

1949

## An Annotated List of the Fishes of the Upper Des Moines River Basin in Iowa

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*Iowa State Conservation Commission*

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## **An Annotated List of the Fishes of the Upper Des Moines River Basin in Iowa**

By HARRY M. HARRISON

The last known list of the fishes of the Des Moines River drainage was published by Meek (1892). During the same year Call (1892) listed the fishes found in the vicinity of Des Moines. Currently there is a paper in press by Starrett (1949) recording the fishes of Boone County. Inasmuch as many changes have taken place in the species composition of the drainage since the time of Meek, a need for a new list becomes apparent.

This paper contains an annotated list of the fishes of the Upper Des Moines River watershed, including only that part of the drainage which lies between the Iowa-Minnesota line, and the Polk-Warren County line. It has been prepared from the survey work of the writer during the years 1946-47-48, from the works of Meek and Call, and from the lake survey records of E. T. Rose and other investigators. Eighty-two species in fourteen families are listed. Of that number, 11 forms reported by Meek are no longer found in the area. Twenty-two not found by him have been added to the list. Except for the Brown bullhead, which has been added from the records of Hubbs (ms), the contemporary list was compiled from 316 collections made in the river and its tributaries, and from 29 collections from 12 lakes made in 1946-47-48. Figure I shows the collection stations. Species taken from the system by Hubbs, Salyer and Speaker (ms) were identified by Dr. Carl L. Hubbs. Those taken from the lakes were identified by Mr. E. T. Rose, while the species determinations for the river specimens were made by the writer. Type specimens of all river species are preserved in the collections of the Iowa State Conservation Commission.

Using a wide variety of gear, collections were made throughout the year in open water, and no habitat type was over-looked. The gear used in making collections included linear seines of  $\frac{1}{4}$  inch to 1 inch bar mesh and ranged from 6 feet to 500 feet in length. In addition, hoop nets, pond nets, and wooden basket traps were employed, and observations were also made at four dam sites equipped with modified Denil fishways.

### ACKNOWLEDGEMENTS

The author wishes to acknowledge with deep appreciation the valued counsel offered by Mr. E. B. Speaker of the Iowa Conservation Commission and to thank Mr. E. T. Rose who so graciously

made available the files of his work and answered many queries regarding the prevalence of various fish species that inhabit the lakes of the area.

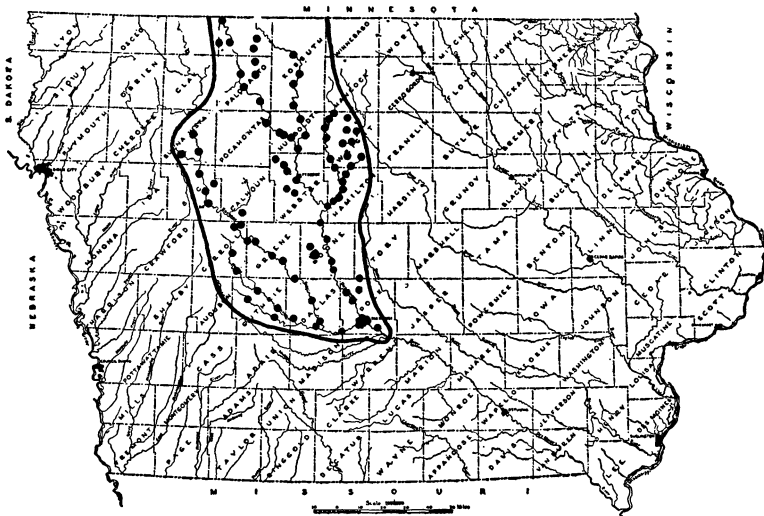


Figure I. Map Showing Study Areas, and Point Where Fish Collections Were Made.

### Annotated List of Species \*

#### PETROMYZONIDAE

##### *Ichthyomyzon* Girard

##### *I. castaneus* Girard

Chestnut lamprey. — Rare. Not taken 1946-48. Reported by Meek, (1892), from Raccoon River at Adel and Des Moines.

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#### LEPISOSTEIDAE

##### *Lepisosteus* Lacepede

##### *L. osseus oxyurus* Rafinesque

Northern longnose gar. — Rare. Not taken 1946-48. Reported by Meek (1892), from the Raccoon River at Des Moines and Adel.

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#### CLUPEIDAE

##### *Dorosoma* Rafinesque

##### *D. cepedianum* (LeSueur)

Gizzard shad. — Abundant in Black Hawk Lake in Sac County. A few records from Storm Lake and the Raccoon River. Rare to absent in the remainder of the drainage.

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\* The arrangement of families and nomenclature used follows that of Bailey (ms).

**CASTOSTOMIDAE***Megastomatobus* Fowler*M. cyprinella* (Cuiver & Valenciennes)

Bigmouth buffalo. — Common in the lakes and larger streams throughout the drainage.

*Ictiobus* Rafinesque*I. niger* (Rafinesque)

Black buffalo. — Rare. Taken three times in present survey; one individual in Storm Lake (Hubbs (ms) 1932), a second at the Ledges State Park, and the third at Fort Dodge.

*Carpiodes* Rafinesque*C. cyprinus* (LeSueur)

Quillback. — Abundant in all except the smallest streams in the area. Few in the lakes.

*C. carpio* (Rafinesque)

River carpsucker. — Abundant in streams throughout the drainage. Common to rare in lakes.

*C. velifer* (Rafinesque)

Highfin sucker. — Abundant in all streams. Rare in lakes.

*Catostomus* LeSueur*C. commersonnii commersonnii* (Lacepede)

Common white sucker. — Common throughout the drainage.

*Hypentelium* Rafinesque*H. nigricans* (LeSueur)

Hog sucker. — Common in swift water with gravel bottoms. Rare or absent in lakes.

*Moxostoma* Rafinesque*M. erythrurum* (Rafinesque)

Golden redbhorse. — Rare, but evenly distributed in the larger rivers.

*M. anisurum* (Rafinesque)

Silver redbhorse. — Common in all except the smallest streams. Not found in lakes.

*M. aureolum* (LeSueur)

Northern redbhorse. — Common throughout the Des Moines basin. Rare in lakes.

*Placopharynx* Cope*P. carinatus* Cope

River redbhorse. — Rare. Not collected 1946-48, but reported by Meek (1892) as common in the Raccoon River.

**CYPRINIDAE***Cyprinus* Linnaeus*C. carpio* Linnaeus

European carp. — Abundant in all waters.

*Semotilus Rafinesque*

*S. atromaculatus atromaculatus* (Mitchill)

Northern creek chub. — Common. Distributed throughout the basin, but prefers the creeks and smaller rivers.

*Nocomis Girard*

*N. biguttatus* (Kirkland)

Hornyhead chub. — Common. More numerous in the Boone River and its tributaries than in other parts of the upper Des Moines basin.

*Platygobio Gill*

*P. gracilis communis* (Girard)

Plains flathead chub. — Rare. One specimen taken in Storm Lake (Rose ms.).

*Hybopsis* (Kirkland)

*H. storerianus* (Kirkland)

Silver chub. — Uncommon. Taken only in the larger rivers.

*Erimystax Jordan*

*E. dissimilis* (Kirkland)

Spotted chub. — Rare. Boone County. Taken once, and then only two individuals were secured.

*Extrarius Jordan*

*E. aestivalis hyostomus* (Gilbert)

Northern longnose chub. — Abundant in 1946 in the southern part of the study area. Becoming fewer in numbers until rare in the fall of 1948.

*Rhinichthys Agassiz*

*R. atratulus meleagris* Agassiz

Western blacknose dace. — Common at small stream stations especially so with those having a steep gradient and rubble bottoms. Rare to absent other areas.

*Chrosomus Rafinesque*

*C. erythrocastr* Rafinesque

Red-bellied dace. — Rare. Taken at Des Moines by Meek in 1892. Collected but once in present study. Then in Emmet County, and represented by six individuals.

*Notemigonus Rafinesque*

*N. crysoleucas auratus* (Mitchill)

Western Golden Shiners. — Abundant to common in all lakes within area. Rare in rivers.

*Notropis Rafinesque*

*N. atherinoides atherinoides* Rafinesque

Common emerald shiner. — Common in all streams.

*N. rubellus* (Agassiz)

Rosyface shiner. — Rare. Taken occasionally below Fort Dodge in the Des Moines River and its tributaries and below Jefferson on the Raccoon River.

*N. umbratilis cyanocephalus* (Copland)

Northern red-fin shiner. — Common in Storm Lake. Rare to absent in other areas.

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*N. cornutus frontalis* (Agassiz)

Northern common shiner. — Common in large as well as small streams throughout the area under study. Rare in lakes.

*N. blennioides* (Girard)

River shiner. — Rare. Taken five times in present study.

*N. hudsonius hudsonius* (Clinton)

Northern spottail shiner. — Rare. Secured in small numbers in Storm Lake.

*N. heterodon* (Cope)

Black chin shiner. — Rare. Reported from Esterville by Meek in 1892. Not taken in present work.

*N. topeka* Gilbert

Topeka shiner. — Common in 1946. Found in small numbers in nearly all parts of the area under study. Becoming rare in 1948.

*N. spilopterus* (Cope)

Spotfin shiner. — Abundant. This is by far the most abundant species of river minnow in the upper Des Moines basin. It occurs in large numbers at all stream collecting stations. Rare in lakes.

*N. lutrensis lutrensis* Baird & Girard

Plains red shiner. — Common in the Des Moines River below Des Moines. Not taken at any other collecting station in present work. One specimen reported by Hubbs, from Storm Lake. (ms)

*N. dorsalis dorsalis* (Agassiz)

Central bigmouth shiner. — Abundant in many small streams. Common, and distributed equally in small numbers in large streams in all parts of the Upper Des Moines basin. Rare to absent in lakes.

*N. deliciosus* sp. (Cope)

Sand shiner. — Abundant. Second only to *N. spilopterus* from the standpoint of numbers in streams in the area studied. Rare to absent in lakes.

*N. heterolepis heterolepis* Eigenmann & Eigenmann

Northern blacknose shiner. — Meek (1892), reported this species as common at Esterville and rare in Beaver and Lizard creeks. It was not taken in the present investigation.

*Phenacobius* Cope*P. mirabilis* (Girard)

Sucker-mouthed minnow. — Common. Distributed in small numbers throughout the upper Des Moines River basin.

*Hybognathus* Agassiz*H. hankinsoni* Hubbs

Brassy minnow. — Common throughout area in 1946. Becoming fewer and fewer in numbers until rare in 1948.

*H. nuchalis nuchalis* Agassiz

Western silvery minnow. — Rare. Reported by Meek, 1892, from Raccoon River as rare. Not taken in present survey.

*Ceratichthys* Baird & Girard

*C. perspicuus* (Girard)

Bullhead minnow. — Common in southern part of area. Rare in the upper reaches. Not taken in any of the lakes.

*Hyborhynchus* (Agassiz)

*H. notatus* (Rafinesque)

Blunt-nosed minnow. Common throughout the upper Des Moines basin. More abundant in the Boone River. Less common in lakes.

*Pimephales* Rafinesque

*P. promelas promelas* Rafinesque

Northern fathead minnow. — Abundant in all lakes, ponds and bayous in the drainage. Common in streams.

*Campostoma* Agassiz

*C. anomalum pullum* (Agassiz)

Central stoneroller. — Common in the smaller streams. Rare in larger rivers and lakes.

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**AMEIURIDAE**

*Ictalurus* Rafinesque

*I. lacustris punctatus* (Rafinesque)

Southern channel catfish. — Abundant. Distributed throughout area in the larger streams and rivers. Also common in Storm and Black Hawk Lakes.

*Ameiurus* Rafinesque

*A. melas melas* (Rafinesque)

Northern black bullheads. — Abundant in lakes where it attains its greatest size. Common in all streams.

*A. nebulosus nebulosus* (LeSueur)

Northern brown bullhead. — Rare. Not taken in present work. Two individuals collected at the outlet of Silver Lake by Hubbs, Salyer & Speaker (ms).

*A. natalis natalis* (LeSueur)

Northern yellow bullhead. — Rare. Taken occasionally in both lakes and streams.

*Pilodictis* Rafinesque

*P. olivaris* (Rafinesque)

Flathead catfish. — Common in the Raccoon River. Found in fewer numbers in the Des Moines north to Fort Dodge. Extremely rare in a few lakes.

*Noturus* Rafinesque

*N. flavus* Rafinesque

Stonecat. — Common in all streams. Prefers swift water over gravel and rock bottoms.

*Schilbeodes* Bleeker

*S. insignis* (Nelson)

Slender madtom. — Rare. Taken only once in present work, then in the Boone River below Webster City.

*S. mollis* (Mitchill)

Tadpole cat. — Rare. Taken occasionally in streams and a few lakes.

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**ESOCIDAE**

*Esox* (Artedi) Linnaeus

*E. vermiculatus* LeSueur

Mud pickerel. — Rare. Reported by Meek (1892). Not taken in present work.

*E. lucius* Linnaeus

Northern pike. — Common in lakes and in the Des Moines River from Boone upstream. Rare between Des Moines and Boone.

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**ANGUILLIDAE**

*Anguilla* Thunberg

*A. bostoniensis* LeSueur

American eel. — Rare. Taken in the Raccoon River north to Jefferson and in the Des Moines River upstream to Rutland. Caught occasionally by anglers.

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**CYPRINODONTIDAE**

*Fundulus* Lacepede

*F. diaphanus menona* (Jordan & Copeland)

Western banded killifish. — Rare. Reported by Meek (1892) from Fort Dodge. One individual taken from Tuttle Lake in 1948.

*F. notatus* (Rafinesque)

Blackstripe topminnow. — Rare. Reported by Meek (1892) from the Raccoon River near Adel. — Not taken in the present study.

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**SERRANIDAE**

*Morone* Mitchill

*M. interrupta* Gill

Yellow bass. — Rare. But becoming common in North Twin Lake.

*Lepibema* Rafinesque

*L. chrysops* (Rafinesque)

White bass. — Common to abundant in some lakes. One specimen taken by Bailey and Speaker (ms) from Raccoon River.

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**CENTRARCHIDAE**

*Micropterus* Lacepede

*M. dolomieu dolomieu* Lacepede

Northern smallmouth bass. — Common in all streams above Des Moines except above Rutland on the west fork of the Des Moines and upstream from Livermore on the east fork.



*M. salmoides* (Lacepede)

Largemouth black bass. — Abundant in Black Hawk Lake. Common to absent in other lakes in the drainage. Rare in flowing water.

*Lepomis* Rafinesque

*L. cyannellus* Rafinesque

Green sunfish. — Common in lakes, ponds and bayous. Rare in flowing waters.

*L. gibbosus* (Linnaeus)

Pumpkinseed. — Rare in the lakes. One specimen taken from the Raccoon River.

*L. macrochirus macrochirus* Rafinesque

Bluegill. — Common in the lakes. Rare in flowing water.

*L. humilis* (Girard)

Orangespotted sunfish. — Abundant in the lakes of the area. Common in the streams particularly where the flow is reduced.

*L. megalotis megalotis* Rafinesque

Central longear sunfish. — Reported by Meek (1892), but not taken in this study.

*Ambloplites* Rafinesque

*A. rupestris* (Rafinesque)

Rock bass. — Rare. Secured from the Boone River, the Des Moines River at Fort Dodge and Fraser and from Lizzard Creek.

*Pomoxis* Rafinesque

*P. annularis* Rafinesque

White crappie. — Abundant in lakes. Common to rare in the larger streams.

*P. nigro-maculatus* (LeSueur)

Black crappie. — Common in the lakes of the drainage. Practically absent in flowing water.

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**PERCIDAE**

*Perca* (Artedi) Linnaeus

*P. flavescens* (Mitchill)

Yellow perch. — Abundant in most lakes. Rare in the rivers.

*Stizostedion* Rafinesque

*S. vitreum vitreum* (Mitchill)

Yellow pikeperch. — Common in Tuttle, Storm, Mud and High Lakes. Common in upper reaches of Des Moines River becoming less common below Fort Dodge.

*Hadropterus* Agassiz

*H. maculatus* (Girard)

Blackside darter. — Rare. Sparsely distributed in streams throughout the area.

*H. phoxocephalus* (Nelson)

Slenderhead darter. — Rare, but distributed evenly in the larger rivers.

*Percina* Haldeman

*P. caprodes semifasciata* (DeKay)

Northern logperch. — Rare. Reported by Meek (1892), from Estherville, Fort Dodge, and Des Moines. Not taken in present study.

*Ammocrypta* Baird

*A. clara* Jordan & Meek

Western sand darter. — Rare. Taken only in Boone County in the Des Moines River.

*Bolesoma* DeKay

*B. nigrum nigrum* (Rafinesque)

Central Johnny darter. — Common in all streams in the upper Des Moines River drainage. Also found in a few lakes.

*Poecilichthys* Agassiz

*P. zonalis zonalis* Cope

Eastern banded darter. — Rare. Taken only a few times in the lower Raccoon River, and in the Des Moines River between Des Moines and Fort Dodge.

*P. jessias asprigenis* Forbes

Northern mud darter. — Rare. Reported by Meek (1892) from Beaver Creek. Not taken in the present investigation.

*P. exilis* (Girard)

Iowa darter. — Rare. Taken only from the larger rivers in the drainage.

*P. flabellaris lineolatus* Agassiz

Striped fantail darter. — Rare, but quite evenly distributed in all small streams throughout the upper Des Moines River watershed. Rare in large rivers and lakes.

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**SCIAENIDAE**

*Aplodinotus* Rafinesque

*A. grunniens* (Rafinesque)

Freshwater sheepshead. — Abundant in Iowa lake. Formerly abundant in Storm Lake. Occasional specimens taken in the Des Moines River.

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**GASTEROSTEIDAE**

*Eucalia* Jordan

*E. inconstans* (Kirkland)

Brook stickleback. — Abundant in a few streams and some of the lateral ponds of the larger rivers. Common to rare in remainder of watershed.

**SUMMARY**

In 1892 Meek listed 59 species of fish for the Des Moines River. Of these, 11 are no longer found in the watershed. Twenty-two species have been added. A total of 82 species are now known to have occurred in the Upper Des Moines River drainage of which

70 persist to this time. The present list of fishes has been prepared from 316 collections of fish taken by the writer at 90 sampling stations in the Des Moines River and its tributaries, and from 29 collections made in 12 lakes by Mr. E. T. Rose. In addition some records of contemporary investigators have been used, and these are noted in the text.

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