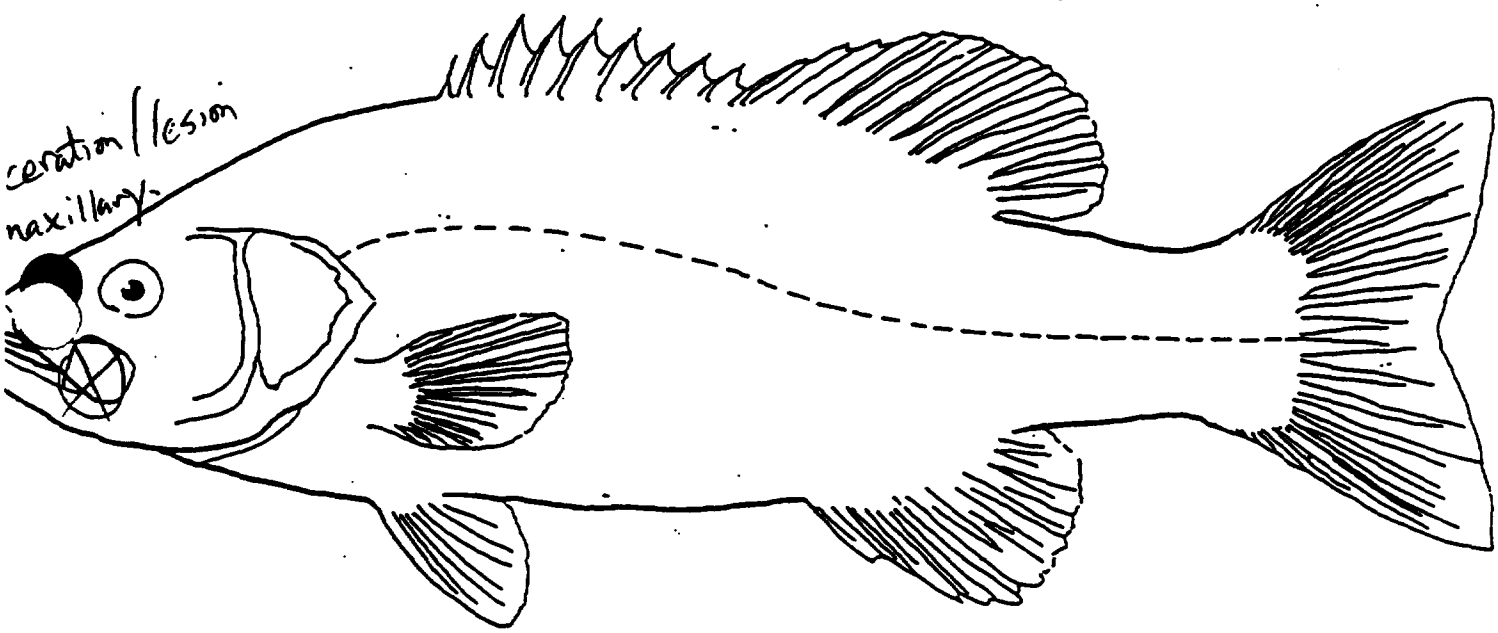
Collection Date _____ Length _____

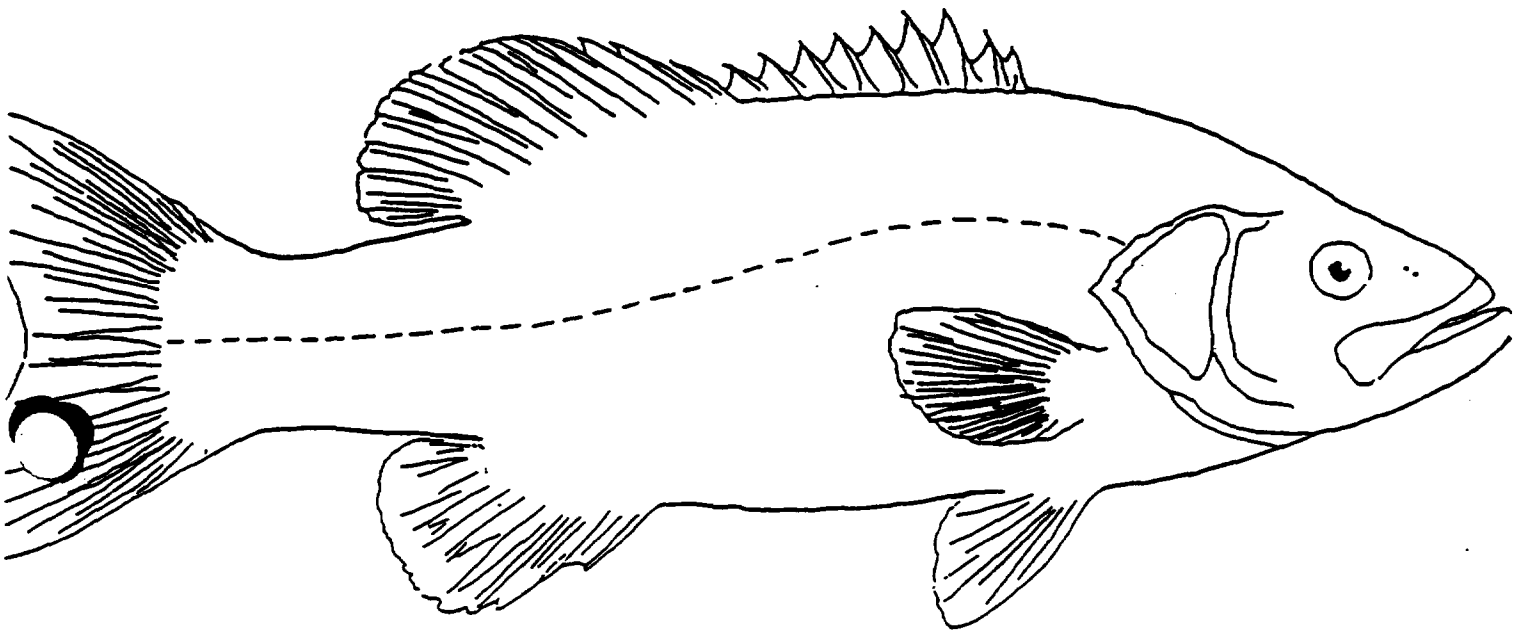
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40105-4-5B

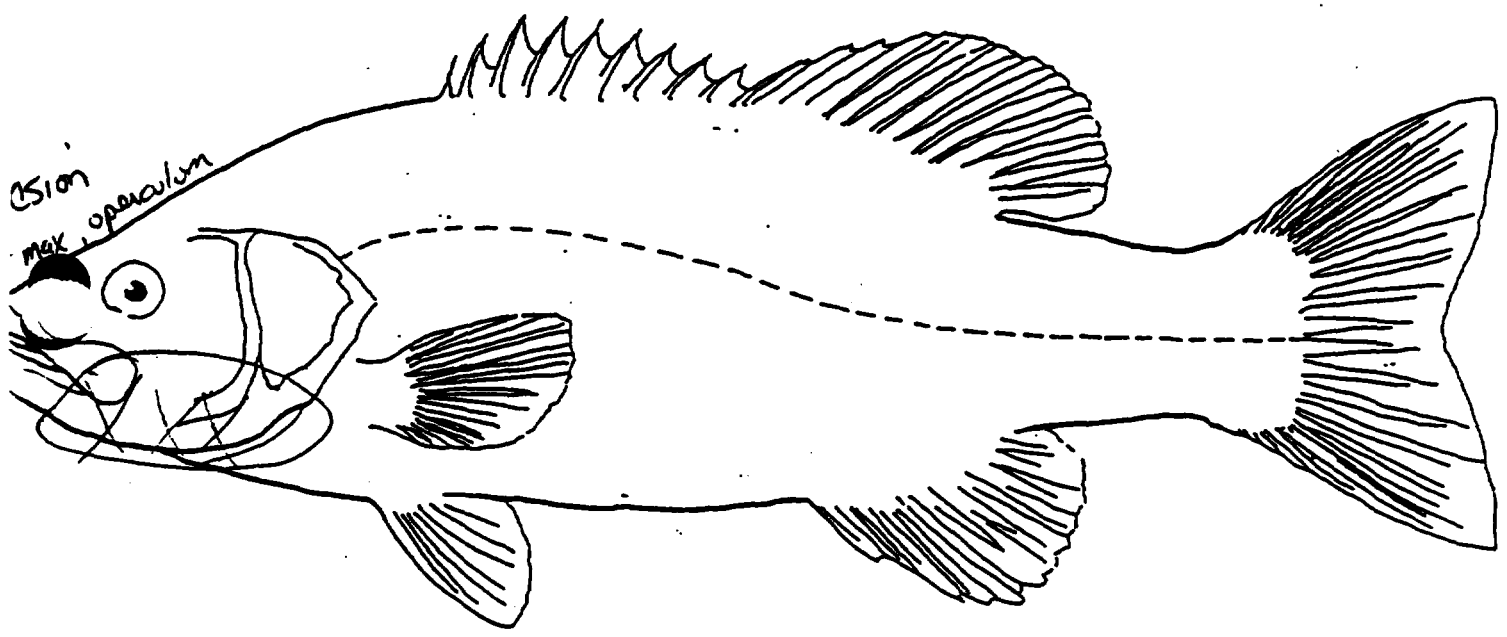
Collection Date _____ Length _____

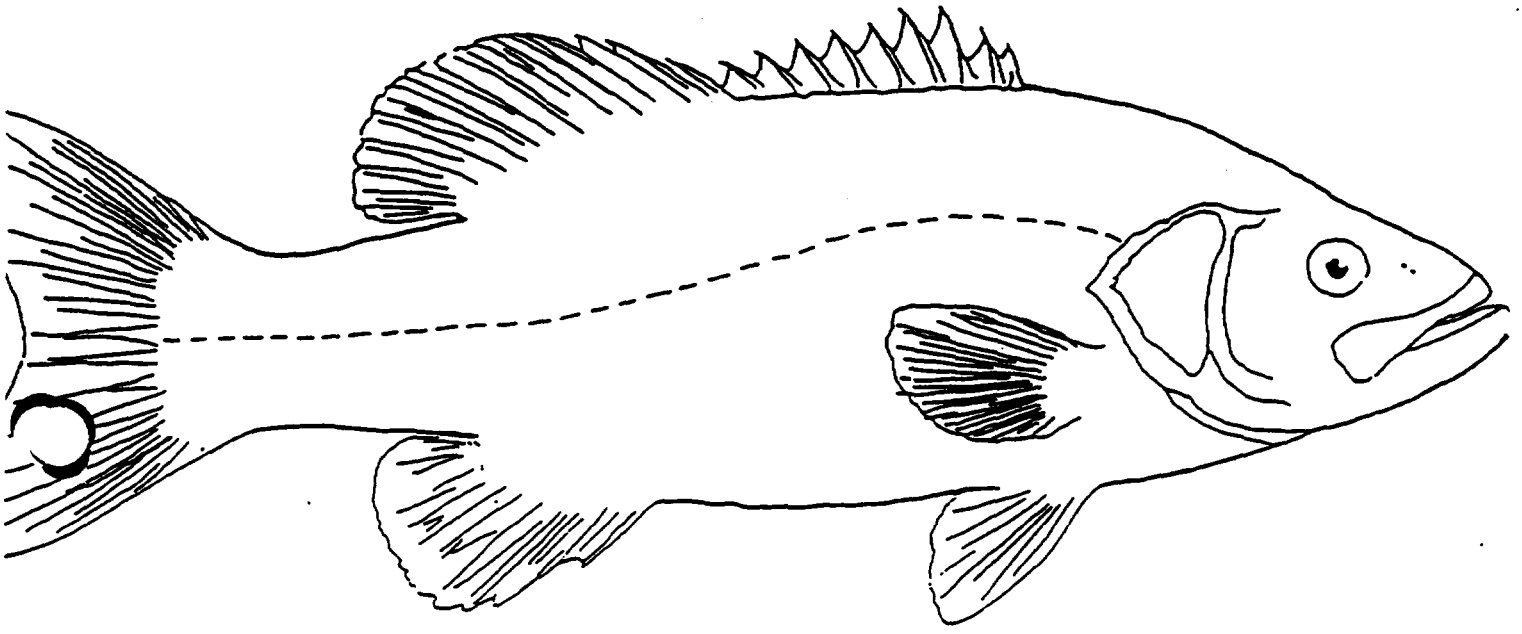
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40110-4-5B

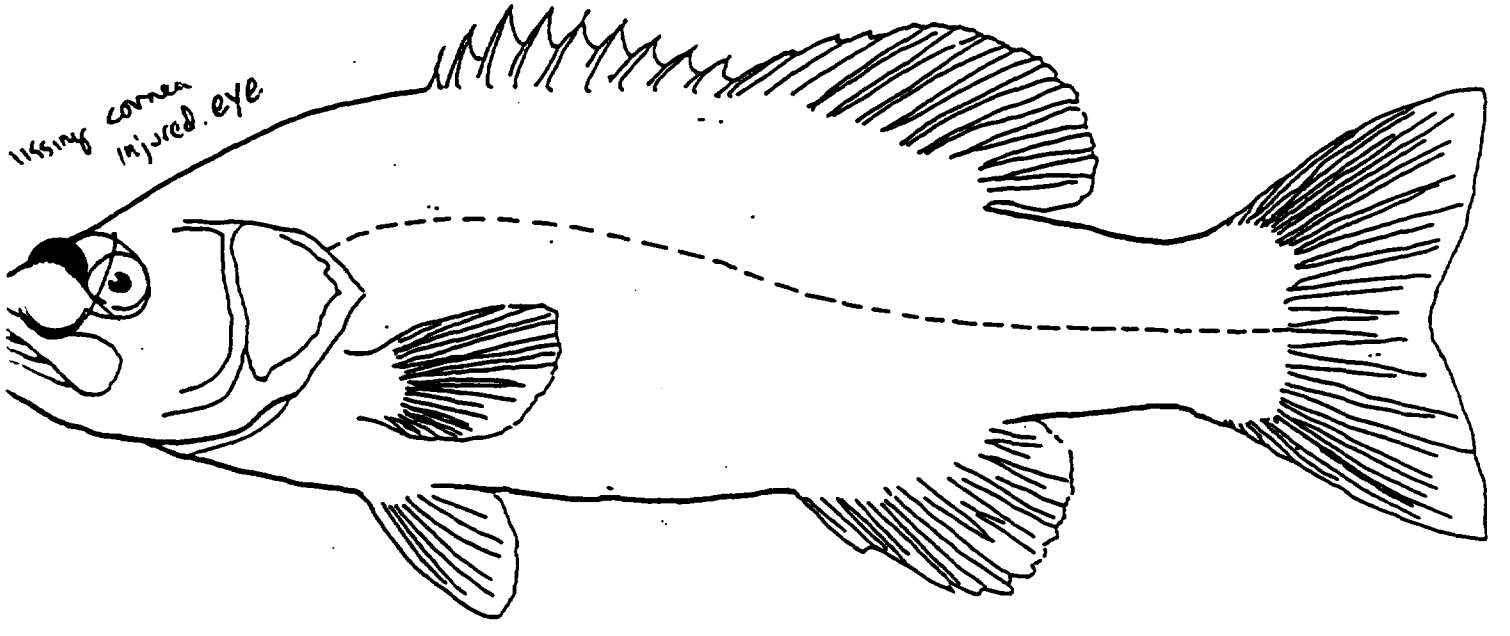
Collection Date _____ Length _____

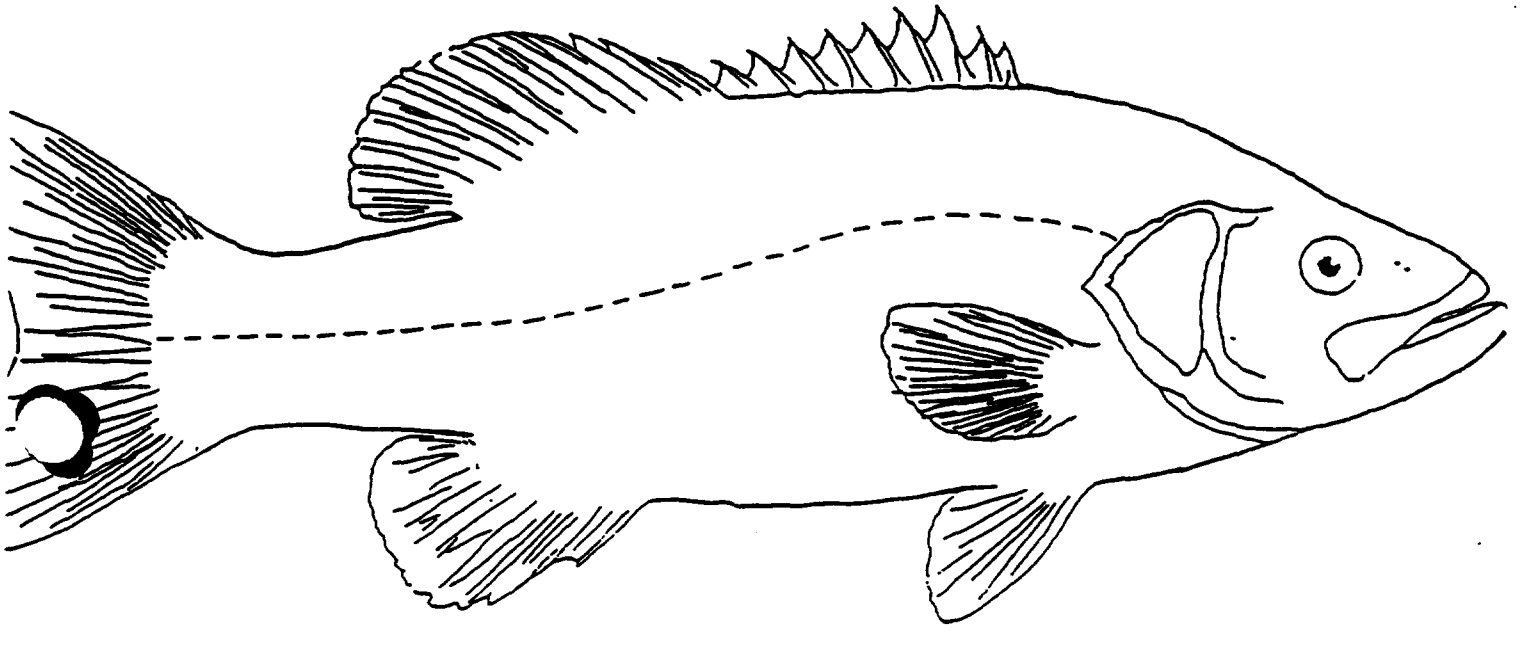
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K-40159-10-5B

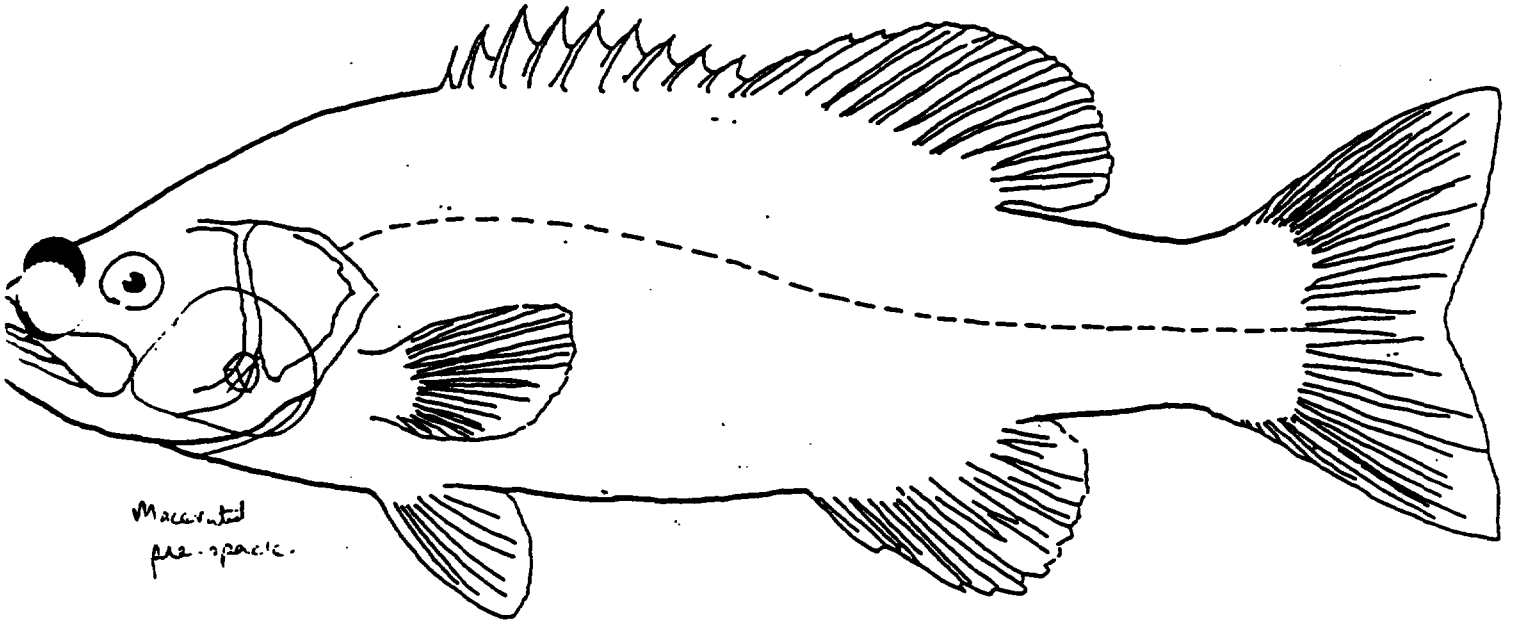
Collection Date _____ Length _____

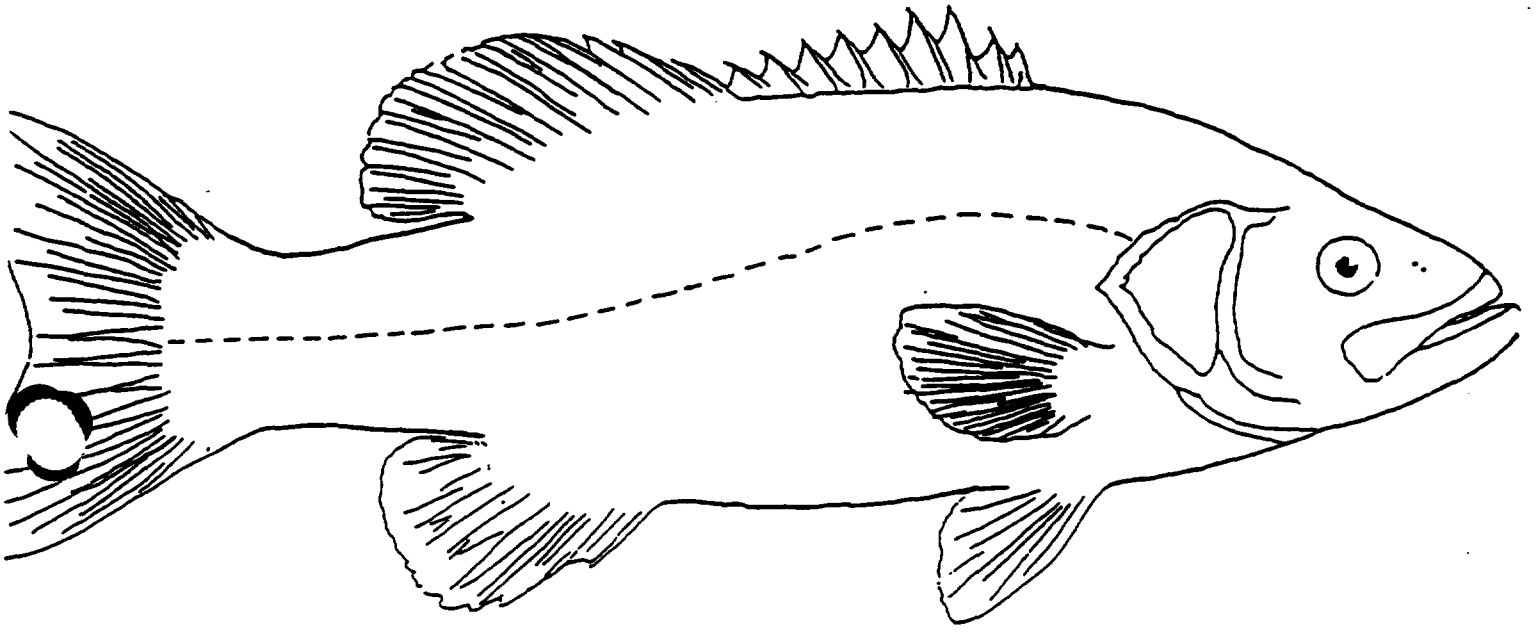
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40245-1-

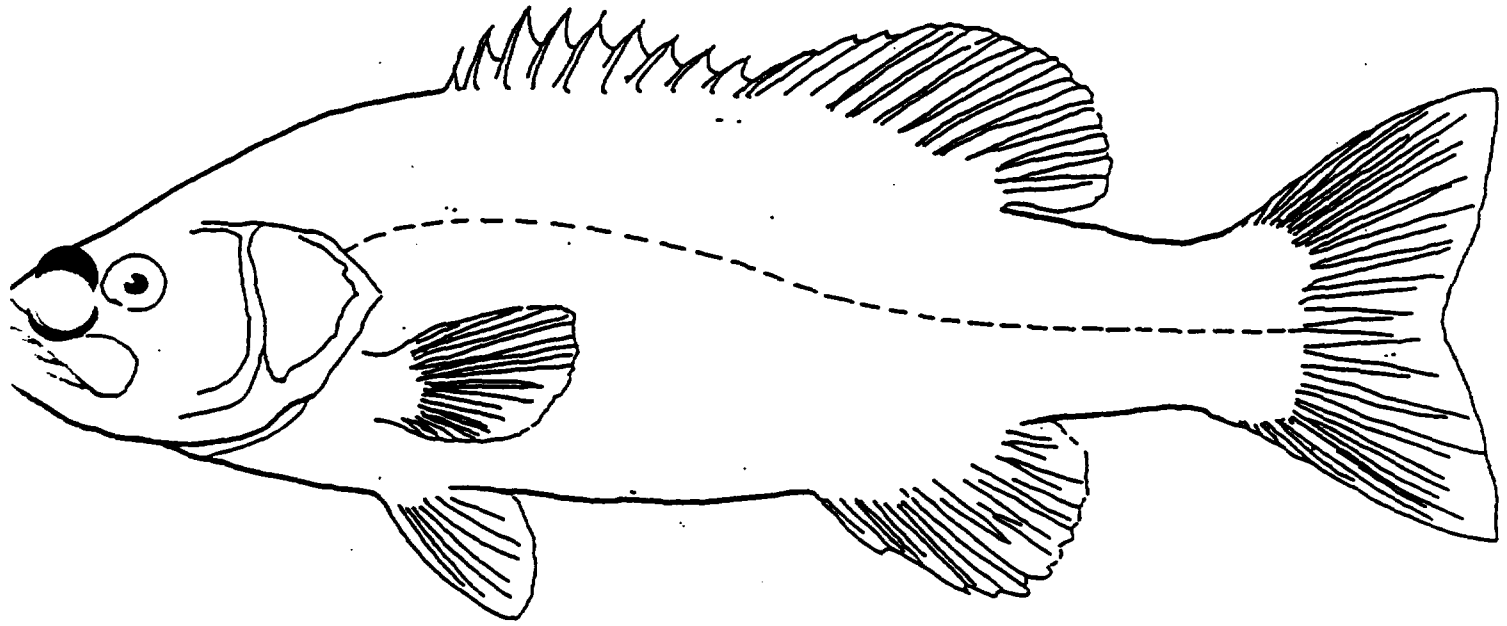
Collection Date _____ Length _____

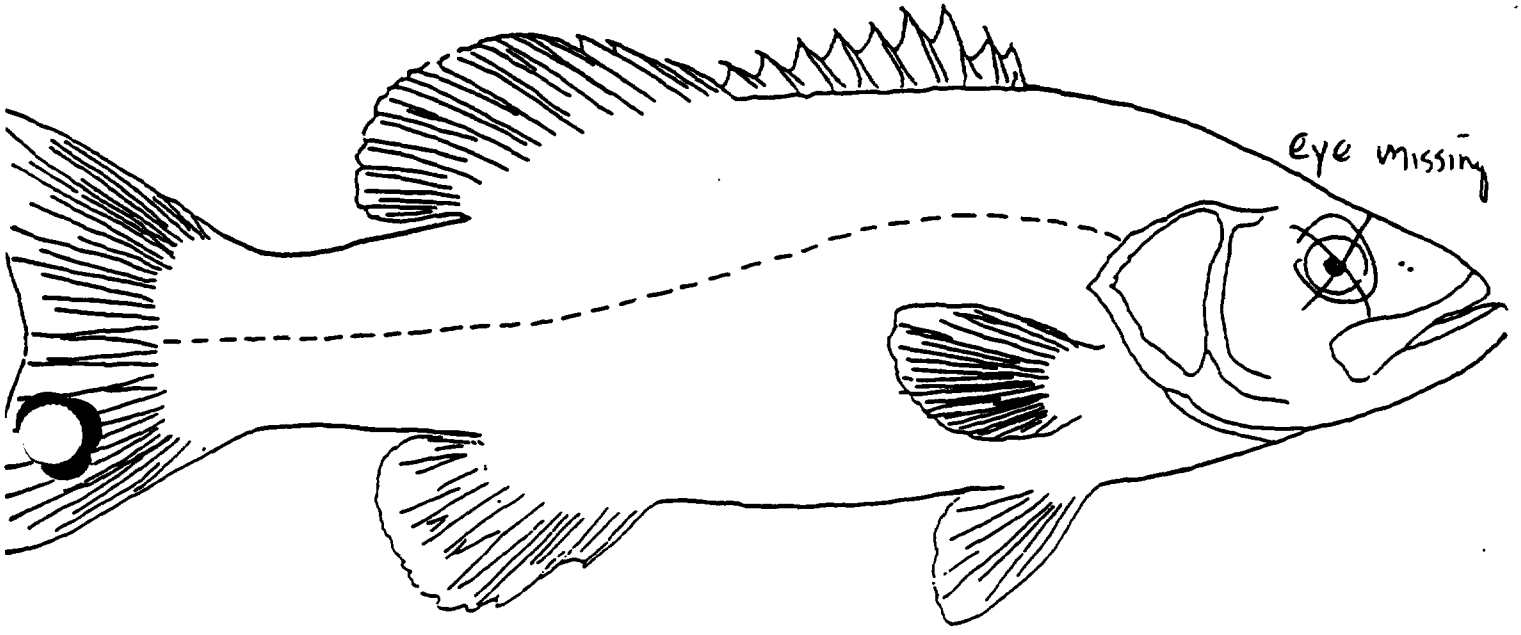
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-5

SNAPPING TURTLE CONDITION SURVEY FORM

Species _____ Turtle No(s). K-42001-5-5T

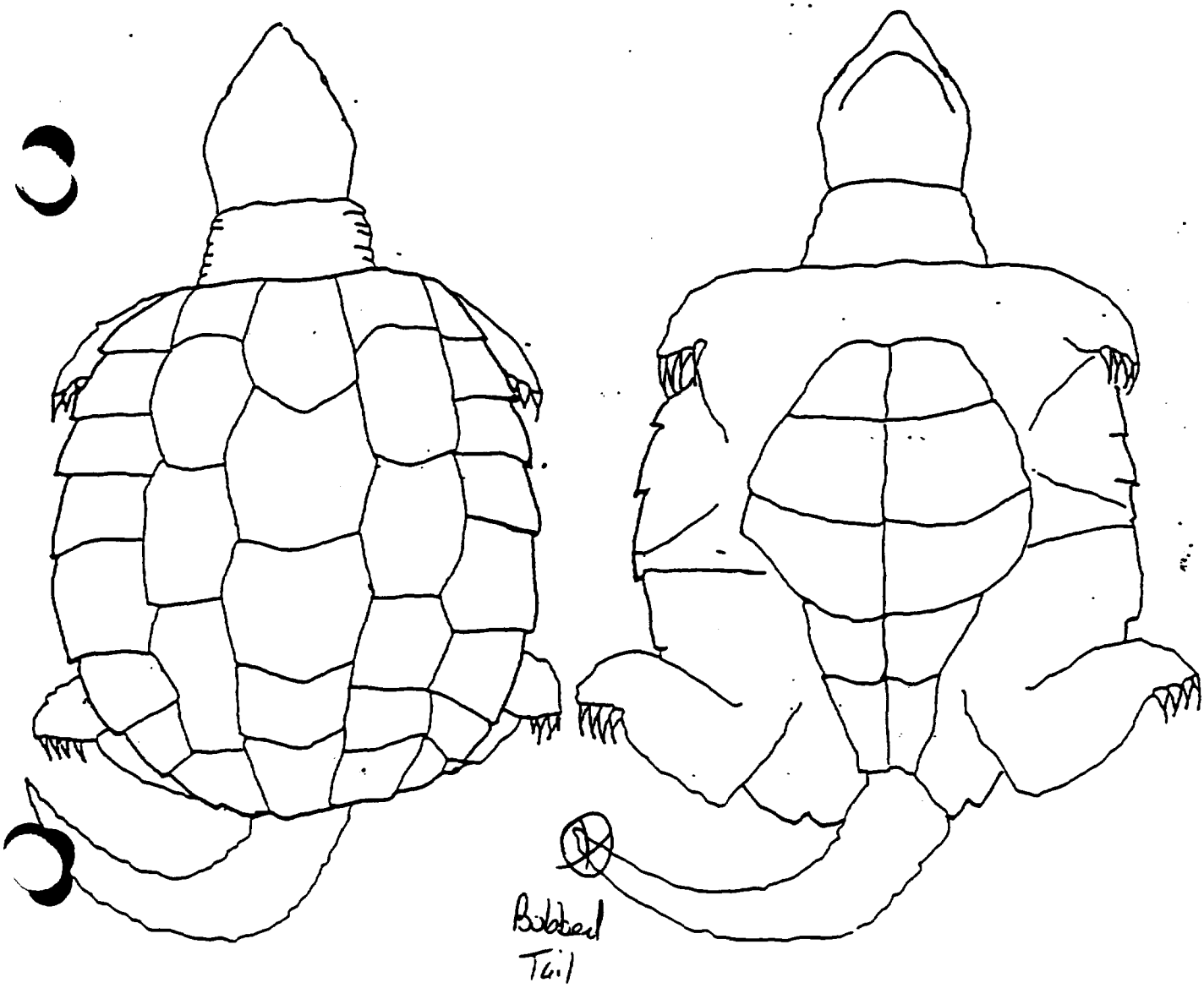
Collection Date _____ Carapace Length _____

Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Turtle _____ _____ Preserved: Yes No



ATTACHMENT A-5

SNAPPING TURTLE CONDITION SURVEY FORM

Species _____ Turtle No(s). K-42006-5-ST

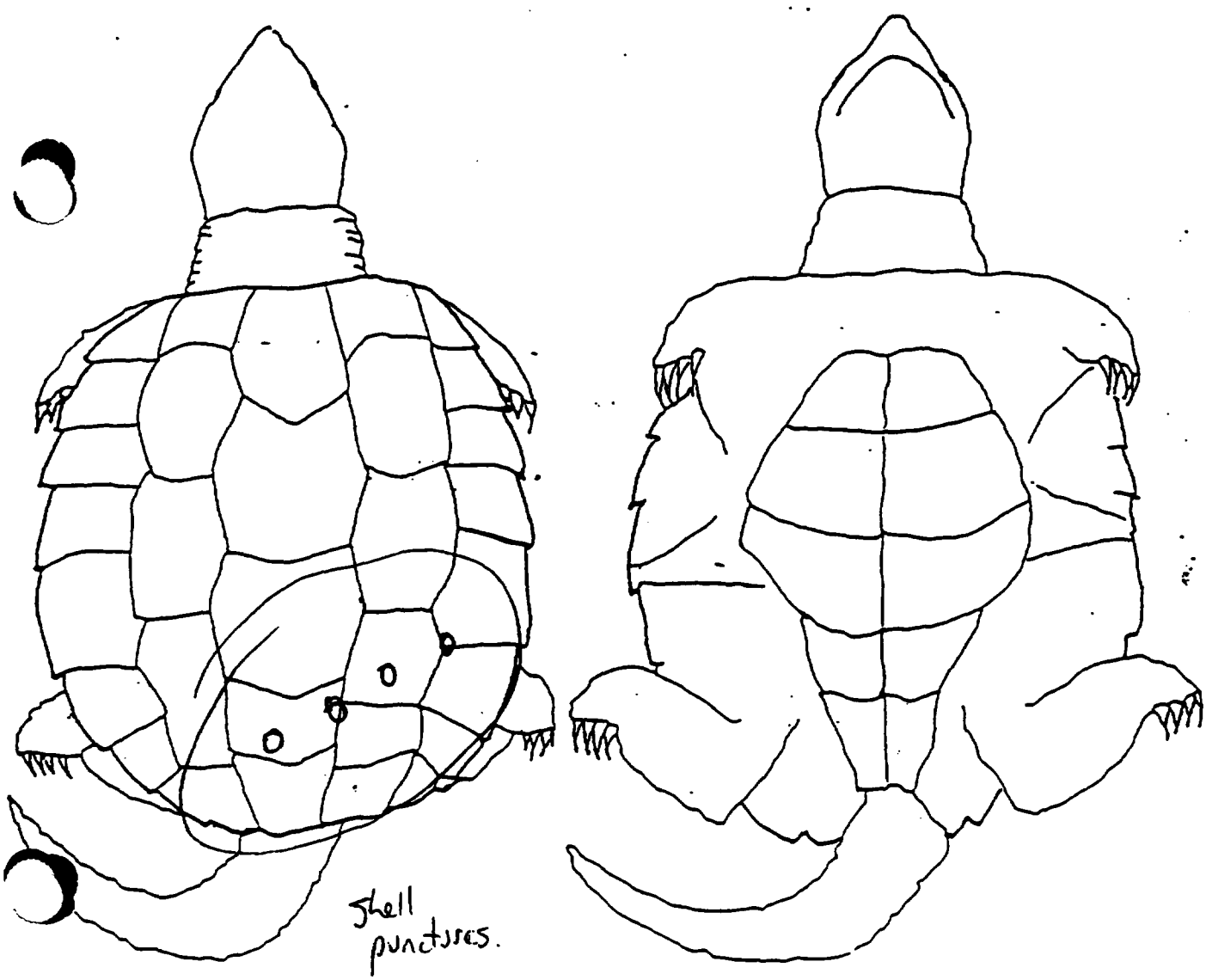
Collection Date _____ Carapace Length _____

Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Frame No(s). _____ Description _____

Age of Turtle _____ _____ Preserved: Yes No



ATTACHMENT A-5

SNAPPING TURTLE CONDITION SURVEY FORM

Species _____ Turtle No(s). K42007-5-ST

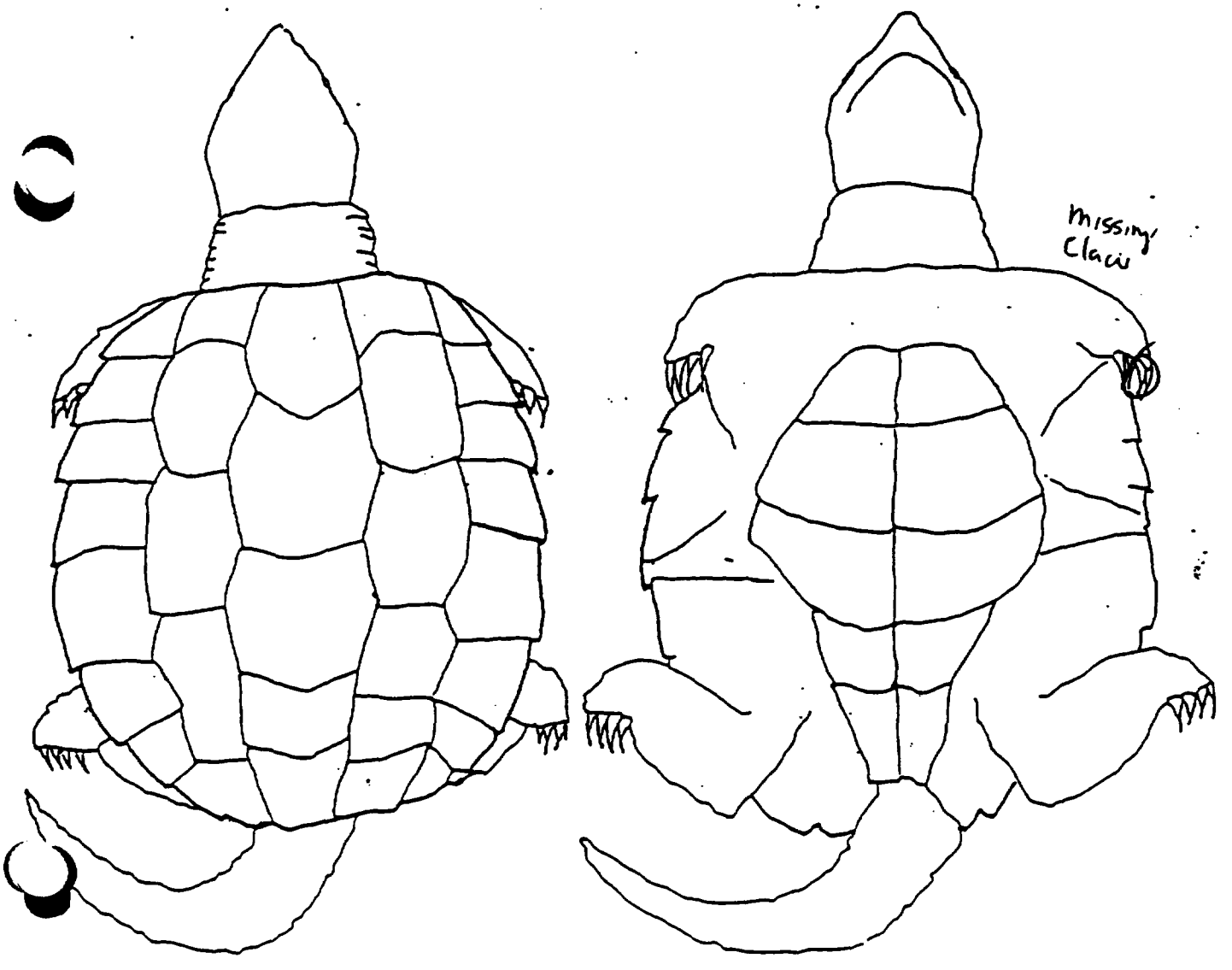
Collection Date _____ Carapace Length _____

Collection Site _____ Weight _____

Collection Method _____

Photographs (Yes) No Frame No(s). _____ Description _____

Age of Turtle _____ _____ Preserved: Yes No



ATTACHMENT A-5

SNAPPING TURTLE CONDITION SURVEY FORM

Species Snapping Turtle

Turtle No(s). K42021-10-ST

Collection Date _____

Carapace Length _____

Collection Site Allyn Dam

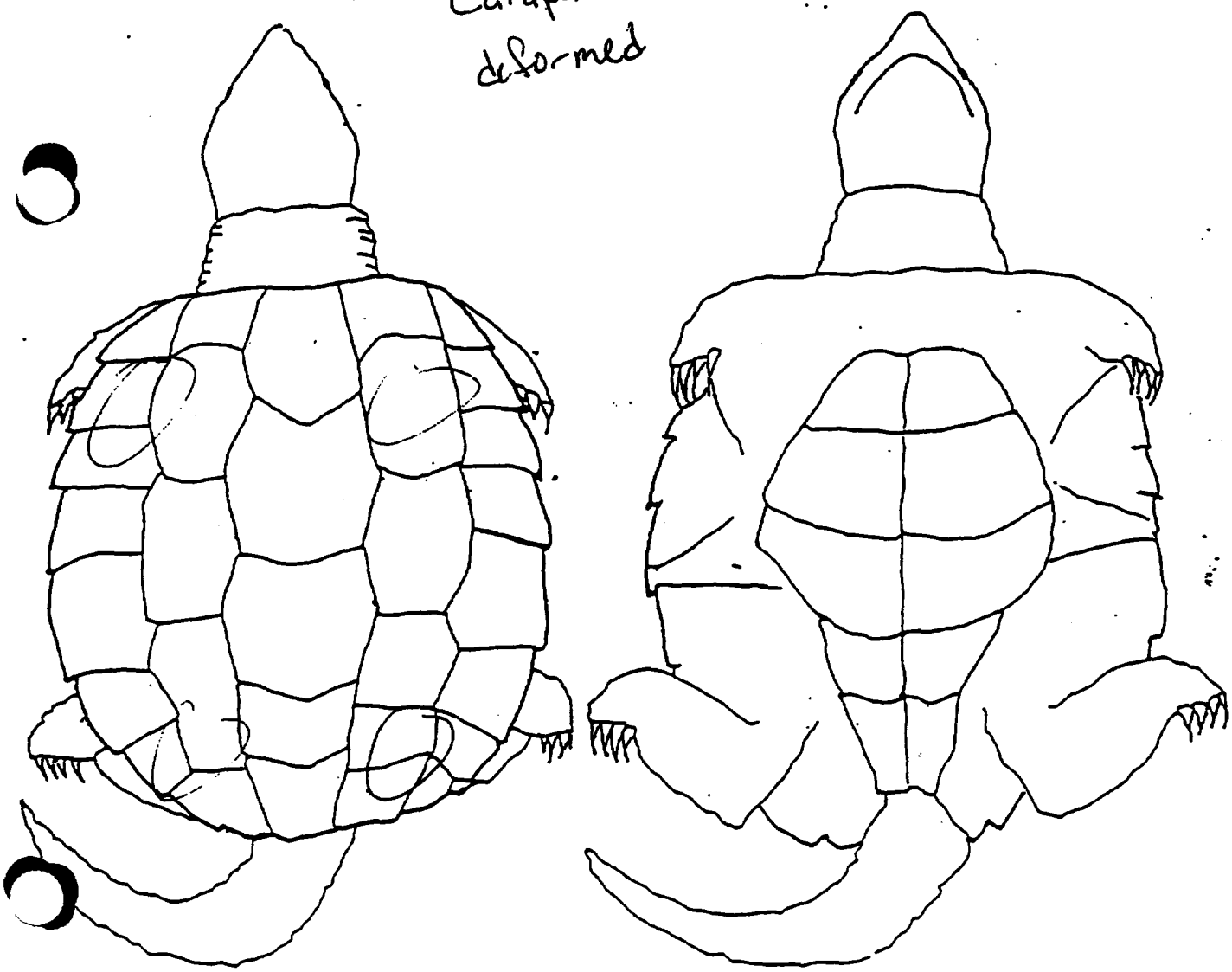
Weight _____

Collection Method Trap.

Photographs: (Yes) No Frame No(s). _____ Description _____

Age of Turtle _____ _____ Preserved: Yes ~~No~~

Carapace was deformed



ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 10:45 Collection Date 9/29/93

TBSA Number 1

Collected By DKR Processed By DKR

Sampling Method Sherman Live Trap

Weather Conditions Heavy rain ; 55°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-SI-2-01	White Footed	16.2	24	M	Whole	A	02	NM	44000
KR-SI-03-02	WF	16.5	19.5	M		A	03	NM	44001
KR-SI-12-03	WF	14.5	14	M		A	12	NM	44002
KR-SI-25-04	WF	14.5	21	F		A	25	NM	44003
KR-SI-15-05	WF	16.7	22	F		A	15	NM	44004
KR-SI-14-06	WF	15.1	14	M		J	14	NM	
KR-SI-22-07	WF	16.6	26	F		A	22	NM	44005
KR-SI-34-08	WF	16.2	19	M		A	34	NM	44006
KR-SI-35-09	WF	14.5	12	M		J	35	NM	
KR-SI-42-10	WF	16.0	19	M		A	42	NM	44007

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 10:50 Collection Date 9/30/93

TBSA Number 1

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 55°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-ST-20-11	WF	16.5	19	M	Whole	A	20	Tapeworm	44008
KR-ST-22-12	WF	16.6	17	M	↓	A	22	NM	44009

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 10:39 Collection Date 10/05/93

TBSA Number III

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 60°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-SIII-46-13	WF	16.1	19	M	Whole	A	46	NM	44010
KR-SIII-24-14	WF	15	21	M	↓	A	24	NM	44011

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 10:45 Collection Date 10/06/93

TBSA Number III

Collected By DKR/LAE Processed By DKR

Sampling Method Sherman Live Trap

Weather Conditions Sunny; 70°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-SIII-23-18	WF	14.1	14	F	Whole	Y.Adult	23	NM	44012
KR-SIII-46-19	WF	16.5	17	F	↓	A	46	NM	44013
KR-SIII-21	MV	(released)							
KR-SIII-34	MV	(dead)							
KR-SIII-40	MV	(released)							

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 10:15 Collection Date 10/07/93

TBSA Number III

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 70°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-SIII-03-20	WF	16.2	18.5	M	whole	A	03	NM	44014
KR-SIII-06-21	WF	17.6	24.5	M	↓	A	06	NM	44015

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 11:45 Collection Date 10/08/93

TBSA Number III

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 70°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
SIII-42-26	WF	15.5	16	M	Whole	A	42	NM	44016
SIII-10-27	WF	18.3	31	F	↓	A	10	7 well developed embryos	44017

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 9:45 Collection Date 10/08/93

TBSA Number V

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 65°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments
KR-~~SV~~-18-22	WF	15	15	F	Whole	A	18	NM 44020
KR-~~SV~~-13-23	WF	17.4	27	F	↓	A	13	5 well developed embryos 44021
~~KR-SV-29-24~~	WF	16.6	16	M	↓	A	29	NM 44022
~~SV~~-37-25	WF	16.1	29.5	F	↓	A	37	6 well developed embryos 44023

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 1:00 Collection Date 10/09/93

TBSA Number III

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Cloudy; 50°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
R-SIII-28-28	WF	15.5	18	M	Whole	A	28	NM	44018
R-SIII-17-29	WF	13.8	16	M	↓	A	17	NM	44019

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time _____ Collection Date 10/09/93

TBSA Number V

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Cloudy; 50°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
R-SV-27-30	WF	16.0	20.5	M	Whole	A	27	Large Anal Parasite	Located in scratch DKR 44024
2-SV-26-31	WF	17	21.5	M	↓	A	26	NM	44025
2-SV-34-32	WF	16.2	20	M	↓	A	34	NM	44026
-SV-38-33	WF	16	16	F	↓	A	38	NM	44027
2-SV-44-34	WF	15.4	19.5	M	↓	A	34	NM	44028
-SV-48-35	WF	14.8	15.5	M	↓	A	35	NM	44029

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 9:00 Collection Date 10/21/93

TBSA Number XI

Collected By DKR Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Cloudy; 55°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments
KR-SXI-20-40	WF	17.4	27	F	Whole	A	20	3 well developed fetuses 44030
KR-SXI-19-41	WF	15.9	18	F	↓	Y. Adult	19	NM 44031

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 2:00 Collection Date 10/21/93

TBSA Number X

Collected By DKR Processed By DKR, BKC

Sampling Method Sherman Live Traps

Weather Conditions Partly sunny; 55°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-SX-03-42	WF					J		(discarded)	
KR-SX-06-43								(discarded)	
KR-SX-16-44	WF	16	19	M	whole	A	16	NM	44040
X-47-45	WF	14.8	16	M	↓	A	47	NM	44041
KR-SX-44-46								(discarded)	
KR-SX-39-47	WF	15.4	18	F	whole	A	39	NM	44042
KR-SX-36-48	WF	14.8	16	M		A	36	NM	44043
KR-SX-37-49	WF	17.8	21	F		A	37	NM	44044
KR-SX-33-50	WF	16	14	M		Y Adult	33	NM	44045
KR-SX-29-51	WF	15.4	19	M		A	29	NM	44046
KR-SX-26-52	WF	16.7	19	M	↓	A	26	NM	44047

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 9:15 Collection Date 10/22/93

TBSA Number XI

Collected By DKR/NJZ Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny, slightly windy; 60°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
SXI-19-53	WF	16.7	24	M	Whole	A	19	enlarged testicles	44032
SXI-30-54	WF	15.9	16.5	F		Y.Adult	30	NM	44033
SXI-50-55	WF	16.6	18	M		A	50	NM	44034
SXI-64-56	WF	18.1	22.5	F		A	64	NM	44035

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 1:00 Collection Date 10/22/93

TBSA Number X

Collected By DKR/BKC Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 65°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments
R-SX-15-57	WF	17.1	23	F	Whole	A	15	NM
R-SX-24-58	WF	16.8	18.5	M	↓	A	24	NM

44048
44049

ATTACHMENT B-2

SMALL MAMMAL COLLECTION FIELD DATA SHEET

Collection Time 8:15 Collection Date 10/24/93

TBSA Number XL

Collected By DKR/ALP Processed By DKR

Sampling Method Sherman Live Traps

Weather Conditions Sunny; 65°F

Sample #	Species	Body Length (cm)	Weight (g)	Gender	Sample Type	Relative Age	Trap Number	Comments	
KR-SXI-42-67	WF	15.5	17	M	Whole	A	42	NM	44036
KR-SXI-62-69	WF	13	12	M	↓	Y.Adult	62	NM	44037
KR-SXI-61-70	WF	13.1	12	F	↓	Y.Adult	61	NM	44038
SXI-67-71	WF	15	15	F	↓	Y.Adult	67	NM	44039

ATTACHMENT C-1

EARTHWORM COLLECTION FIELD DATA SHEET

Collection Time 3:30 Collection Date 10/05/93

TBSA Number I Sample Location TBSA #1

Collected By DKR Processed By DKR

Volume of Soil Excavated ~~48,000~~ cm³; 33,844 cm³; 33,844 cm³

Weather Conditions Sunny; 65°F

Sample #	Identification	Number of Indiviuals	Weight (g)	Comments
KR-SI-1-15	63 ~~Aff.Lum.~~	67 RJF 4/5/94 Lab identification		46000
	4 Lum			
KR-SI-2-16	60 ~~Aff.~~ Lum	63 RJF 4/5/94 Lab identification		46001
	3 Lum.			
KR-SI-3-17	51 ~~Aff.Lum.~~	61 RJF 4/5/94 Lab identification		46002
	10 Lum.			

Lum = Lumbricus sp.

RJF 4/5/94

ATTACHMENT C-1

EARTHWORM COLLECTION FIELD DATA SHEET

Collection Time _____ Collection Date 10/10/93

TBSA Number III Sample Location TBSA #3

Collected By DKR Processed By DKR, BKC

Volume of Soil Excavated _____

Weather Conditions _____

Sample #	Identification	Number of Indiviuals	Weight (g)	Comments
KR-SIII-1-36	57 ~~Alt~~ Lum	61 RJF 4/5/94 Lab identification	20.3	46003
	4 Lum.			
KR-SIII-2-37	20 ~~Alt.~~	38 RJF 4/5/94 Lab identification	39.5	46004
	18 Lum.			
KR-SIII-3-38	13 ~~Alt.~~ Lum	47 RJF 4/5/94 Lab identification	21.5	46005
	17 Lum.			
	8 U			
	9 Green			

Lum = Lumbricus sp.
U = unknown sp
Green = Allolobophora sp RJF 4/5/94

ATTACHMENT C-1

EARTHWORM COLLECTION FIELD DATA SHEET

Collection Time 2:45 Collection Date 10/10/93

TBSA Number V Sample Location TBSA #5

Collected By DKR Processed By DKR, BKC

Volume of Soil Excavated 474,375 cm³

Weather Conditions Sunny; 60°F

Sample #	Identification	Number of Indiviuals	Weight (g)	Comments
KR-SV-1-39	31 ~~AH~~ Lum	40	18.6	46006
	9 Lum	RJF 4/5/94 Lum identification		

Lum = Lumbricus sp. RJF 4/5/94

ATTACHMENT C-1

EARTHWORM COLLECTION FIELD DATA SHEET

Collection Time 9:00 Collection Date 10/21/93

TBSA Number XI Sample Location TBSA #11

Collected By BKC/DKB/NJZ Processed By BKC

Volume of Soil Excavated 155,250cm³; 196,875cm³; 219,000cm³

Weather Conditions cloudy, windy; 55°F

Sample #	Identification	Number of Indiviuals	Weight (g)	Comments	
KR-SXI-1-62	18 Lum.	25	23.4		46012
	7 Att. Lum	4/5/94 RJF - Lab. verification			
KR-SXI-2-63	22 Lum.	50	24		46013
	23 Att. Lum.	4/5/94 - RJF Lab ver.			
	5 UK				
KR-SXI-3-64	14 Lum.	36	26.6		46014
	7 Att. Lum.	4/5/94 - RJF Lab ver.			
	6 UK				
	9 P				

UK = Aporrectodea sp.

P = Dendrobaena sp.

Lum = Lumbricus sp.

RJF 4/5/94

ATTACHMENT C-1

EARTHWORM COLLECTION FIELD DATA SHEET

Collection Time 2:30 Collection Date 10/21/93

TBSA Number $\bar{X}$ Sample Location 10-1; 10-2; N of SW corner

Collected By DKR/BKC/NJZ Processed By BKC

Volume of Soil Excavated 223,125 cm³; 610,400 cm³; 692,250 cm³

Weather Conditions partly sunny; 55°F

	Sample #	Identification	Number of Indiviuals	Weight (g)	Comments	
KR-$\bar{X}$-1-59		3 Lum	63	20.3		46009
		2 ~~Att.~~ Lum	5/6/94 RJF Lab. ver.			
		50 UK				
		8 P.				
KR-$\bar{X}$-2-60		6 ~~Att.~~ Lum	51	27		46010
		9 ~~Lum.~~ OK RJF	5/6/94 RJF Lab ver.			
		16 UK				
		20 P.				
KR-$\bar{X}$-3-61		4 Lum.	57	24		46011
		3 ~~Att.~~ Lum	5/6/94 RJF Lab verification			
		38 UK				
		12 P.				

*depuration period 24 hrs.

UK = Aporrectodea sp.

P = Dendrobaena sp.

Lum = Lumbricus sp. RJF Lab I.D. 5/6/94

ATTACHMENT C-1

EARTHWORM COLLECTION FIELD DATA SHEET

Collection Time 8:00 Collection Date 10/22/93

TBSA Number V Sample Location TBSA # 5

Collected By DKR/BKC Processed By BKC

Volume of Soil Excavated _____

Weather Conditions _____

Sample #	Identification	Number of Indiviuals	Weight (g)	Comments
KR-SV-2-65	24 Att. Lum	26	13.7	4/6/07
	2 Lum.	7/5/94 RJF Lab identification		
KR-SV-3-66	10 Att. Lum	14	10.6	3 of the 14 worms had constrictions approximately 2/3 of the way between the crop and the anterior end. 4/6/08
	4 Lum.	4/5/94 RJF Lab identification		

* depuration period 15 hrs.

Lum = Lumbricus sp

RJF 4/5/94

Appendix A
Field Documentation

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

10/13/97

Start-up meeting @ 4:30 pm w/ Ron French (COM) and oversight personnel Nicole Adaniya for week of 10/13. R. French relays MDEQ amendment to SOW requesting that we return the largest carp and bass captured at each location and submit these fish with sample for analysis.

10/14/97 Crew: KDS, RJF, PMW Oversight: N. Adaniya cloudy, cool mid 50's
Electrofish (boat) at N. Richmond (ABSA #11) some rain / light sprinkles
Put in River @ 9:30 am and fish till 12:45.
Capture 6 carp 18-22" and 3 carp > 23", one A. Bass and 3 J. Bass.
All fish taken upstream of 58th St. Bridge. Carp taken in close proximity to launch. J. Bass along N & S shore from bridge upstream to midpoint between Bridge and Ramp. Carp are relatively abundant throughout, SM bass present in v. low numbers and v. difficult to locate. LM bass v. abundant here both adults and juveniles.

Oversight breaks shear pin in rental engine and has no spare pin. RJF goes to get replacement parts and we continue to fish with 2-man crew, towing oversight along to sampling locations. Electrofish 1:30-3:00 w/ 2 man crew (KDS, PMW) focusing on N shore approx. .5 mi downstream of ramp capture 2 > 23" carp and one large carp for MDEQ. RJF returns @ 3:00 and we repair oversight's boat.

3:30-6:30 continue electrofishing w/ 3-man crew. Fish N & S shore from 1st bend in river below 58th St Bridge up to RR track / N. Richmond River bend. Capture 2 A. bass and 4 J. Bass.

Total For Day 12 carp, 3 A. Bass, 7 J. Bass. All fish captured w/ electrofishing boat. Many Steelhead in river, some salmon (Kings), also many LM Bass throughout, but especially in backwaters.

10/15/97 Crew: KDS, RJF, PMW Oversight: N. Adaniya partly cloudy, low 50's
Electrofish at Murrow Pond in AM (ABSA #2)
Put in at 8:45 am and fish till 12:00 noon.
Fish N shore immed. upstream of ramp (E. Cumstock ramp closest to Dam) approx 300 yds and capture one A. Bass, 2 carp and 3-4 J Bass. Move downstream to 35th street bridge and fish bridge pylons upstream along N bank. Capture many J bass at bridge also 2 or 3 A. bass. Also capture many J. Bass along S Shore at submerged stumps located throughout.

Total for day 6 carp (4 18-22", 2 > 23"), 3 A. bass, 20 J. bass.
LM Bass abundant at this location, many < 18" carp, many mid-size bass (9-13")
1:00-5:30 pm Process fish from N. Richmond & Murrow Pond. Give up 1 carp [illegible] for N. Richmond when 23" fish shrinks (overnight - on ice) to < 23".

oversight engine repaired. Shear pin had again broken and jammed into prop collar. We could not fix in field. We could not get engine repaired and had to tow oversight for remainder of day.
Totals for day: 7 carp 18-22", 7 adult bass, 3 J. bass composites (15 indiv) All fish captured w/ electrofishing boat

10/22/97 Crew: KDS, DKR, PMW Oversight: I. Gillis Cloudy, light snow showers high 30s
AM - Process fish from Morrow Pond and Lake Allegan. Wait over 2 hrs for oversight to acquire new rental engine.
PM - Check on Plainwell Dam Access and decide against going into Plainwell dam due to late start and considerable effort needed to clear access to river behind dam. Put in at Lake Allegan (4:00-7:00) and collect remaining 2 A. Bass and 4 J. Bass to complete L. Allegan sample. A. bass taken at upstream downstream cove (S. shore) and upstream from cross along S. shore. J. bass taken along Allegan Dam Rd riprap and along N. shore downstream of rocky pt.
Totals for Day: 2 A. bass 4 indiv J. Bass All fish captured w/ electrofishing boat.

10/23/97 Crew: KDS, DKR, PMW Oversight: I. Gillis cloudy mid 40's
Plainwell Dam (9:30-5:30)
Clear access and put into River next to Powell Dam. Spend AM electrofishing between Dam and Rt. 131 Bridge. Capture all A. Bass (all in 12.5-15.5" size limit), all J. Bass (25 indiv) and all large carp >23" plus 2 18-22" indiv. Bass abundant throughout this reach of River (both adults and juveniles). Large carp also abundant throughout. Smaller carp <22" v. difficult to locate. In PM, negotiate rapids at 131 Bridge and fish upstream of bridge to Plainwell WWTP outfall to capture remaining 4 18-22" carp (this after another 1.5 hrs spent trying to locate this size fish in original reach from Dam to 131 Bridge). Get pulled out of access by Dave's towing. Totals for Day: 6 carp 18-22", 6 carp >23", 12 A. bass, 5 J. bass composites (25 indiv)
All fish captured w/ electrofishing boat.

10/24/97 Crew: KDS, DKR, PMW Oversight: R French cloudy mid 40's
N. Richmond (10:30-12:30)
Electrofish N. Richmond location in attempt to capture 2 A. Bass required to complete sample for this location. Run down to 1st side channel into Mermson Bayou and fish structure in vicinity of this channel (both banks). Capture no acceptable size A. Bass. Run up to sample in vicinity of N. Shore backwater area where we captured bass 10/16 and could not fish area because of presence of one indiv who was fishing in the area we wanted to shock. Fish further upstream and again capture no Keeper A. Bass. Try fishing at 58th St. bridge w/ similar results (no Keepers).

1:30-5:30 Process fish from 10/22 & 10/23

Kalamazoo River Fish Collection Field Data

1997

BBL

BLASLAND, BOUCK & LEE, INC.

engineers & scientists

Attachment A-1

Fish Collection Field Data Sheet

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 10:00 am - 6:00 pm

Collection Date 10/14/97

Water Body Kaw River

Sampling Location N. Richmond ARGA #11

Collected By KDS ~~[illegible]~~ KF

Processed By KDS ~~[illegible]~~ AMW

Observer: Nicole Adams

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40500	Sm Bass Adult	43	1000		Fillet	Marker
K40501	Sm Bass Adult	44	1300		Fillet	NM
* K40502	Sm Bass Adult	39	550		"	NM
K40503-C	Sm Bass Juv	18	74		Whole Composite	NM
|	|	20	90		|	NM
|	|	18	75		|	NM
|	|	17	58		|	NM
|	|	17	75		|	
K40504-C1	Sm Bass Juv	17	61		Whole Composite	NM
"	"	19	95		"	NM
★ K40505	Adult Carp	70	5.9 Kg		Fillet	Marker
K40506	Adult Carp	66	6.1 Kg		Fillet	NM
K40507	Adult Carp	59	3.0 Kg		Fillet	NM
K40508	Adult Carp	60	3.3 Kg		Fillet	NM
K40509	Adult Carp	65	4.0 Kg		Fillet	NM
K40510	Adult Carp	57	2.9 Kg		Fillet	NM
K40511	Adult Carp	55	2.5 Kg		Fillet	NM
K40512	Adult Carp	52	2.1 Kg		Fillet	NM

★ Max Fish Collected per MDEQ Request

* Within Size Restriction For Sm Bass

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 10:[illegible] am - [illegible] pm

Collection Date 10/14/97

Water Body Kzoo River

Sampling Location New Richmond AOSA #11

Collected By KDS HIE DMW

Oversight: Nicole Adamczyk

Processed By KDS DMW

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40513	Adult Carp	53.5	1.9 Kg		Fillet	Muscle
K40514	Adult Carp	49.5	1.7 Kg		Fillet	NM
K40515	Adult Carp	50	2.2 Kg		Fillet	NM
K40516	Adult Carp	51.5	1.9 Kg		Fillet	muscle

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00 am - 13:00 pm

Collection Date 10/15/07

Water Body Kzoo River

Sampling Location Morrow Lake AGSA #2 Collected By KDS RJT PMW

Processed By KDS, PMW Observer: [illegible]

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40517-C	Juvenile Smallmouth	15.5	54		whole body composite	NM
↓	"	19	91		"	NM
	"	14	34		"	NM
	"	20	57		"	NM
	"	15	79		"	NM
K40515-C	Juvenile Smallmouth	15.5	76		whole body composite	NM
↓	↓	16	52		↓	NM
		14.5	40			NM
		14.5	35			NM
		15.5	48			NM
K40519-C	Juvenile Smallmouth	15.5	46		whole body composite	NM
↓	↓	15.0	40		↓	NM
		19.5	64			NM
		15.0	51			NM
		14.5	39			NM
K40520-C	Juvenile Smallmouth	15	73		whole body composite	NM
		19	90			
		16	50			

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00 am - 12:00 pm

Collection Date 10/15/97

Water Body Kaw River

Sampling Location Marina Pond AGSA #2 Collected By KDS, RJF, PMW

oversight Nicole Adams

Processed By KDS, PMW, RJF

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K 40520-C	Juvenile Sm Bass	15.5	45		Whole Composite	N.M
"	"	13	27		"	"
K40521	Adult Carp	53	2.0 Kg		Fillets	Discolor[illegible] Bottom [illegible] Anus
K40522	Adult Carp	53	2.1 Kg		Fillets	Muscle
K40523	Adult Carp	62.5	2.6 Kg		Fillets	Muscle Mir Carp
K40524	Adult Carp	53.5	2.6 Kg		Fillet	N.M
K40525	Adult Carp	54.5	2.3 Kg		Fillet	NM
K40526	Adult Carp	52.0	1.8 Kg		Fillet	NM
K40527	Adult Bass	33.0	570 g		Fillet	N.M
K40528	Adult Bass	45	1.2 Kg		Fillet	NM
K40529	Adult Bass	33.5	560 g		Fillet	NM

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 10:00 Am - 4:30 PM

Collection Date 10/16/97

Water Body Kzoo River

Sampling Location New Richmond (Area #11) Collected By KDS, RJF, PMW

Processed By KDS, RJF, PMW Oversight: Nicole Adamy

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40504-C2	Juv. Sm. bass	15.5	54		w-body Composite	NM
↓	"	15.5	50		↓	NM
↓	"	18.0	75		↓	NM
K40530-C	Juv Sm bass	19.0	82		w-body Composite	NM
↓	↓	17.0	62		↓	NM
↓	↓	16.5	60		↓	NM
↓	↓	17.5	62		↓	NM
↓	↓	17.0	58		↓	NM
K40531-C	Juv Sm. bass	18.0	73		W-body Composite	NM
↓	↓	15.5	46		↓	NM
↓	↓	18.0	78		↓	NM
↓	↓	20.0	100		↓	NM
↓	↓	18.0	86		↓	NM
K40532-C	Juv. Sm. bass	18.0	78		w-body Composite	NM
↓	↓	17.0	55		↓	NM
↓	↓	17.0	60		↓	NM
↓	↓	17.0 ~~17.5~~	63		↓	NM
↓	↓	15.0	45		↓	NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 9:00 - 12:15 pm

Collection Date 10/17/97

Water Body ~~Lake Allegan AOC #9~~ Kzoo River

Sampling Location Lake Allegan AOC #9 Collected By KDS, RJF, PMW

Processed By KDS, RJF, PMW oversight: Nicole Adaniya

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40533-C	Juv. Sm. Bass	19.5	90		w-body composite	NM
		18.5	78			NM
		18.5	85			NM
		18.5	67			NM
		17.0	56			NM
K40534-C1	Juv. Sm. Bass	17.5	58		w-body comp	NM
K40535	Adult Carp	50.0	1.7 kg		fillet	scar on left operculum
K40536	Adult Carp	47.5	1.1 kg		Fillet	ulcerations
K40537	Adult Carp	46.5	1.1 kg		Fillet	ulcerations
K40538	Adult Carp	47.5	1.4 kg		Fillet	NM
K40539	Adult Carp	46.5	1.3 kg		Fillet	NM
K40540	Adult Sm. Bass	37.5	680		Fillet	ulcers on ~~L.M.~~ L. maxillary
K40541	Adult Sm. Bass	34.0	580		Fillet	NM
K40542	Adult Sm. Bass	36.0	590		Fillet	healed wound

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 10:00am - 4:30pm

Collection Date 10/16/97

Water Body Kaw River

Sampling Location New Richmond ABS4 # 11 Collected By KDS, RJF, DMW

Processed By KDS RJF DMW Oversight Nicole Adamiya

Sampling Method Electrofishing

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40543	Adult Carp	63.5	3.7 kg		Fillet	Minnows
K40544	Adult Sm Bass	41.0	1.1 kg		Fillet	NM
K40545	Ad Sm Bass	39.0	1.1 kg		Fillet	L. mandible
K40546	Adult Sm Bass	36.5	770		Fillet	NM
K40547	Adult Sm Bass	38.0	880		Fillet	NM
K40548	Adult Sm Bass	35.0	640		Fillet	NM
K40549	Adult Sm Bass	40.5	1.2 kg		Fillet	NM
K40550	Adult Sm Bass	33.5	570		Fillet	

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 12:30pm - 5:30pm

Collection Date [illegible]

Water Body Kaw River

Sampling Location Manhattan [illegible] Collected By [illegible]

Processed By [illegible] 10/20/97

Sampling Method Electroshocking Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40551-C	Juvenile [illegible]	14.5	43		Whole Carcass	N/M
		13.5	24			N/M
		13.5	24			N/M
		12	27			N/M
		12.5	24			N/M
K40552	Adult [illegible]	70	5.5 Kg		Skin-off Fillet	N/M
K40553	"	69	3.9 Kg			marks
K40554	"	~~72.5~~ 73.0	4.9 Kg			N/M
K40555	"	51.5	2.0 Kg			marks
K40556	"	47.5	[illegible]			N/M
K40557	"	69	[illegible]			N/M
K40558	Adult [illegible]	43	1.3 Kg		Skin-on Fillet	N/M
K40559	"	36.5	550			marks
K40560	"	33.5	550			N/M
K40561		34.5	550			N/M
K40562	"	34.0	490			N/M
K40563	"	33.5	460			

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time [illegible]

Collection Date [illegible]

Water Body [illegible]

Sampling Location [illegible] Collected By [illegible]

Processed By [illegible] [illegible]

Sampling Method [illegible]

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40544-C	Smallmouth Bass	20	[illegible]		Composites [illegible]	N/M
		19.5	96			N/M
		18	74			N/M
		18	63			N/M
		19	63			N/M
K40545-C	Smallmouth Bass	~~19~~ 19	~~20~~ 60.5			[illegible]
		~~18~~ 20	103			N/M
		18	71			N/M
		18	67			N/M
		18.5	47			N/M
K40546-C	Smallmouth Bass	16.5	54			Marks [illegible]
		[illegible]	47			N/M
		15.5	43			N/M
		15.0	42			N/M
		15.0	40			N/M
K40547-C	Smallmouth Bass	0.5	[illegible]			N/M
		11.0	17.0			N/M
		11.0	18.0			N/M

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 10/21/97 10:00 am & 2 pm

Collection Date ↓

Water Body Kaw River

Sampling Location Lake Annawan Collected By KDS DKR BMW

Processed By KDS DKR BMW 10/21/97 Fish Collection Permit

Sampling Method Electroshocking Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40567-C	Juv. Sm Bass	11.0	9.0		whole body composite	NM
"	"	12.0	23.0		"	NM
K40568	Adult Carp	53	1.8 Kg		Skin-on fillet	NM
K40569	"	45	1.7 Kg			NM
K40570	"	47.5	1.6 Kg			NM
K40571	"	47.0	1.2 Kg			Marks
K40572	"	47.5	1.2 Kg			Marks
K40573	"	46.5	1.2 Kg			Marks
K40574	"	45.5	1.5 Kg			Marks ~~[illegible]~~
K40575	Adult Sm Bass	40.0	710 g		Skin-on fillet	Marks
K40576	"	41.5	1.1 Kg		"	Marks
K40577	"	40	770 g			Marks
K40578	"	24.5	310 g			NM
K40579	"	24.5	440 g			NM Red [illegible]
K40580	"	24.5	510 g			NM
K40581	"	34.0	540 g			NM

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 4:00pm - 6:30 pm

Collection Date 10/22/97

Water Body Lake Allegan Kzoo River

Sampling Location ↓

Collected By KDS, DKR, MRW, Ian Gillin - Oversight

Processed By KDS, DKR, MRW, Ron French - Oversight

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40552	Adult smallmouth bass	36.5	550			NM
K40553	Adult smallmouth bass	37.5	570			NM
K40534-C2	Juvenile smallmouth bass	19.5	79			NM
↓	↓	18	78			NM
↓	↓	17.5	59			NM
↓	↓	15.5	49			NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 9:30 - 6:00 pm

Collection Date 10/23/97

Water Body Kalamazoo River

Sampling Location Plainwell Dam

Collected By KDS DKE DMW Jim Gillis - Dreissinit

Processed By KDS DKE DMW Jim Gillis - Dreissinit

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40544	Adult Carp	75	6.1 Kg			NM
K40585	"	64	4.2 Kg			NM
K40586	"	72	5.7 Kg			NM
K40587	"	67	4.1 Kg			NM
K40588	"	55	2.5 Kg			NM
K40589	"	55	2.4 Kg			NM
K40590	"	55	2.5 Kg			NM
K40591	"	57.5	2.5 Kg			NM
K40592	"	50	1.9 Kg			Male
K40593	"	53	2.3 Kg			NM
K40594	"	51.5	1.9 Kg			NM
K40595	"	71	6.5 Kg			NM
K40596	Adult Sm Mouth	35	650 g			NM
K40597	"	38	650 g			NM
K40598	"	35	540 g			NM
K40599	"	35.5	600 g			NM
K40600	"	39.0	910 g			NM
K40601	"	36	650			NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 9:30am - 6:00pm

Collection Date 10/23/97

Water Body Kalamazoo River

Sampling Location Plainwell Dam Collected By KDS OKS Shaw
Jon Gibbs - Consultant

Processed By KDS OKS Shaw Ron Martin - Consultant

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K406:2	Adult Sm Bass	37	660			NM
K406:3	"	37.5	650			NM
K406:4	"	41.5	970			NM
K406:5	"	36	610			NM
K406:6	"	36.5	670			NM
K406:7	"	35.5	540			NM
K406:8-C	Juvenile Sm Bass	18.0	73			NM
↓	↓	17	65			↓
		17	66			
		16.5	53			
		15	44			
K406:9-C	Juvenile Sm Bass	17.5	55			NM
↓	↓	17.5	59			↓
		15.5	44			
		15.0	46			
		15.0	45			
K406:10-C	Juvenile Sm Bass	17.5	69			NM
"	"	17.0	66			"

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:30 am - 6:30 pm

Collection Date 10/23/97

Water Body Kiso River

Sampling Location Plainwell Dam

Collected By KDS DKR JMW R. French - Consultant

Processed By KDS JMW Ron French - Consultant

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40610-C	Juvenile smBass	15.5	45			NM
		15.0	45			
		13.0	31			
K40611-C	Juvenile smBass	17.5	64			NM
		17.0	59			
		16.5	58			
		15.5	47			
		13.5	34			
K40612-C	Juv sm Bass	15.5	59			NM
		15.5	52			
		15.5	51			
		15.5	47			
		14.5	41			

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 2:30 - 5:00

Collection Date 10/27/97

Water Body Kalamazoo River

Sampling Location New Richmond ABSA#11 Collected By KDS DKR Jma
N Adamiya - Ottawa

Processed By KDS DKW

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40613	Adult Sm Bass	33.5	550			NM
K40614	Adult Sm Bass	36.5	760			NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 3:45-[illegible]

Collection Date 10/25/97

Water Body Kalamazoo River

Sampling Location Morrow Lake (AFSA#[illegible]) Collected By KDS, JKR, JMW

N. Adamiya - Oversight

Processed By KDS JKR

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40615	Adult Smallmouth Bass	33.0	430		Fillets	NM
K40616	Adult Smallmouth Bass	31.5	490		"	NM
K40617	Adult Smallmouth Bass	34	550		"	NM

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 3:00 - 4:30

Collection Date 10/28/07

Water Body Kalamazoo River

Sampling Location [illegible] Collected By KDS CKA DMW
N. Adeniyo - Consultant

Processed By KDS DMW

Sampling Method Electrofishing Rod

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40615	Adult Smallmouth Bass	45	1.3 Kg		Fillets	NM
K40619	Adult Smallmouth Bass	46	1.4 Kg		"	NM
K40620	Adult Smallmouth Bass	45	1.2 Kg		"	NM
K40621	Adult Smallmouth Bass	45	1.6 Kg		"	NM
K40622	Adult Smallmouth Bass	45	1.2 Kg		"	NM
K40623	Adult Smallmouth Bass	44	1.2 Kg		"	NM
K40624	Adult Smallmouth Bass	40.5	1.1 Kg		"	NM
K40625	" "	36	740 g		"	NM
K40626	" "	34	510 g		"	NM
K40627	" "	37	730 g		"	NM
K40628	" "	39.5	870 g		"	Mavigg [illegible]
K40629	" "	44.5	1.3 Kg		"	NM
K40630-C	Forage fishes	14	21.0		whole-body composite	NM
		15.5	37			
		15.5	52			
		16	52			
		17	60			
K40631-C1	Fish	18.5	50		whole-body composite	NM

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 2:00 pm - 4:30 pm

Collection Date 10/28/97

Water Body Kaw River

Sampling Location Bethel Cemetery ARSA #1 Collected By KDS DCR PMW

Processed By KDS PMW N. Adamyk - Contractor

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40631-C1	Ictalurus punctatus	16.5	56		whole body composite	N/A
1	1	16.5	53		1	1
1	1	11	35		1	1

ATTACHMENT A-1

FISH COLLECTION FIELD DATA SHEET

Collection Time 9:00am - 12:00

Collection Date 10/22/94

Water Body Battle Creek

Sampling Location Kalamazoo River Collected By KDS/DKR/PMW

Processed By DKR/PMW

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40631-C2	Juv. Sm. Bass	13.5	30		Whole Body Composite	NM
K40632-C1	Juv. Sm. Bass	16.5	67		Whole Body Composite	NM
		16.5	58			
		15.5	45			
		15.5	48			
		14.0	35			
K40633-C1	Juv. Sm. Bass	17.5	75		Whole Body Composite	NM
		16.5	62			
		14.5	39			
		13.5	32			
		13.0	27			
K40634-C1	Juv. Sm. Bass	16.5	61		Whole Body Composite	NM
		16.0	54			
		15.5	44			
		15.0	43			
		14.5	37			
K40635	Ad. Sm. Bass	36.0	740		Fillet	NM
K40636	Ad. Sm. Bass	37.5	1100		Fillet	NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 9:00 am - 12

Collection Date 10/29/97

Water Body Kalamazoo River

Sampling Location Battle Creek Collected By KOS/DKR/DMW

Processed By DKR/DMW

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) NA

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40637	Ad. Sm. Bass	39.0	1100		Fillet	NM
K40638	Ad. Sm. Bass	36.5	750		Fillet	NM
K40639	Ad. Sm. Bass	35.0	650		Fillet	NM

ATTACHMENT A-1

FISH COLLECTION
FIELD DATA SHEET

Collection Time 1:30 - 2:30

Collection Date 11/10/97

Water Body Kao River

Sampling Location Cassava Rio

Collected By KDC DKR
Nicole Adamiya Jackson

Processed By KDC DKR

Sampling Method Electrofishing Boat

Dimension and Mesh Size of Seine (if applicable) _____

Sample #	Species	Total Length(cm)	Weight (g)	Gender	Sample Type	Comments
K40640	Carp	54.0	2200 g		Fillets	Marks
K40641	"	57.5	2.6 Kg		"	NM
K40642	"	57.0	3.0 Kg		"	NM
K40643	"	60	3.0 Kg		"	NM
K40644	"	59.5	3.2 Kg		"	NM
K40645	"	53	2.3 Kg		"	NM
K40646	"	60	3.1 Kg		"	NM
K40647	"	59	2.6 Kg		"	NM
K40648	"	50	1.8 Kg		"	NM
K40649	"	54.5	2.4 Kg		"	NM
K40650	"	53	2.0 Kg		"	NM
K40651	"	51	2.2 Kg		"	NM

Attachment A-3

Carp Fish Condition Survey Form

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40505

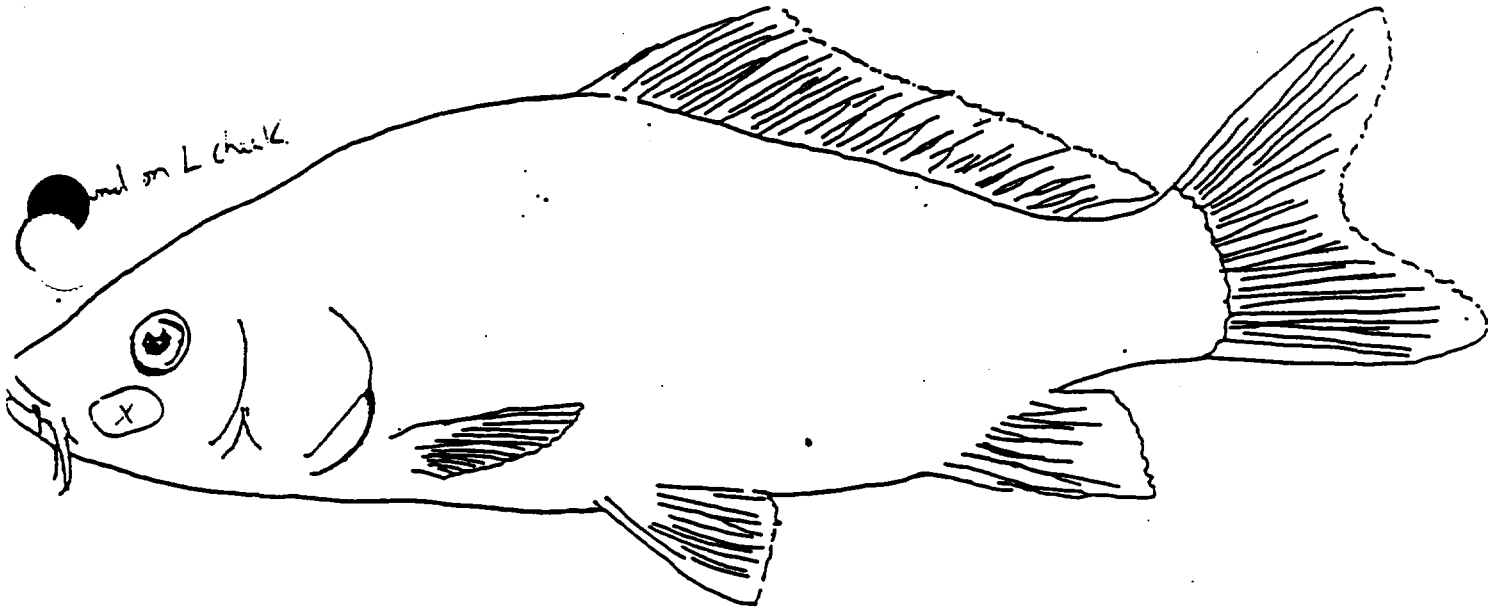
Collection Date _____ Length _____

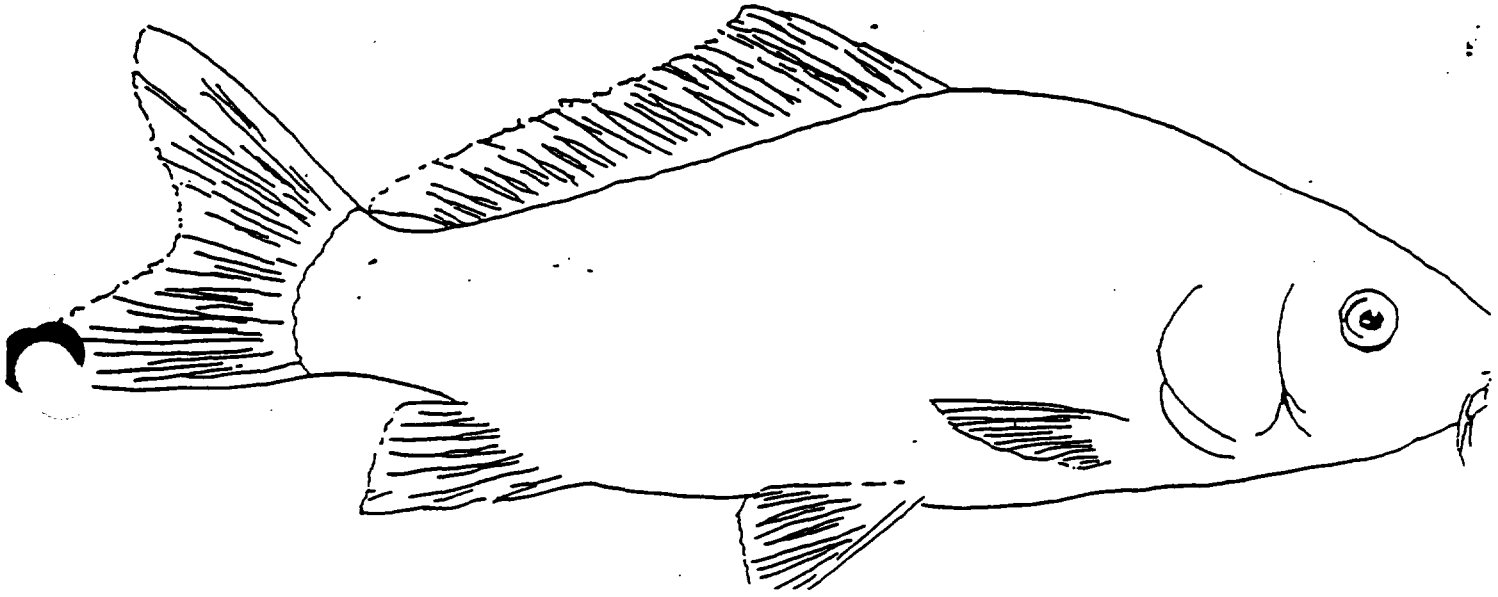
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #1 Frame No(s). #6-8 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40513

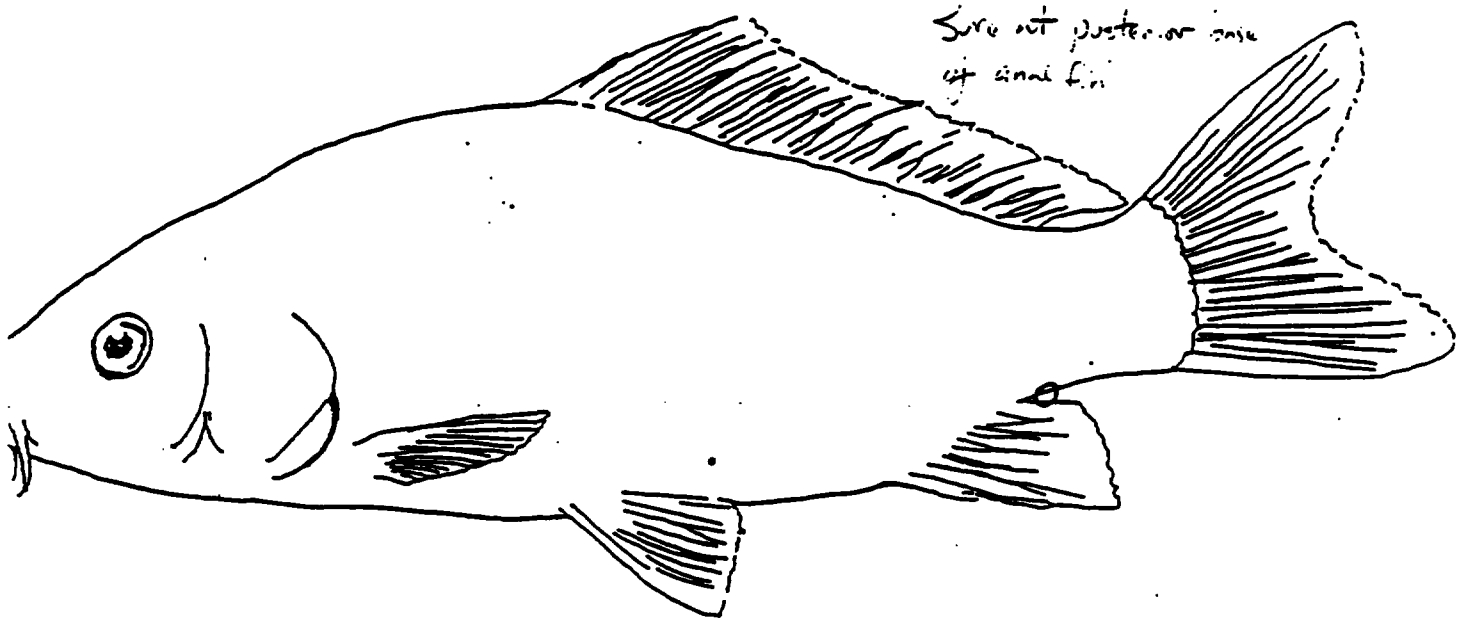
Collection Date _____ Length _____

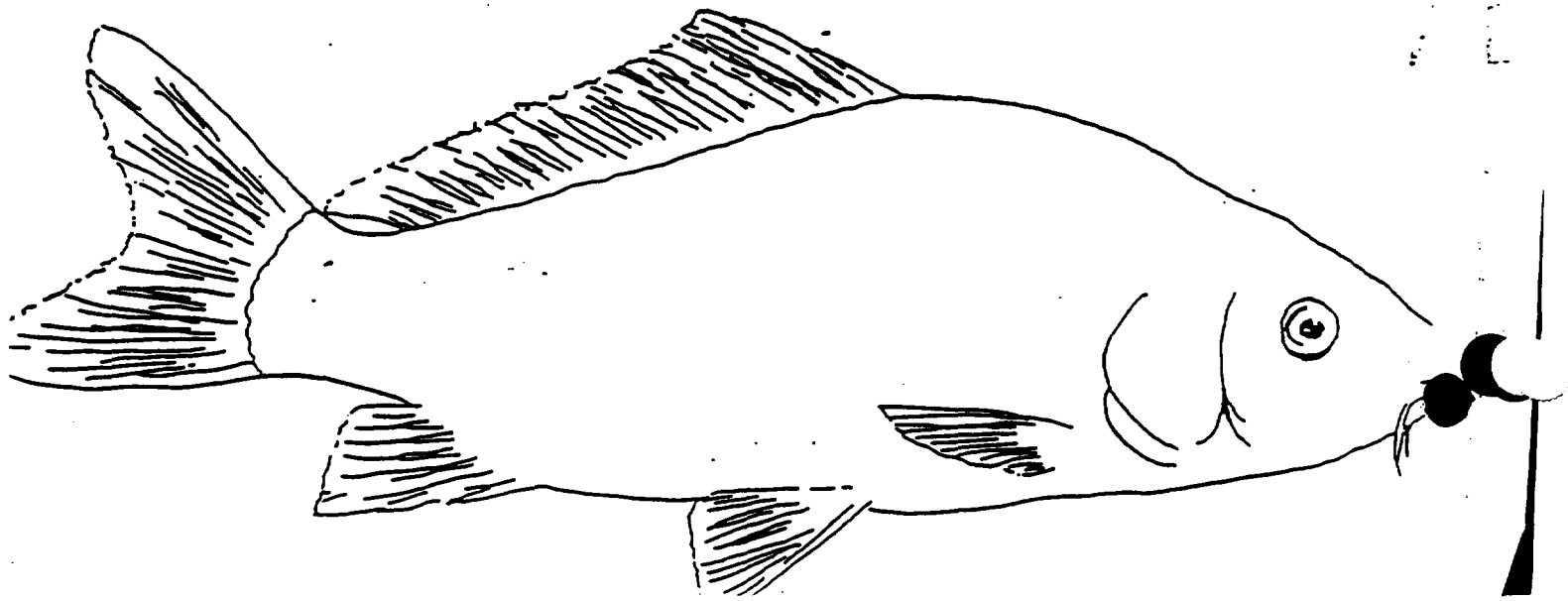
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #1 Frame No(s). 16 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____

Fish No (s). K40516

Collection Date _____

Length _____

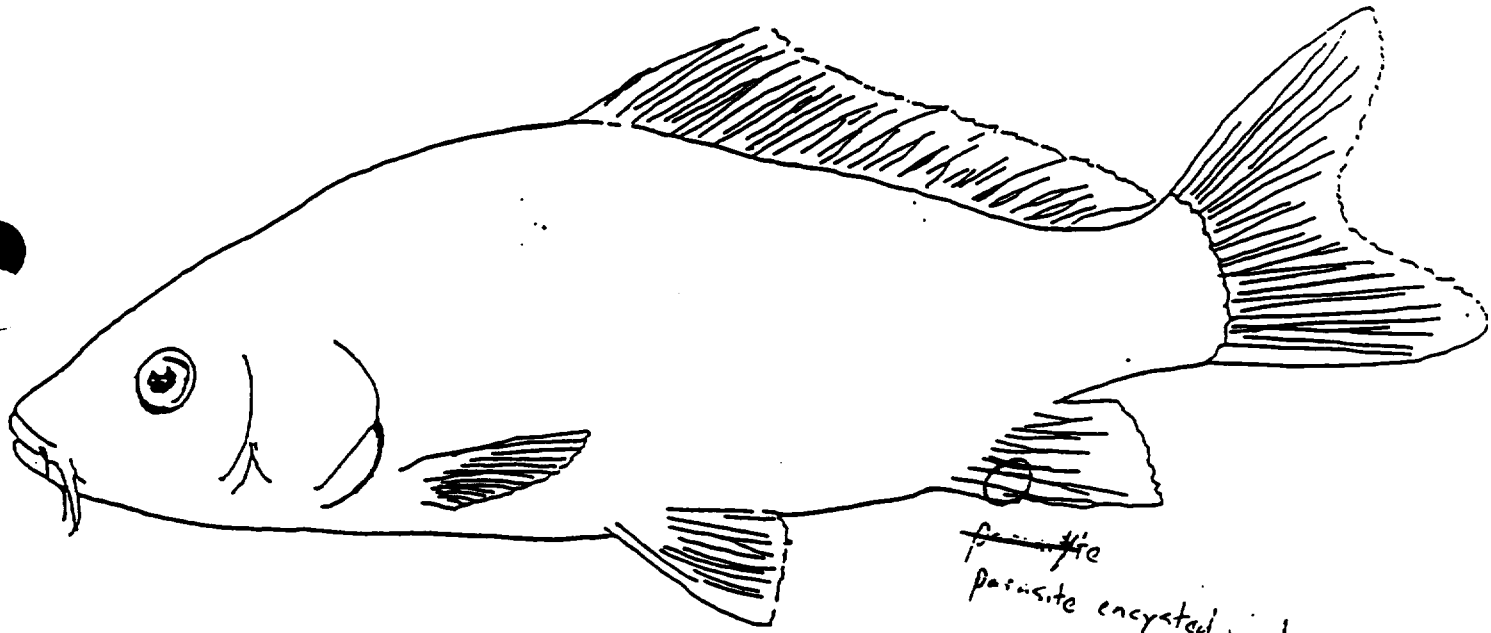
Collection Site _____

Weight _____

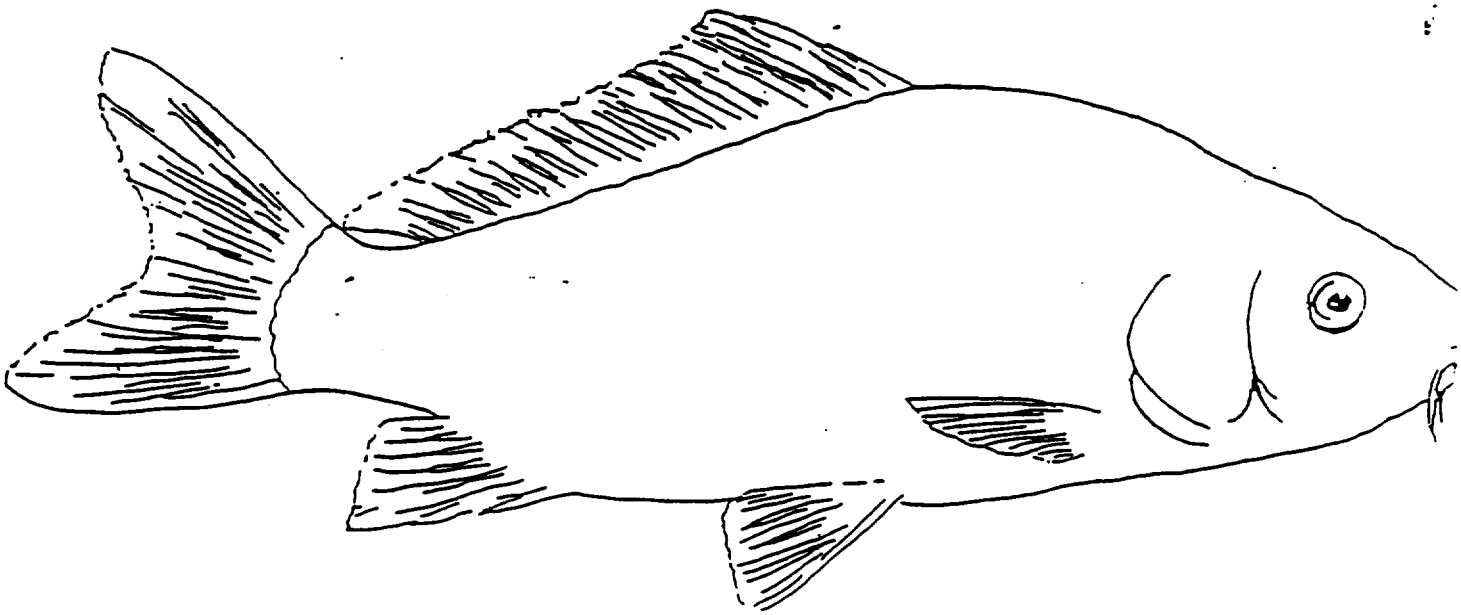
Collection Method _____

Photographs: (Yes) No Roll #1 Frame No(s). 19 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



~~parasite~~ parasite encysted in tail fin



ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40521

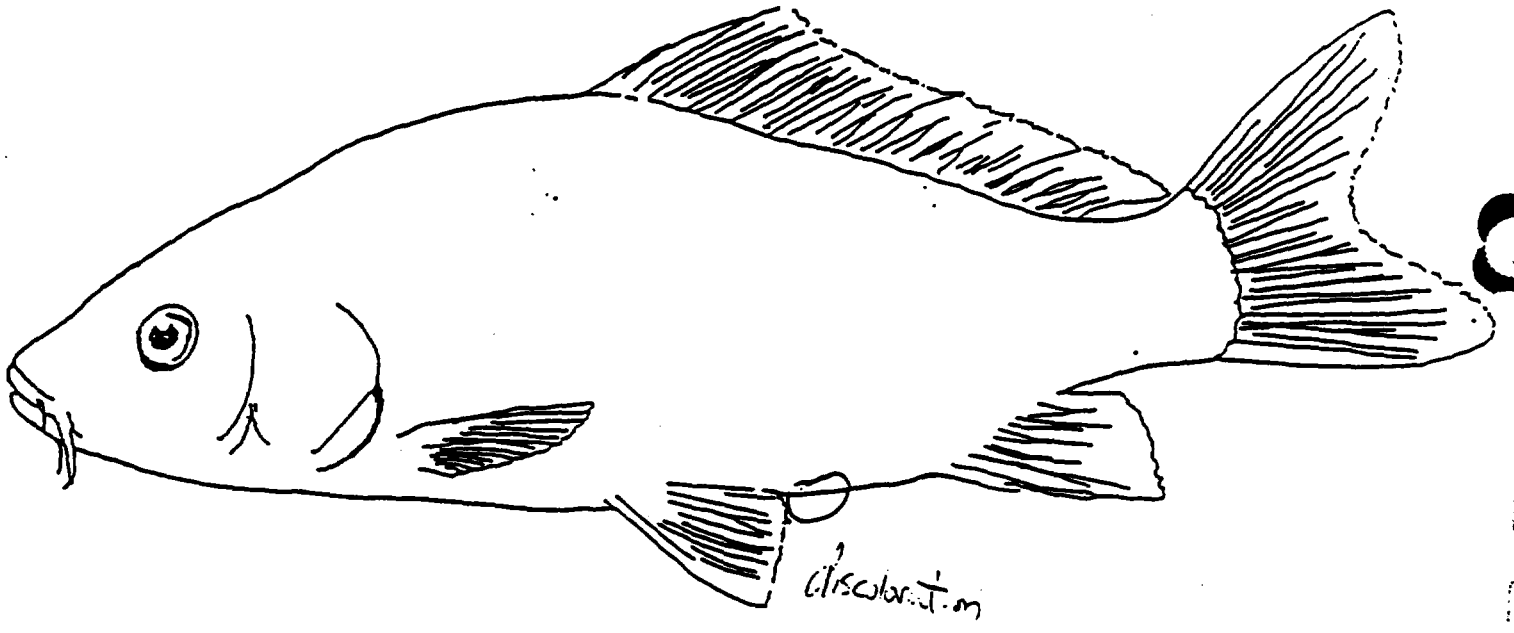
Collection Date _____ Length _____

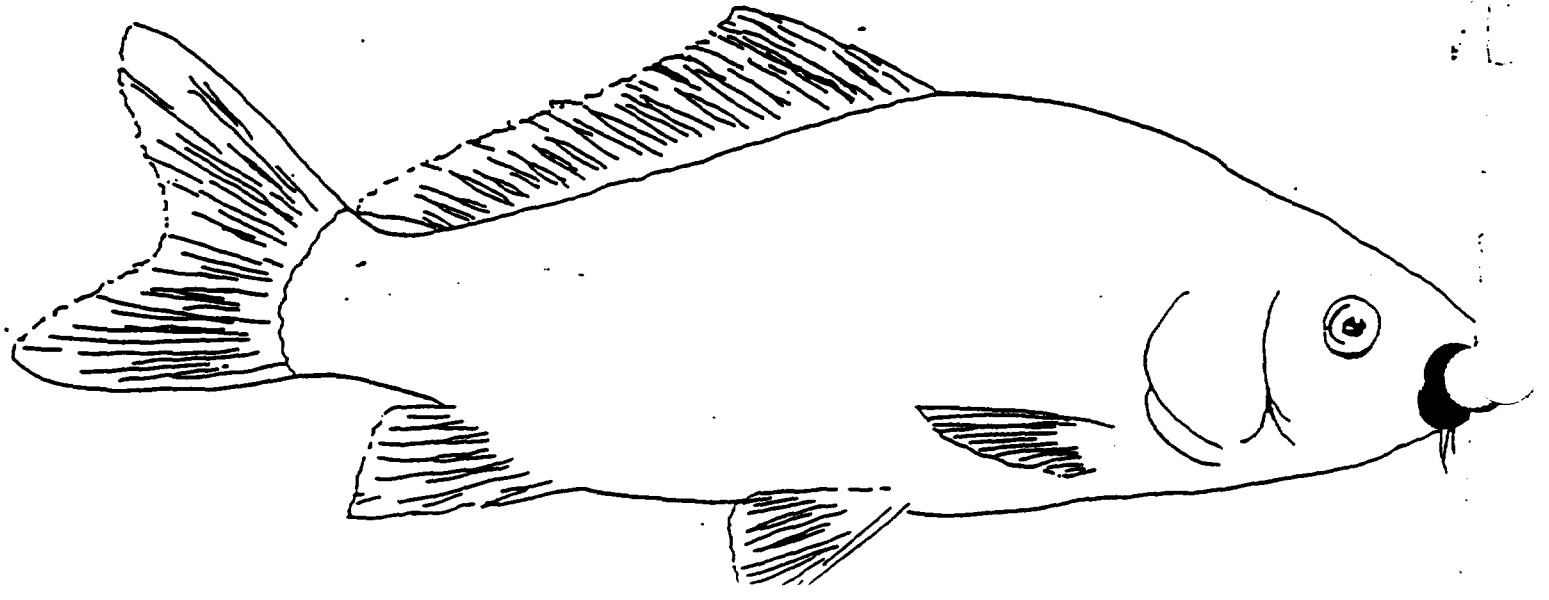
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Roll #1 Frame No(s). 24 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40535

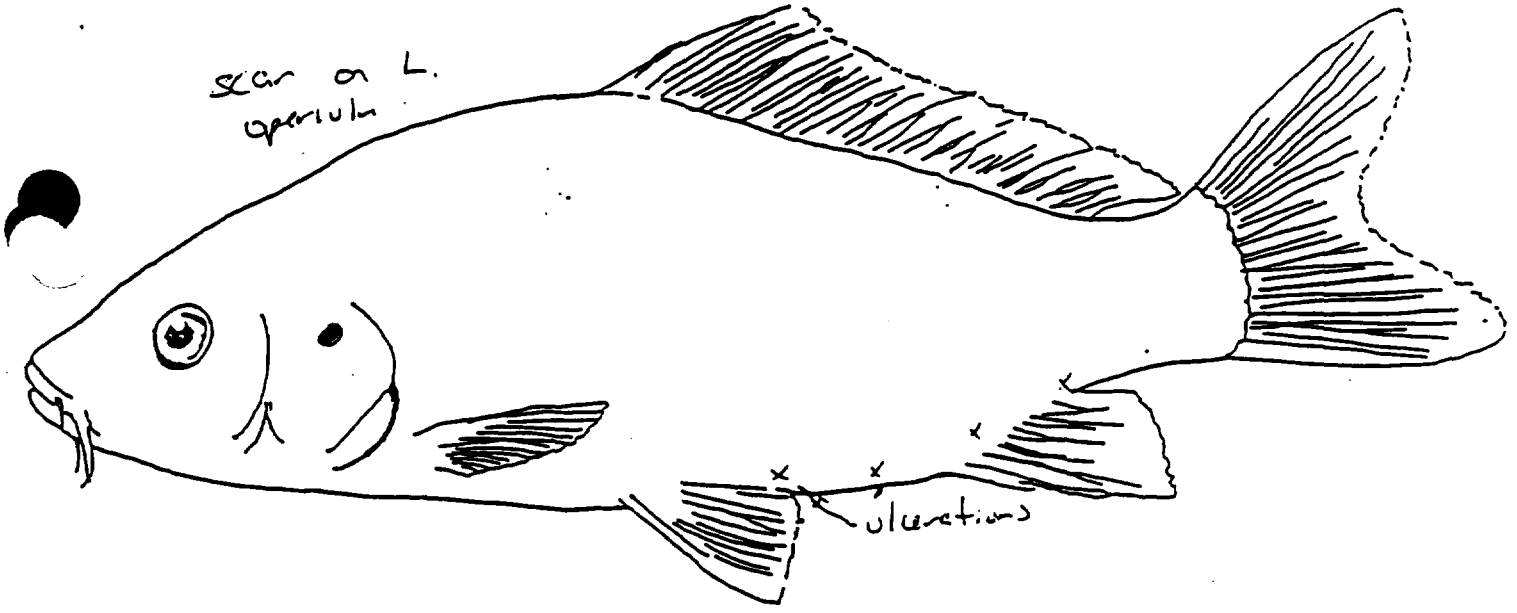
Collection Date _____ Length 50 cm

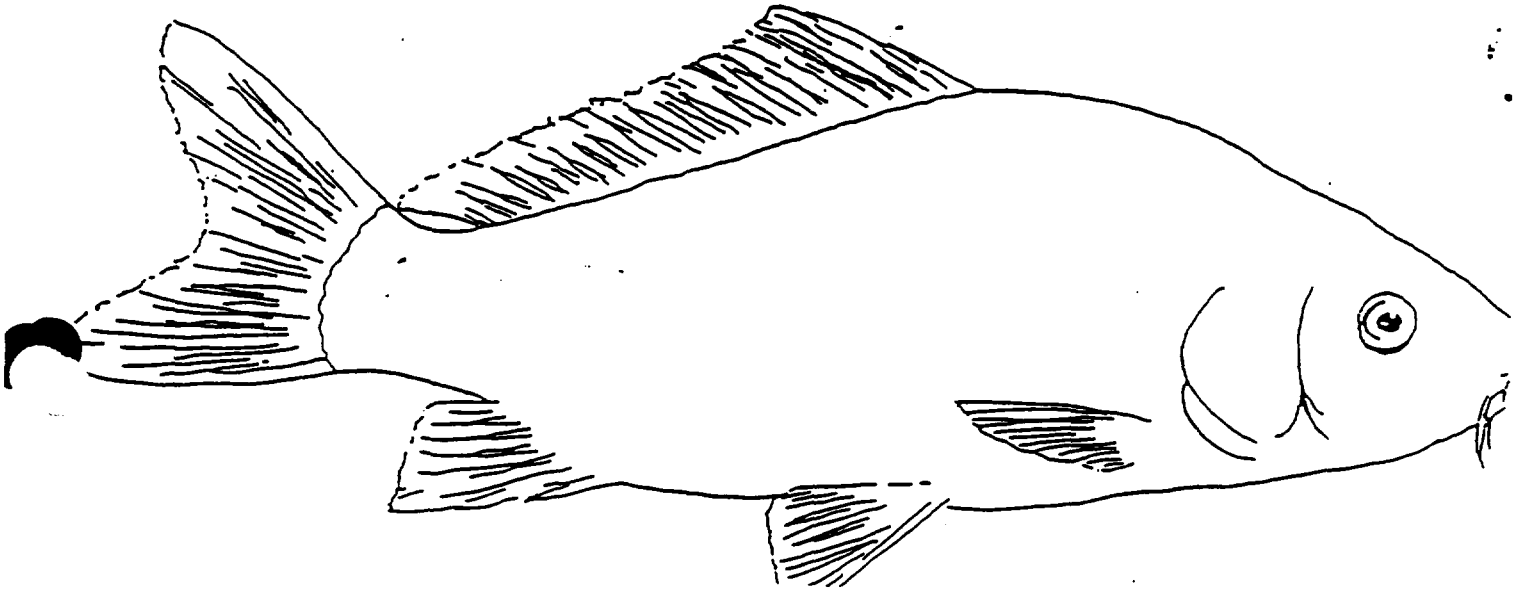
Collection Site _____ Weight 1.7 kg

Collection Method Electrofish

Photographs: (Yes) No Frame No(s). Roll 2 8 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K4053c

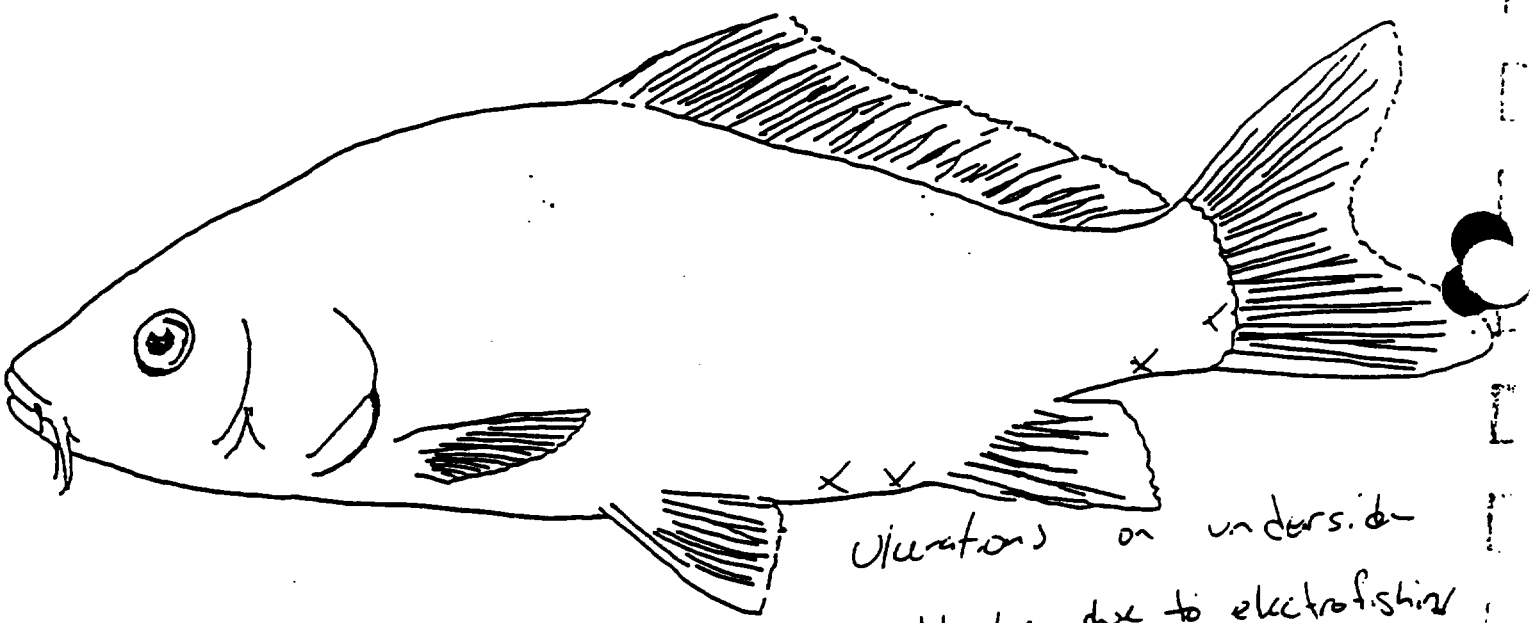
Collection Date _____ Length _____

Collection Site _____ Weight _____

Collection Method _____

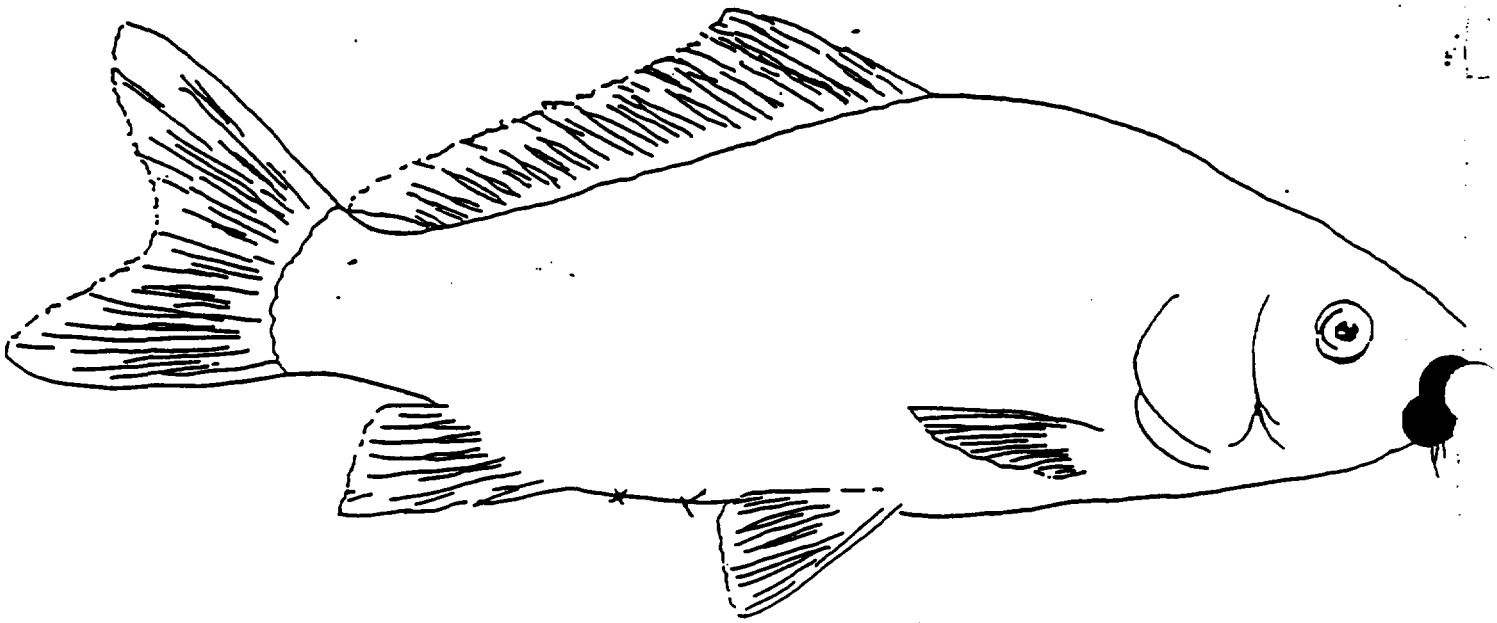
Photographs: (Yes) No Frame No(s). Roll 2 9 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



Ulcerations on underside

- could be due to electrofishing



ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 40522

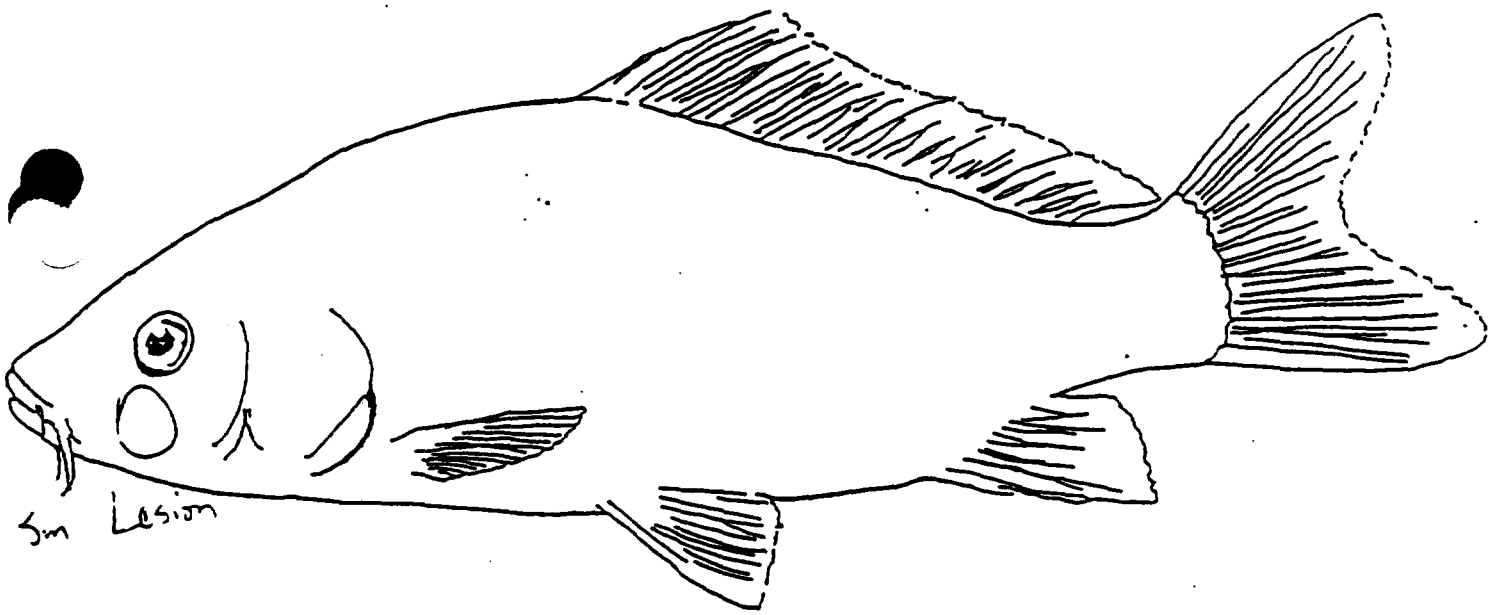
Collection Date _____ Length _____

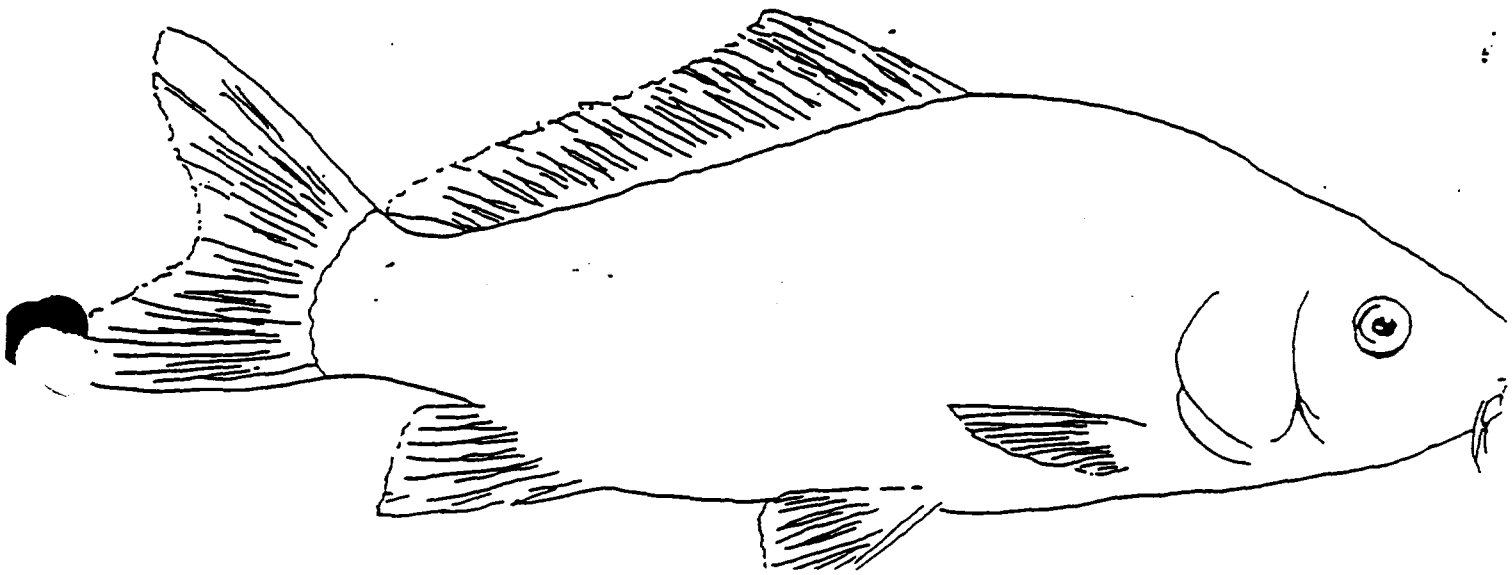
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Roll #1 Frame No(s). 25 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____

Fish No (s). 1K 40523

Collection Date _____

Length _____

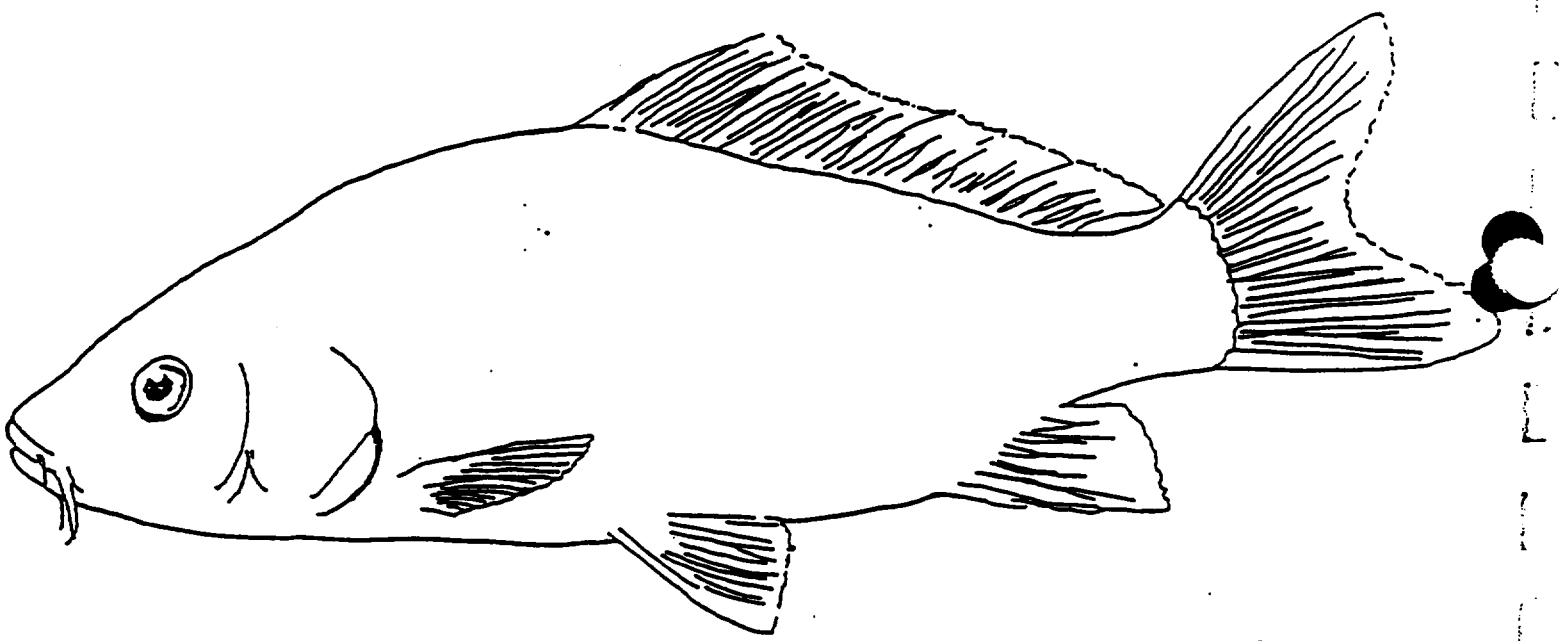
Collection Site _____

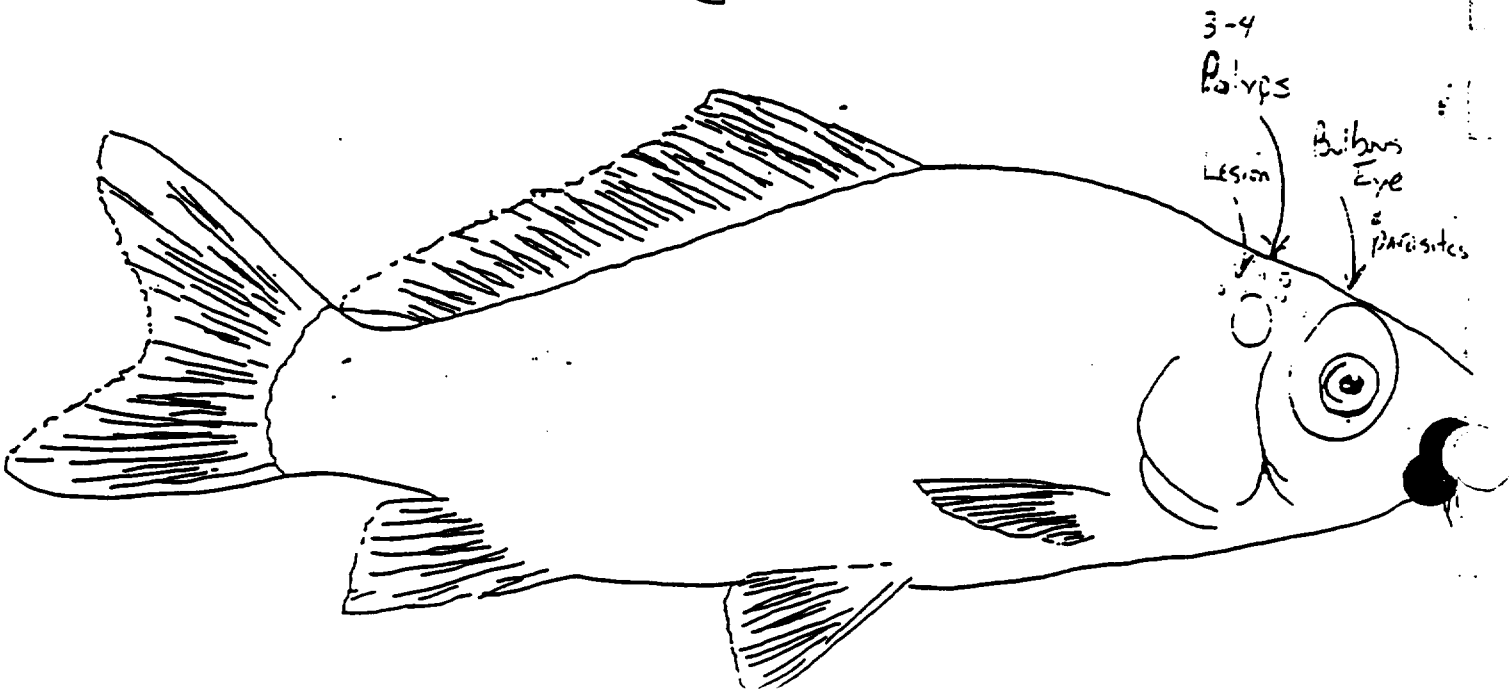
Weight _____

Collection Method _____

Photographs: (Yes) No Roll #1 Frame No(s). 26&27 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K90537

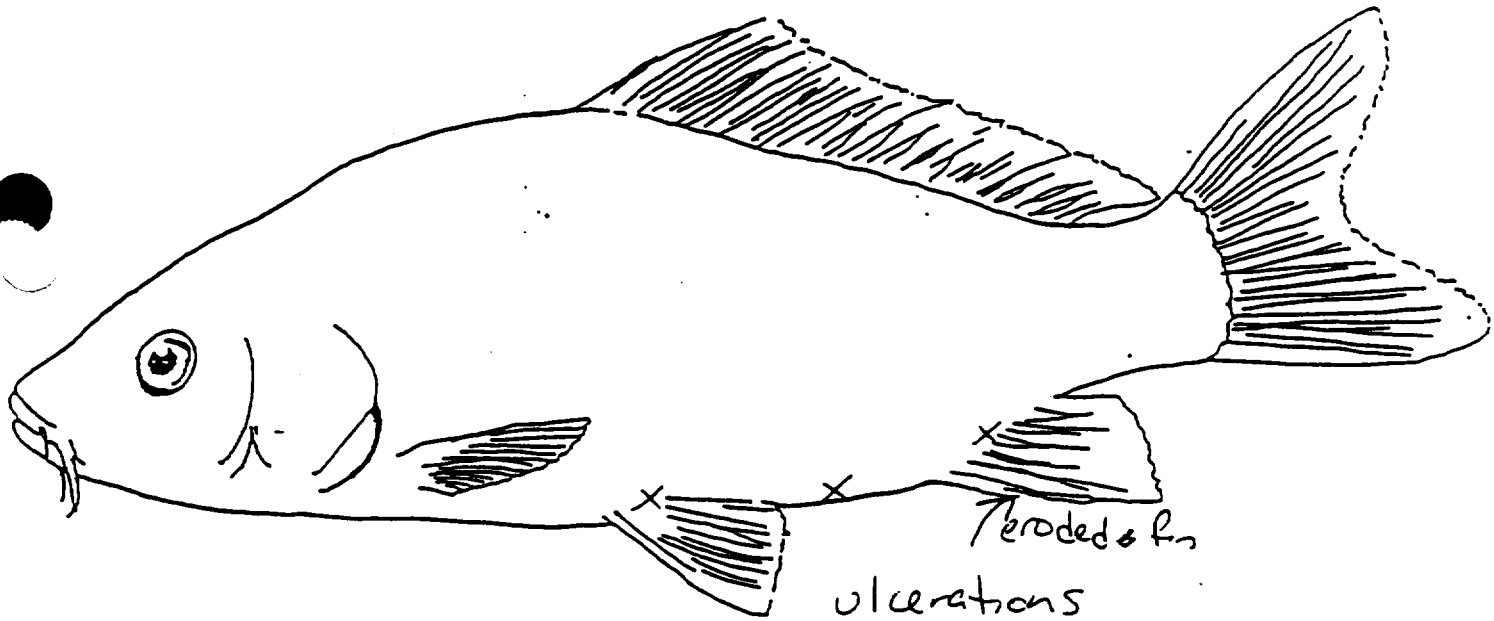
Collection Date _____ Length _____

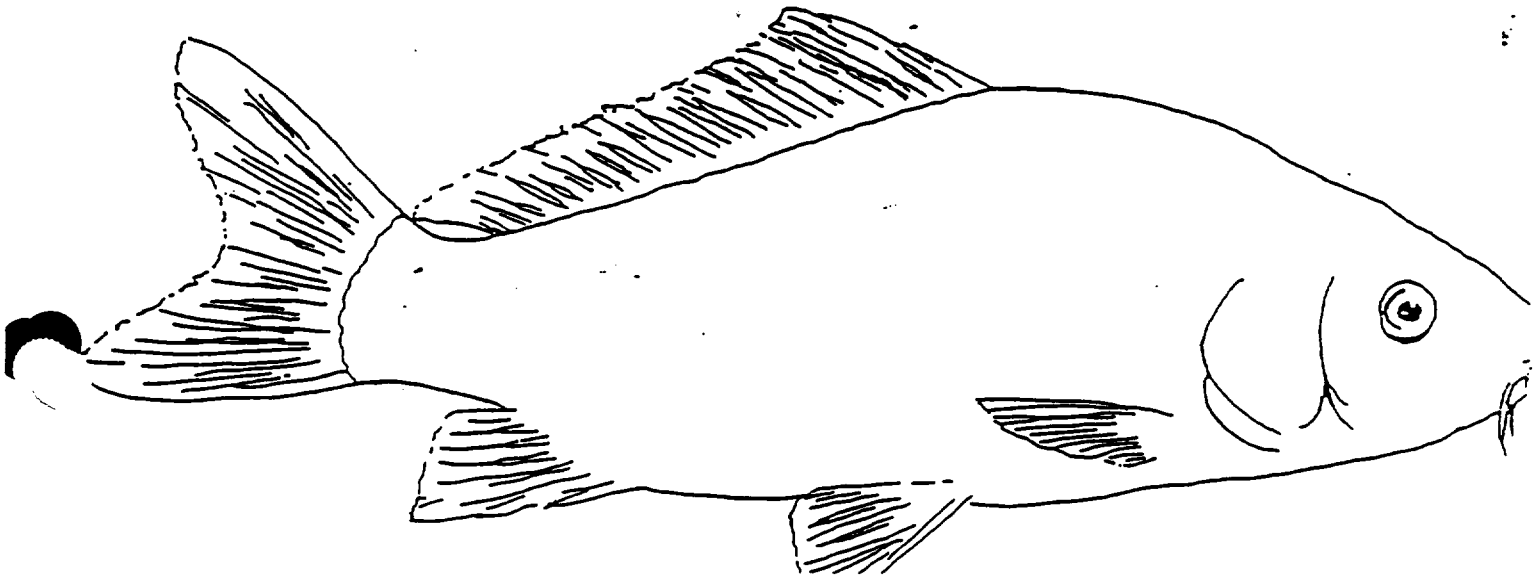
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Frame No(s). Roll #2 10 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40543

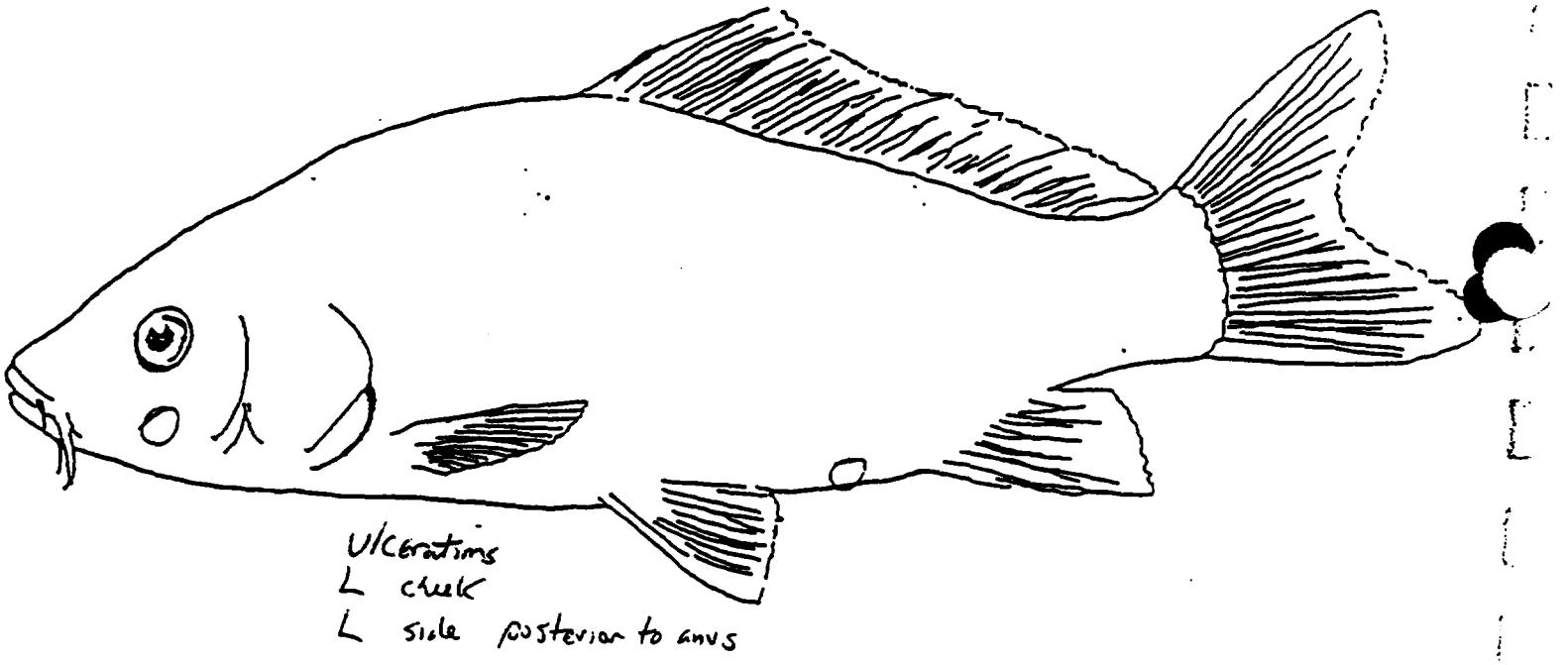
Collection Date _____ Length _____

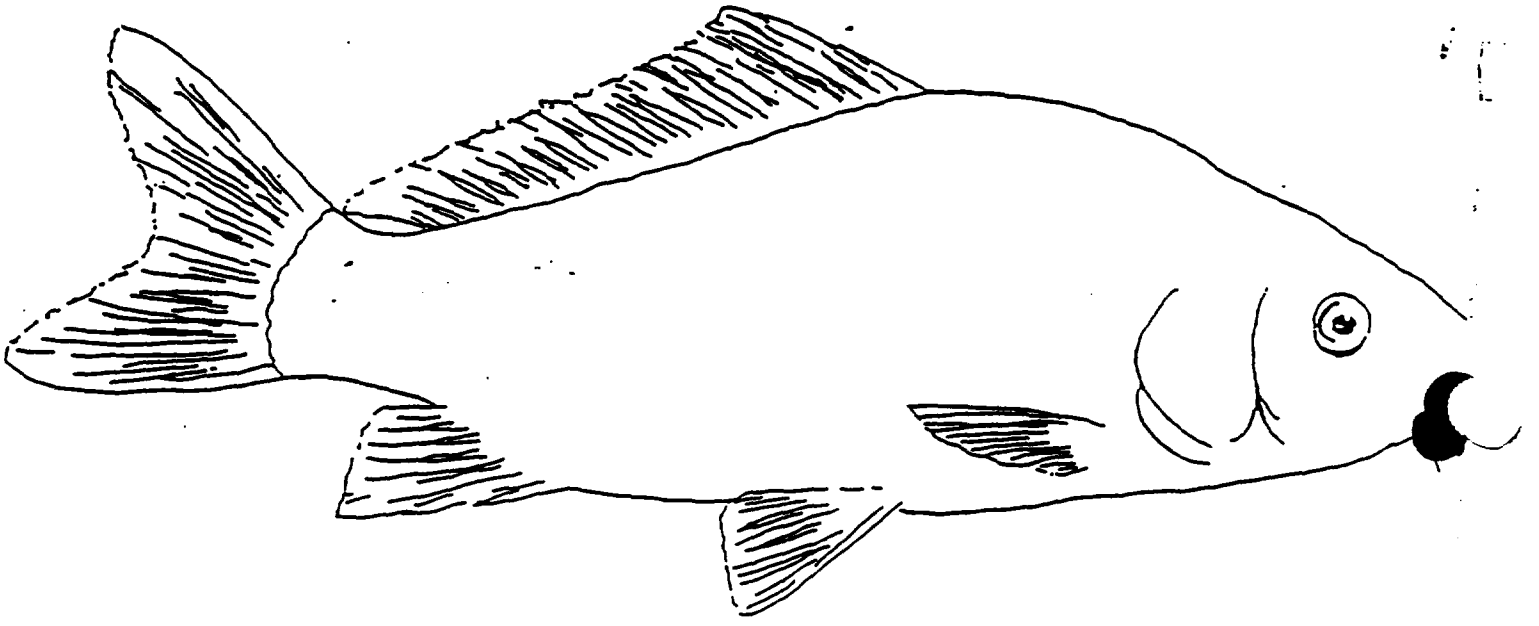
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #2 Frame No(s). 16 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Fish No (s). K40553

Species _____

Length _____

Collection Date _____

Weight _____

Collection Site _____

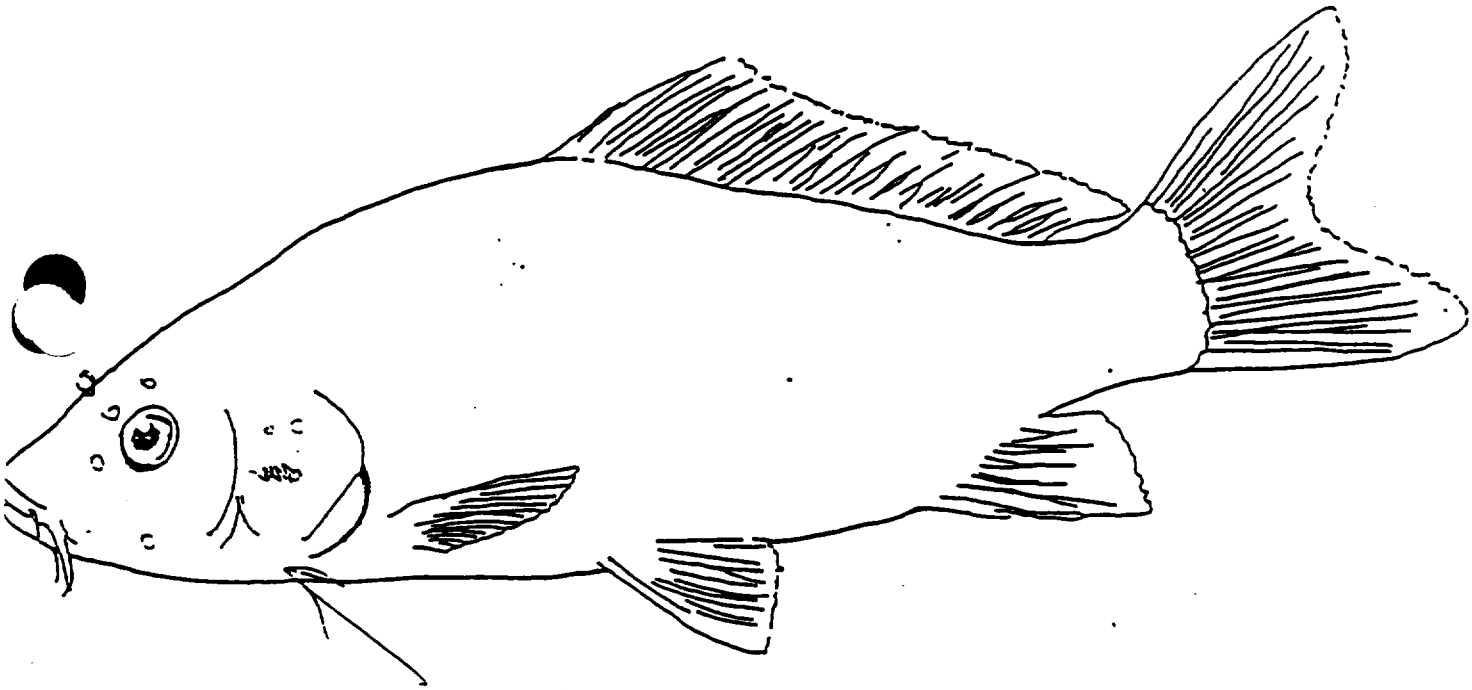
Collection Method _____

Photographs: (Yes) No Roll 53 Frame No(s). 2

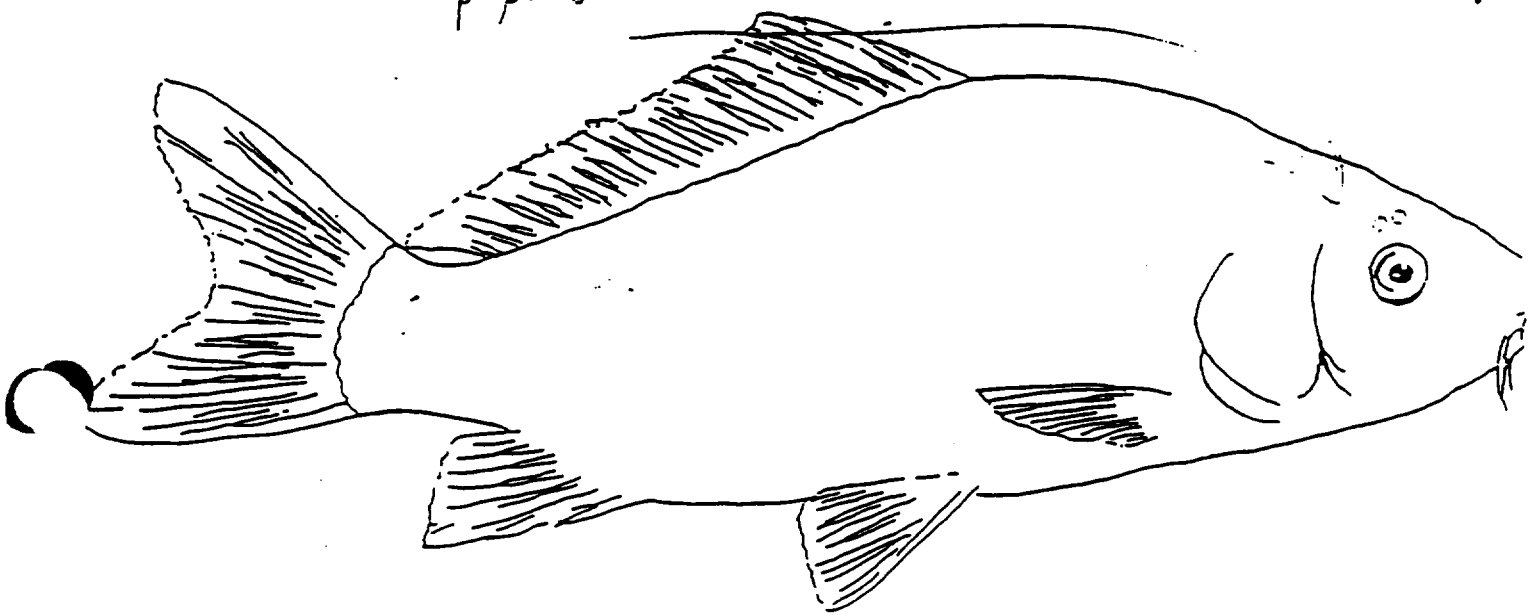
Description _____

Age of Fish _____ Spine, Scale, Ray _____

Preserved: Yes No



papillomas



ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). 1410555

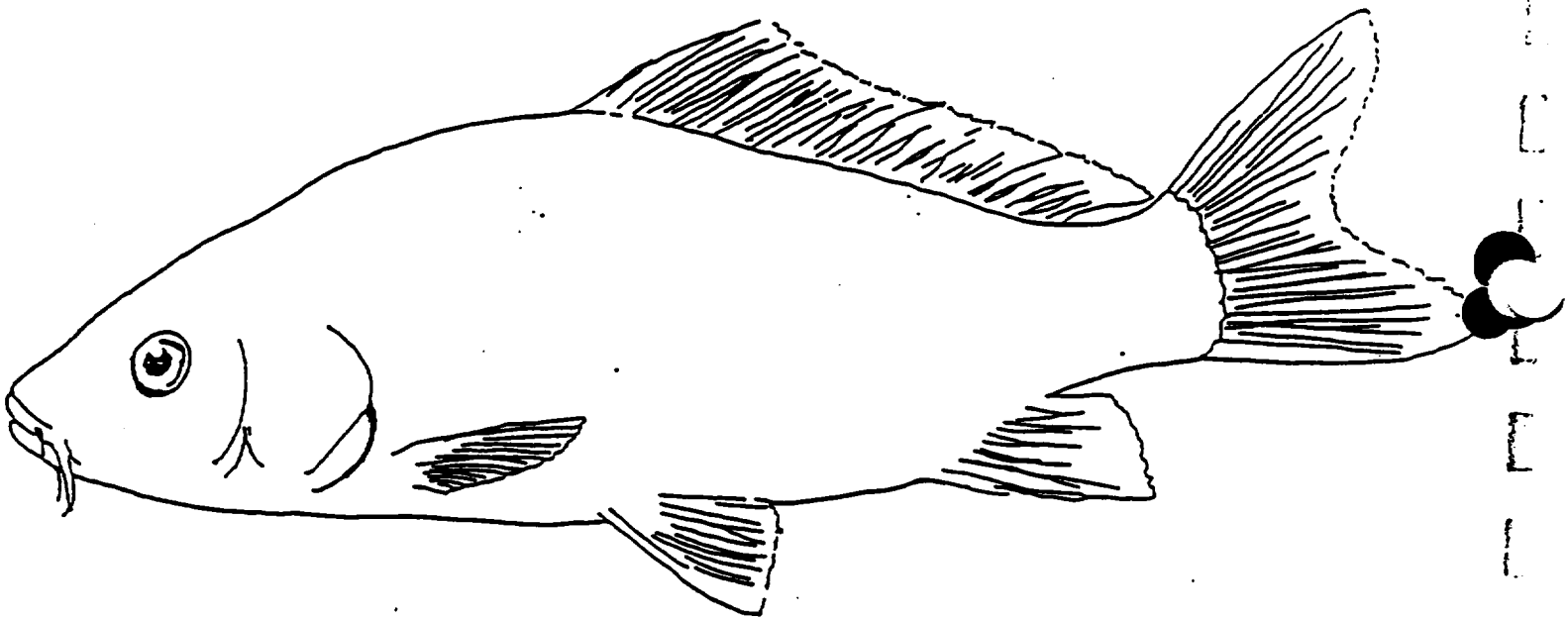
Collection Date _____ Length _____

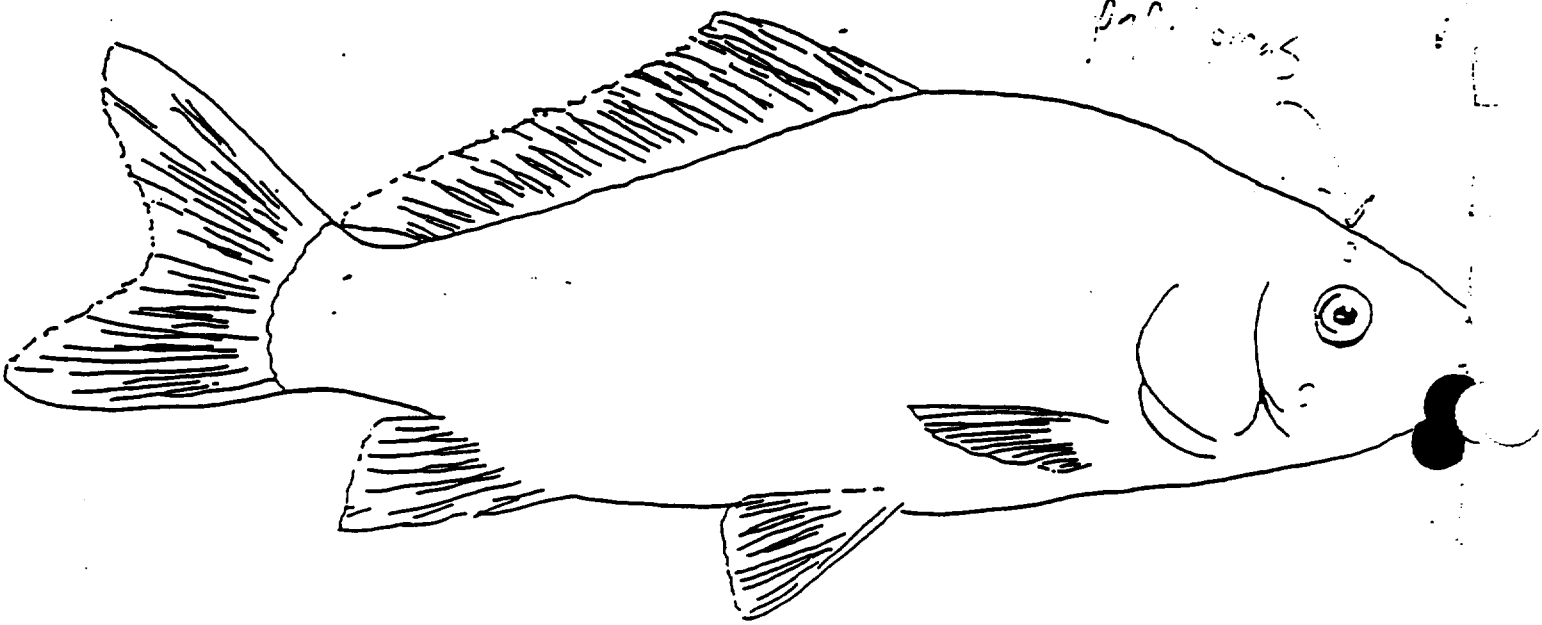
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #3 Frame No(s). 4 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 410571

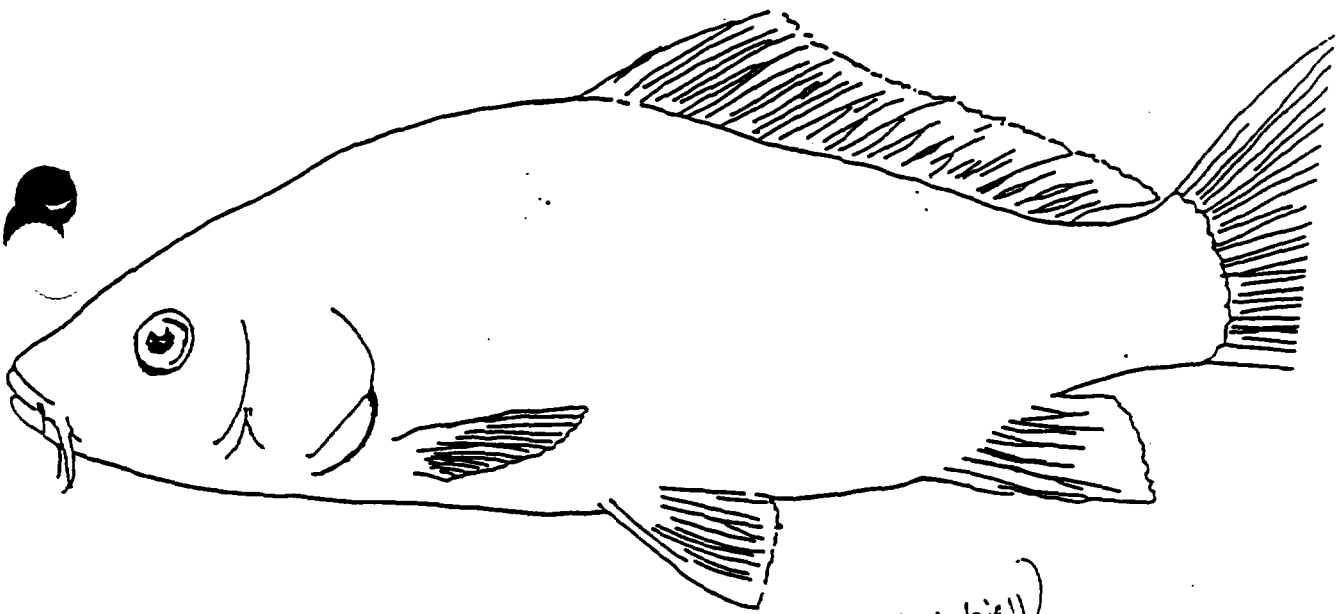
Collection Date _____ Length _____

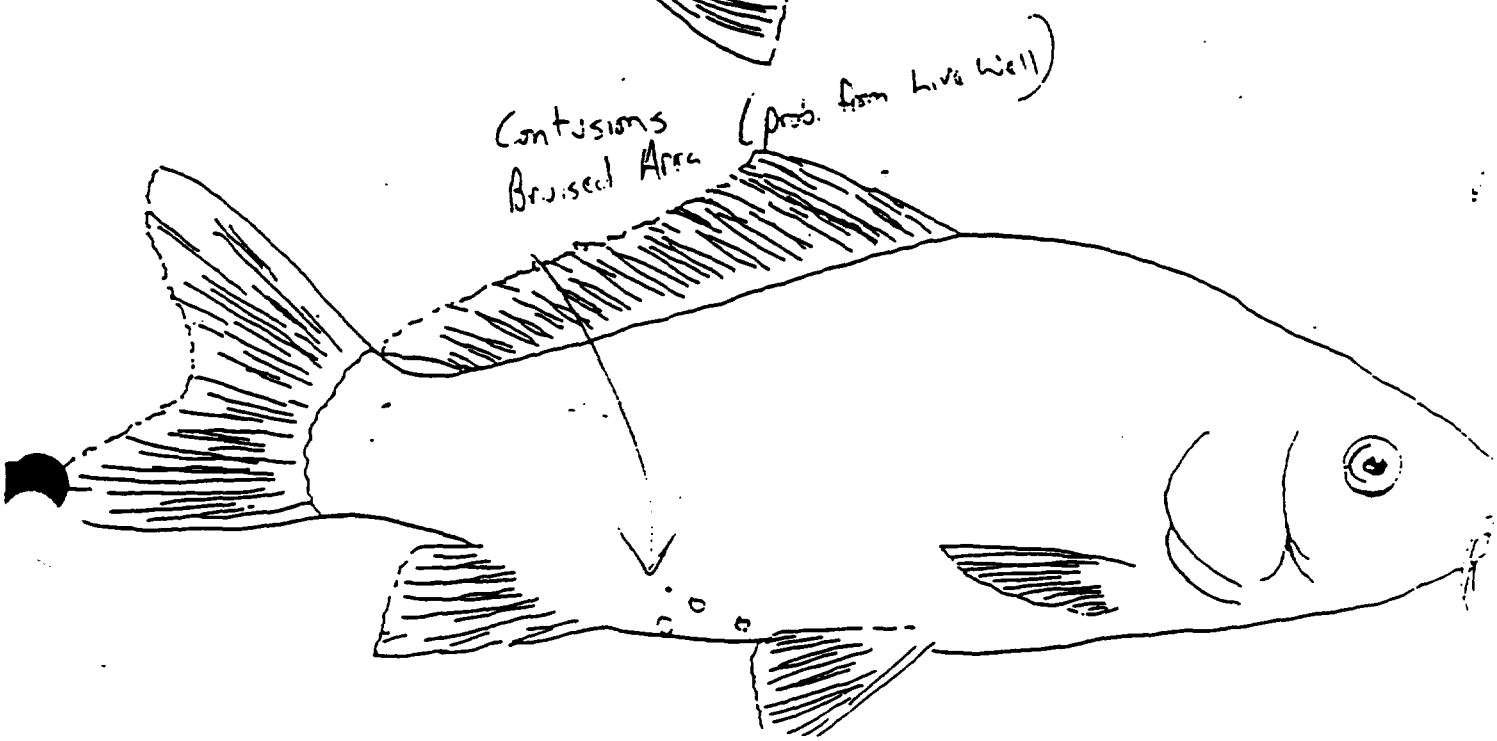
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #3 Frame No(s). 20 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 40572

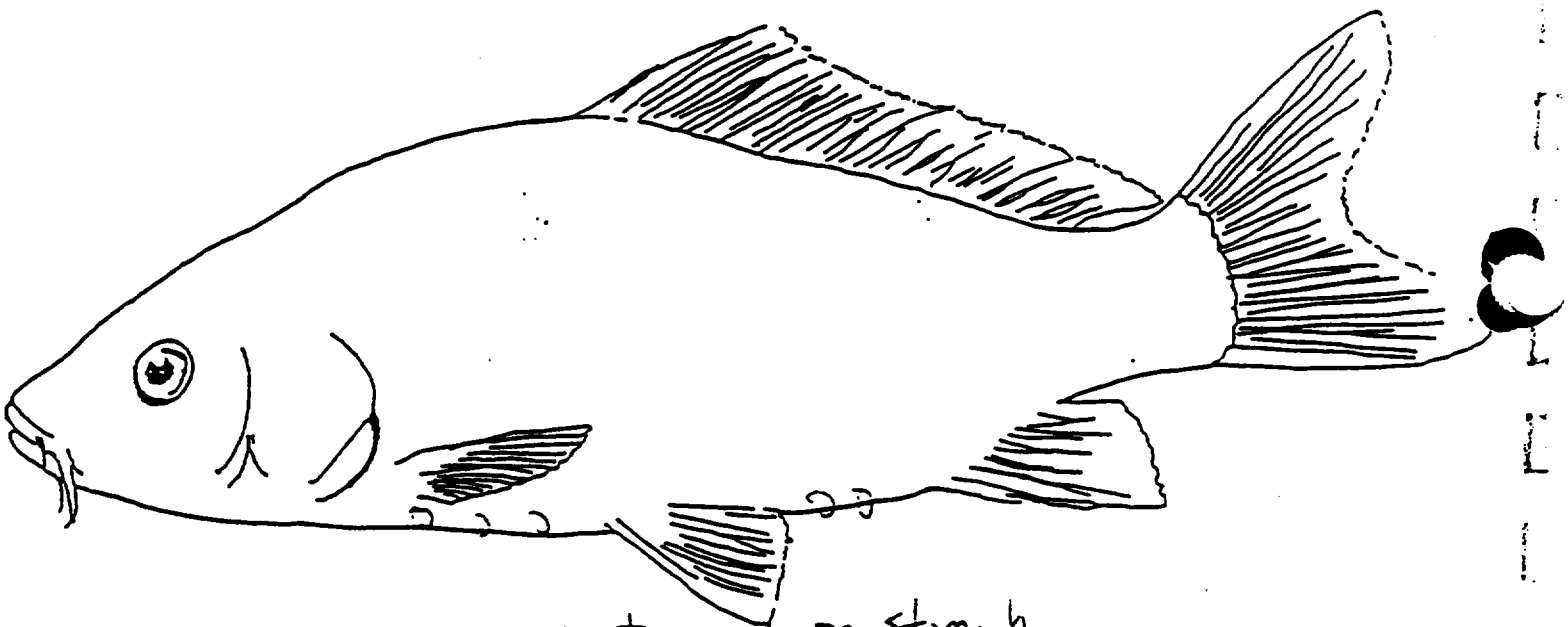
Collection Date _____ Length _____

Collection Site _____ Weight _____

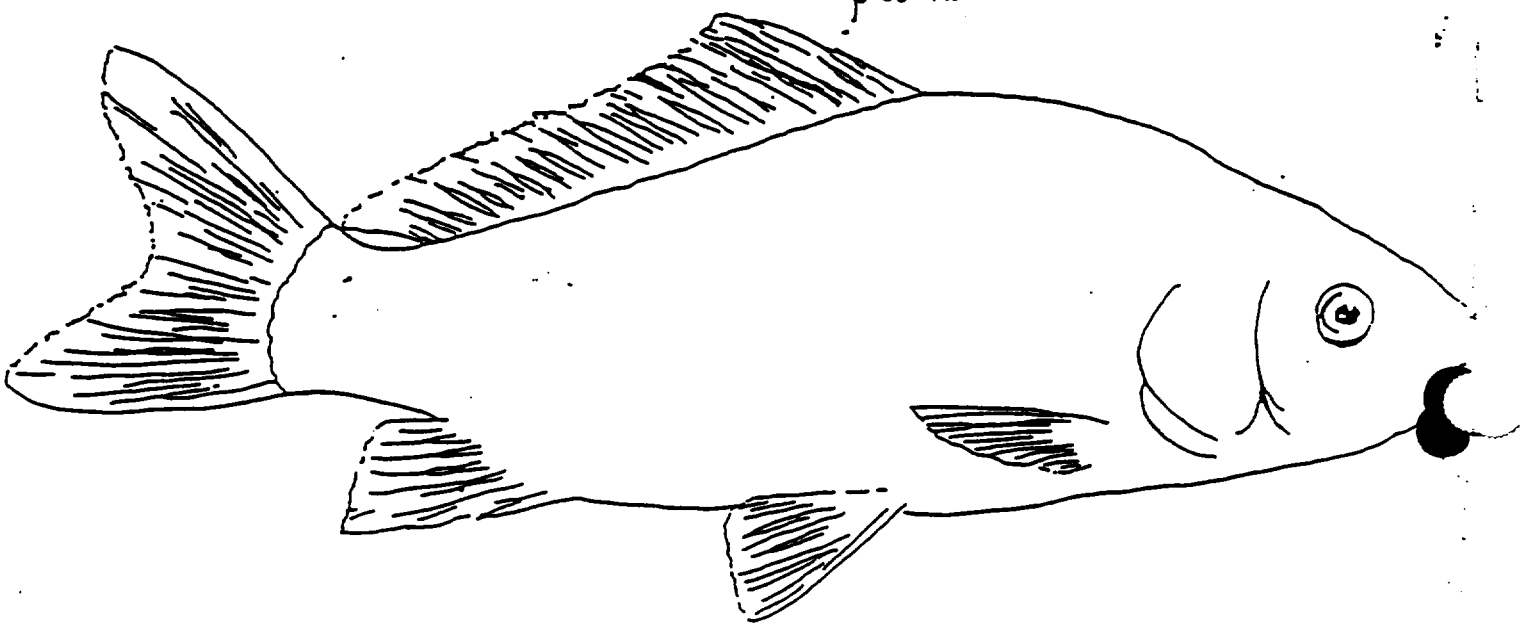
Collection Method _____

Photographs: Yes No Roll #3 Frame No(s). 21 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



contusions on stomach
grab from live well



ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 40573

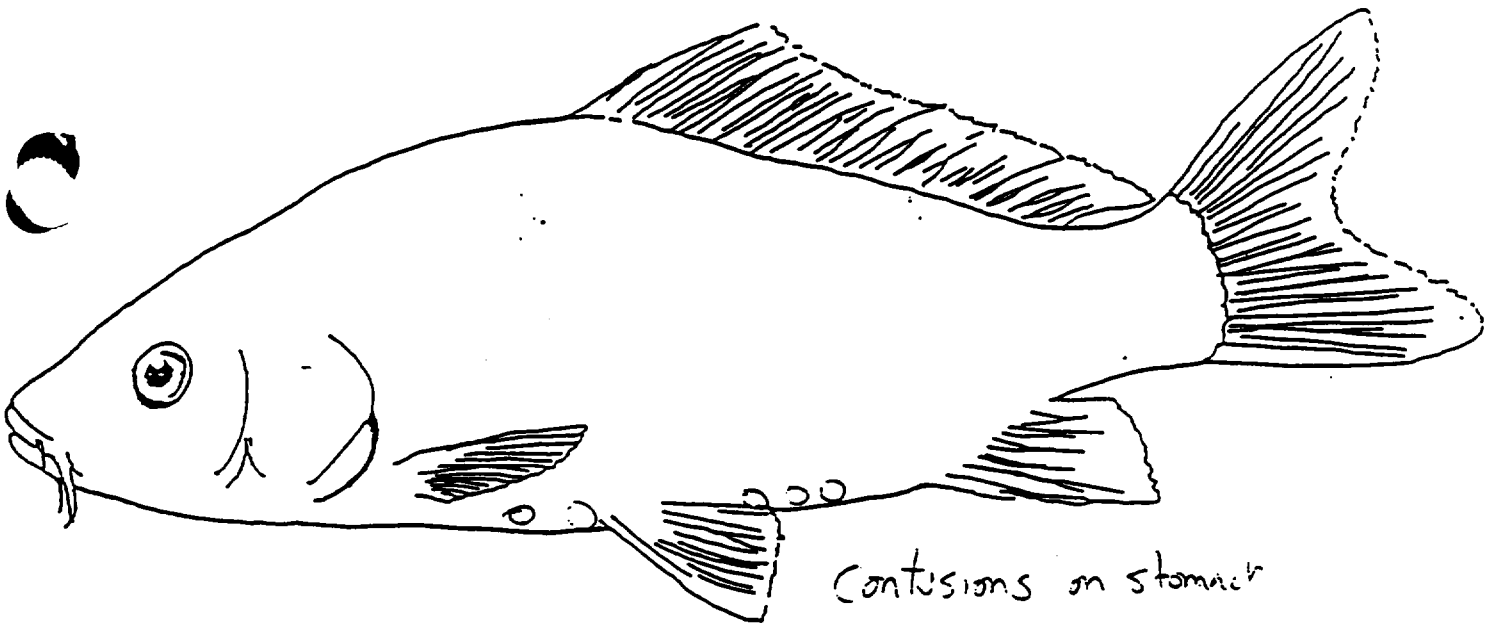
Collection Date _____ Length _____

Collection Site _____ Weight _____

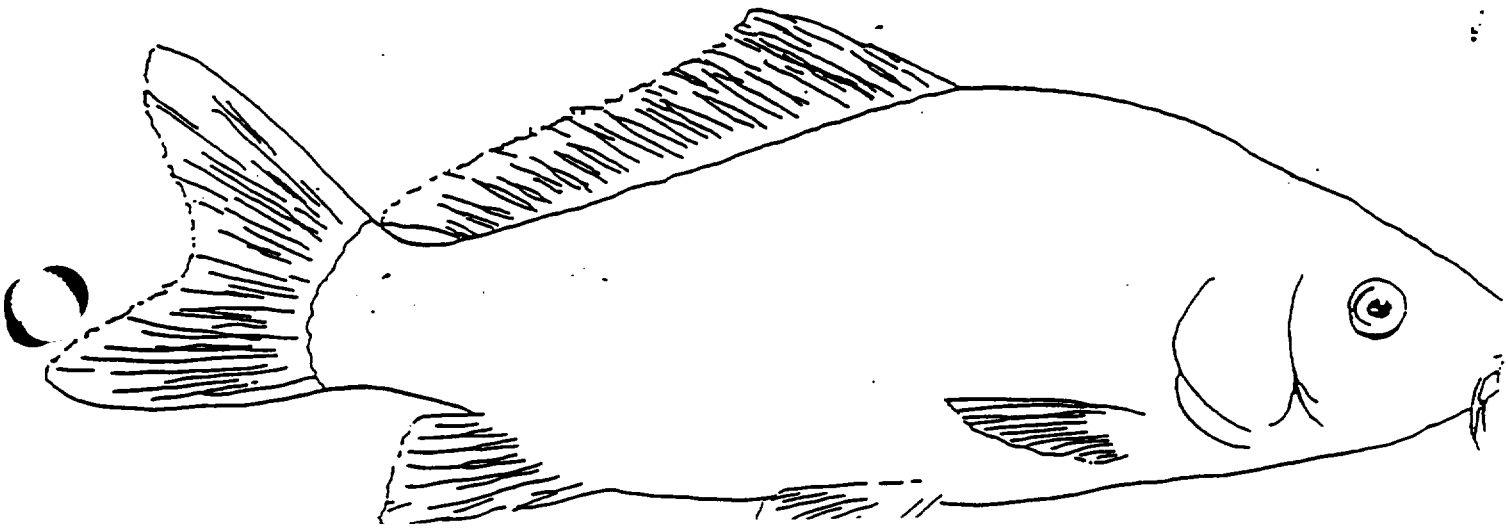
Collection Method _____

Photographs: Yes No Roll #3 Frame No(s). 22 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



Contusions on stomach
from live well



ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 4057-1

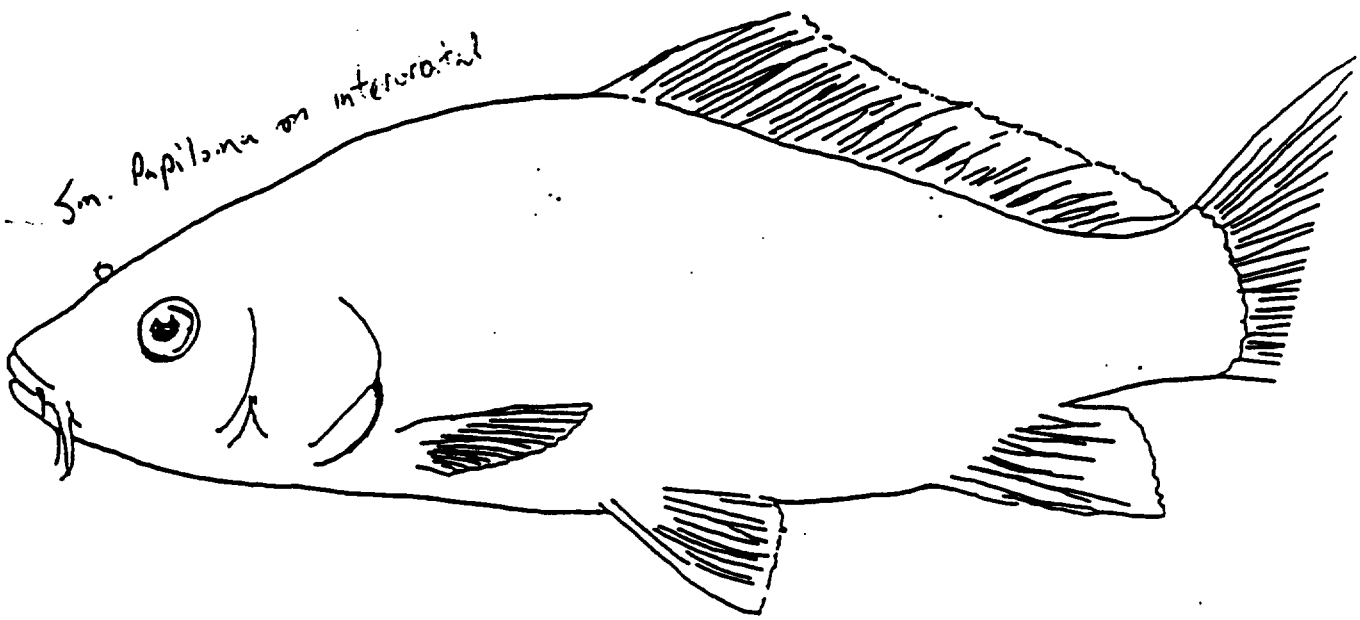
Collection Date _____ Length _____

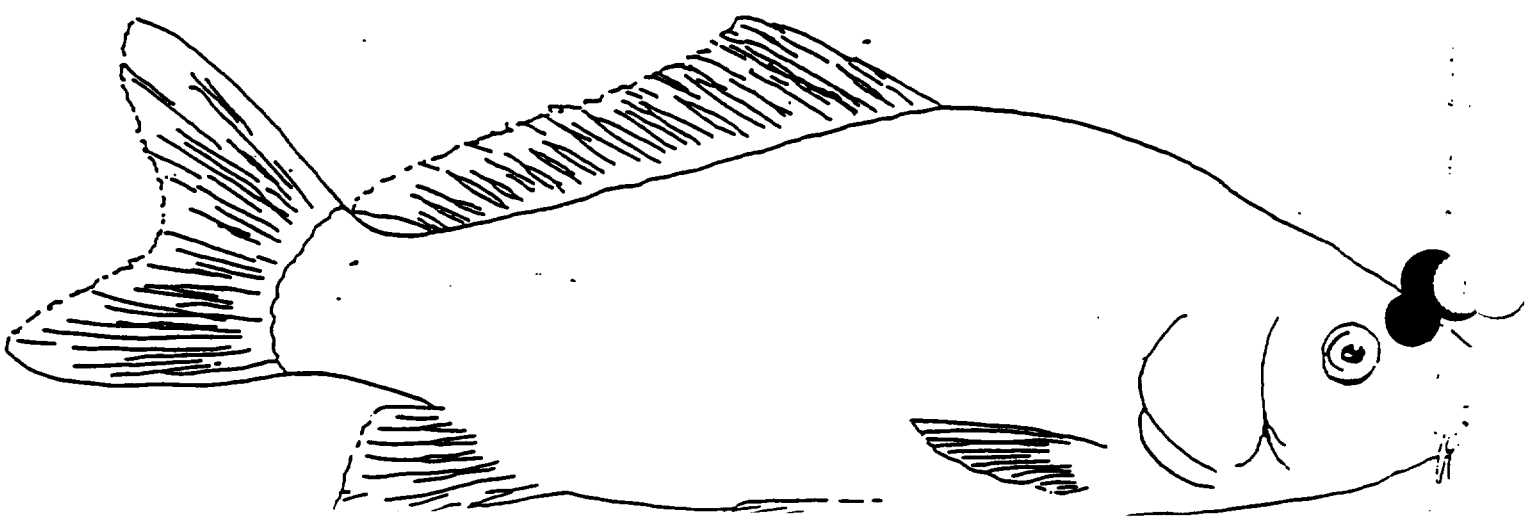
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #3 Frame No(s). 23 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40592

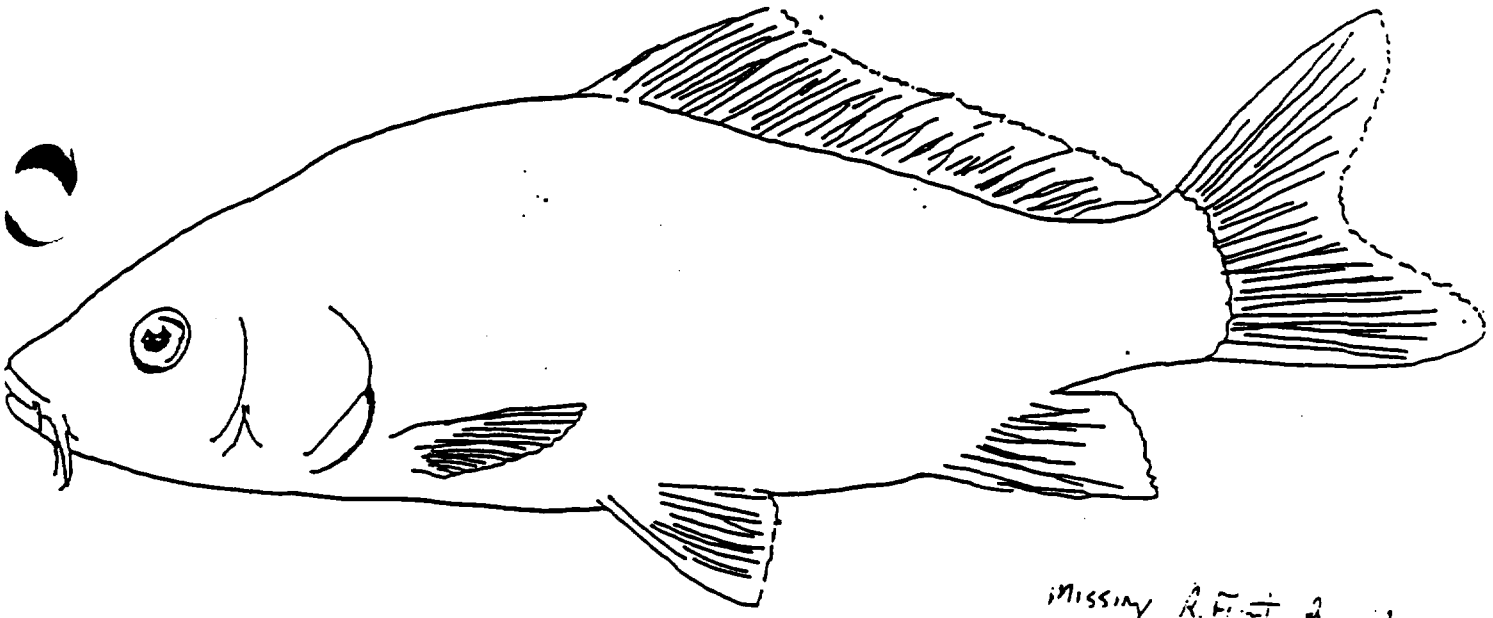
Collection Date _____ Length _____

Collection Site _____ Weight _____

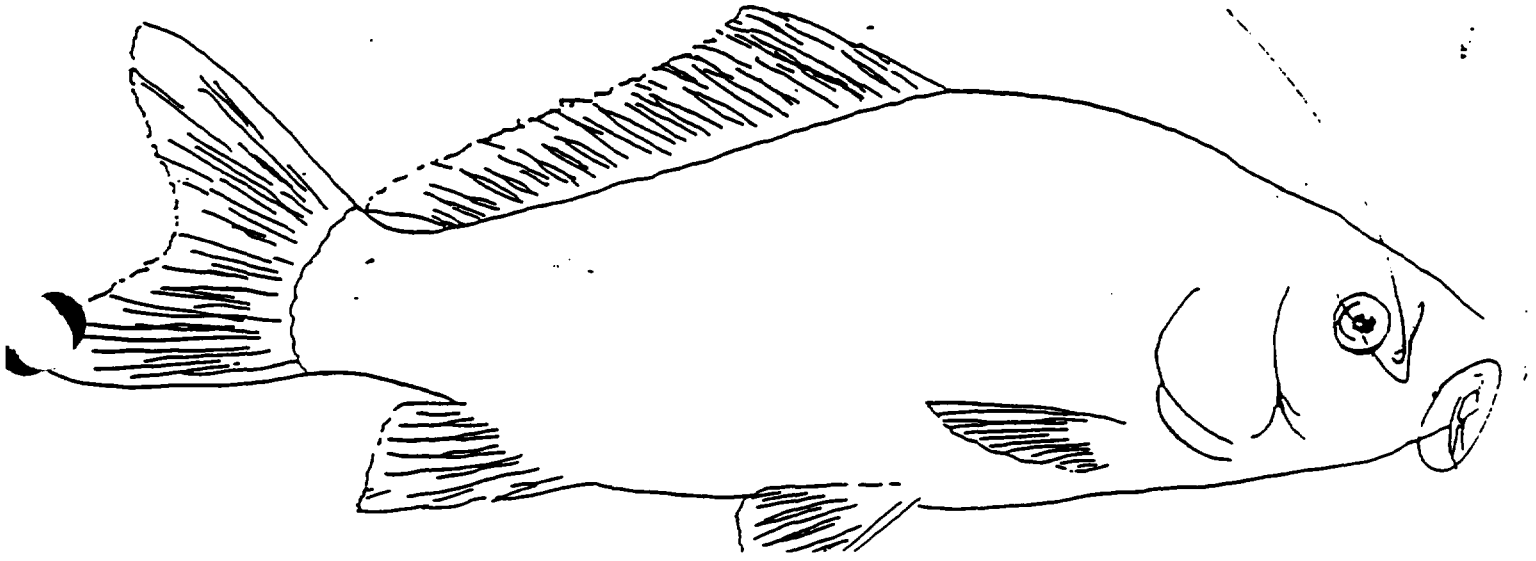
Collection Method _____

Photographs: (Yes) No Roll #4 Frame No(s). 6 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



missing R. Fin + Barbel



ATTACHMENT A-3

CARP FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40640

Collection Date _____ Length _____

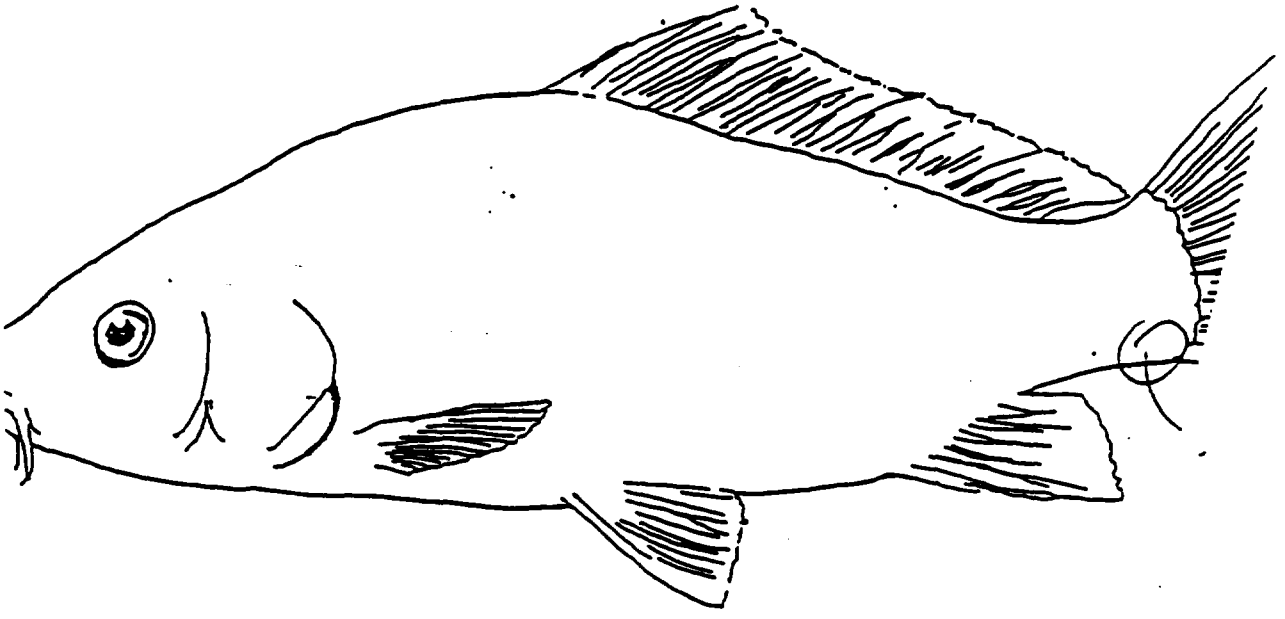
Collection Site _____ Weight _____

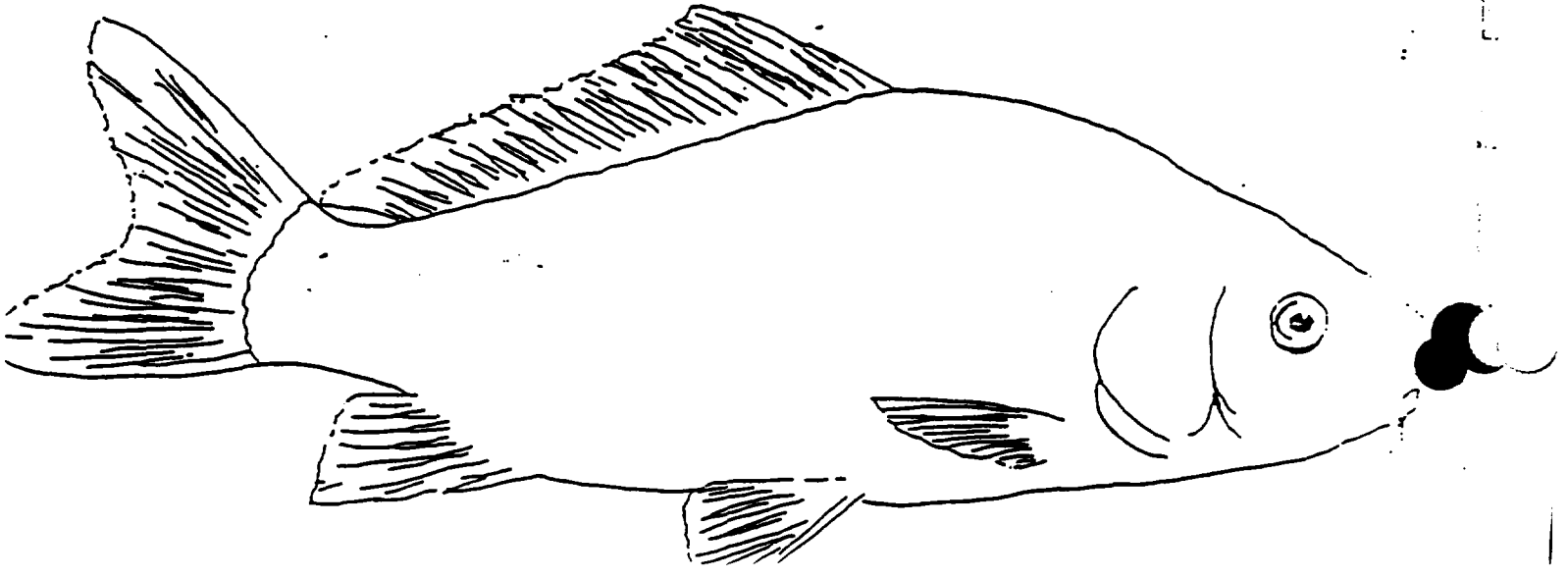
Collection Method _____

Roll #6

Photographs: Yes No Frame No(s). 1 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





Attachment A-4

Bass Fish Condition Survey Form

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40542

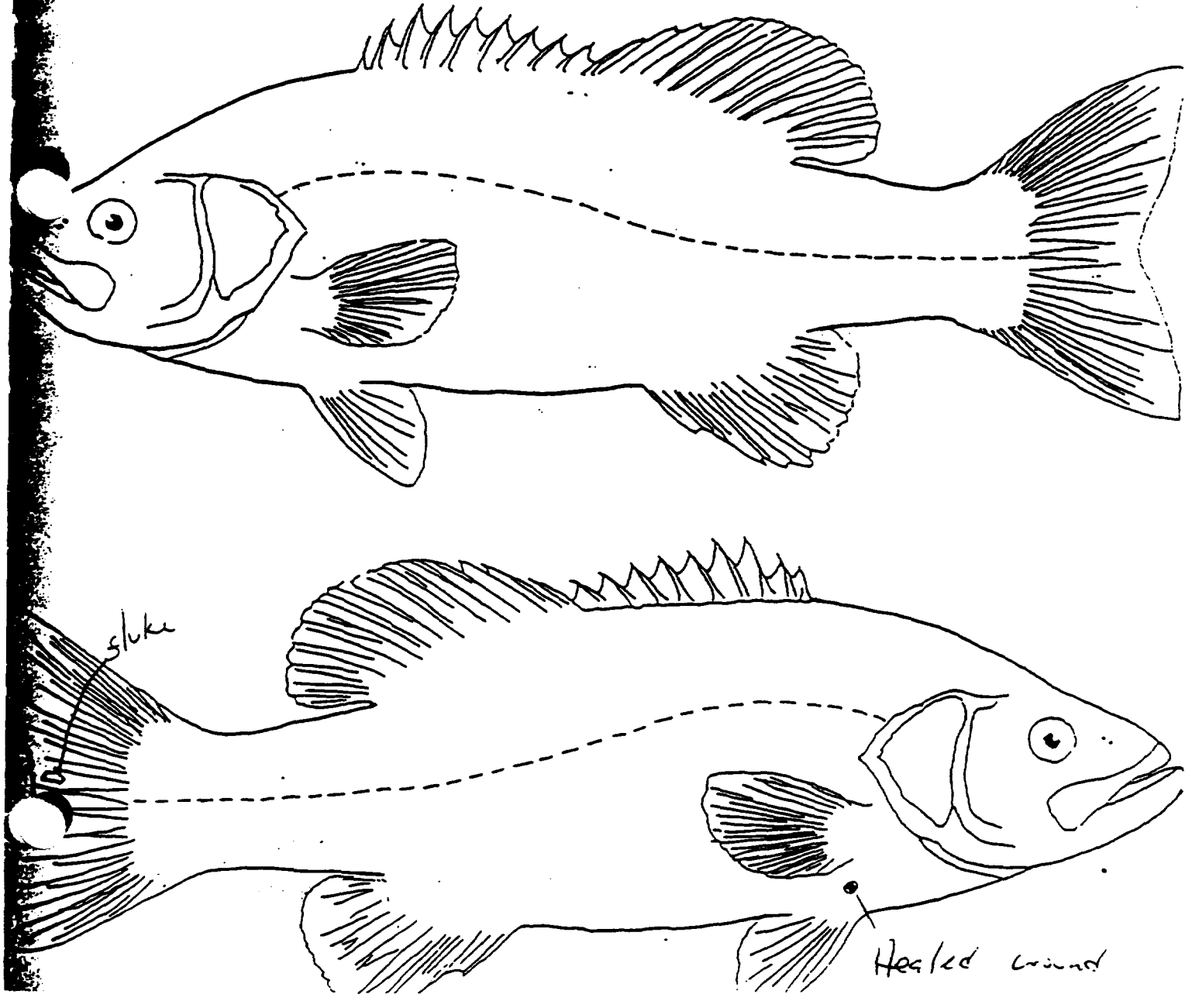
Collection Date _____ Length _____

Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Frame No(s). Rdl #2 15 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40545

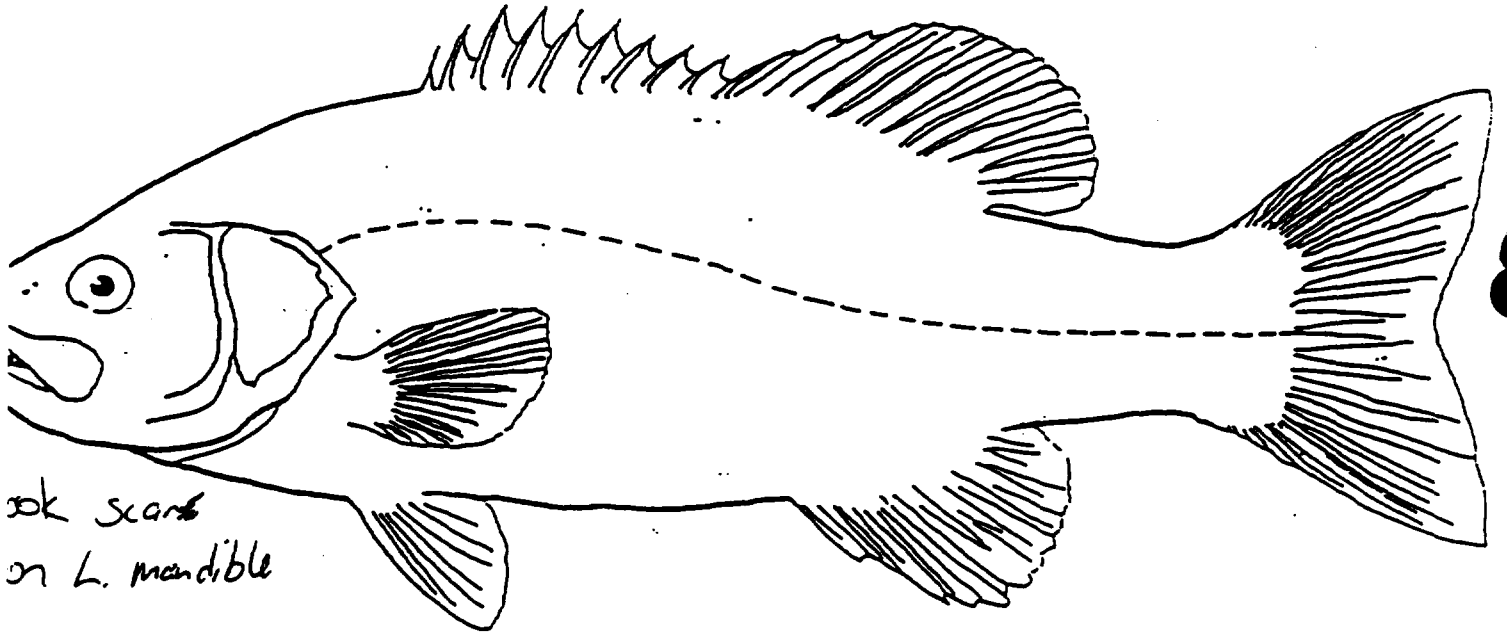
Collection Date _____ Length _____

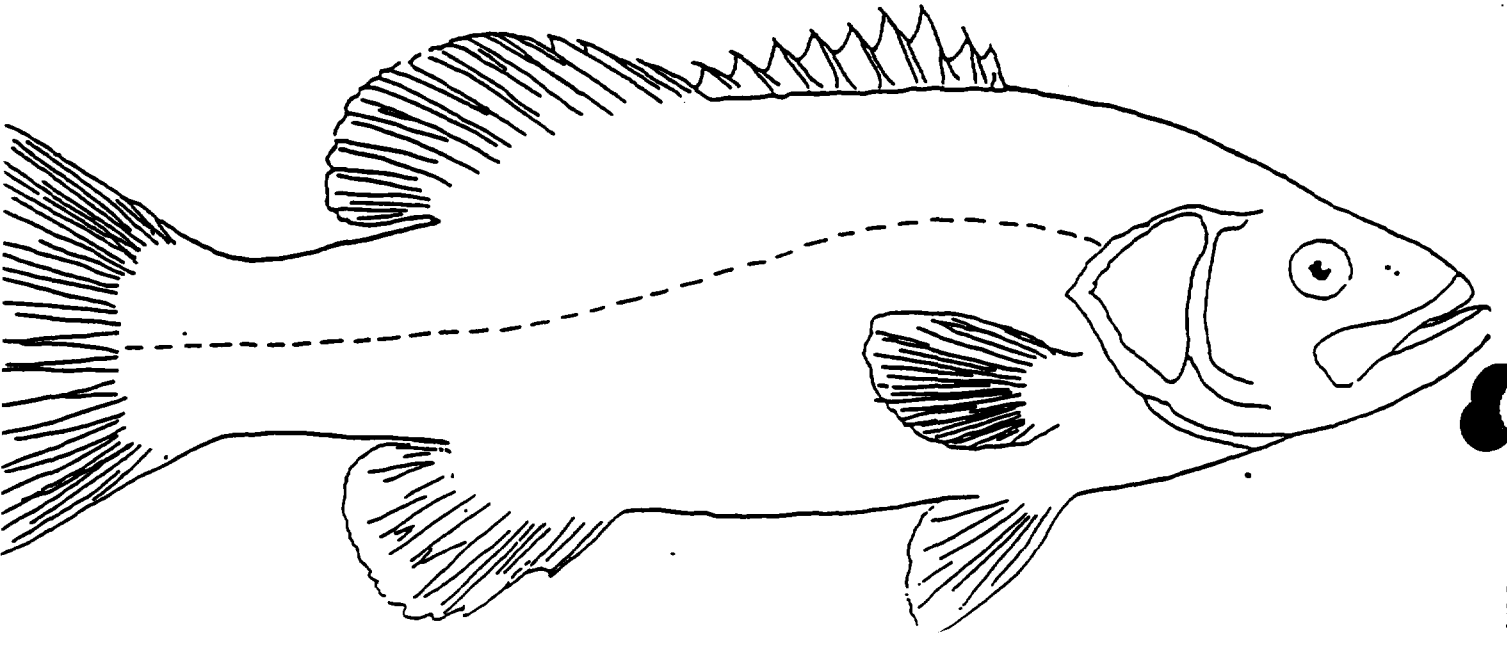
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Roll #2 Frame No(s). 18 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species Adult Sm Bass Fish No (s). 1540500

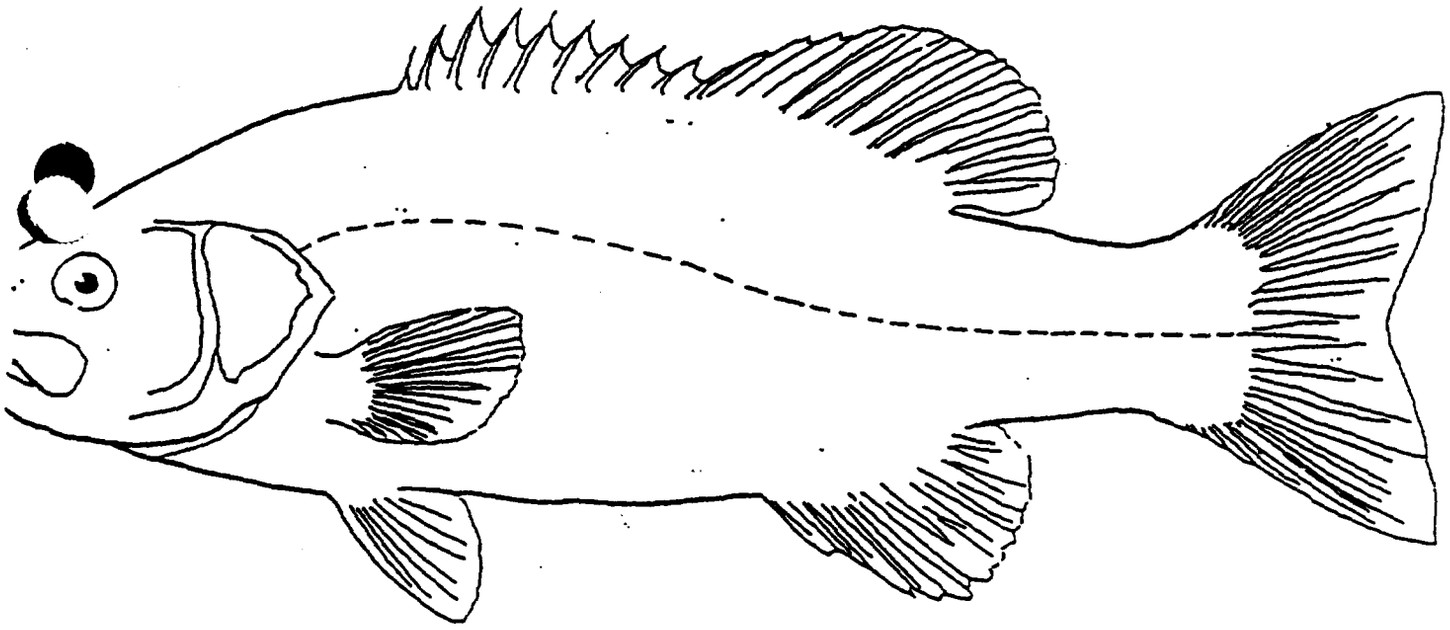
Collection Date _____ Length _____

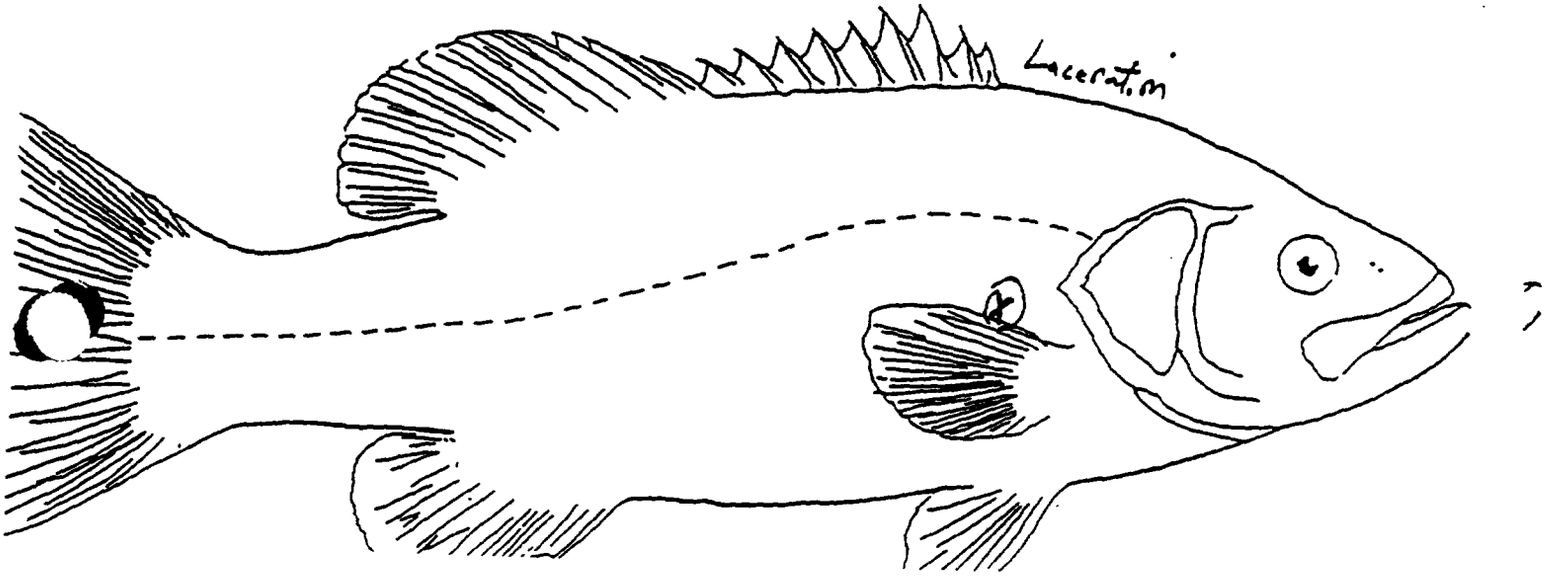
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Frame No(s). Roll #1 Fol Description Echo

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40590

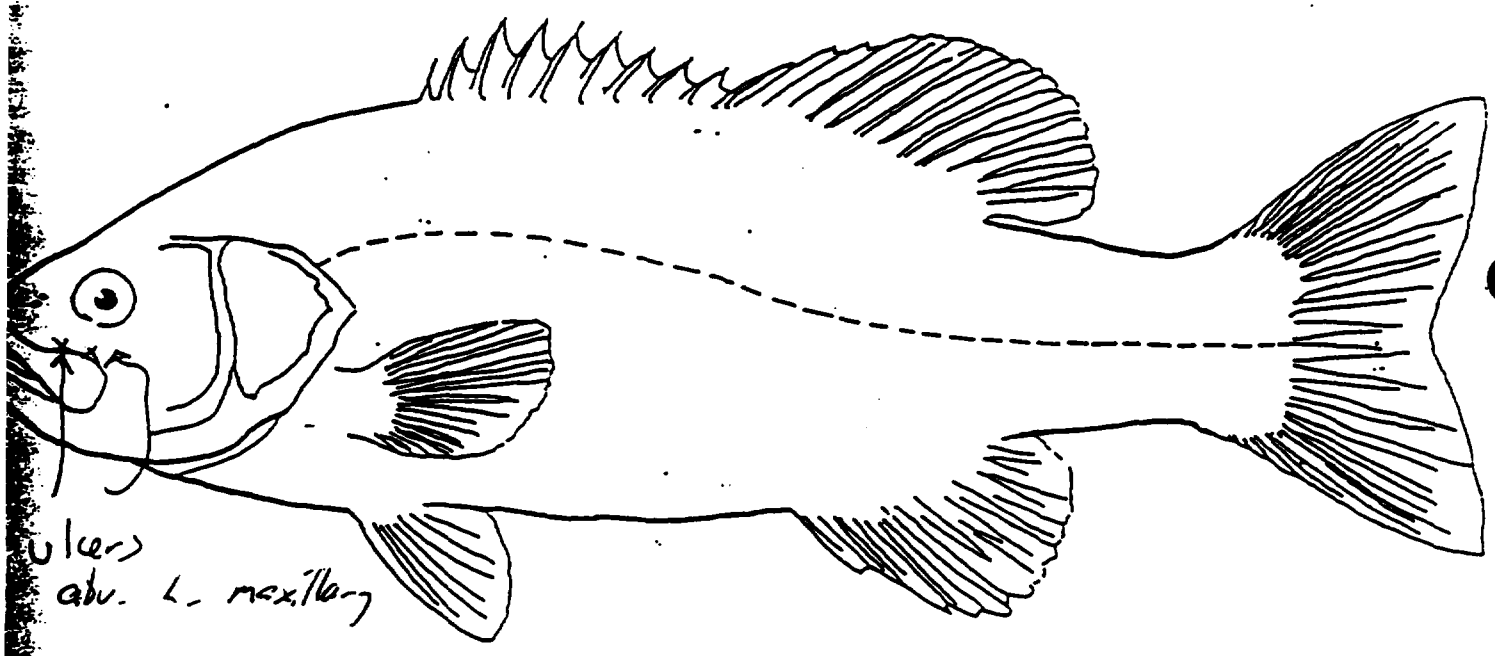
Collection Date _____ Length _____

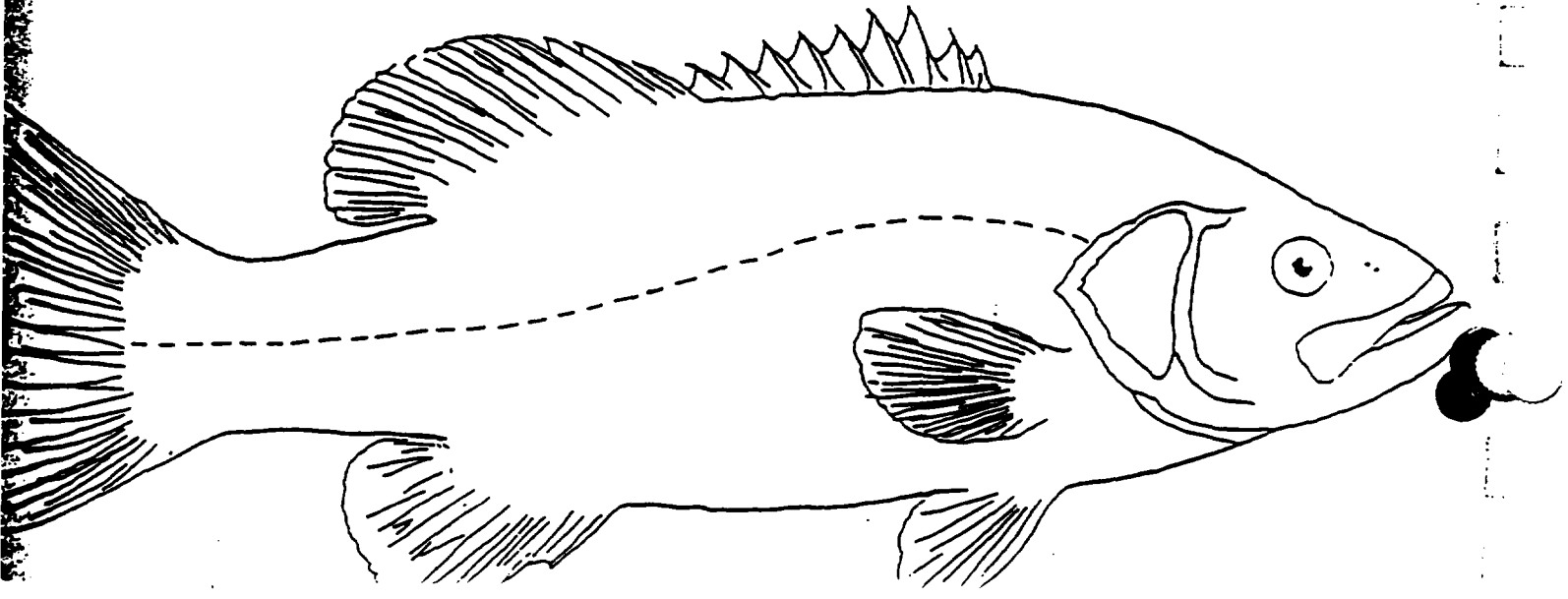
Collection Site _____ Weight _____

Collection Method _____

Photographs: (Yes) No Frame No(s). Roll 2 13 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 40575

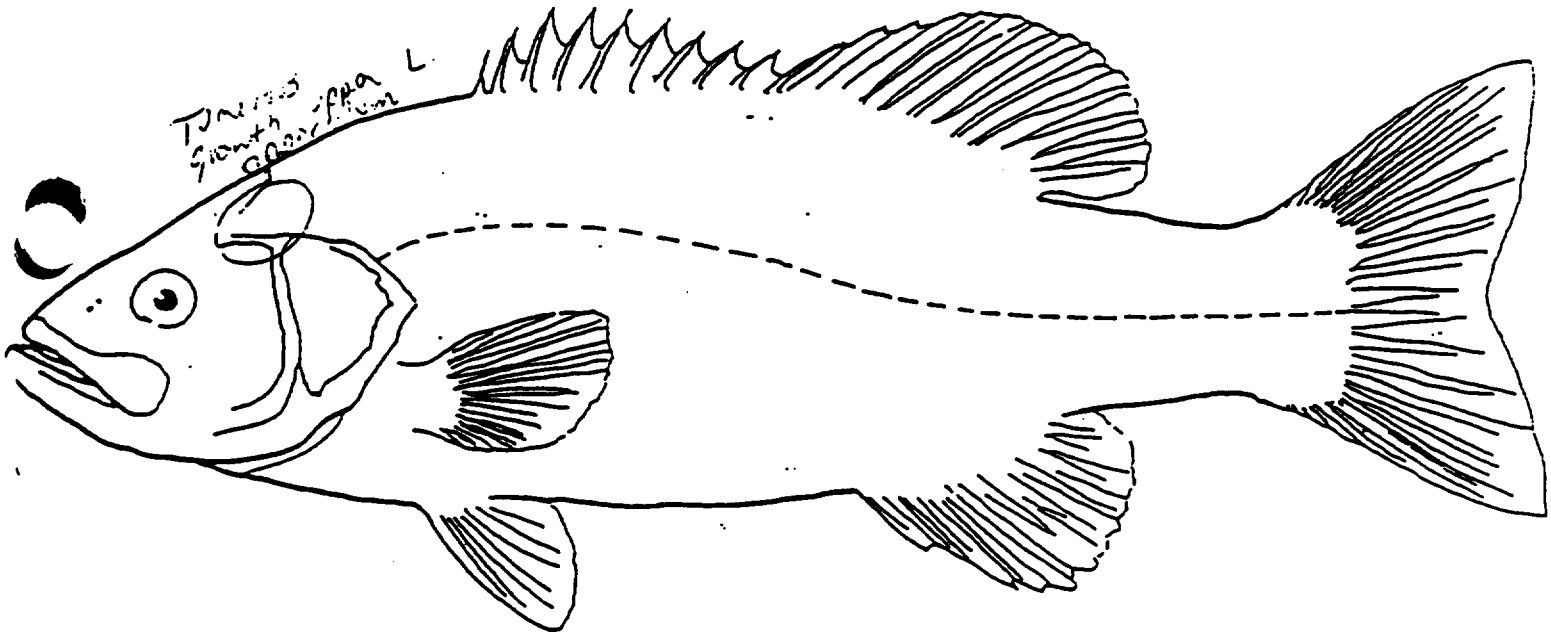
Collection Date _____ Length _____

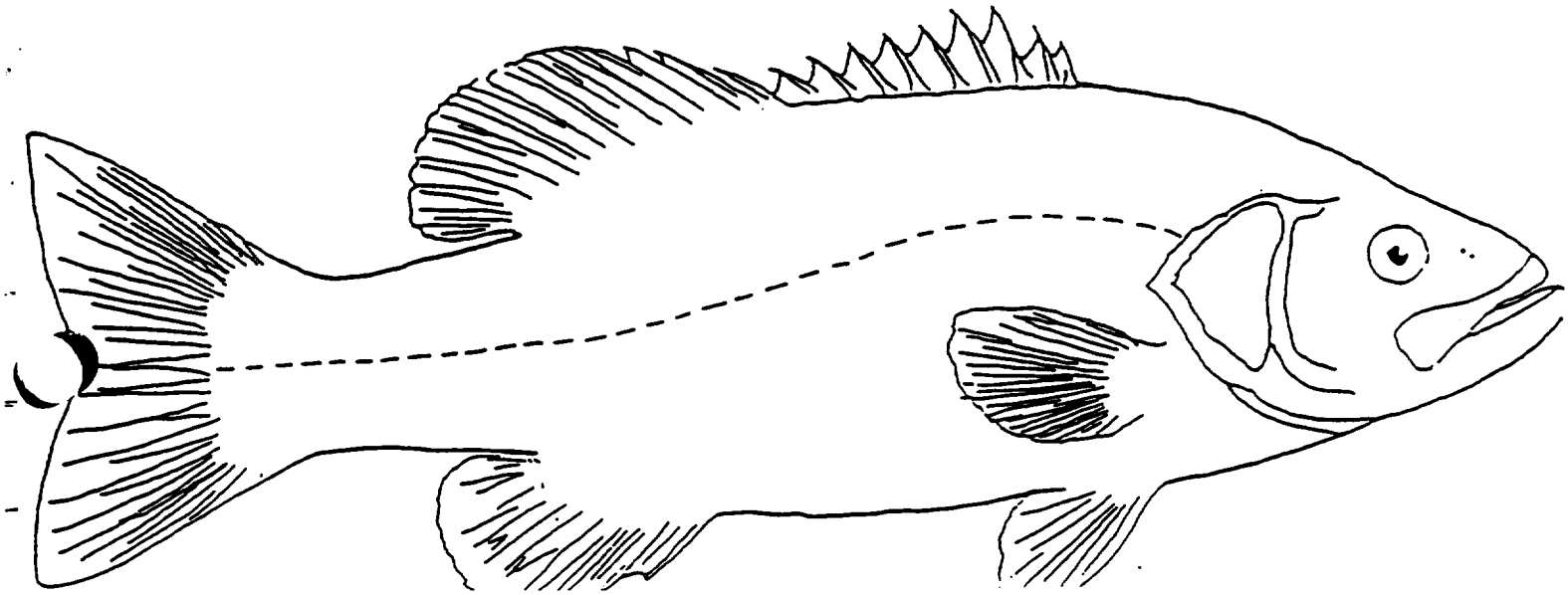
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Roll #3 Frame No(s). 24 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). KU576

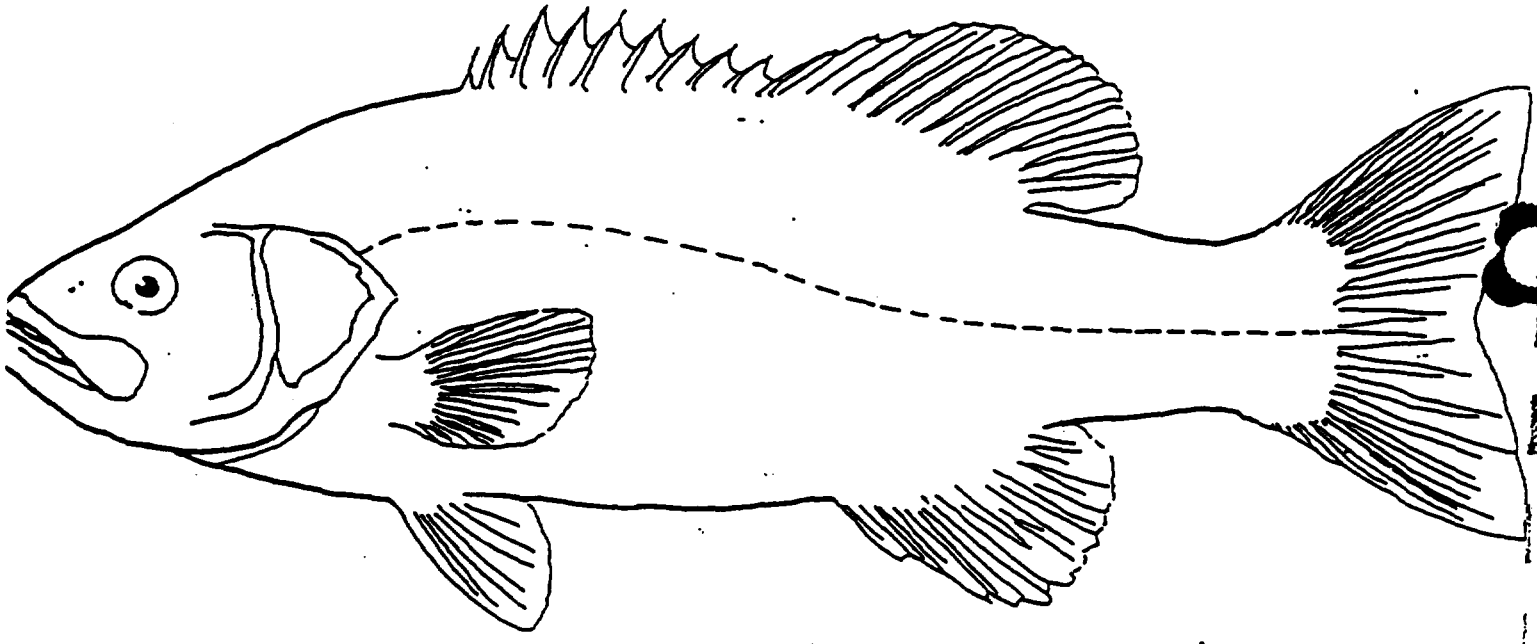
Collection Date _____ Length _____

Collection Site _____ Weight _____

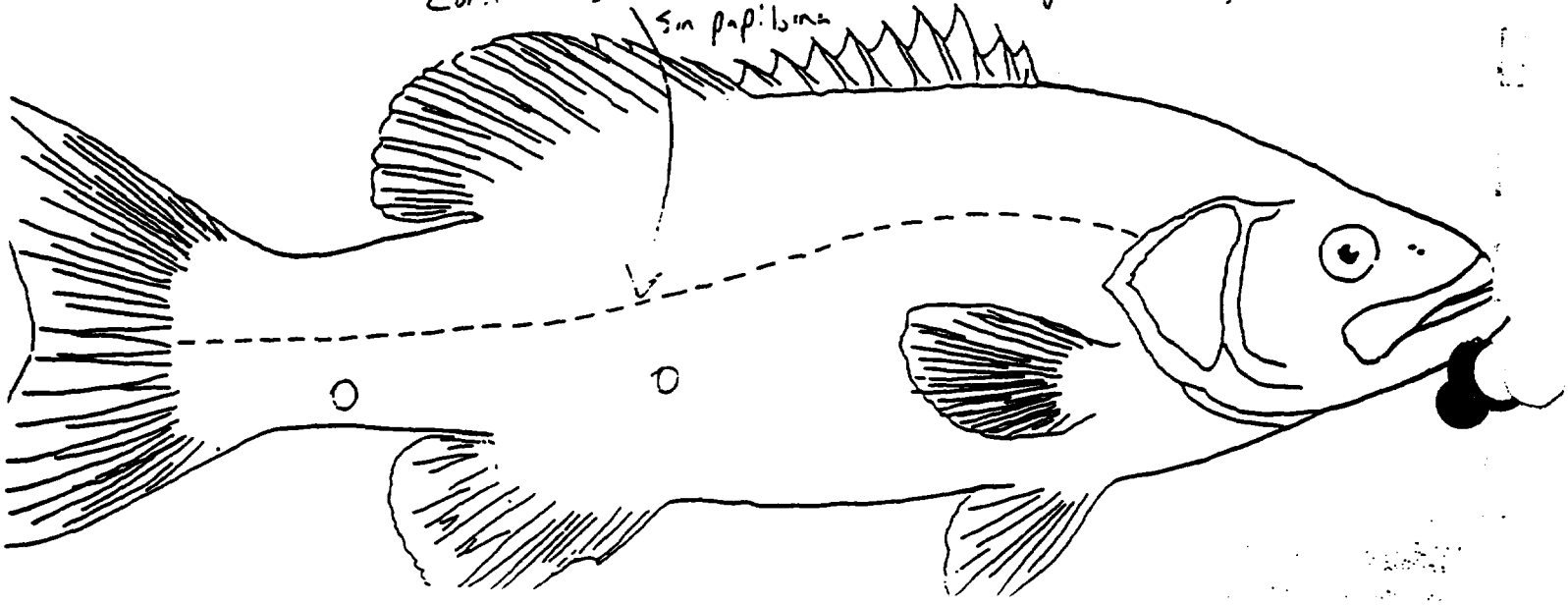
Collection Method _____

Photographs: (Yes) No Roll #3 Frame No(s). 25 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No



Contusions Lower R side in vicinity of Anal fin.
Sin papilloma



ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K410577

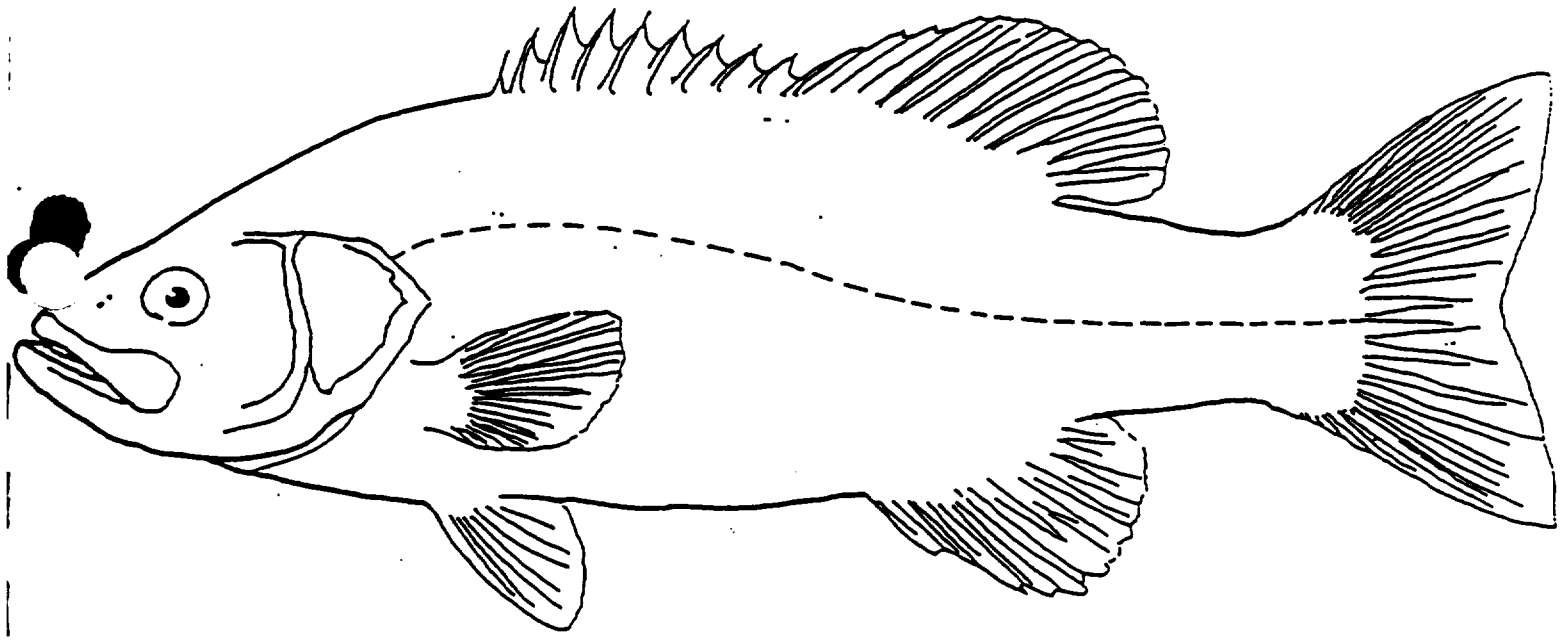
Collection Date _____ Length _____

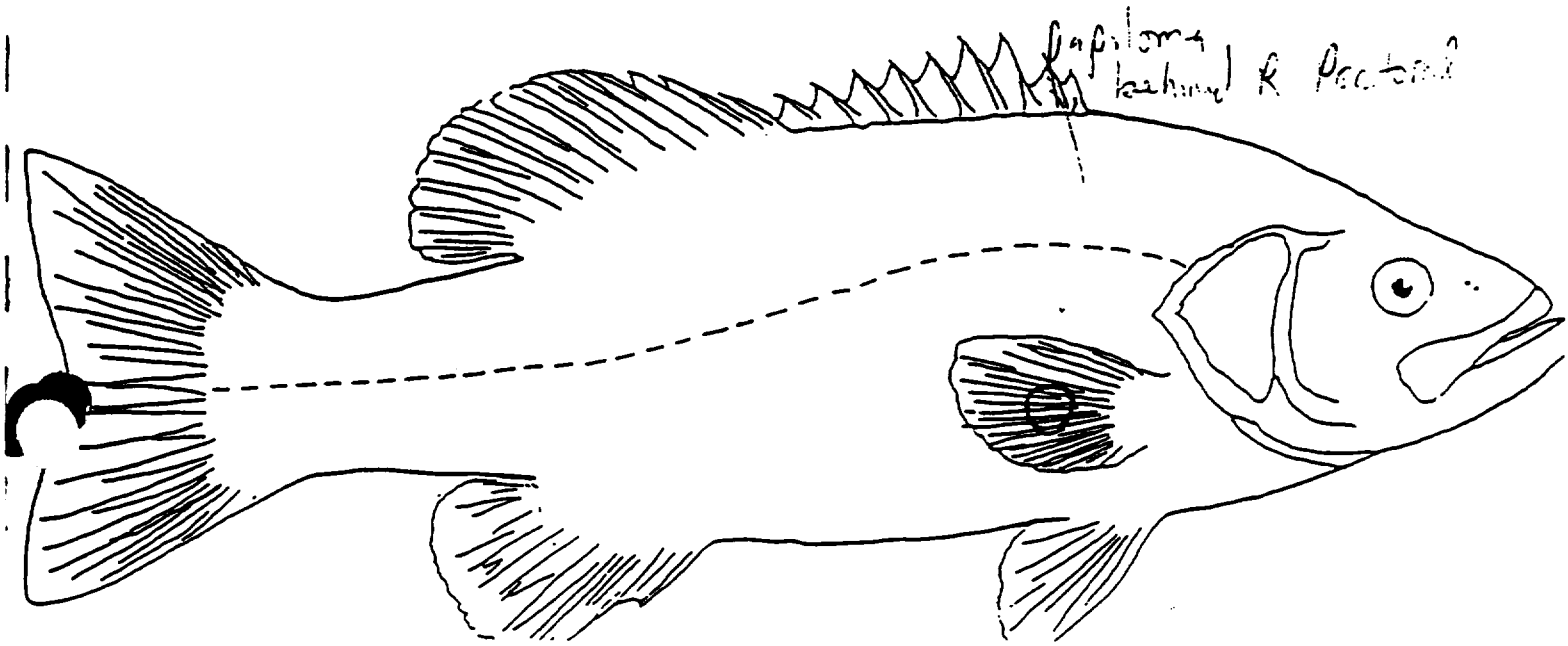
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Roll #3 Frame No(s). 26 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K 40628

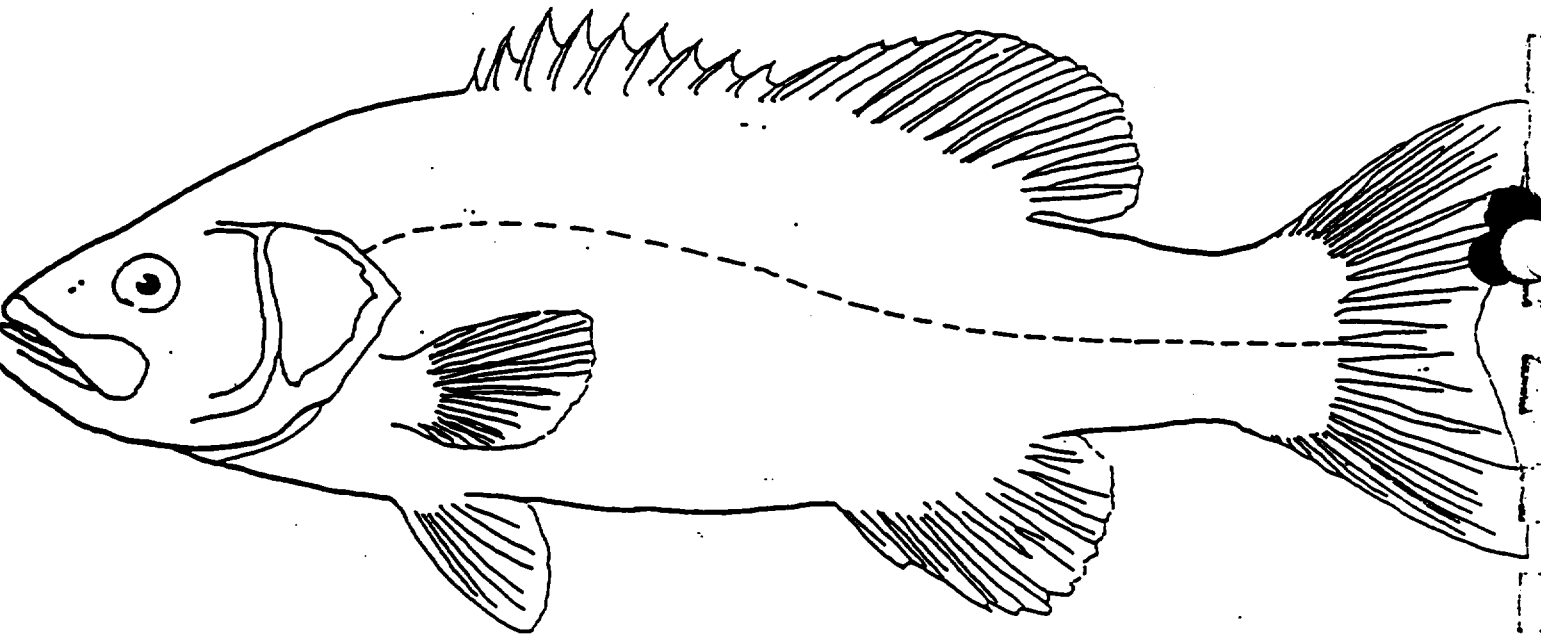
Collection Date _____ Length _____

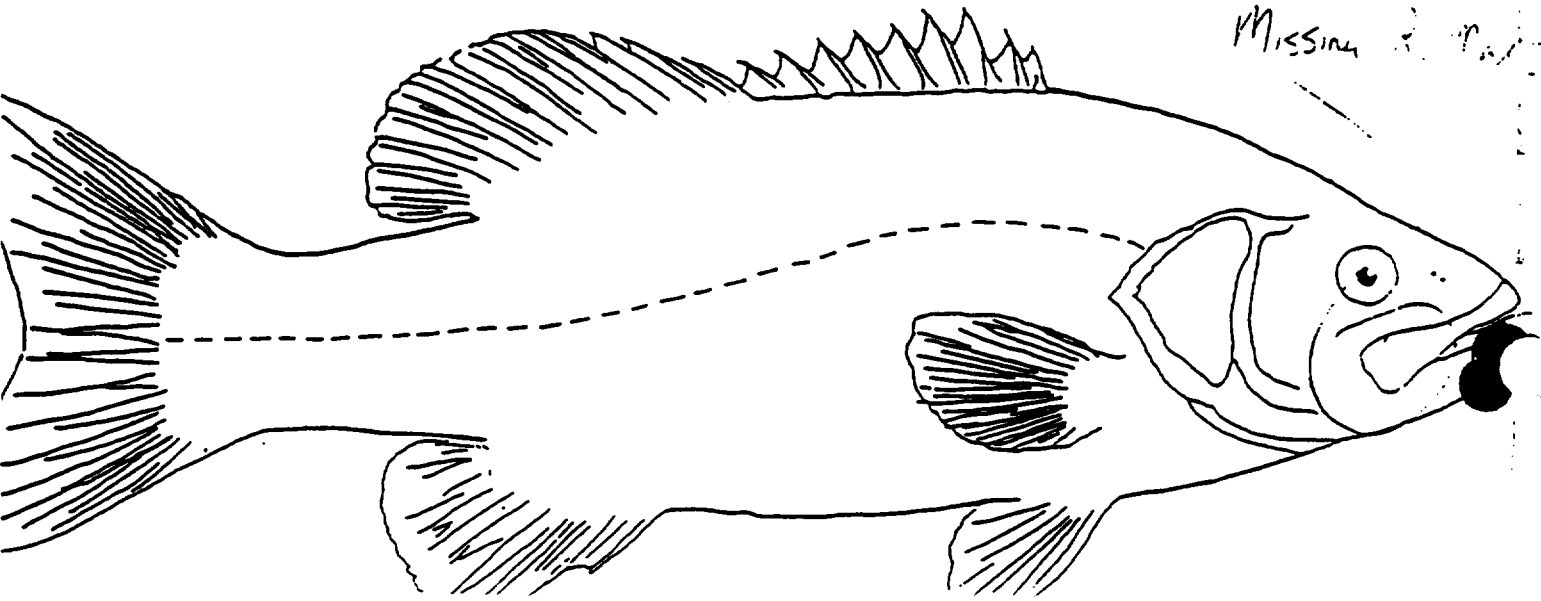
Collection Site _____ Weight _____

Collection Method _____

Photographs: Yes No Roll #5 Frame No(s). 11 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

Species _____ Fish No (s). K40559

Collection Date _____ Length _____

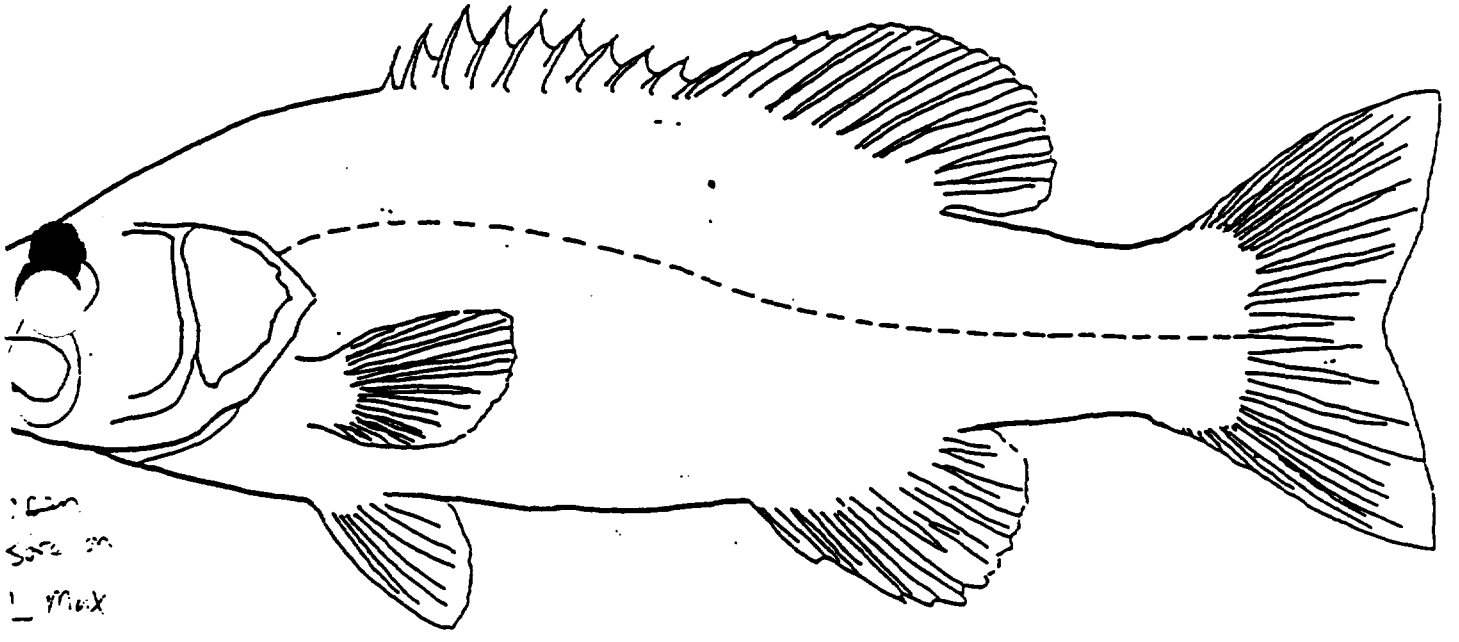
Collection Site _____ Weight _____

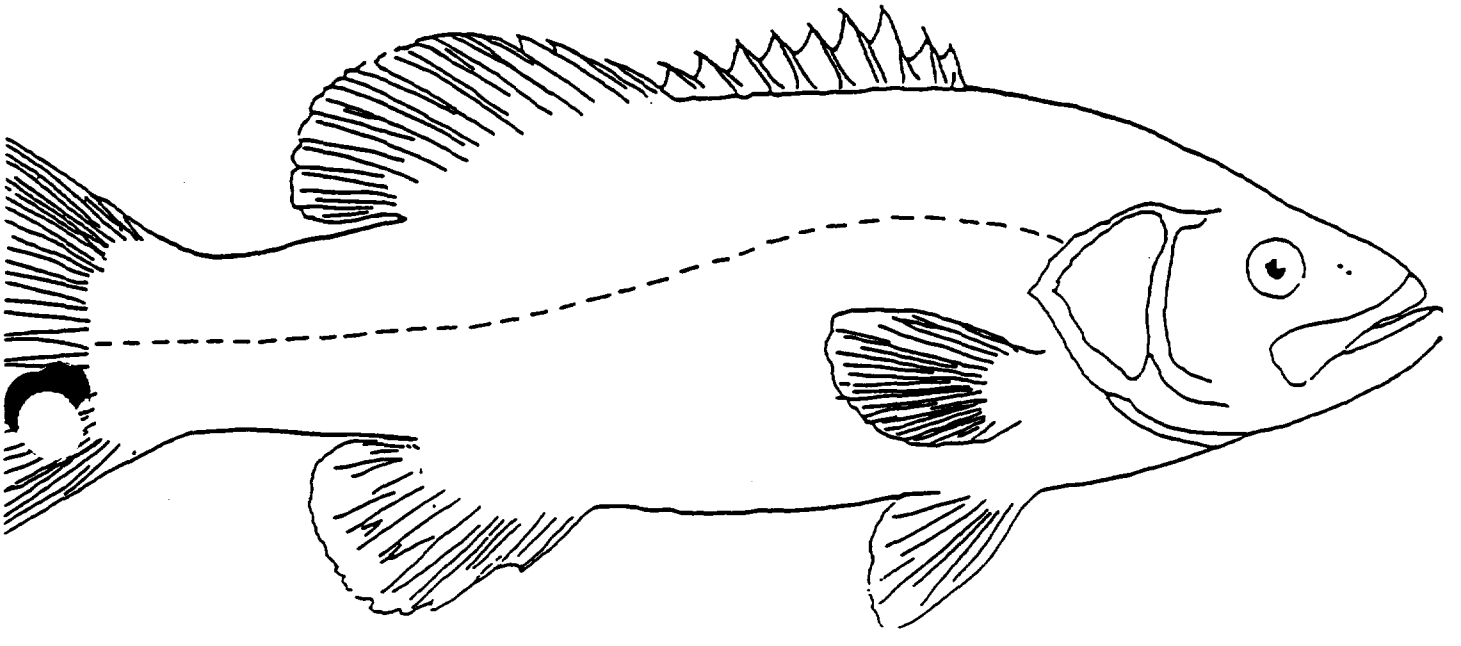
Collection Method _____

Roll #3

Photographs: (Yes) No Frame No(s). 8 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No





ATTACHMENT A-4

BASS FISH CONDITION SURVEY FORM

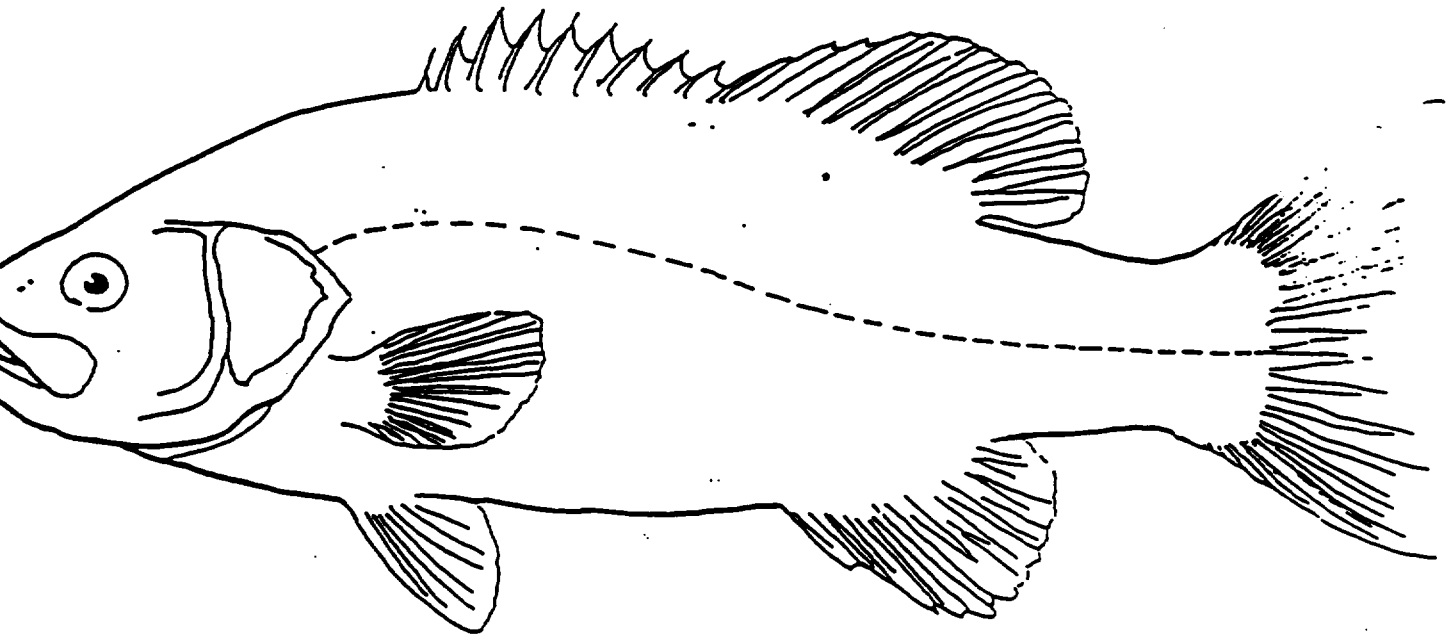
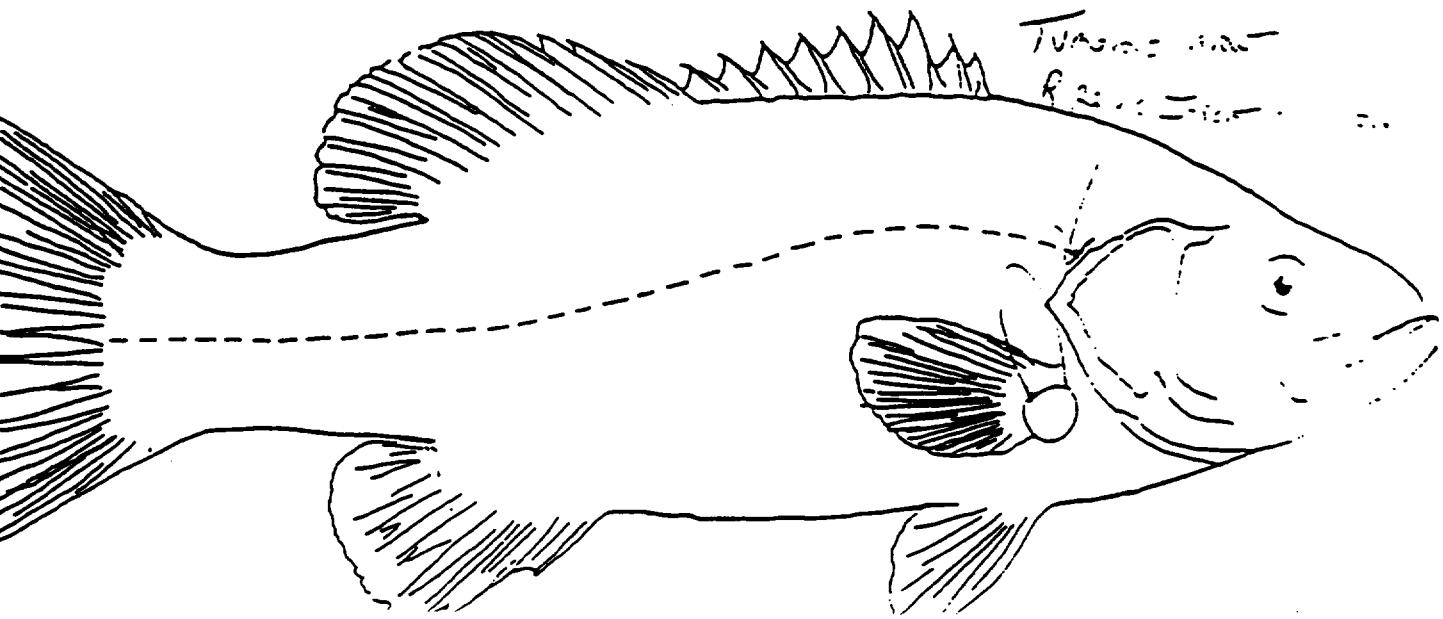
Species _____ Fish No (s). K40561-C

Collection Date _____ Length _____

Collection Site _____ Weight _____

Collection Method _____

Roll #3

Photographs: (Yes) No Frame No(s). 13 Description _____

Age of Fish _____ Spine, Scale, Ray _____ Preserved: Yes No