

**JOURNAL OF LIMNOLOGY**

**DOI: 10.4081/jlimnol.2025.2213**

**SUPPLEMENTARY MATERIAL**

**Mississippi River-floodplain connectivity level mediates fish assemblage dynamics**

Adam H. Quade,<sup>1,2\*</sup> Allyse Ferrara,<sup>3</sup> Quenton Fontenot,<sup>3</sup> Raynie Harland,<sup>4</sup>  
Kelly S. Boyle,<sup>3</sup> Guillaume Rieucan<sup>1</sup>

<sup>1</sup>Louisiana Universities Marine Consortium, Chauvin, LA

<sup>2</sup>Department of Biological Sciences, University of New Orleans, New Orleans, LA

<sup>3</sup>Department of Biological Sciences, Nicholls State University, Thibodaux, LA

<sup>4</sup>Louisiana Department of Wildlife and Fisheries Baton Rouge, LA, USA

\*Corresponding author: [aquade@lumcon.edu](mailto:aquade@lumcon.edu)

**Key words:** fish assemblage; flood pulse; Mississippi River; floodplain; imaging sonar.

---

**Supplementary Tab. S1.** Summary of species collected by the Louisiana Department of Wildlife and Fisheries (LDWF). Common names and maximum total lengths (TL) are sourced from fishbase.se and associated references. Size classes are categorized as follows: 200 - 400 mm = I, 400 - 600 mm = II, etc.

Species	Common TL (mm)	Max TL (mm)	Size class	Seasonal level of inundation	Gear type	n	MGMS	Fishbase ref #
Threadfin Shad – <i>Dorosoma petenense</i>	100	330	I	Con-Sum	E	972	2.321	9291, 96339
				Con-Fal	E	509	1.215	
				Par-Sum	S	794	0.922	
				Dis-Sum	E	1028	2.454	
				Dis-Sum	S	8	0.009	
				Dis-Win	E	691	1.650	
Black Crappie – <i>Pomoxis nigromaculatus</i>	275	490	I-II	Con-Spr	F	200	4.301	12193, 86798
				Con-Fal	E	1	0.002	
				Con-Win	F	10	0.215	
				Dis-Sum	E	3	0.007	
				Dis-Sum	F	13	0.280	
				Dis-Sum	G	2	0.007	
				Dis-Sum	S	1	0.001	
				Dis-Win	E	3	0.007	
Gizzard Shad – <i>Dorosoma cepedianum</i>	350	570	I-II	Con-Spr	F	1	0.022	7251, 40637
				Con-Sum	E	729	1.741	
				Con-Fal	E	30	0.072	
				Dis-Sum	E	248	0.592	
				Dis-Sum	F	1	0.022	
				Dis-Sum	G	24	0.081	
				Dis-Sum	S	2	0.002	
				Dis-Win	E	530	1.265	
Mississippi Silverside – <i>Menidia audens</i>		150		Con-Sum	E	11	0.026	86798
				Con-Fal	E	100	0.239	
				Par-Sum	S	2204	2.558	
				Dis-Sum	E	44	0.105	
				Dis-Sum	S	217	0.252	
				Dis-Win	E	74	0.178	
Spotted Gar – <i>Lepisosteus oculatus</i>	1000	1500	I-V	Con-Spr	F	13	0.280	3728, 57533
				Con-Fal	E	9	0.022	

				Con-Win	F	4	0.086	
				Dis-Sum	E	18	0.043	
				Dis-Sum	F	14	0.301	
				Dis-Sum	G	4	0.014	
				Dis-Win	E	7	0.017	
Smallmouth Buffalo – <i>Ictiobus bubalus</i>	585	1120	I-V	Con-Sum	E	1	0.002	12193, 40637
				Con-Fal	E	3	0.007	
				Par-Sum	S	2	0.002	
				Dis-Sum	E	4	0.010	
				Dis-Sum	G	73	0.246	
				Dis-Sum	S	3	0.003	
				Dis-Win	E	81	0.193	
Largemouth Bass – <i>Micropterus nigricans</i>	400	970	I-IV	Con-Spr	F	1	0.022	556, 86798
				Con-Sum	E	18	0.043	
				Con-Fal	E	44	0.105	
				Con-Win	F	2	0.043	
				Par-Sum	S	2	0.002	
				Dis-Sum	E	14	0.033	
				Dis-Sum	G	1	0.003	
				Dis-Sum	S	38	0.044	
				Dis-Win	E	22	0.053	
Bluegill – <i>Lepomis macrochirus</i>	191	410	I-II	Con-Sum	E	1	0.0021	12193, 5723
				Con-Fal	E	87	0.208	
				Dis-Sum	E	19	0.045	
				Dis-Sum	F	2	0.043	
				Dis-Sum	S	1	0.001	
				Dis-Win	E	6	0.014	
Channel Catfish – <i>Ictalurus punctatus</i>	570	1320	I-V	Con-Fal	E	3	0.007	59043, 26550
				Par-Sum	S	94	0.109	
				Dis-Sum	F	2	0.043	
				Dis-Sum	G	35	0.118	
				Dis-Win	E	1	0.002	
Carp – <i>Cyprinus carpio</i>	310	1200	I-V	Dis-Sum	E	3	0.007	3561, 27549
				Dis-Sum	G	78	0.263	
Shortnose Gar				Con-Spr	F	3	0.065	

– <i>Lepisosteus platostomus</i>				Con-Win	F	1	0.022	
				Dis-Sum	E	8	0.019	
				Dis-Sum	F	3	0.065	
				Dis-Sum	G	3	0.010	
				Dis-Win	E	1	0.002	
Longear Sunfish	115	240	I-II	Con-Fal	E	43	0.107	4543, 5723
– <i>Lepomis megalotis</i>				Dis-Sum	S	1	0.001	
Orangespotted Sunfish	74	175		Con-Spr	F	4	0.086	12193, 3993
– <i>Lepomis humilis</i>				Par-Sum	S	7	0.008	
				Dis-Sum	E	4	0.010	
				Dis-Sum	S	2	0.002	
				Dis-Win	E	1	0.002	
Black Buffalo	521	1230	I-V	Dis-Sum	G	30	0.101	12193, 40637
– <i>Ictiobus niger</i>								
White Crappie	250	530	I-II	Con-Spr	F	3	0.065	12193, 5723
– <i>Pomoxis annularis</i>				Dis-Sum	E	4	0.010	
				Dis-Sum	F	1	0.022	
				Dis-Sum	G	1	0.003	
Flathead Catfish		1550	I-V	Dis-Sum	E	4	0.010	86798
– <i>Pylodictis olivaris</i>				Dis-Sum	F	1	0.022	
				Dis-Sum	G	12	0.040	
Silver Carp	180	1200	I-V	Con-Sum	E	1	0.002	35840, 86798
– <i>Hypophthalmichthys molitrix</i>				Dis-Sum	E	6	0.014	
				Dis-Sum	G	6	0.020	
				Dis-Win	E	9	0.022	
Brook Silverside	84	130		Con-Sum	E	1	0.002	12193, 5723
– <i>Labidesthes sicculus</i>				Dis-Sum	E	16	0.038	
				Dis-Win	E	4	0.010	
Freshwater Drum	450	950	I-IV	Con-Fal	E	1	0.002	9988, 40637
– <i>Aplodinotus grunniens</i>				Par-Sum	S	2	0.002	
				Dis-Sum	E	2	0.005	
				Dis-Sum	G	8	0.027	
Western Mosquito Fish	39	51 – 70		Dis-Sum	S	26	0.030	12193, 50932
– <i>Gambusia affinis</i>								
White Bass	318	450	I-II	Par-Sum	S	4	0.004	12193, 86798



Grass Carp – <i>Ctenopharyngodon idella</i>	107	1500	I-V	Dis-Sum	G	1	0.003	35840, 30578
Hybrid Striped Bass – <i>Striped Bass X White Bass</i>				Dis-Sum	G	1	0.003	
River Carpsucker – <i>Carpoides carpio</i>	343	640	I-III	Dis-Sum	G	1	0.003	12193, 86798
Bowfin – <i>Amia ocellicauda</i>	534	1090	I-V	Dis-Sum	E	1	0.002	12193, 86798
Redear Sunfish – <i>Lepomis microlophus</i>	192	432	I-II	Con-Fal	E	1	0.002	12193, 40637
Blacktail Shiner – <i>Cyprinella venusta</i>		190		Dis-Sum	S	1	0.001	86798
Golden Topminnow – <i>Fundulus chrysotus</i>	40	85		Dis-Sum	S	1	0.001	12193, 27139
Mosquito Fish – <i>Gambusia</i> spp.	39	51-70		Dis-Sum	S	1	0.001	12193, 50932

Gear types used for sampling are indicated as follows: E, electrofishing; F, frame net; G, monofilament gill nets; S, seining; n, number of individuals collected; MGMS, multi-gear mean standardized CPUE value. Species are listed in descending order of their summed MGMS values. Fishbase.org references cited by reference number.