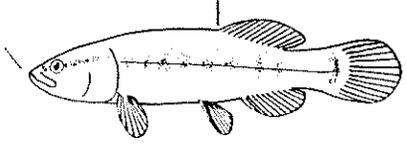


GUIDE TO NONGAME
FISHES OF
MICHIGAN

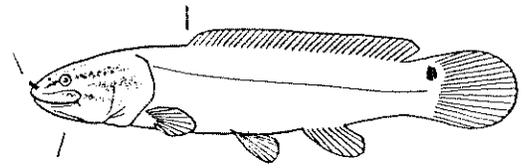
GERALD SMITH

Museum of Zoology
University of Michigan
Ann Arbor, Michigan 48109

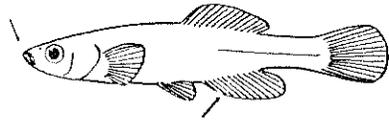
January 24, 1989



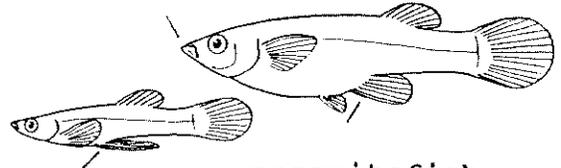
mudminnow



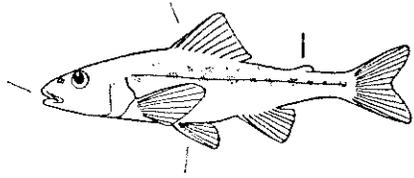
bowfin



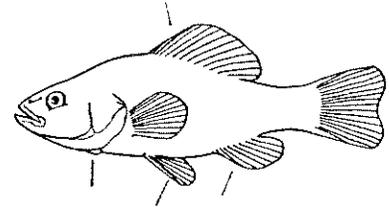
topminnow



mosquitofish



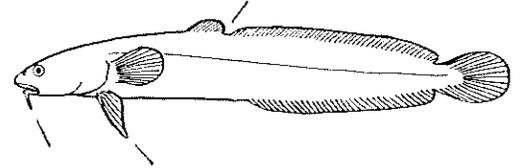
trout-perch



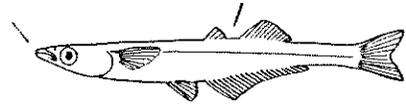
pirate perch



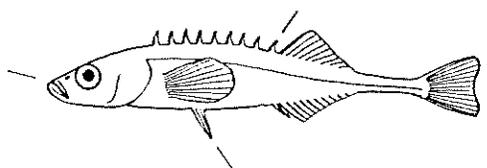
weatherfish



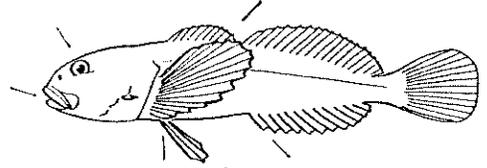
burbot



brook silverside



stickleback



sculpin

INTRODUCTION

The following guide is intended to assist biologists in the field identification of inland nongame fishes of Michigan. It will work best in the summer months and on adult fish. Young fish often have different (e.g., striped) color patterns and relatively larger eyes than in the figures.

The identification of these fishes depends heavily on four kinds of features: (1) the shape of the face, especially the size and angles of the mouth, lips, and eyes, (2) the size of the scales along the sides and the relative size of the front and back scales of the back, (3) the shape of the body and the size and position of the fins, especially the dorsal fin, and (4) special color patterns such as horizontal stripes, vertical bars, spots, and cross-hatching along the scale margins. Familiarity with these four aspects of the fish shown here will assure correct identification, at least of adults. The identification of young can usually be accomplished by comparing them to larger fish in the sample, working your way up and down a size-graded series. The best way to do this is to arrange the fish on their right sides in columns along the bottom of a tray, with the heads to the left, starting with the largest and working down in size, removing all other species to other columns until they are sorted.

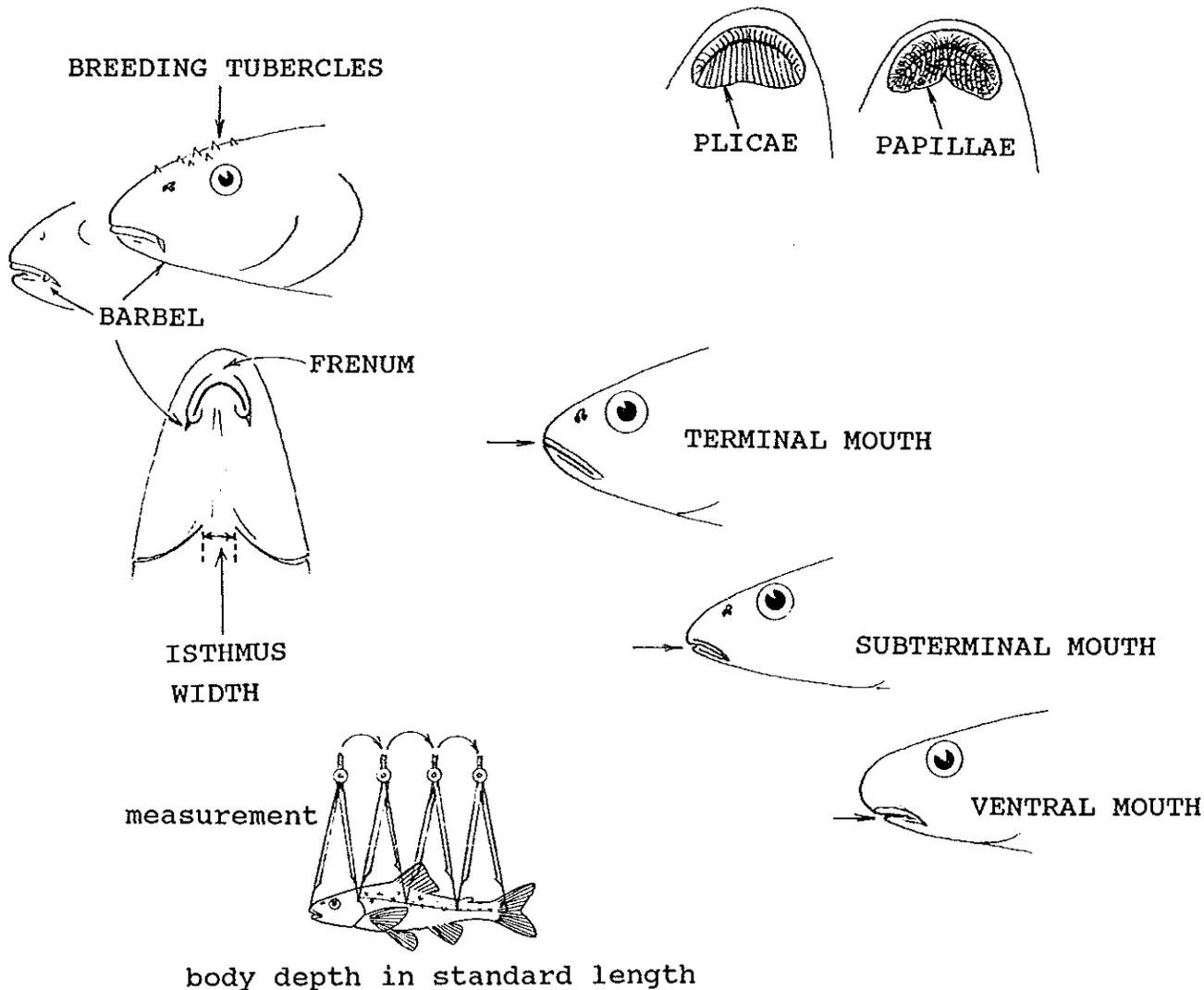
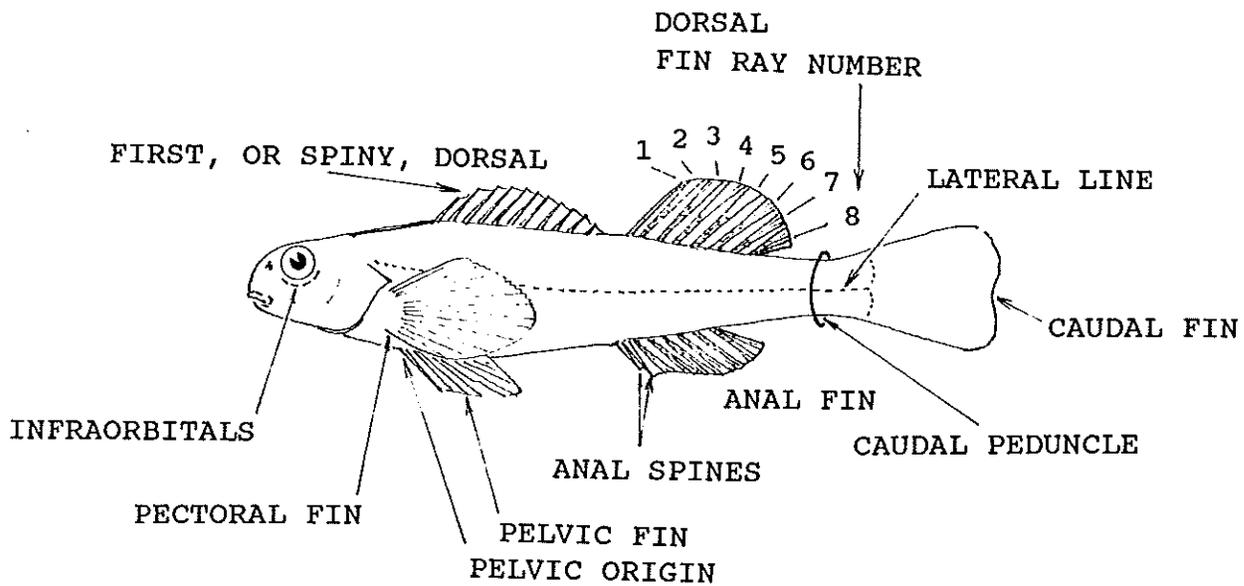
The key at the beginning should be skipped, except for problem fish; it is merely a guide to the sequence of the figured groups of similar fishes. The tables of characters are included to assist in the decisions about difficult pairs of species. The maps can be used to eliminate certain possibilities--southern species are extremely unlikely to occur more than 100 miles north of where they are shown on the map; northern species can be found further to the south in cold waters, e.g. along the Great Lakes shores; fishes with widespread but spotty distributions can be found in between, and notification of the author of new records (with specimens if possible) will be appreciated. The maps and identification aids are provisional, a part of a more general guide to Michigan fishes currently in preparation, so suggestions and new records will be appreciated.

Fish are easiest to identify when they are fresh. Questionable specimens can be put fresh into 10% formalin and sent to the author for identification.

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University of Michigan
Ann Arbor, Michigan 48109

phone 313,764-0491

IDENTIFICATION OF TERMS



KEY TO PICTURED GROUPS OF MINNOWS, SUCKERS, AND DARTERS*

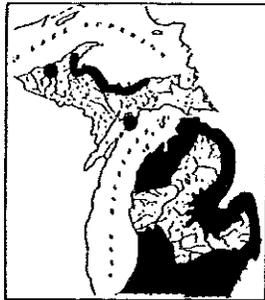
- 1a) One dorsal fin, with 10 or more rays; ventral mouth, with fleshy lower lip and posterior anal fin; or with long dorsal fin; SUCKERS AND CARPS (2)
- 1b) One dorsal fin, with 9 or fewer rays; no fleshy lower lip, and anal fin not posterior in position MINNOWS (4)
- 1c) Two dorsal fins DARTERS (p. 25)
- 2a) Dorsal fin long, with more than 17 rays
..... CARP-SHAPED SUCKERS AND CARPS (P. 7)
- 2b) Dorsal fin short, with fewer than 17 rays
..... SHORTFIN SUCKERS (3)
- 3a) Color olive, bluish, or tan, with black or brown saddles, or black or red stripes SLENDER SUCKERS (p. 9)
- 3b) Color gold, pink, or silvery, with only faint black spots or saddles REDHORSES (p.11)
- 4a) Scales small, fewer than 60 lateral series, mouth terminal FINE-SCALED MINNOWS (P.13)
- 4b) Mouth ventral or scales large..... 5
- 5a) Mouth ventral, usually with barbel.....
..... VENTRAL MOUTHED MINNOWS AND CHUBS (P.15)
(also check honeyhead and river chubs, p. 20; and p. 22)
- 5c) Scales large, fewer than 60 in lateral series, mouth terminal or subterminal . SHINERS AND LARGE-SCALED MINNOWS 6
- 6a) A black stripe extending along the lateral line and extending onto the face BLACK-STRIPED SHINERS (P.17)
(The young of many of the ventral-mouthed and fine-scaled minnows, as well as bluntnose minnows, golden shiners, hornyhead chubs, and river chubs, have black stripes.)
- 6b) A long, pointed snout with horizontal mouth, body often slender SHARP-FACED MINNOWS (p.19)
- 6c) Mouth oblique, size often large, commonly with distinctive color patterns
..... OBLIQUE-MOUTHED SHINERS AND LARGE CHUBS (p.21)
- 6d) Mouth subterminal or ventral, size small, color often plain brassy, silvery, or straw colored
..... SUBTERMINAL AND VENTRAL-MOUTHED SHINERS (p.23)

* Other groups are pictured on page 30

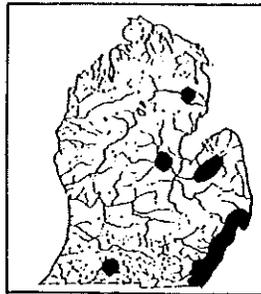
IDENTIFICATION OF CARP-SHAPED MINNOWS AND SUCKERS

carp	goldfish	quillback carpsucker	bigmouth buffalo	black buffalo	smallmouth buffalo
DORSAL AND ANAL FIN SPINES					
++	++	-	-	-	-
BARBELS					
*2 pr	0	0	0	0	0
MOUTH					
terminal	terminal	ventral	terminal*	larger/eye ventral	smaller/eye ventral
COLOR					
brassy	orange* or brassy	silver*	bronze -olive	bronze -olive	bronze -olive
BODY DEPTH (measurements = body depth in standard length)					
moderate	deep	deep (2.3-2.7)	moderate	*moderate (2.9-3.4)	*deep (2.4-2.8)
CRANIAL FONTANELLES (openings in top of skull)					
0	0	2*	1	1	1
SPECIAL STRUCTURES (eye measurements = diameters in head length)					
molar teeth*	teeth 4-4*	cheek expanded	lips thin	*eye 5.1-7	*eye 4.4-5.1

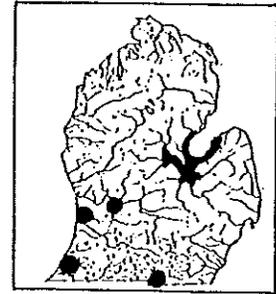
* asterisks denote features that will best identify the species



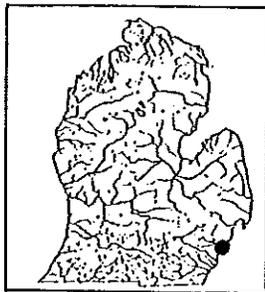
carp



goldfish



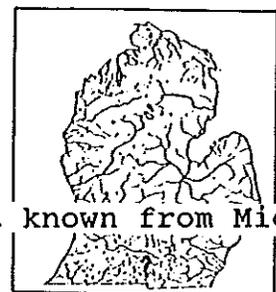
quillback



bigmouth buffalo

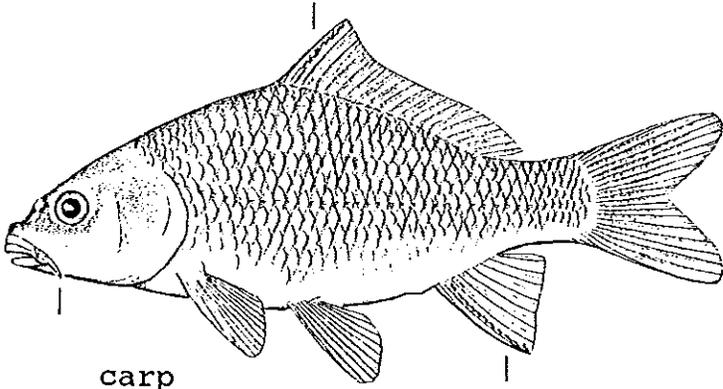


black buffalo

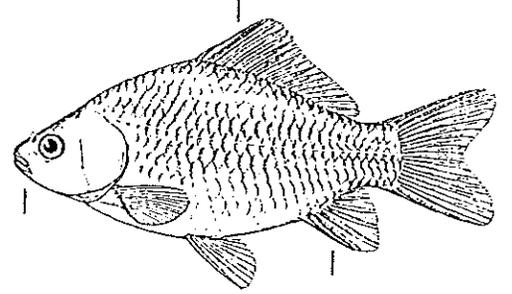


not known from Michigan

smallmouth buffalo

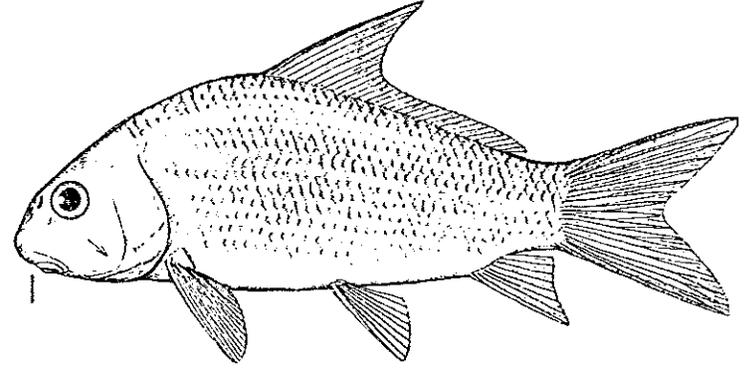
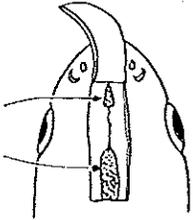


carp

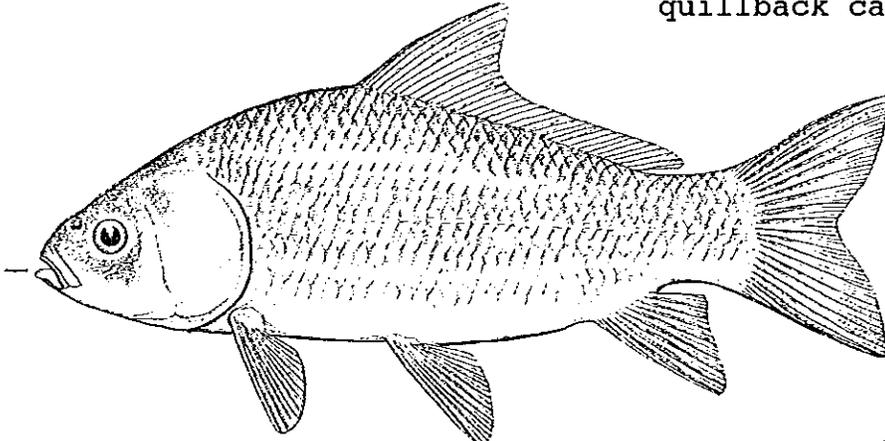


goldfish

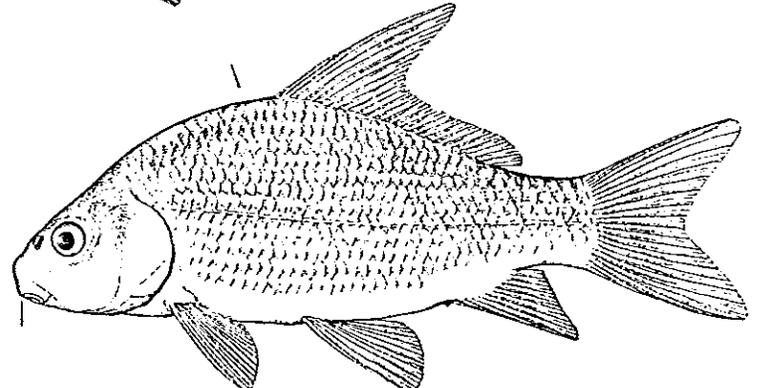
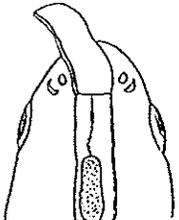
fontanelles



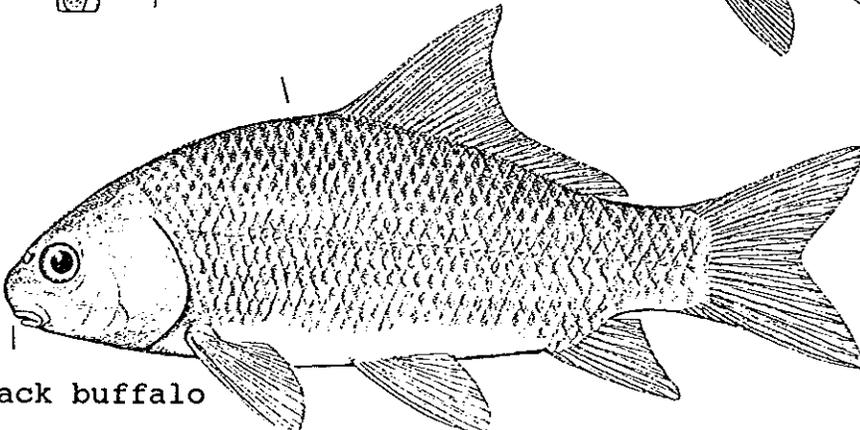
quillback carpsucker



bigmouth buffalo



smallmouth buffalo



black buffalo

IDENTIFICATION OF SLENDER SUCKERS AND CHUB SUCKERS

white sucker	longnose sucker	hog sucker	spotted sucker	creek chubsucker	lake chubsucker
--------------	-----------------	------------	----------------	------------------	-----------------

NUMBER OF LATERAL LINE SCALES OR SCALES IN LATERAL SERIES

*58-72	*91-115	*47-51	*42-46	*39-41	*36-38
--------	---------	--------	--------	--------	--------

LATERAL LINE

complete	complete	complete	incomplete	absent	absent
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NUMBER OF DORSAL RAYS

11-12	us. 10	11-12	11-12	10-11	11-12
-------	--------	-------	-------	-------	-------

MOUTH

ventral lips papillose	ventral lips papillose	round	lips thin plicate	subterminal	
------------------------	------------------------	-------	-------------------	-------------	--

COLOR OF ADULTS (breeding fish may have red sides)

pale saddles	dark back	dark saddles	*spotted scales	bars	bars
--------------	-----------	--------------	-----------------	------	------

COLOR PATTERN IN YOUNG AND YEARLINGS

*striped	*barred-striped
red tail	amber tail

SPECIAL STRUCTURES

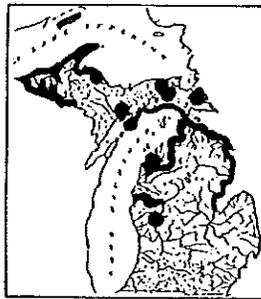
long nose

forhead concave

split anal fin in males



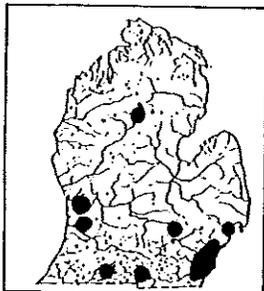
white sucker



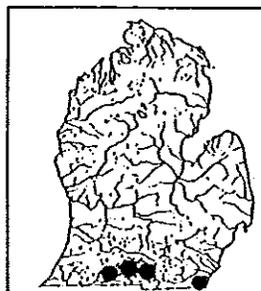
longnose sucker



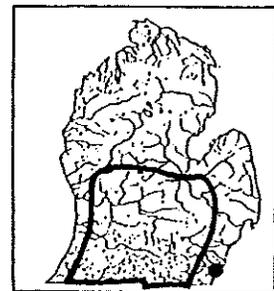
hog sucker



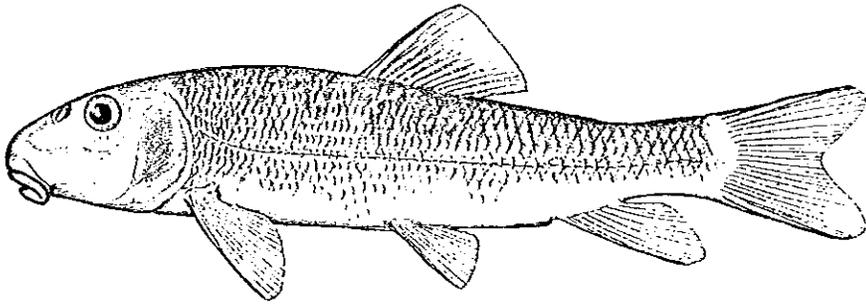
spotted sucker



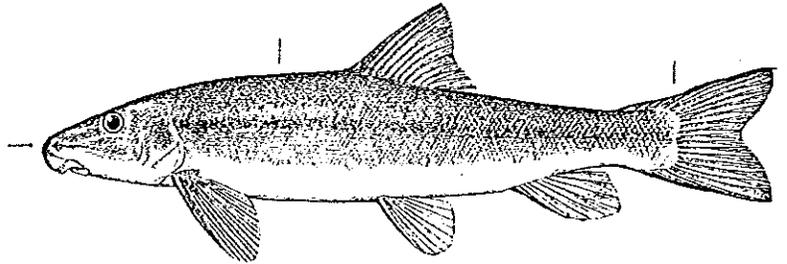
creek chubsucker



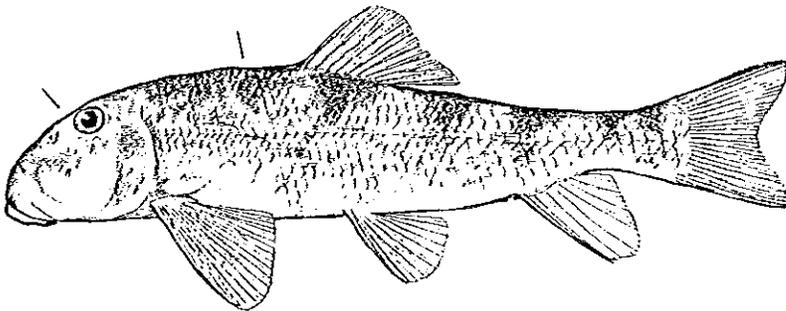
lake chubsucker



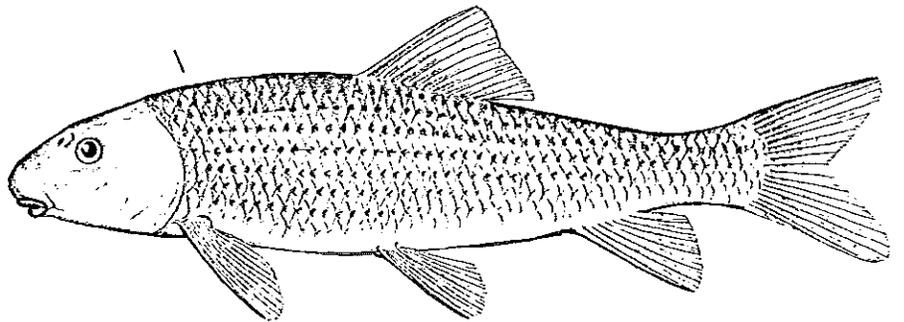
white sucker



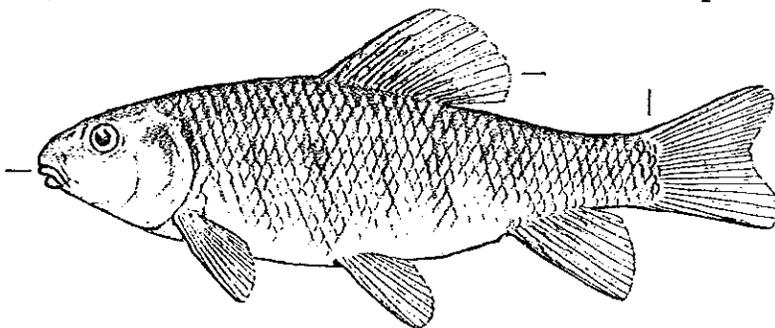
longnose sucker



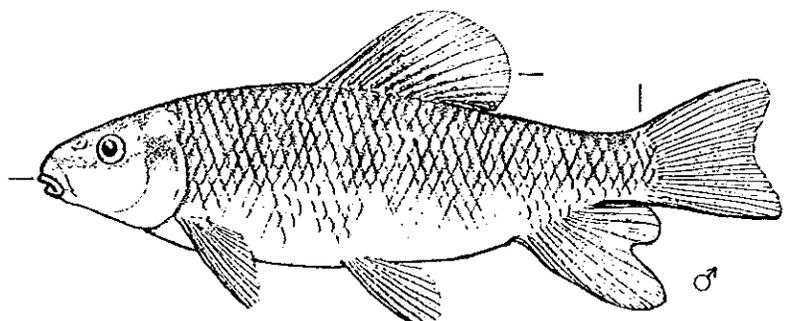
hog sucker



spotted sucker



creek chubsucker



lake chubsucker

IDENTIFICATION OF REDHORSE SUCKERS

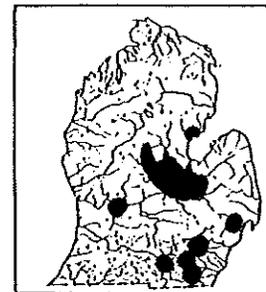
silver redhorse	golden redhorse	black redhorse	shorthead redhorse	river redhorse	greater redhorse
TAIL IN ADULTS					
gray	gray	gray	red	red	red
SPOTS AT BASE OF DORSAL LATERAL SCALES					
-	-	-	+	+	+
NUMBER OF DORSAL FIN RAYS (usual numbers)					
14-17*	12-14	12-13	12-14	12-14	12-14
LIP SHAPE AND SENSORY ORGANS					
papillose* notched	plicate notched	plicate	plicate straight*	plicate	plicate
NUMBER OF SCALES IN DIAGONAL SERIES AROUND CAUDAL PEDUNCLE					
12	12	12	12	12	15 or 16*
NUMBER OF LATERAL LINE SCALES					
40-43	37-43	44-48*	42-44	42-44	42-45
HEAD SIZE (number of head lengths in standard length)					
large	large	large	small* (4.3-5.4 ad) (3.5-4.0 yg)	large (<4.3) (3.3-3.7 yg)	large
NUMBER OF PELVIC FIN RAYS					
9-9	9-9	9 or 10	9 or 10	9-9	9-9
PHARYNGEAL TEETH					
thin	thin	thin	thin	molars*	thin
CAUDAL PEDUNCLE DEPTH (expressed as CP into CP length)					
<1.7	<1.7	>1.7*	<1.7	<1.7	<1.7



silver redhorse



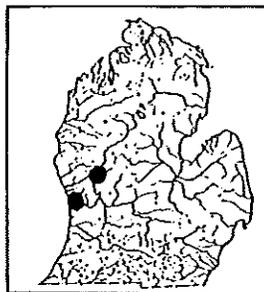
golden redhorse



black redhorse



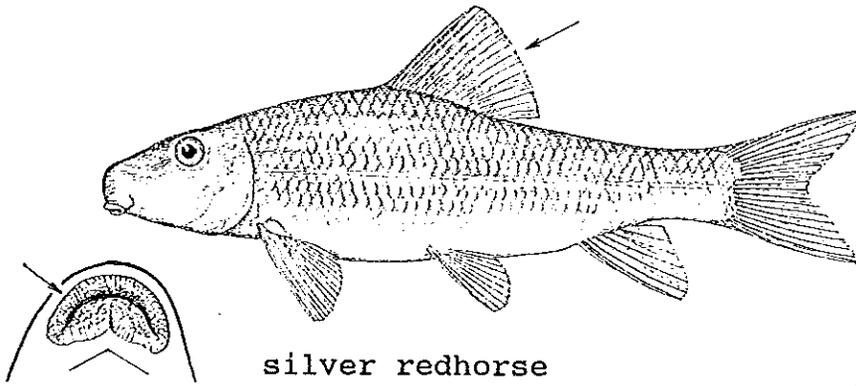
shorthead redhorse



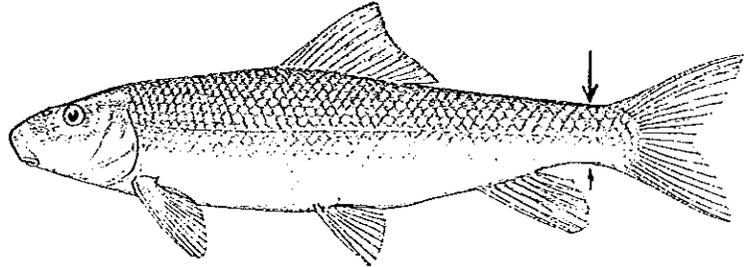
river redhorse



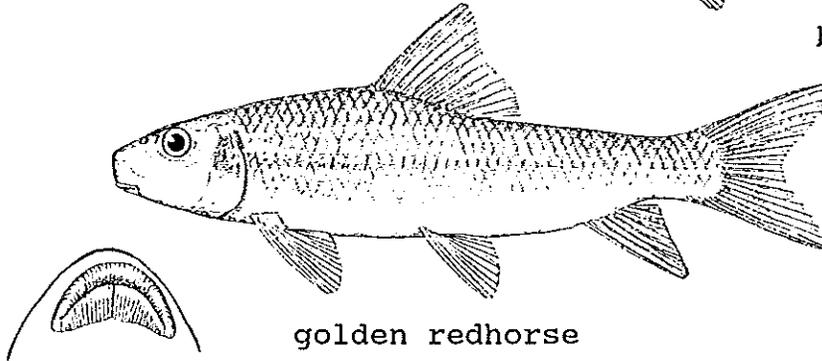
greater redhorse



silver redhorse



black redhorse

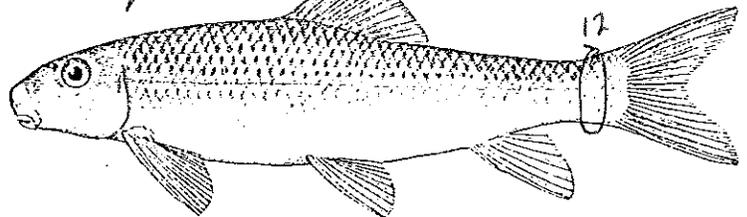


golden redhorse

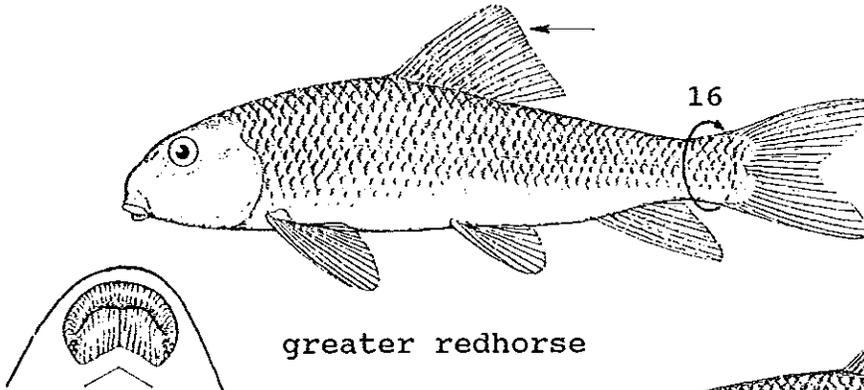
gray tails

longer fish with short head

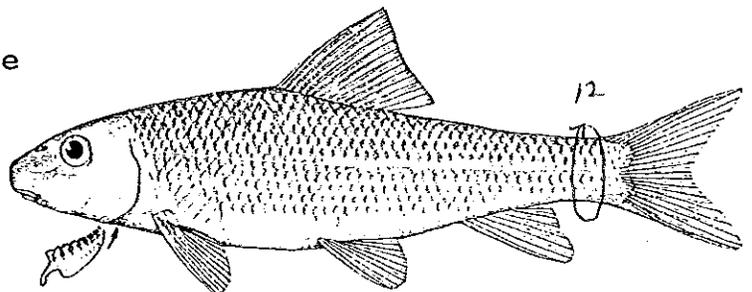
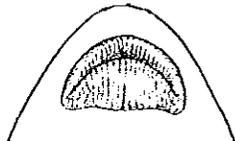
red tails



shorthead redhorse



greater redhorse



river redhorse

IDENTIFICATION OF FINE-SCALE MINNOWS

				southern	northern	
creek	pearl	lake	redside	redbelly	redbelly	finescale
chub	dace	chub	dace	dace	dace	dace

NUMBER OF SCALES IN LATERAL SERIES

50-65	62-75	60-67	62-75	67-90	70-90	72-89

BARBEL

maxilla	max	*terminal	-	-	-	-
---------	-----	-----------	---	---	---	---

MOUTH

large,	small,	medium,	large,	small	oblique	medium
*lip	sub-	sub-	*jaw		*	
large	terminal	terminal	projects			

BREEDING COLORS

rosy	rosy	rosy	red	red &	red &	reddish,
		or red	sides	yellow	yellow	yellow

SPECIAL COLOR MARKINGS

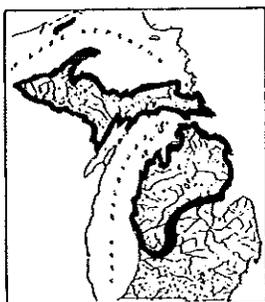
dorsal	speckles		stripe	stripes	stripes	1 stripe
fin						
spot						

NUMBER OF ANAL FIN RAYS

8	us. 8	8	us. 9	8	8	8
---	-------	---	-------	---	---	---



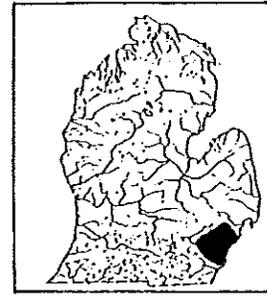
creek chub



pearl dace



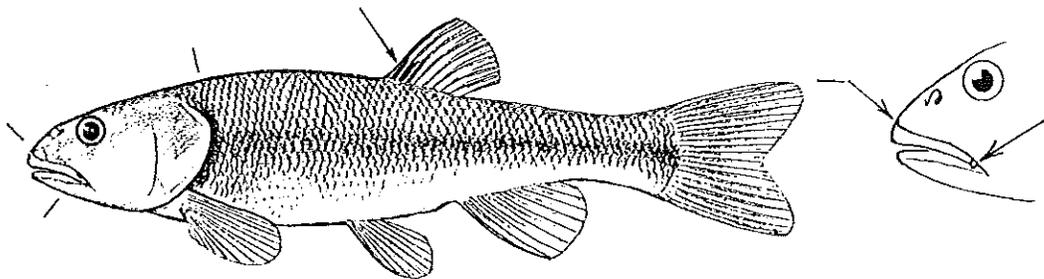
lake chub



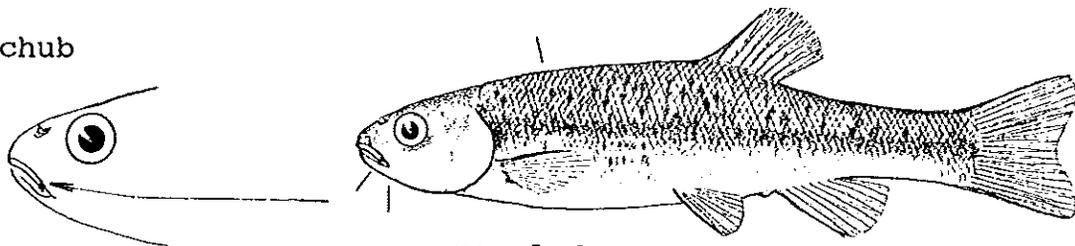
redside dace

southern
redbelly dacenorthern
redbelly dace

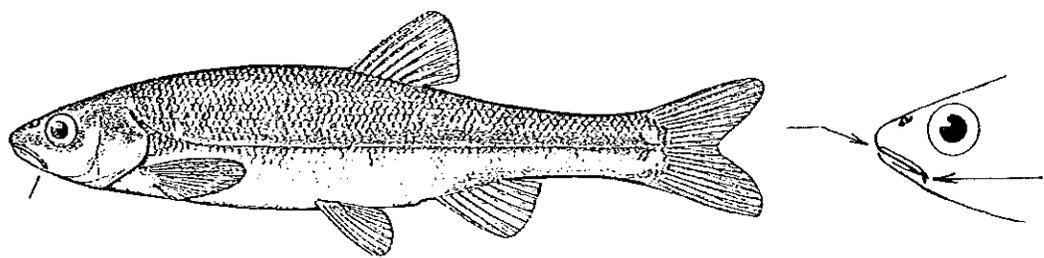
finescale dace



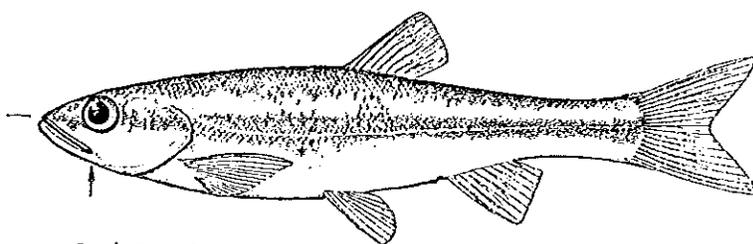
creek chub



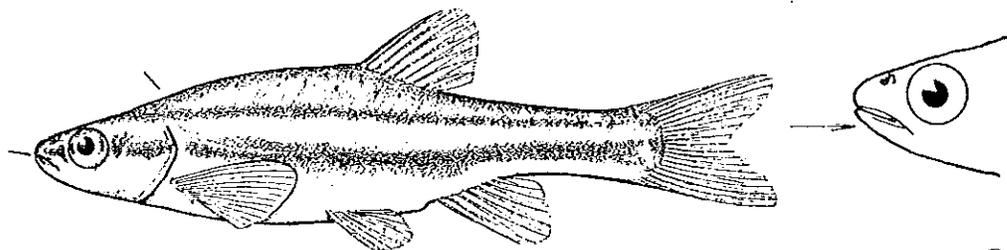
pearl dace



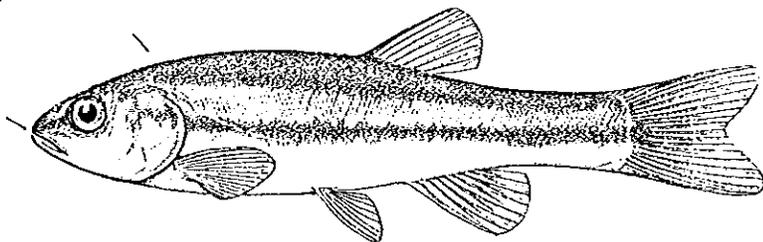
lake chub



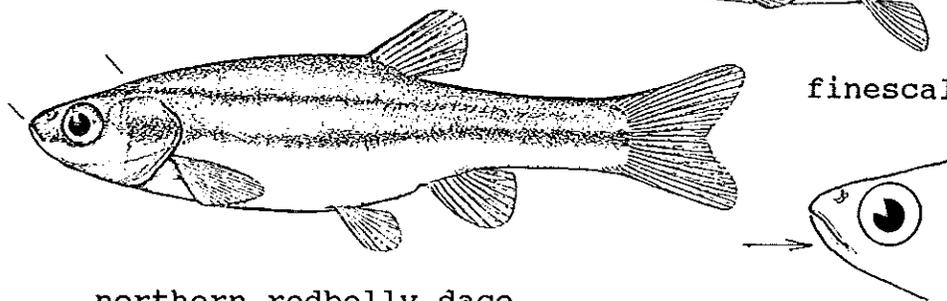
redside dace



southern redbelly dace



finescale dace

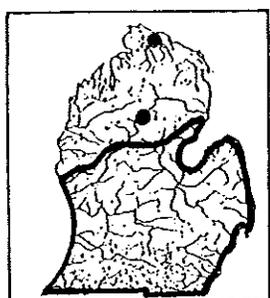


northern redbelly dace

IDENTIFICATION OF VENTRAL-MOUTHED MINNOWS AND CHUBS

	stoneroller	suckermouth minnow	blacknose dace	longnose dace	silver chub	bigeye chub
BARBELS	-	-	+	+	+	+
NUMBER OF LATERAL LINE SCALES	45-55	42-50	60-75	60-75	<45	<45
FRENUM (bridge of skin from upper lip to snout)	-	-	++	++	-	-
SPECIAL STRUCTURES	cartilage on jaws*	fleshy lip lobes	subterminal mouth	long nose*	falcate dorsal	large eye*
SPECIAL COLORS	yellow/black dorsal fin, speckles	caudal spot*	black nose, speckles	uniform olive brown	pale caudal streak	straw & silver
ISTHMUS WIDTH	{ broad, > eye			{ narrow, < eye}		
NUMBER OF ANAL FIN RAYS (usual number)	7	7	7	7	8	8

[see also bluntnose minnow among ventral and subterminal-mouthed shiners. It has a unique dorsal fin and crowded predorsal scales]



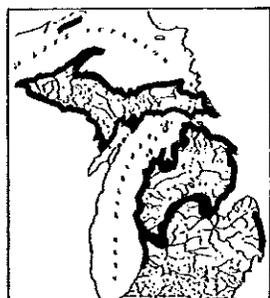
stoneroller



suckermouth minnow



blacknose dace



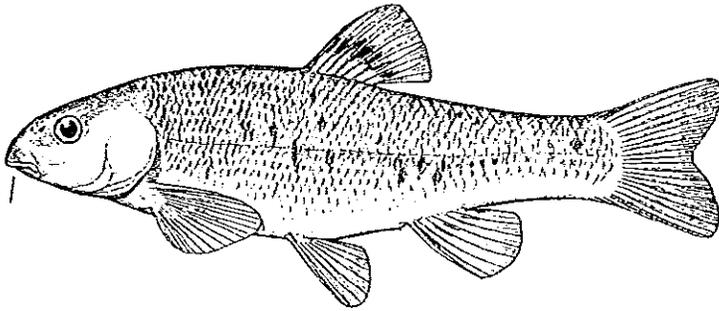
longnose dace



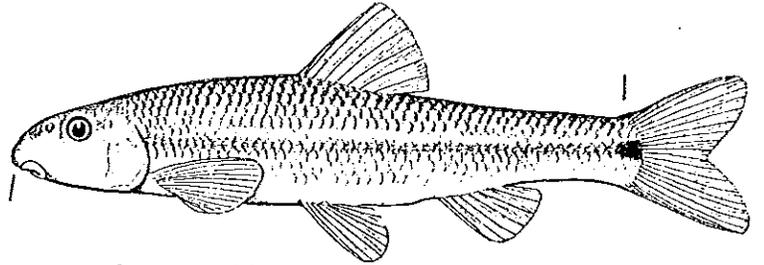
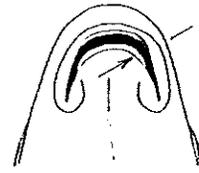
silver chub



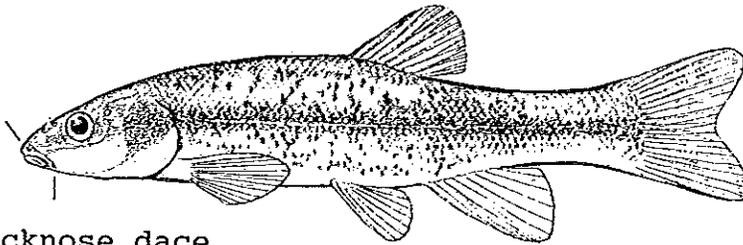
bigeye chub



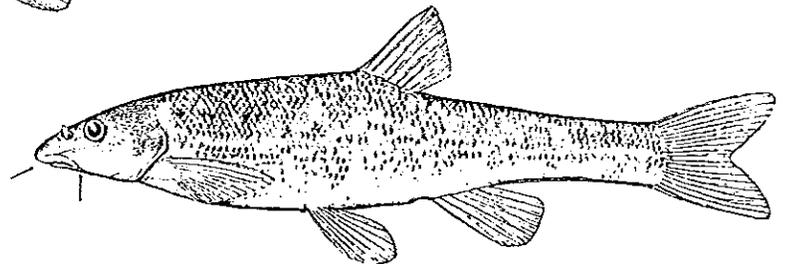
stoneroller



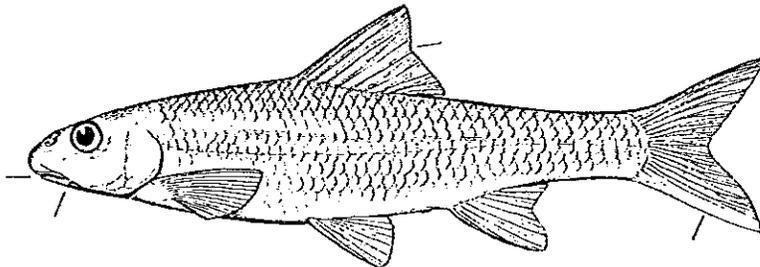
suckermouth minnow



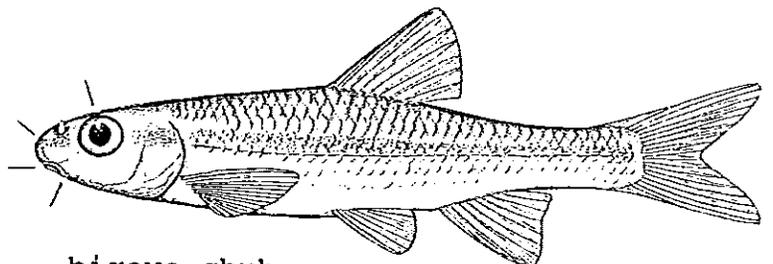
blacknose dace



longnose dace



silver chub



bigeye chub

IDENTIFICATION OF BLACK-STRIPED SHINERS

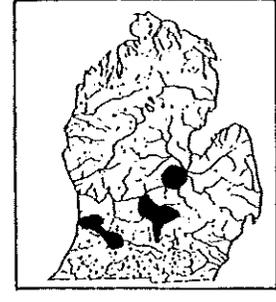
blacknose shiner	blackchin shiner	weed shiner	ironcolor shiner	pugnose minnow	pugnose shiner
MOUTH					
subterminal	terminal*	subterminal			oblique*
NUMBER OF ANAL FIN RAYS					
us. 8	us. 7	us. 7*	us. 8	us. 8	us. 8
NUMBER OF DORSAL FIN RAYS					
us. 8	us. 8	us. 8	us. 8	us. 9*	us. 8
LATERAL STRIPE					
crescents*	even edges	uneven	even	even	even
CAUDAL SPOT					
short	usually separated	usually wide*	abrupt	none	wedge
SPECIAL COLORS					
no chin pigment	black chin	scapular bar	black in mouth	black in dorsal	brown peritoneum
size small, <38 mm					



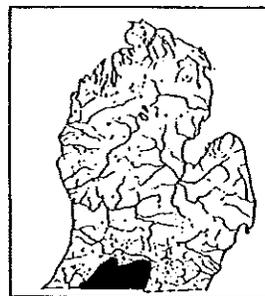
blacknose shiner



blackchin shiner



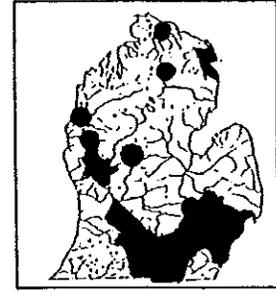
weed shiner



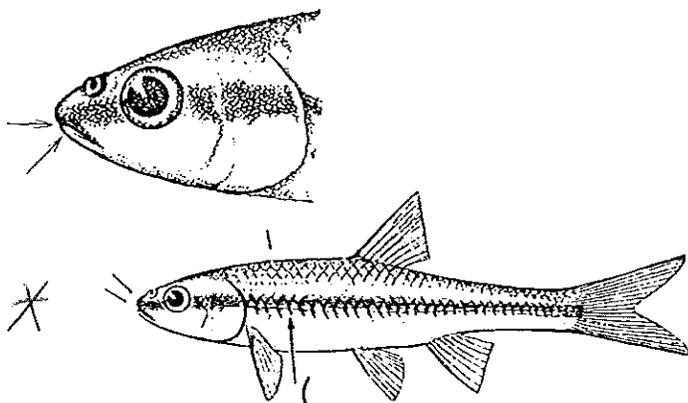
ironcolor shiner



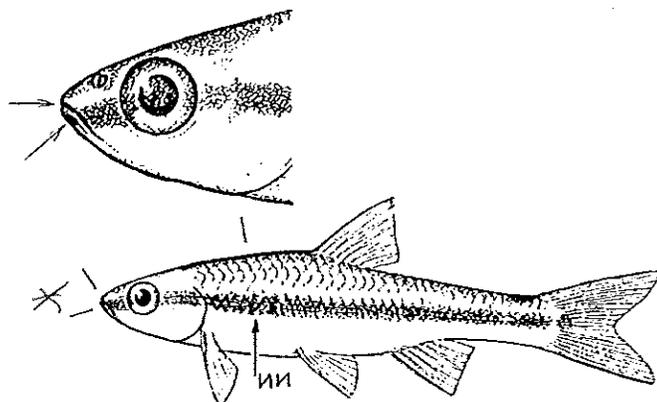
pugnose minnow



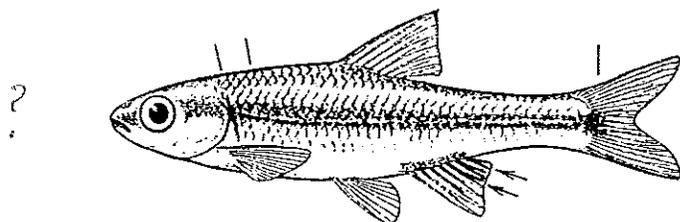
pugnose shiner



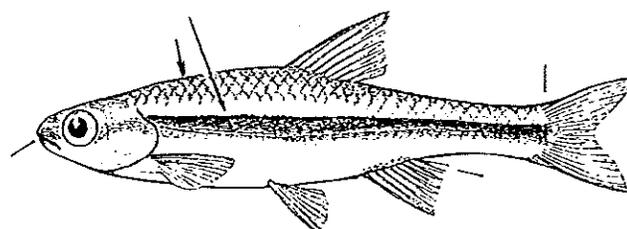
blacknose shiner



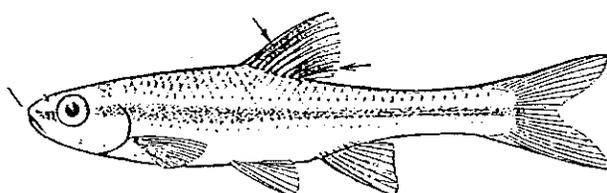
blackchin shiner



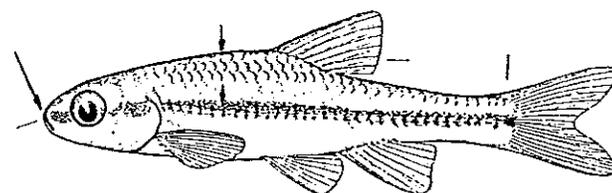
weed shiner



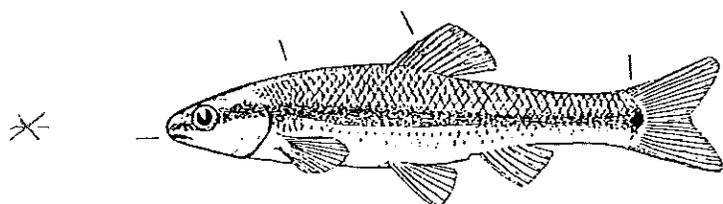
Ironcolor shiner



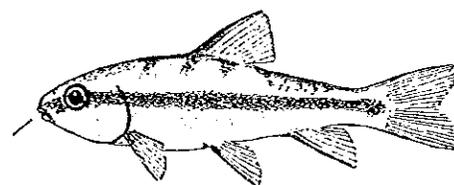
pugnose minnow



pugnose shiner



bluntnose



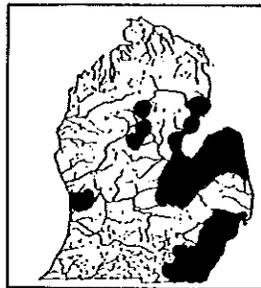
chubsucker
young

IDENTIFICATION OF SHARP-FACED MINNOWS

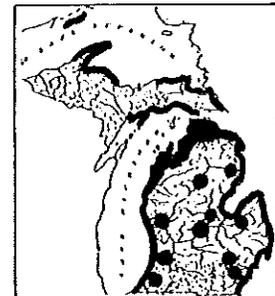
spotfin shiner	redfin shiner	emerald shiner	rosyface shiner	silver shiner
BODY DEPTH deep	deep	slender	slender	slender
SPECIAL PIGMENT AND COLOR PATTERNS				
*posterior dorsal spot	*anterior dorsal spot	emerald green	*red on face	*crescents between nostrils
DORSAL FIN ORIGIN RELATIVE TO VERTICAL FROM PELVIC ORIGIN				
over	slightly behind	behind	*well behind	behind
SPECIAL CHARACTERISTICS				
*silver-blue cross-hatch	predorsal scales crowded	snout short	<u>predorsal stripe</u> weak	*solid
NUMBER OF ANAL FIN RAYS				
us. 8	us. 11	us. 11	us. 10	10-13



spotfin shiner



redfin shiner



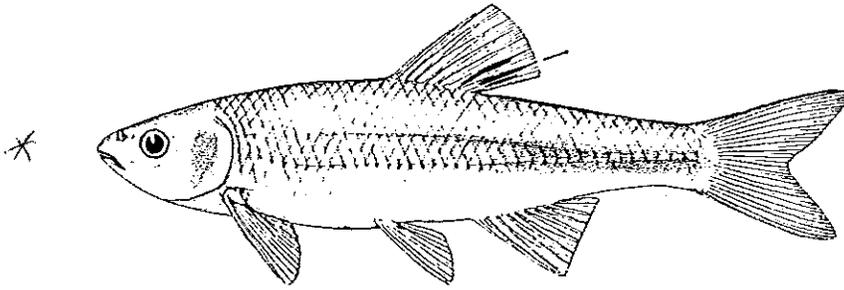
emerald shiner



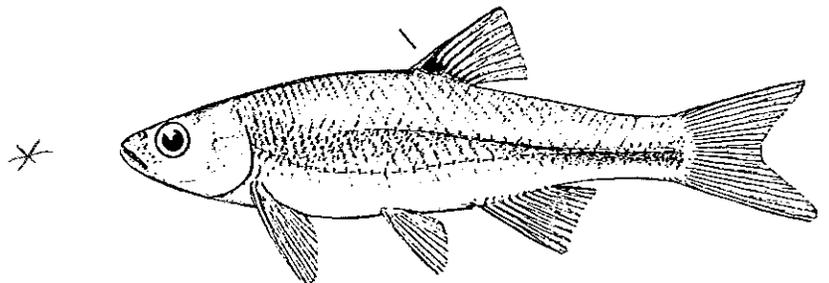
rosyface shiner



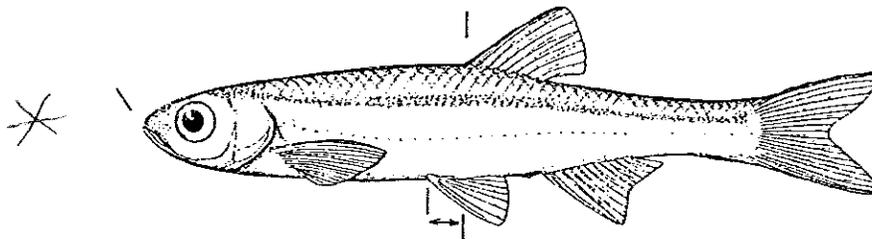
silver shiner



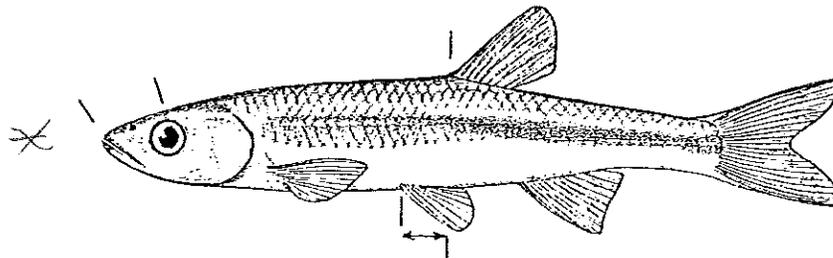
spotfin shiner



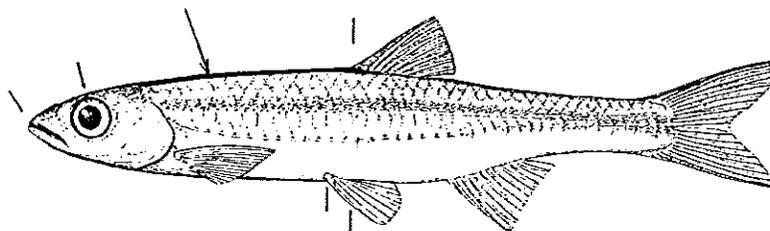
redfin shiner



emerald shiner



rosyface shiner



silver shiner



IDENTIFICATION OF OBLIQUE-MOUTHED MINNOWS AND LARGE SHINERS AND CHUBS

fathead minnow	golden shiner	common shiner	striped shiner	hornyhead chub	river chub
MOUTH					
small, oblique	small, oblique	large, oblique	large, oblique	large, ventral	large, ventral
BARBELS					
-	-	-	-	+	+
LATERAL LINE					
incomplete	decurved	+	+	+	+
SPECIAL COLORS					
oblique caudal bar	golden sides	parallel stripes	converging stripes	*crimson eye spot, red tail yg	
PREDORSAL SCALES					
*small & crowded	small (>25)	*small (18-24)	*large (15-18)	large	large
SPECIAL STRUCTURES					
*splint 1st D ray	*ventral keel	(high lateral scales)			*long face
BREEDING TUBERCLES ON MALES					
large on snout	minute on body	widespread on top and sides of head		*head behind snout	*on snout
PHARYNGEAL TEETH					
4-4	5-5	2,4-4,2	2,4-4,2	1,4-4,1	4-4
NUMBER OF ANAL FIN RAYS					
7	11-13	us. 9	us. 9	7	7



fathead minnow



golden shiner



common shiner



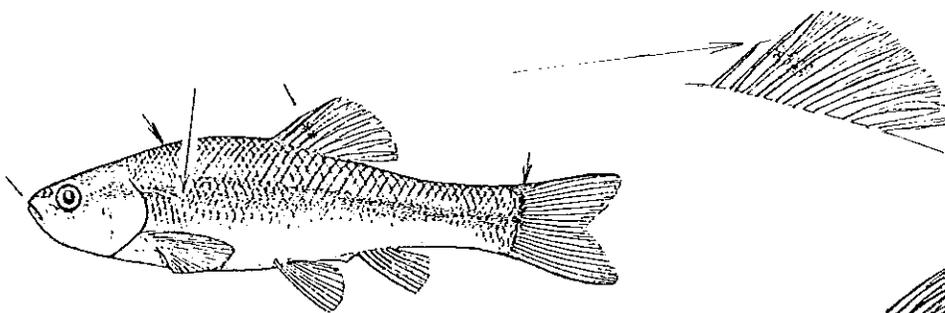
striped shiner



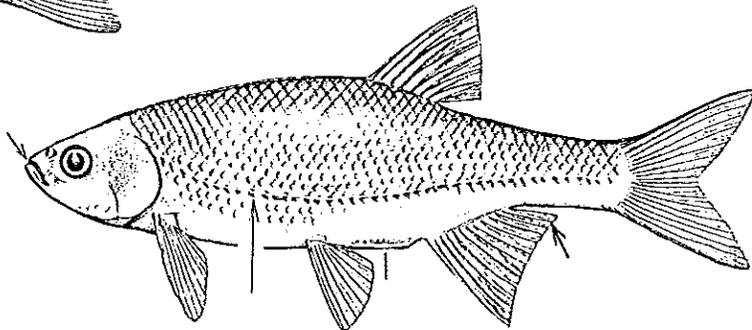
hornyhead chub



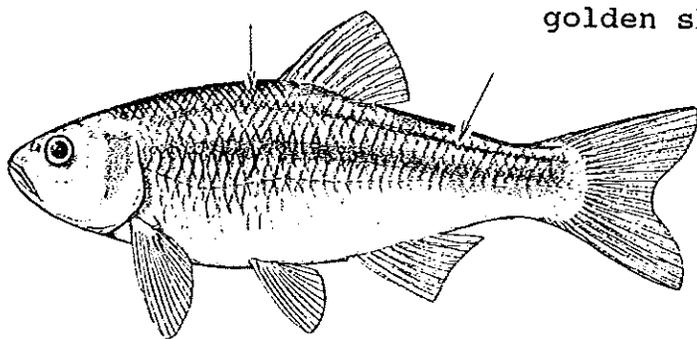
river chub



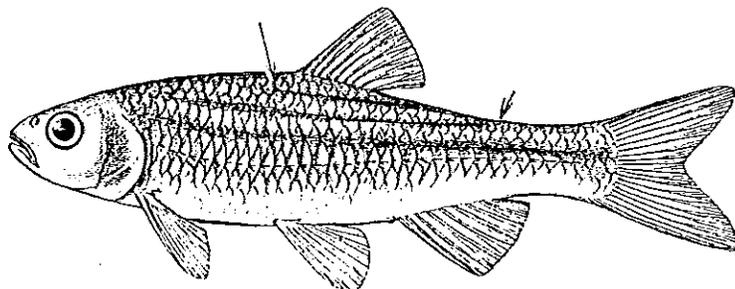
fathead minnow



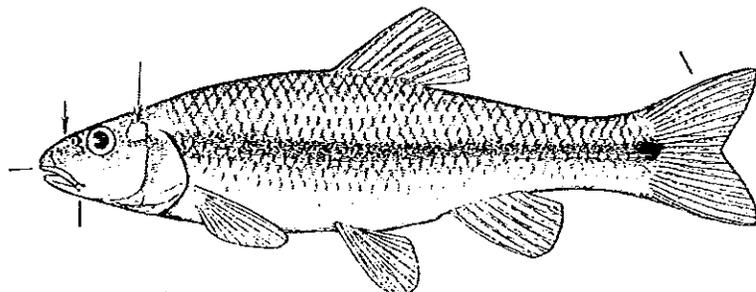
golden shiner



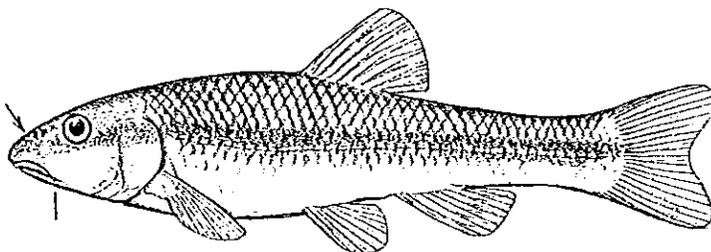
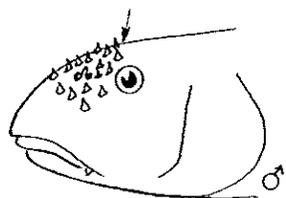
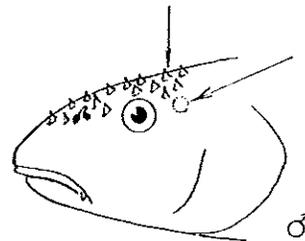
common shiner



striped shiner



hornyhead chub



river chub

IDENTIFICATION OF SUBTERMINAL AND VENTRAL MOUTH SHINERS

brassy minnow	mimic shiner	sand shiner	bigmouth shiner	bluntnose minnow	spottail shiner	silverjaw minnow
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GENERAL COLOR						
brassy	straw	straw	straw	dark above	silver	silver

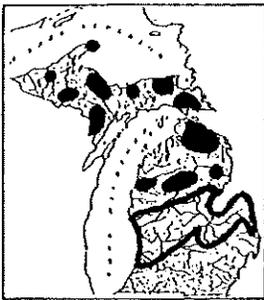
SPECIAL PIGMENT PATTERNS						
dusky sides	around anus*	=====	=====	dorsal fin spot	pale lower caudal lobe	
		=		on lateral line		

CAUDAL SPOT						
-	small	small	-	end of stripe	large*	-

SPECIAL STRUCTURES						
*long coiled gut	*high lateral scales		*dorsal eyes dorsal stripe	*splint 1st dorsal ray		*sensory chambers on cheek & jaws

NUMBER OF ANAL FIN RAYS						
7,8	8	7	8	7	us. 8	8

peritoneum
dusky



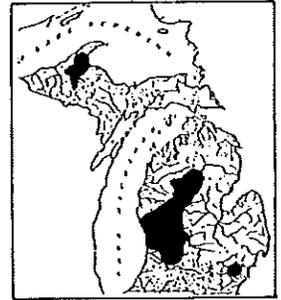
brassy minnow



mimic shiner



sand shiner



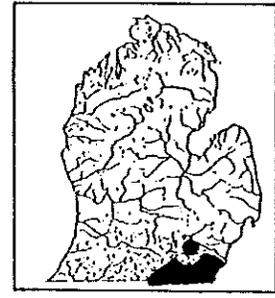
bigmouth shiner



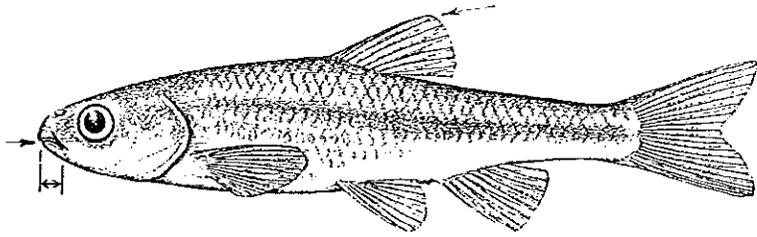
bluntnose minnow



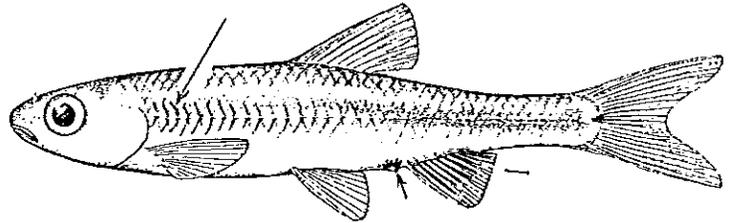
spottail shiner



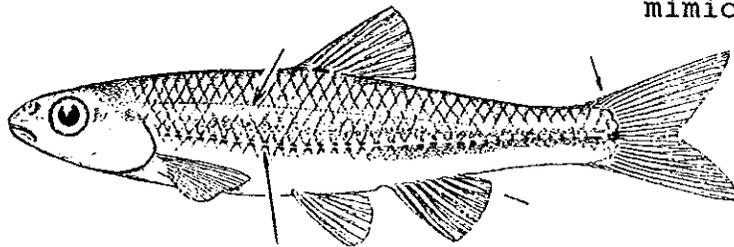
silverjaw minnow



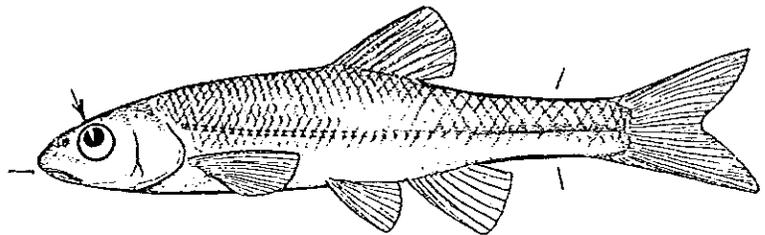
brassy minnow



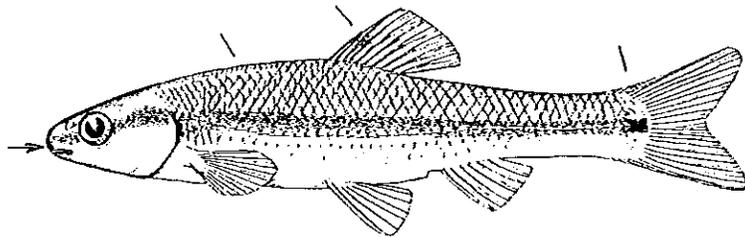
mimic shiner



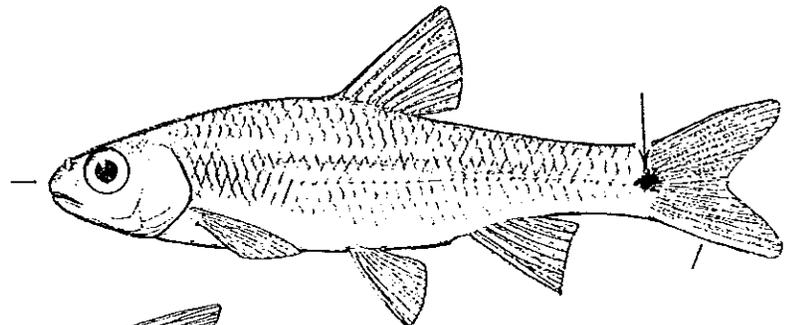
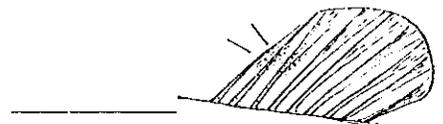
sand shiner



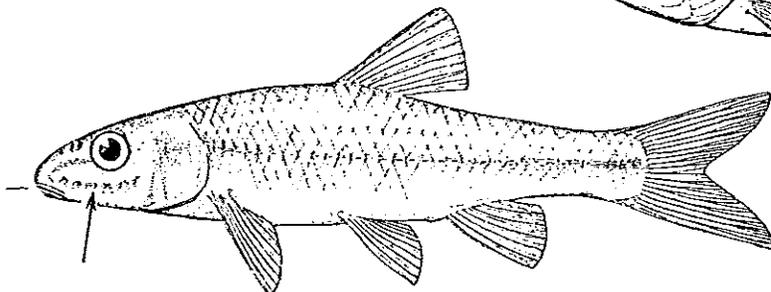
bigmouth shiner



bluntnose minnow



spottail shiner



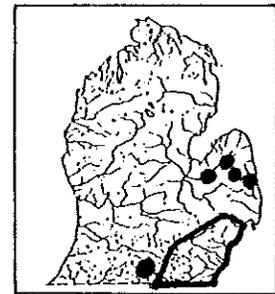
silverjaw minnow

IDENTIFICATION OF BLUNTNOSE DARTERS (Etheostoma and Percina)

johnny darter	greenside darter	banded darter	channel darter
BODY COLORS AND LATERAL MARKS			
brown, *black W's, tan	*green V's yellowish, few red spots	*green, olive, bands*	yellow-olive, brown dashes*
DORSAL BLOTCHES			
6	7	6	about 8
DORSAL FIN COLORS			
clear & speckled, *or dark (males)	{ green with red-brown base }		clear, or 2 dark bands (males)
BRIDGE OF SKIN BETWEEN SNOOT AND UPPER LIP (FRENUM)			
none	*lateral only	*anterior, well developed	absent or narrow
CONNECTION OF GILL COVERS ACROSS ISTHMUS			
narrow	broad	broad	narrow
DORSAL SPINES (usual count)			
*8,9	12-14	10-12	10-11
ANAL SPINES			
*1	2	2	2
LATERAL LINE SCALES			
37-50	55-65	44-57	43-61



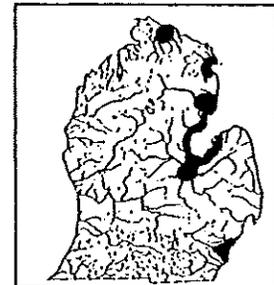
johnny darter



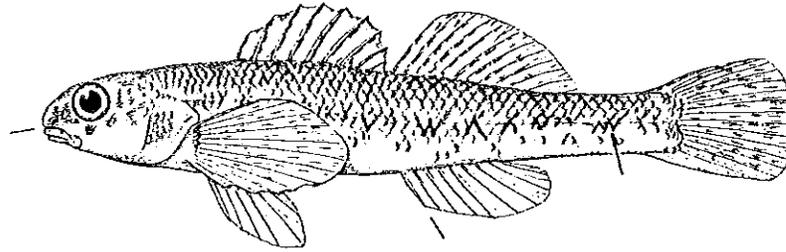
greenside darter



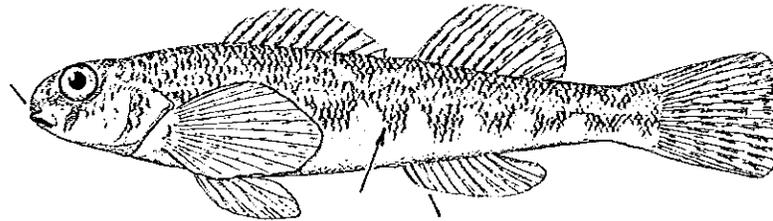
banded darter



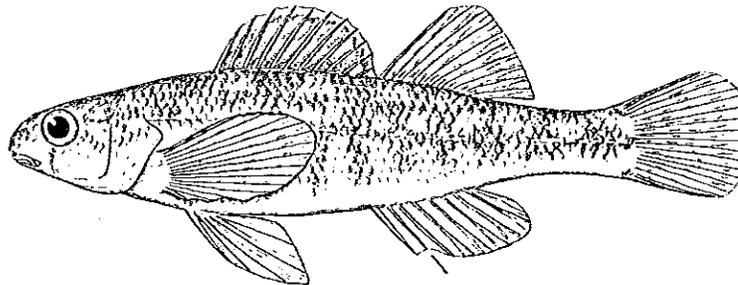
channel darter



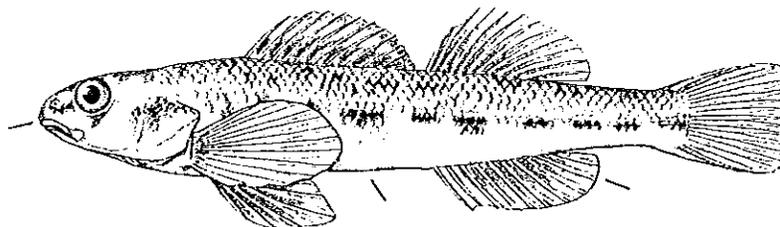
johnny darter



greenside darter



banded darter



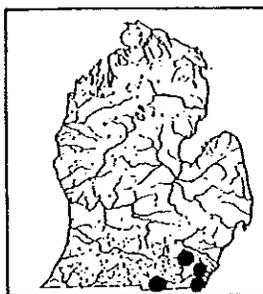
channel darter

IDENTIFICATION OF SHARP-FACED COLORFUL DARTERS IN MICHIGAN
(Etheostoma in which the lateral line is never complete)

fantail darter	orangethroat darter	rainbow darter	Iowa darter	least darter
SIZE small	small	small	small	*very small
SPECIAL COLORS ON BODY AND SIDES				
olive brown	{orange throat & belly}		red-orange	tan
*dotted lines or bars;	{& bluegreen bars that}		& brown spots	and brown
*humeral spot	*do not (encircle caudal peduncle)	*nearly	on sides	
COLORS IN SPINY DORSAL FIN				
dark, with yellow knobs*	red & blue; light stripe wide forward*	red & blue; light stripe wide backward*	red band & blue spots & margin	red spots & black bars
SPINES OF SPINY DORSAL				
*short 7-8	long 9-10	long 9-11	long 8-9	long 6-7
SPECIAL IDENTIFYING CHARACTERS				
deep caudal peduncle; protruding lower jaw	infraorbital sensory canal interrupted; no orange in anal fin*	*orange on anal & caudal fins of males	*cheeks scaled	*<4 pores in lateral line *males with enlarged pelvic fins



fantail darter



orangethroat darter



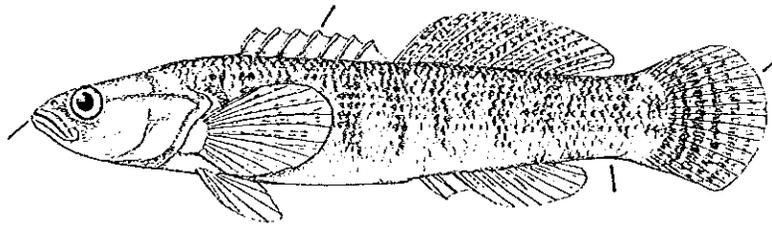
rainbow darter



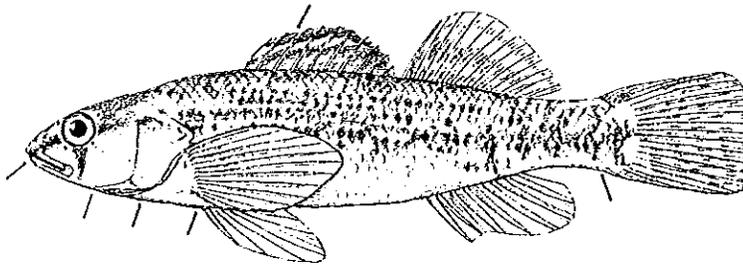
Iowa darter



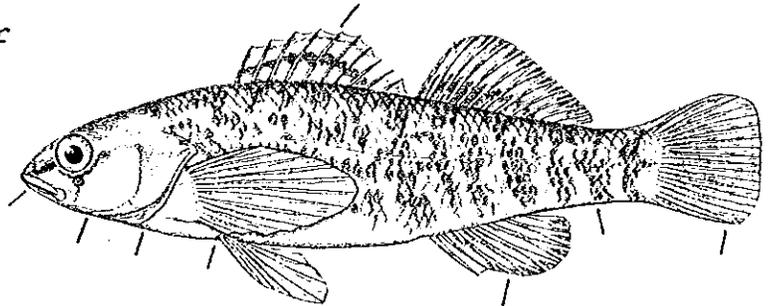
least darter



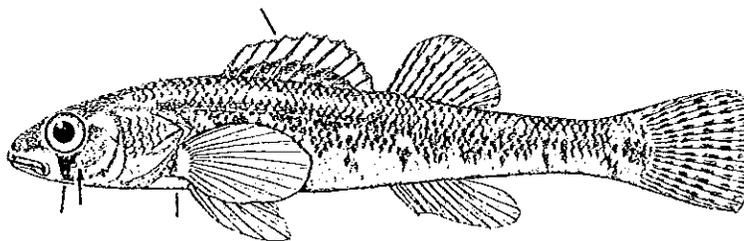
fantail darter



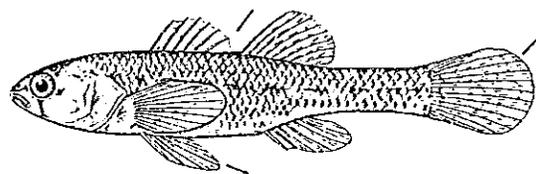
orangethroat darter



rainbow darter



Iowa darter



least darter

IDENTIFICATION OF SHARP-FACED, NON-COLORFUL DARTERS IN MICHIGAN (Percina and Ammocrypta, which have complete lateral lines)

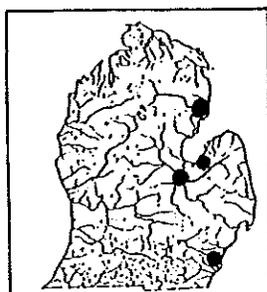
blackside darter	logperch	river darter	eastern sand darter
BODY COLOR			
olive with connected black blotches*	yellow 15-25 narrow bands*	brownish 8-15 lateral blotches*	translucent in life*; yellowish
CAUDAL SPOT			
+	+	-	-
SPECIALIZED SCALES ON MIDLINE OF BELLY			
+	+	only between pelvics	-
ANAL SPINES			
2	2	2	1
DORSAL FIN			
dark membranes bassally	banded light brown	*dark blotches near front & back	clear
FRENUM (bridge of skin between snout and lip)			
broad	broad	narrow or absent	absent
SPECIAL IDENTIFYING CHARACTERS			
*black sides	*pointed snout	male anal fin large, with tubercles	*slender body, small dorsal fin



blackside darter



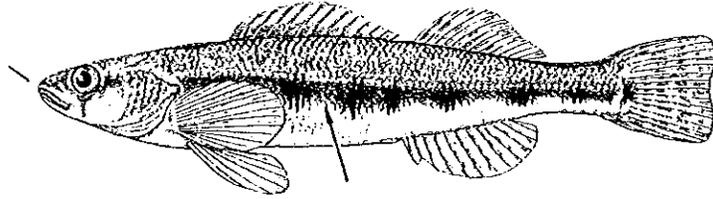
logperch



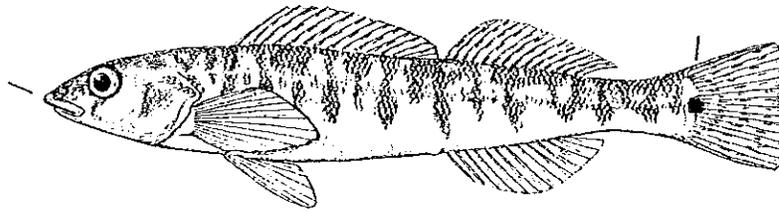
river darter



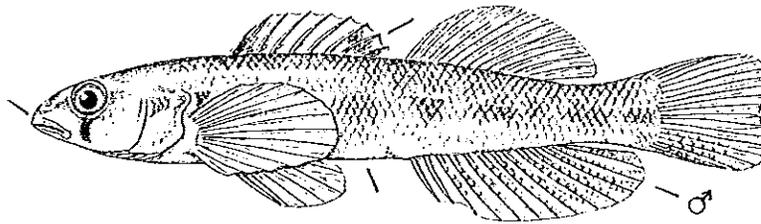
eastern sand darter



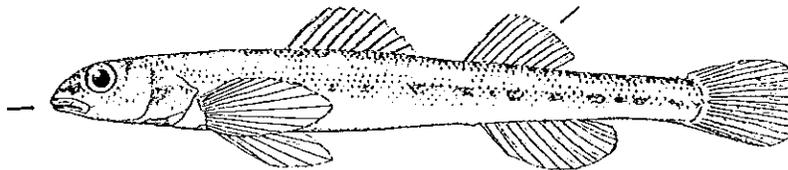
blackside darter



logperch



river darter



eastern sand darter

LIST OF MICHIGAN FISHES

LAMPREYS

Chestnut lamprey (Ichthyomyzon castaneus)
 Northern brook lamprey (Ichthyomyzon fossor)
 Silver lamprey (Ichthyomyzon unicuspis)
 American brook lamprey (Lampetra appendix)
 Sea lamprey (Petromyzon marinus)*

STURGEONS

Lake sturgeon (Acipenser fulvescens)

PADDLEFISHES

Paddlefish (Polyodon spathula) X

GARS

Spotted gar (Lepisosteus oculatus)
 Longnose gar (Lepisosteus osseus)

BOWFIN

Bowfin (Amia calva)

FRESHWATER EELS

American eel (Anquilla rostrata)

HERRINGS

Alewife (Alosa pseudoharengus) *
 Gizzard shad (Dorosoma cepedianum)

MOONEYES

Mooneye (Hiodon tergisus) E

GRAYLING, WHITEFISH, TROUTS, AND SALMONS

Pygmy whitefish (Prosopium coulteri)
 Round whitefish (Prosopium cylindraceum)
 Lake whitefish (Coregonus clupeaformis)
 Lake herring (Coregonus artedi)
 Bloater (Coregonus hoyi)
 Kiyi (Coregonus kiyi)
 Shortnose cisco (Coregonus reighardi)
 Shortjaw cisco (Coregonus zenithicus)
 Deepwater cisco (Coregonus johanna) X
 Arctic grayling (Thymallus arcticus) X
 Brook trout (Salvelinus fontinalis)
 Lake trout (Salvelinus namaycush)
 Atlantic salmon (Salmo salar) *
 Brown trout (Salmo trutta) *
 Rainbow trout (Oncorhynchus mykiss) *
 Coho salmon (Oncorhynchus kisutch) *
 Chinook salmon (Oncorhynchus tshawytscha) *
 Kokanee (Oncorhynchus nerka kennerlyi)
 Pink salmon (Oncorhynchus gorbuscha) *

SMELTS

Rainbow smelt (Osmerus mordax)

MUDMINNONS

Central mudminnow (Umbra limi)

PIKES

Grass pickerel (Esox americanus)

Northern pike (Esox lucius)

Muskellunge (Esox masquinongy)

MINNONS AND CARPS

Carp (Cyprinus carpio) *

Goldfish (Carassius auratus) *

Central stoneroller (Campostoma anomalum)

Lake chub (Couesius plumbeus)

Silverjaw minnow (Ericymba buccata)

Brassy minnow (Hybognathus hankinsoni)

Bigeye chub (Hybopsis amblops)

Silver chub (Hybopsis storeriana)

Horneyhead chub (Nocomis biguttatus)

River chub (Nocomis micropogon)

Golden shiner (Notemigonus crysoleucas)

Pugnose shiner (Notropis anogenus)

Emerald shiner (Notropis atherinoides)

Ironcolor shiner (Notropis chalybaeus) E

Striped shiner (Notropis chrysocephalus)

Common shiner (Notropis cornutus)

Bigmouth shiner (Notropis dorsalis)

Pugnose minnow (Notropis emiliae)

Blackchin shiner (Notropis heterodon)

Blacknose shiner (Notropis heterolepis)

Spottail shiner (Notropis hudsonius)

Silver shiner (Notropis photogenis) T

Rosyface shiner (Notropis rubellus)

Spotfin shiner (Notropis spilopterus)

Sand shiner (Notropis stramineus)

Weed shiner (Notropis texanus) E

Redfin shiner (Notropis umbratilis)

Mimic shiner (Notropis volucellus)

Suckermouth minnow (Phenacobius mirabilis)

Northern redbelly dace (Phoxinus eos)

Southern redbelly dace (Phoxinus erythrogaster) T

Finescale dace (Phoxinus neogaeus)

Bluntnose minnow (Pimephales notatus)

Flathead minnow (Pimephales promelas)

Blacknose dace (Rhinichthys atratulus)

Longnose dace (Rhinichthys cataractae)

Redside dace (Richardsonius elongatus)

Creek chub (Semotilus atromaculatus)

Pearl dace (Semotilus margarita)

SUCKERS

Bigmouth buffalo (Ictiobus cyprinellus)
 Black buffalo (Ictiobus niger)
 Quillback (Carpionodes cyprinus)
 Longnose sucker (Catostomus catostomus)
 White sucker (Catostomus commersoni)
 Creek chubsucker (Erimyzon oblongus)
 Lake chubsucker (Erimyzon sucetta)
 Northern hog sucker (Hypentelium nigricans)
 Spotted sucker (Minytrema melanops)
 Silver redhorse (Moxostoma anisurum)
 River redhorse (Moxostoma carinatum) T
 Black redhorse (Moxostoma duquesnei)
 Golden redhorse (Moxostoma erythrurum)
 Shorthead redhorse (Moxostoma macrolepidotum)
 Greater redhorse (Moxostoma valenciennesi)

LOACHES

Oriental weatherfish (Misgurnus anguillicaudatus) *

CATFISHES

Black bullhead (Ictalurus melas)
 Yellow bullhead (Ictalurus natalis)
 Brown bullhead (Ictalurus nebulosus)
 Channel catfish (Ictalurus punctatus)
 Stonecat (Noturus flavus)
 Tadpole madtom (Noturus gyrinus)
 Margined madtom (Noturus insignis)
 Brindled madtom (Noturus miurus)
 Northern madtom (Noturus stigmosus) E
 Flathead catfish (Pylodictis olivaris)

PIRATE PERCHES

Pirate perch (Aphredoderus sayanus)

TROUT-PERCHES

Trout-perch (Percopsis omiscomaycus)

CODFISHES

Burbot (Lota lota)

KILLIFISHES

Banded killifish (Fundulus diaphanus)
 Starhead topminnow (Fundulus dispar)
 Blackstripe topminnow (Fundulus notatus)

LIVEBEARERS

Mosquitofish (Gambusia affinis) *

SILVERSIDES

Brook silverside (Labidesthes sicculus)

STICKLEBACKS

Brook stickleback (Culaea inconstans)
 Threespine stickleback (Gasterosteus aculeatus)
 Ninespine stickleback (Pungitius pungitius)

TEMPERATE BASSES

White perch (Morone americana) *
 White bass (Morone chrysops)
 Striped bass (Morone saxatilis) *

SUNFISHES

Rock bass (Ambloplites rupestris)
 Warmouth (Lepomis gulosus)
 Green sunfish (Lepomis cyanellus)
 Pumpkinseed (Lepomis gibbosus)
 Orangespotted sunfish (Lepomis humilis)
 Bluegill (Lepomis macrochirus)
 Longear sunfish (Lepomis megalotis)
 Redear sunfish (Lepomis microlophus) *
 Smallmouth bass (Micropterus dolomieu)
 Largemouth bass (Micropterus salmoides)
 White crappie (Pomoxis annularis)
 Black crappie (Pomoxis nigromaculatus)

PERCHES

Eastern sand darter (Ammocrypta pellucida) T
 Greenside darter (Etheostoma blennioides)
 Rainbow darter (Etheostoma caeruleum)
 Iowa darter (Etheostoma exile)
 Barred fantail darter (Etheostoma flabellare flabellare)
 Striped fantail darter (Etheostoma flabellare lineolatum)
 Least darter (Etheostoma microperca)
 Johnny darter (Etheostoma nigrum)
 Orangethroat darter (Etheostoma spectabile)
 Banded darter (Etheostoma zonale)
 Yellow perch (Perca flavescens)
 Logperch (Percina caprodes)
 Channel darter (Percina copelandi) T
 Blackside darter (Percina maculata)
 River darter (Percina shumardi) T
 Sauger (Stizostedion canadense)
 Blue pike (Stizostedion vitreum glaucum) X
 Walleye (Stizostedion vitreum vitreum)
 Ruffe (Gymnocephalus cernuus) *

DRUMS

Freshwater drum (Aplodinotus grunniens)

SCULPINS

Mottled sculpin (Cottus bairdi)
 Slimy sculpin (Cottus cognatus)
 Spoonhead sculpin (Cottus ricei)
 Deepwater sculpin (Myoxocephalus thompsoni)

FLOUNDERS

European flounder (Platichthys flesus) *

*=Introduced, X=Extinct, E=Endangered, T=Threatened

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THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INSTITUTE FOR FISHERIES RESEARCH

ANN ARBOR, MICHIGAN

LITTLE KNOWN MICHIGAN FISH FACTS

Over 150 species of fishes are listed from Michigan waters.

The blue pike and the deepwater cisco, formerly important commercial fishes, are extinct.

The grayling, the paddlefish, and several species of minnows have been eliminated from Michigan waters, but survive elsewhere.

23 species of fishes in Michigan are introduced or have colonized on their own, through canals.

38 species of minnows and 15 species of suckers are known from state waters.

19 species of salmonids, six of which are introduced, are known from the state.

We have 10 kinds of sunfishes and 14 kinds of darters.

Native sunfish and minnows make colorful aquarium fishes.

Our smallest species is the least darter; adult males are about 1.5" long, the "record" is a female less than 2" long.

Our smallest species of minnows, the pugnose shiner, attains lengths of about 2 inches.

Living sand darters are nearly transparent.

Only about 30 of our species are primarily large lake fishes, but more than half of the inland species are also found in the Great Lakes, where they range from stragglers to inshore breeding populations.

Steelheads are close relatives of coho salmon, not brown trout.

Bluegills are deceptive fish: large breeding males defend their nests against all but breeding females, which they accept singly or in groups, but small males often mimic females to gain access to nests and "steal" matings; some females mimic breeding females, only to steal and eat eggs.

Small male rainbow darters often sneak onto territories and mate with females while the large territorial males are fighting with rivals.

Male bowfins protect their young. The male parent may react to predators by signalling the whole school of babies to swim into his mouth; they are released after the danger passes.

Among catfish, the father or the mother or both may protect the young.