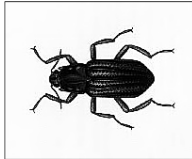


11.0 BIBLIOGRAPHY

**Insects that are indicators of excellent water quality
and provide nutrition for stream trout**

Riffle Beetle

Order Coleoptera, Family Elmidae



- Riffle beetles measure approximately 1/16 to 1/4 inch in length
- Body small, usually oval
- Legs are long
- Antennae are usually slender
- Riffle beetles walk slowly underwater, they do not swim on the surface.

Great Lakes Trivia Test (answers on back):

- 1) What historic and recreation resource is protected by Great Lakes Bottomland Preserves?
- 2) Great Lakes water levels fluctuate—go up and down—naturally. What is the most significant cause of these changes in water levels from year to year?
- 3) What is the percentage of Michigan's land area that drains into the Great Lakes? (a) 75 (b) 95 (c) 100

Answers:

- 1) shipwrecks
- 2) precipitation rates (rainfall)
- 3) (c) 100

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Minimum Entry Lengths/Weights and Current State Records

Catch and Release Entries must meet minimum length

Catch and Keep Entries must meet minimum weight

Species	Minimum Entry Length (inches)	Minimum Entry Weight (lbs.-oz.)	Current State Record (lbs.-oz.)	Species	Minimum Entry Length (inches)	Minimum Entry Weight (lbs.-oz.)	Current State Record (lbs.-oz.)
American Eel	32"	3-0	7-7	Musky, Tiger	42"	20-0	51-3
Bass, Largemouth	22"	6-0	11-15	Northern Pike	40"	18-0	39-0
Bass, Rock	11"	1-0	3-10	Perch, White	10"	0-8	1-14
Bass, Smallmouth	21"	5-0	9-4	Perch, Yellow	14"	1-13	3-12
Bass, Warmouth	9"	1-0	1-6	Salmon, Atlantic	33"	12-0	32-10
Bass, White	16"	2-0	6-7	Salmon, Chinook	41"	27-0	46-1
Bluegill	10"	1-0	2-12	Salmon, Coho	32"	12-0	30-9
Buffalo, Big Mouth	32"	20-0	---	Salmon, Pink	21"	3-0	8-9
Buffalo, Black	26"	10-0	33-4	Smelt***	10"	None	12"
Bullhead, Black	14"	1-4	3-7	Splake	25"	6-0	17-8
Bullhead, Brown	14"	1-8	3-10	Sucker, Longnose	17"	2-0	6-14
Bullhead, Yellow	14"	1-8	3-9.6	Sucker, N. Hog	13"	1-8	2-8
Bowfin	27"	7-0	14-0	Sucker, Redhorse	22"	4-0	12-14.2
Burbot	26"	5-0	18-4	Sucker, White	20"	3-0	7-3
Carp	30"	20-0	61-8*	Sunfish, Green	9"	0-12	1-8
			45-0**	Sunfish, P.Seed	9"	0-12	1-5.6
Carp sucker	19"	3-0	8-0	Sunfish, Redear	10"	1-0	1-15.5
Catfish, Channel	27"	8-0	40-0	Trout, Brook	17"	2-0	9-8
Catfish, Flathead	29"	10-0	47-8	Trout, Brown	33"	16-0	34-10
Crappie, Black	14"	1-12	4-2	Trout, Lake	34"	18-0	61-8
Crappie, White	14"	1-12	3-6	Trout, Rainbow (Steelhead)	34"	17-0	26-8
Freshwater Drum	21"	7-0	26-0	Walleye	29"	11-0	17-3
Gizzard Shad	16"	1-8	4-2	Whitefish, Lake	23"	6-0	14-4.5
Lake Herring	16"	2-8	5-6	Menominee	15"	1-0	4-0
Lake Sturgeon	50"	70-0	193-0				
Longnose Gar	32"	5-0	18-0				
Musky, Great Lks.	42"	20-0	48-0				
Musky, Northern	42"	20-0	49-12				

*State Record Carp; **Largest hook and line caught Carp; ***The minimum entry requirement for Smelt is 10" for both catch and keep and catch and release entries. The Smelt State Record is by length rather than weight.

Length Measurement Directions: Measure fish from tip of nose (or lower jaw) to tip of tail in a straight line (DO NOT measure in a curve around the body from nose to tail). Measure to the closest 1/8th inch. Tail and jaw should be pinched together.



Our Great Lakes

