

Phase II: Zebra Mussel Monitoring Report

Personal Data

Name: Patrick Schmalz - Geneva Lake Environmental Agency
 Address: Hwy 67 P.O. Box 200
 City: Fontana, State: WI Zip: 53125
 Phone Number: (414) 275-6310

Monitoring Location

Date: 8-7-96 Time: 13:30
 County: Walworth City: Linn Township
 Body of Water: Geneva Lake
 Nearest Landmark (town, highway, boat ramp, bridge): public launch at Hillside Rd. end of pier/under pier
 Distance from nearest landmark: _____
 Habitat Type: River/Stream _____ Natural Lake/Pond X Marsh/Swamp _____
 Canal/Ditch _____ Man Made Reservoir _____ Estuary/Bay _____

Water Quality Parameters

Temperature: 27°C Secchi Depth: >2.4m

Sampler Information

Total Water Depth: 2.4 m Depth of Sampler: 1.1 m
 Length of time sampler was in place (Days): 56 total (29 since last check)

Monitoring Results

Number of mussels found: # on Top side of Plates: 70
 # on Bottom side of Plates: 201 52 found on spacers
 Total: 323 (271 on plates)

Size of the largest mussel (in mm): 4 mm
 Size of the smallest mussel (in mm): 0.8 mm
 Density of mussels on sampler: 610 mussels/m²

$$\text{Density of mussels (N/M}^2\text{)} = \frac{\text{Number counted (N)} \times 10,000}{\text{Area Counted (cm}^2\text{)}} = \frac{(271)(10,000)}{(2219)+(2219)} = 610.6$$

Area conversions for the plate sampler described in this document:

Plate Size	Area (in. ²)	Area (cm ²)
6" x 6"	36	232
8" x 8"	64	413
10" x 10"	100	645
12" x 12"	144	929
Total (4 plates):	344	2219

If greater than 20 mussels are found measure 20 mussels chosen randomly from the sample. If less than 20 mussels are found measure all mussels found. Report results in table given on next page.

153 : 12" x 12"
50 : 10" x 10"
49 : 8" x 8"
19 : 6" x 6"
 6" - 8" spacer : 8
 8" - 10" spacer : 12
 10" - 12" spacer : 32

Length of Zebra Mussels

Number	Length (mm)	Number	Length (mm)
1	3	11	2
2	3	12	2.5
3	3.3	13	3
4	2	14	2
5	1	15	2
6	1.5	16	3
7	3	17	1
8	3	18	1
9	1.5	19	1
10	1	20	1

NOTE: All samples should be placed in isopropyl or rubbing alcohol until verification is obtained.

* Note: majority of, and largest sized mussels were found on or closest to the spacer in the center of the plates
 - Did not measure size of spacer, so do not know an exact density figure.

Density per plate:

12" x 12" plate: $\frac{(153) \times (10,000)}{(929) + (929)} = 823.5 \text{ mussels/m}^2$

10" x 10" plate: $\frac{(50) \times (10,000)}{(645) + (645)} = 387.6 \text{ mussels/m}^2$

8" x 8" plate: $\frac{(49) \times (10,000)}{(413) + (413)} = 593.2 \text{ mussels/m}^2$

6" x 6" plate: $\frac{(19) \times (10,000)}{(232) + (232)} = 409.5 \text{ mussels/m}^2$

* Note: naked eye observation, no hand lens used

Length of Zebra Mussels

Number	Length (mm)	Number	Length (mm)
1	3 mm	11	1 mm
2	4 mm	12	2.5 mm
3	2.5 mm	13	2 mm
4	2 mm	14	2.5 mm
5	1.5 mm	15	2 mm
6	3 mm	16	1 mm
7	1.2 mm	17	2 mm
8	1 mm	18	2 mm
9	2.9 mm	19	2.5 mm
10	2 mm	20	2.5 mm

NOTE: All samples should be placed in isopropyl or rubbing alcohol until verification is obtained.

Density by plate:

$$6" \times 6" : \frac{(9)(10,000)}{(232+232)} = 193.96 \sim 194 \text{ mussels}/m^2$$

$$8" \times 8" : \frac{(28)(10,000)}{(413+413)} = 338.98 \sim 339 \text{ mussels}/m^2$$

$$10" \times 10" : \frac{(15)(10,000)}{(645+645)} = 116.28 \sim 116 \text{ mussels}/m^2$$

$$12" \times 12" : \frac{(13)(10,000)}{(929+929)} = 69.96 \sim 70 \text{ mussels}/m^2$$

* Note: - observed + removed only w/ naked eye

- most + largest mussels were found near or on spacers between plates
- no area known for spacers, so density on them unknown as of now.