

Table 3-16. Unionid species previously collected within Reach 3¹.

| Site | Site 22 (D97) | IL Bayou | Bay Ridge | | Delaware Cr. | | H92a | H92b | 6M | Shoal Cr. | Reach 3 |
|-------------------------------|---------------|----------|-----------|-----------|--------------|----------|--------|----------------|--------|-----------|---------|
| Navigation Mile | 206.8/207.4 | D97a | 4M | D2-211B | LD-5M | 215.8 | 216.8 | 217.8 to 218.6 | 218.2 | 220 | Total |
| Habitat | Straight | Cove | Cove | Peninsula | Cove | Straight | Inside | Cove, chan. | Inside | Outside | |
| Dredge/disposal activity | Dredge | | | | | | | | | | |
| <i>Amblema plicata</i> | - | 1 | - | - | - | - | 1 | 1 | - | - | 3 |
| <i>Anodonta suborbiculata</i> | - | 1 | - | - | - | - | 1 | 1 | - | - | 3 |
| <i>Arcidens confragosus</i> | 1 | 1 | - | - | - | - | 1 | 2 | - | - | 5 |
| <i>Fusconaia flava</i> | - | 7 | - | - | - | - | - | - | - | - | 7 |
| <i>Lampsilis satura</i> | - | - | - | - | - | - | D | - | - | - | D |
| <i>Lampsilis teres</i> | - | 1 | - | - | - | - | - | - | - | - | 1 |
| <i>Lasmigona complanata</i> | - | 1 | - | - | - | - | D | D | - | - | 1 |
| <i>Leptodea fragilis</i> | 1 | 3 | - | - | - | 4 | D | D | - | - | 8 |
| <i>Megaloniaias nervosa</i> | - | - | - | - | - | 1 | - | 1 | - | - | 2 |
| <i>Obliquaria reflexa</i> | 1 | 25 | - | - | - | - | 6 | 7 | - | - | 39 |
| <i>Plectomerus dombeyanus</i> | 24 | 312 | - | 2 | 1 | 12 | 63 | 5 | - | 1 | 420 |
| <i>Potamilus ohioensis</i> | 3 | - | - | - | - | - | D | 3 | - | - | 6 |
| <i>Pyganodon grandis</i> | - | 6 | 1 | - | - | - | 6 | 2 | 2 | - | 17 |
| <i>Quadrula pustulosa</i> | - | 20 | - | - | - | - | - | - | - | - | 20 |
| <i>Quadrula quadrula</i> | 15 | 158 | 4 | - | 23 | - | 64 | 50 | 2 | 1 | 317 |
| Total | 45 | 536 | 5 | 2 | 24 | 17 | 142 | 72 | 4 | 2 | 849 |
| No. species | 6 | 12 | 2 | 1 | 2 | 3 | 7 | 9 | 2 | 2 | 14 |

¹Davidson (1997); Harris (1992)

D = dead shell

Table 3-17. MKARNS proposed dredge and proposed/permited disposal areas with respect to unionid sample sites in Reach 3, 2004 (page 1 of 3).

| Reach | Pool | Proposed dredge and proposed/permited disposal areas | | | | | | | Unionids near proposed dredge and proposed/permited disposal areas | | | | | | | | |
|-------|------|--|-------|-------|-------|------|-----------|---------------|--|-----------|---------|---------------|------------------------|-----------|-------------------|---------|--------|
| | | DR/DI | Dn NM | Up NM | Dist. | Site | Habitat | Substrate | B/P | Habitat | Depth | Substrate | Dist from DR/DI (m) | Direction | CPUE ¹ | Species | % Juv. |
| 3 | 6 | DI-41 | 122.7 | 123.3 | 0.6 | | Island | NS | | | | | | | | | |
| 3 | 6 | DI-42 | 124.1 | 124.5 | 0.4 | | TW | NS | | | | | | | | | |
| 3 | 6 | DI-43 | 124.3 | 125.0 | 0.7 | | TW | NS | | | | | | | | | |
| 3 | 6 | DR-21 | 124.8 | 125.1 | 0.3 | | TW | NS | | | | | | | | | |
| 3 | 7 | DI-44 | 126.5 | 126.8 | 0.3 | 11 | Straight | Cl/Sd/St | B11-1 | Straight | 1.2-3.7 | Cl/Sd/St | 0 | In | 9 | 9 | 54 |
| 3 | 7 | DI-45 | 126.5 | 127.9 | 1.4 | 11 | Peninsula | Sd/ClGr/Cb/Bd | | Peninsula | 1.2-3.1 | Sd/ClGr/Cb/Bd | 0 | In | 2 | 4 | 29 |
| 3 | 7 | DR-22 | 126.6 | 126.8 | 0.2 | 11 | Channel | NS | B11-1 | Straight | 1.2-3.7 | Cl/Sd/St | 450 | Shoreward | 9 | 9 | 54 |
| 3 | 7 | DI-46 | 128.0 | 129.0 | 1.0 | | Straight | NS | | | | | | | | | |
| 3 | 7 | DI-47 | 129.9 | 130.0 | 0.1 | | Island | NS | | | | | | | | | |
| 3 | 7 | DI-48 | 130.3 | 130.5 | 0.2 | | Island | NS | | | | | | | | | |
| 3 | 7 | DI-49 | 130.8 | 131.2 | 0.4 | | Straight | NS | | | | | | | | | |
| 3 | 7 | DI-50 | 133.7 | 135.1 | 1.4 | 12 | Inside | NS | P12-1/6 | Island | 0.8-3.5 | Sd/Cl/St | >950 | Shoreward | 9 | 12 | 18 |
| 3 | 7 | DI-51 | 135.0 | 139.0 | 4.0 | | Inside | NS | | | | | | | | | |
| 3 | 7 | DR-23 | 135.0 | 135.2 | 0.2 | | Channel | NS | | | | | | | | | |
| 3 | 7 | DR-24 | 137.3 | 137.4 | 0.1 | | Channel | NS | | | | | | | | | |
| 3 | 7 | DI-52 | 137.4 | 139.5 | 2.1 | | Straight | NS | | | | | | | | | |
| 3 | 7 | DI-53 | 139.7 | 140.1 | 0.4 | 13 | Inside | Sd/St/Gr | | Inside | 0.6-1.8 | Sd/St/Gr | 0.0 | In | 0 | 0 | 0 |
| 3 | 7 | DR-25 | 139.8 | 140.2 | 0.4 | 13 | Channel | NS | | | | | | | | | |
| 3 | 7 | DI-54 | 140.1 | 141.0 | 0.9 | 13 | Inside | NS | | | | | | | | | |
| 3 | 7 | DR-26 | 140.6 | 140.9 | 0.3 | 13 | Channel | Sd/Gr | | Channel | 3.4-4.3 | Sd/Gr | 0 | In | 0 | 0 | 0 |
| 3 | 7 | DI-55 | 141.5 | 142.6 | 1.1 | 13 | Straight | Sd/Gr/Bd/Cb | | Straight | 2.1-5.8 | Sd/Gr/Bd/Cb | 0 | In | 0.1 | 1 | 0 |
| 3 | 7 | DR-27 | 141.9 | 142.1 | 0.2 | 13 | Channel | Sd/Gr/St | | Channel | 4.9-5.2 | Sd/Gr/St | 0 | In | 0 | 0 | 0 |
| 3 | 7 | DR-28 | 142.2 | 142.3 | 0.1 | 13 | Channel | Sd | | Channel | 3.7-4.3 | Sd | 0 | In | 0 | 0 | 0 |
| 3 | 7 | DR-29 | 142.5 | 143.2 | 0.7 | 13 | Channel | Sd/St/Cl | | Channel | 3.7-4.0 | Sd/St/Cl | 0 | In | 0 | 0 | 0 |
| 3 | 7 | DR-30 | 143.4 | 143.4 | 0.0 | 13 | Channel | NS | | | | | | | | | |
| 3 | 7 | DR-31 | 144.0 | 144.1 | 0.1 | 13 | Channel | Sd/St | | Channel | 4.0 | Sd/St | 0 | In | 0 | 0 | 0 |
| 3 | 7 | DR-32 | 144.5 | 144.8 | 0.3 | 13 | Channel | NS | | | | | | | | | |
| 3 | 7 | DR-33 | 145.0 | 145.5 | 0.5 | 13 | Channel | Sd/St/Cl/Dt | | Channel | 3.4-4.3 | Sd/St/Cl/Dt | 0 | In | 1.8 | 4 | 0 |
| 3 | 7 | DR-34 | 145.5 | 145.7 | 0.2 | 13 | Channel | Sd/Gr | | Outside | 3.7 | Sd/Gr | 0 | In | 0 | 0 | 0 |
| 3 | 7 | DR-35 | 145.9 | 146.0 | 0.1 | 13 | Inside | NS | | | | | | | | | |
| 3 | 7 | DI-56 | 146.0 | 146.5 | 0.5 | 13 | Outside | Gr/Sd/St/Cl | P13-1 | Outside | 0.5-3.4 | Sd/St/Cl | 0 | In | 8 | 4 | 0 |
| 3 | 7 | DR-36 | 146.1 | 146.3 | 0.2 | 13 | Inside | NS | | | | | | | | | |
| 3 | 7 | DR-37 | 146.3 | 147.1 | 0.8 | 13 | Inside | NS | P13-1 | Outside | 0.5-2.1 | Sd/St/Cl | 100 | Shoreward | 8 | 4 | 0 |
| 3 | 7 | DI-57 | 146.5 | 147.5 | 1.0 | 13 | Inside | NS | P13-2 | Tributary | 0.9-2.4 | St/Sd/Cl/Gr | 60 | Dnstream | 31 | 8 | 3 |
| 3 | 7 | DI-58 | 146.7 | 147.8 | 1.1 | 13 | Island | NS | | | | | | | | | |
| 3 | 7 | DI-59 | 147.7 | 151.7 | 4.0 | 13 | Inside | NS | | | | | | | | | |
| 3 | 7 | DI-60 | 148.4 | 150.0 | 1.6 | | Outside | NS | | | | | | | | | |
| 3 | 7 | DR-38 | 149.1 | 149.2 | 0.1 | | Channel | NS | | | | | | | | | |

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Table 3-17. MKARNS proposed dredge and proposed/permited disposal areas with respect to unionid sample sites in Reach 3, 2004 (page 2 of 3).

| Reach | Pool | Proposed dredge and proposed/permited disposal areas | | | | | | | Unionids near proposed dredge and proposed/permited disposal areas | | | | | | | | |
|-------|------|--|-------|-------|-------|------|----------|-------------|--|-----------|---------|----------------|------------------------|-----------|-------------------|---------|--------|
| | | DR/DI | Dn NM | Up NM | Dist. | Site | Habitat | Substrate | B/P | Habitat | Depth | Substrate | Dist from DR/DI (m) | Direction | CPUE ¹ | Species | % Juv. |
| 3 | 7 | DR-39 | 149.3 | 149.6 | 0.3 | | Channel | NS | | | | | | | | | |
| 3 | 7 | DR-40 | 149.6 | 150.1 | 0.5 | | Channel | NS | | | | | | | | | |
| 3 | 7 | DR-41 | 150.4 | 150.5 | 0.1 | | Channel | NS | | | | | | | | | |
| 3 | 7 | DI-61 | 151.6 | 155.6 | 4.0 | 14 | Inside | NS | | Inside | 2.1-6.1 | Sd/Gr/Cb | 0.0 | In | <1 | 1 | 33 |
| 3 | 7 | DR-42 | 154.5 | 154.7 | 0.2 | 14 | Channel | NS | | Inside | 2.1-6.1 | Sd/Gr/Cb | 1750 | Dnstream | <1 | 1 | 33 |
| 3 | 7 | DR-43 | 155.4 | 155.5 | 0.1 | 14 | TW | NS | | | | | | | | | |
| 3 | 8 | DR-44 | 158.4 | 158.7 | 0.3 | | Channel | NS | | | | | | | | | |
| 3 | 8 | DI-62 | 158.9 | 159.2 | 0.3 | | Inside | NS | | | | | | | | | |
| 3 | 8 | DR-45 | 159.3 | 159.4 | 0.1 | | Channel | NS | | | | | | | | | |
| 3 | 8 | DR-46 | 160.2 | 160.6 | 0.4 | | Channel | NS | | | | | | | | | |
| 3 | 8 | DI-63 | 164.1 | 164.9 | 0.8 | 15 | Straight | Sd/Cl | | Straight | 27-4.3 | Sd/Cl | 0 | In | <1 | 1 | 0 |
| 3 | 8 | DR-47 | 164.4 | 164.6 | 0.2 | 15 | Channel | Sd | | Channel | 2.7-3.4 | Sd/Gr | 0 | In | 0 | 0 | 0 |
| | | | | | | | | | | Straight | 2.4-2.7 | Sd/Cl/St | 200 | Dnstream | 1 | 3 | 100 |
| 3 | 8 | DR-48 | 164.7 | 165.1 | 0.4 | 15 | Channel | Sd | | Channel | 2.8 | Sd | 0 | In | 0 | 0 | 0 |
| | | | | | | | | | | Straight | 4.6-6.1 | Sd/Cl/St/Gr | 50 | Shoreward | 2 | 2 | 50 |
| 3 | 8 | DI-64 | 165.4 | 166.2 | 0.8 | | Straight | NS | | | | | | | | | |
| 3 | 8 | DR-49 | 165.9 | 166.0 | 0.1 | | Channel | NS | | | | | | | | | |
| 3 | 8 | DI-65 | 165.9 | 167.0 | 1.1 | | Straight | NS | | | | | | | | | |
| 3 | 8 | DR-50 | 168.4 | 169.1 | 0.7 | | Channel | NS | | | | | | | | | |
| 3 | 8 | DI-66 | 168.7 | 169.5 | 0.8 | | Inside | NS | | | | | | | | | |
| 3 | 8 | DI-67 | 169.1 | 169.9 | 0.8 | | Outside | NS | | | | | | | | | |
| 3 | 8 | DR-51 | 169.2 | 169.5 | 0.3 | | Channel | NS | | | | | | | | | |
| 3 | 8 | DI-68 | 169.7 | 172.0 | 2.3 | | Straight | NS | | | | | | | | | |
| 3 | 8 | DI-69 | 171.5 | 172.0 | 0.5 | | Straight | NS | | | | | | | | | |
| 3 | 8 | DI-70 | 174.0 | 176.6 | 2.6 | 16 | Inside | Sd/Gr/Cb | | Inside | 2.1-2.4 | Sd/Gr/Cb | 0 | In | 0 | 0 | 0 |
| 3 | 8 | DR-52 | 174.0 | 174.3 | 0.3 | 16 | Channel | Sd/Gr/Cb | | Channel | 2.4-4.6 | Sd/Gr/Cb | 0 | In | 0 | 0 | 0 |
| | | | | | | 16 | | | | Outside | 0.8-6.1 | Cb/Gr/Sd/St/Cl | 150 | Shoreward | 1 | 2 | 50 |
| | | | | | | 16 | | | | Tributary | 1.5 | Cl/Sd/Su/Cb/Dt | 400 | Dnstream | 9 | 4 | 100 |
| 3 | 8 | DR-53 | 174.9 | 175.2 | 0.3 | 16 | Channel | Sd/Gr/Cb/St | | Channel | 0.9-4.6 | Sd/Gr/Cb/St | 0 | In | <1 | 2 | 0 |
| 3 | 8 | DI-71 | 176.0 | 176.5 | 0.5 | | TW | NS | | | | | | | | | |
| 3 | 8 | DR-54 | 176.4 | 176.5 | 0.1 | | TW | NS | | | | | | | | | |
| 3 | 9 | DR-55 | 178.7 | 179.2 | 0.5 | | Channel | NS | | | | | | | | | |
| 3 | 9 | DR-56 | 179.5 | 179.7 | 0.2 | | Channel | NS | | | | | | | | | |
| 3 | 9 | DI-72 | 180.4 | 181.3 | 0.9 | | Straight | NS | | | | | | | | | |
| 3 | 9 | DR-57 | 180.8 | 180.9 | 0.1 | | Channel | NS | | | | | | | | | |
| 3 | 9 | DR-58 | 181.6 | 182.0 | 0.4 | 18 | Outside | Sd/Gr | | Outside | 3.7-4.6 | Sd/Gr | 0 | In | 0 | 0 | 0 |
| 3 | 9 | DI-73 | 181.8 | 184.9 | 3.1 | 18 | Inside | NS | | | | | | | | | |
| 3 | 9 | DR-59 | 184.3 | 184.8 | 0.5 | 18 | Channel | Sd | | Straight | 6.7 | Sd/Bd/Gr | 250 | Shoreward | <1 | 1 | 0 |

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Table 3-17. MKARNS proposed dredge and proposed/permited disposal areas with respect to unionid sample sites in Reach 3, 2004 (page 3 of 3).

| Reach | Pool | Proposed dredge and proposed/permited disposal areas | | | | | | | Unionids near proposed dredge and proposed/permited disposal areas | | | | | | | | |
|-------|------|--|--------------|--------------|------------|------|----------|-----------|--|----------|----------|----------------|------------------------|-----------|-------------------|---------|--------|
| | | DR/DI | Dn NM | Up NM | Dist. | Site | Habitat | Substrate | B/P | Habitat | Depth | Substrate | Dist from DR/DI (m) | Direction | CPUE ¹ | Species | % Juv. |
| 3 | 9 | DR-60 | 184.9 | 185.3 | 0.4 | 18 | Channel | Sd | | Channel | 3.4 | Sd | 0 | In | 0 | 0 | 0 |
| 3 | 9 | DI-74 | 185.9 | 186.5 | 0.6 | | Straight | NS | | | | | | | | | |
| 3 | 9 | DR-61 | 186.1 | 187.4 | 1.3 | | Outside | NS | | | | | | | | | |
| 3 | 9 | DI-75 | 186.9 | 189.9 | 3.0 | | Island | NS | | | | | | | | | |
| 3 | 9 | DI-76 | 189.0 | 190.5 | 1.5 | | Island | NS | | | | | | | | | |
| 3 | 9 | DR-62 | <i>191.3</i> | <i>192.4</i> | <i>1.1</i> | | Channel | NS | | | | | | | | | |
| 3 | 9 | DI-77 | 193.6 | 195.0 | 1.4 | | Inside | NS | | | | | | | | | |
| 3 | 9 | DR-63 | <i>199.1</i> | <i>199.8</i> | <i>0.7</i> | | Channel | NS | | | | | | | | | |
| 3 | 9 | DI-78 | 200.0 | 202.0 | 2.0 | | Inside | NS | | | | | | | | | |
| 3 | 9 | DI-79 | 203.7 | 205.4 | 1.7 | | Inside | NS | | | | | | | | | |
| 3 | 9 | DR-64 | 204.5 | 205.0 | 0.5 | | TW | NS | | | | | | | | | |
| 3 | 10 | DR-65 | 205.9 | 206.5 | 0.6 | | Straight | NS | | | | | | | | | |
| 3 | 10 | DI-80 | 206.4 | 207.0 | 0.6 | 22 | Straight | NS | B22-1 | Straight | 1.8-10.5 | Cl/Sd/St/shell | <50 | Shoreward | 12 | 8 | 23 |
| 3 | 10 | DR-66 | 207.0 | 207.6 | 0.6 | 22 | Channel | Sd | B22-1 | Straight | 1.8-10.5 | Cl/Sd/St/shell | <50 | Shoreward | 12 | 8 | 23 |
| | | | | | | | | | B22-2 | Straight | 3.1-11.4 | Cl/Sd/Gr | <50 | Shoreward | 8 | 8 | |

Italics dredge areas are only for 12ft option

¹CPUE = unionids/5min.

DR = dredge; DI = disposal; NM = navigation mile; B = bed; P = patch; B1-1 = site 1, bed 1

Cb = cobble, Gr = gravel, Sd = sand, St = silt, Cl = clay, NS = no substrate data recorded, TW = tailwater

Table 3-18. Unionid species collected in Reach 3, MKARNS, 2004.

| Site | Pool 7 | | | | Total | Pool 8 | | | Total | Pool 9 | Pool 10 |
|-------------------------------|--------|-----|-----|----|-------|--------|----|----|-------|--------|---------|
| | 11 | 12 | 13 | 14 | | 15 | 16 | 18 | | 22 | |
| <i>Amblema plicata</i> | - | - | 6 | - | 6 | - | - | - | - | - | |
| <i>Anodonta suborbiculata</i> | 3 | 2 | - | - | 5 | - | - | - | 1 | 4 | |
| <i>Lampsilis teres</i> | - | 5 | 2 | - | 7 | - | - | - | - | - | |
| <i>Leptodea fragilis</i> | 19 | 3 | FD | FD | 22 | - | 2 | 2 | FD | 10 | |
| <i>Megaloniais nervosa</i> | 8 | 5 | 13 | - | 26 | - | - | - | - | 5 | |
| <i>Obliquaria reflexa</i> | 7 | 20 | 163 | 3 | 193 | 3 | 4 | 7 | 1 | 6 | |
| <i>Plectomerus dombeyanus</i> | - | 2 | 5 | - | 7 | - | - | - | - | 231 | |
| <i>Potamilus ohiensis</i> | 27 | 2 | - | - | 29 | - | WD | WD | - | WD | |
| <i>Potamilus purpuratus</i> | 22 | 3 | 1 | WD | 26 | 1 | WD | 1 | FD | WD | |
| <i>Pyganodon grandis</i> | 11 | 11 | 7 | - | 29 | - | 2 | 2 | - | 19 | |
| <i>Quadrula aspera</i> | 5 | 6 | 4 | - | 15 | - | 1 | 1 | - | 12 | |
| <i>Quadrula p. pustulosa</i> | - | - | 1 | - | 1 | - | - | - | - | - | |
| <i>Quadrula quadrula</i> | 43 | 58 | 59 | WD | 160 | 5 | 5 | 10 | - | 78 | |
| <i>Truncilla donaciformis</i> | - | - | 2 | - | 2 | - | - | - | - | - | |
| <i>Truncilla truncata</i> | - | - | 1 | - | 1 | - | - | - | - | - | |
| <i>Utterbackia imbecillis</i> | - | 7 | 1 | - | 8 | - | - | - | - | - | |
| Total | 145 | 124 | 265 | 3 | 537 | 9 | 14 | 23 | 2 | 365 | |
| No. live species | 9 | 12 | 13 | 1 | 16 | 3 | 5 | 6 | 2 | 8 | |
| Total no. species | 9 | 12 | 14 | 4 | 16 | 3 | 7 | 7 | 4 | 10 | |

FD = fresh dead, WD = weathered dead

Table 3-19. Site 11 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 126.8 | 126.8 | 126.8 | 126.8 | 126.7 | 126.7 | 126.7 | 126.6 | 126.6 | 126.6 | 126.6 | 126.6 | 126.5 | 126.5 | 126.6 |
|-------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Bank | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| Bed/Patch | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 | B11-1 |
| <i>Anodonta suborbiculata</i> | - | - | - | 1 | 1 | 1 | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | 1 | - | - | 2 | 3 | - | 5 | - | 1 | - | 1 | 1 | 1 | 1 | 2 |
| <i>Megaloniais nervosa</i> | - | - | - | 3 | 1 | - | 1 | - | - | 1 | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | 3 | 1 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| <i>Potamilus ohioensis</i> | - | - | - | - | 3 | 2 | 9 | 5 | 2 | 1 | 4 | - | - | - | 1 |
| <i>Potamilus purpuratus</i> | - | - | - | 3 | 2 | 2 | 2 | 4 | 2 | 1 | - | 3 | - | - | - |
| <i>Pyganodon grandis</i> | 1 | - | - | 1 | 1 | 2 | - | - | 1 | - | - | - | - | 1 | 2 |
| <i>Quadrula aspera</i> | - | - | - | 4 | 1 | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 4 | 2 | 2 | 6 | 7 | 3 | - | - | - | 4 | 5 | 5 | 1 | 1 | 3 |
| Total | 6 | 2 | 5 | 21 | 19 | 10 | 17 | 9 | 7 | 7 | 10 | 10 | 2 | 3 | 8 |
| No. species live | 3 | 1 | 2 | 8 | 8 | 5 | 4 | 2 | 5 | 4 | 3 | 4 | 2 | 3 | 4 |
| No. species total | 3 | 1 | 2 | 8 | 8 | 5 | 4 | 2 | 5 | 4 | 3 | 4 | 2 | 3 | 4 |
| Appr. Density (no./m ²) | 1 | <1 | <1 | 1 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | | | |
| Existing | - | - | - | - | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 | DI-44 |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight |
| Depth (m) | 1.4 | 1.5 | 1.3 | 3.7 | 3.4 | 1.5 | 2.3 | 2.1 | 2.7 | 2.1 | 1.5 | 1.2 | 3.1 | 1.5 | - |
| Substrate | | | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Gravel | - | 25 | 40 | - | - | - | - | - | - | - | - | - | - | - | 5 |
| Sand | - | 70 | 50 | - | - | - | - | - | 60 | 50 | 50 | 40 | 10 | 5 | 26 |
| Silt | - | 5 | 10 | 45 | 45 | 20 | 20 | 15 | 20 | 10 | 10 | 20 | - | - | 17 |
| Clay | - | - | - | 45 | 45 | 70 | 70 | 80 | 20 | 40 | 40 | 40 | 90 | 95 | 49 |
| Detritus | - | - | - | - | - | 10 | 10 | 5 | - | - | - | - | - | - | 2 |
| Shell | - | - | - | 10 | 10 | - | - | - | - | - | - | - | - | - | 2 |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | 1% | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-19. Site 11 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 126.5 | 126.6 | 126.5 | 126.6 | 126.6 | Total | % |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-------|------|
| Bank | R | R | R | R | R | No. | |
| Bed/Patch | | | | | | No. | % |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | 3 | 2.1 |
| <i>Leptodea fragilis</i> | - | - | 1 | - | - | 19 | 13.1 |
| <i>Megaloniaias nervosa</i> | - | - | - | - | 2 | 8 | 5.5 |
| <i>Obliquaria reflexa</i> | - | - | - | 1 | - | 7 | 4.8 |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | 27 | 18.6 |
| <i>Potamilus purpuratus</i> | - | - | - | 2 | 1 | 22 | 15.2 |
| <i>Pyganodon grandis</i> | - | 2 | - | - | - | 11 | 7.6 |
| <i>Quadrula aspera</i> | - | - | - | - | - | 5 | 3.4 |
| <i>Quadrula quadrula</i> | - | - | - | - | - | 43 | 29.7 |
| Total | 0 | 2 | 1 | 3 | 3 | 145 | |
| No. species live | 0 | 1 | 1 | 2 | 2 | 9 | |
| No. species total | 0 | 1 | 1 | 2 | 2 | 9 | |
| Appr. Density (no./m ²) | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | 7.3 | |
| Modification* | | | | | | | |
| Existing | - | - | DI-45 | DI-45 | DI-45 | | |
| Proposed | - | - | - | - | - | | |
| Habitat | Peninsula | Peninsula | Peninsula | Peninsula | Peninsula | | |
| Depth (m) | 0.9 | 1.5 | 3.1 | 1.2 | - | | |
| Substrate | | | | | | | |
| Bedrock | - | - | - | - | - | | |
| Boulder | 5 | - | - | - | - | | |
| Cobble | 5 | - | - | - | - | | |
| Gravel | 50 | - | - | 10 | - | | |
| Sand | 40 | 50 | 100 | 65 | - | | |
| Silt | - | - | - | - | - | | |
| Clay | - | 50 | - | 25 | - | | |
| Detritus | - | - | - | - | - | | |
| Shell | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | - | | |
| Zeb coverage of substrate | - | - | - | - | - | | |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

T50

Table 3-20. Site 12 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 134.3 | 134.3 | 134.3 | 134.3 | 134.3 | 134.3 | 134.3 | 134.3 | 134.3 | 134.4 | 134.4 | 134.4 | 134.4 | 134.4 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Bank | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Bed/Patch | P12-1 | P12-1 | P12-1 | P12-1 | P12-1 | P12-1 | P12-1 | P12-1 | P12-1 | P12-2 | P12-2 | P12-2 | P12-3 | P12-3 |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Lampsilis teres</i> | - | 1 | - | - | WD | - | 1 | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Megaloniais nervosa</i> | - | - | - | - | - | - | - | - | 1 | 1 | 1 | - | - | - |
| <i>Obliquaria reflexa</i> | 1 | 4 | 1 | 1 | - | - | - | 2 | - | 1 | - | 2 | 2 | |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| <i>Potamilus ohiensis</i> | 1 | - | - | - | - | 1 | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | WD | - | 1 | - | - | - | 1 | - | - | - |
| <i>Pyganodon grandis</i> | 1 | - | 1 | - | 1 | - | 2 | 1 | - | - | - | 1 | 1 | |
| <i>Quadrula aspera</i> | 1 | 1 | - | - | - | 1 | 1 | 1 | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 2 | 3 | 1 | 3 | 2 | 3 | 5 | 6 | - | 2 | 1 | 7 | 1 | |
| <i>Utterbackia imbecillis</i> | - | 1 | - | - | - | - | - | - | 3 | - | - | - | - | - |
| Total | 7 | 12 | 3 | 4 | 3 | 5 | 10 | 10 | 4 | 5 | 3 | 10 | 4 | |
| No. species live | 6 | 6 | 3 | 2 | 2 | 3 | 5 | 4 | 2 | 4 | 3 | 3 | 3 | |
| No. species total | 6 | 6 | 3 | 2 | 4 | 3 | 5 | 4 | 2 | 4 | 3 | 3 | 3 | |
| Appr. Density (no./m ²) | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | - | - | - | - | - | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Modification* | | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Habitat | Island | Island | Island | Island | Island | Island | Island | Island | Island | Island | Island | Island | Island | |
| Depth (m) | 0.8 | 0.8 | - | - | 1.1 | 0.9 | 0.8 | - | 3.5 | 0.9 | 1.8 | - | - | |
| Substrate | | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Gravel | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Sand | 25 | 25 | 25 | 25 | 20 | 50 | 50 | 50 | 50 | 50 | - | 75 | 75 | |
| Silt | 50 | 50 | 50 | 50 | 40 | 20 | 25 | 25 | - | - | - | 25 | 25 | |
| Clay | 25 | 25 | 25 | 25 | 40 | 80 | 25 | 25 | 50 | 50 | - | - | - | |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Zebra/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | - | |

*See Tables 1-1 and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-20. Site 12 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 134.4 | 134.4 | 134.5 | 134.6 | 134.4 | 134.3 | 134.4 | Total | % |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|------|
| Bank | R | R | R | R | R | R | R | No. | |
| Bed/Patch | P12-3 | P12-4 | P12-5 | P12-6 | | | | | |
| <i>Anodonta suborbiculata</i> | - | - | - | 2 | - | - | - | 2 | 1.6 |
| <i>Lampsilis teres</i> | - | - | 2 | 1 | - | WD | - | 5 | 4.0 |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | 3 | 2.4 |
| <i>Megaloniais nervosa</i> | - | - | - | 2 | - | - | - | 5 | 4.0 |
| <i>Obliquaria reflexa</i> | - | - | 4 | 2 | - | - | - | 20 | 16.1 |
| <i>Plectomerus dombeyanus</i> | - | 1 | - | - | - | - | - | 2 | 1.6 |
| <i>Potamilus ohiensis</i> | - | - | - | - | - | - | - | 2 | 1.6 |
| <i>Potamilus purpuratus</i> | - | - | - | 1 | - | - | - | 3 | 2.4 |
| <i>Pyganodon grandis</i> | 2 | - | - | 1 | - | - | - | 11 | 8.9 |
| <i>Quadrula aspera</i> | - | - | - | - | - | 1 | - | 6 | 4.8 |
| <i>Quadrula quadrula</i> | - | 13 | 6 | 2 | - | 1 | - | 58 | 46.8 |
| <i>Utterbackia imbecillis</i> | - | 1 | 2 | - | - | - | - | 7 | 5.6 |
| Total | 2 | 15 | 14 | 11 | 0 | 2 | 0 | 124 | |
| No. species live | 1 | 3 | 4 | 7 | 0 | 2 | 0 | 12 | |
| No. species total | 1 | 3 | 4 | 7 | 0 | 3 | 0 | 12 | |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | 6.2 | |
| Modification* | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | | |
| Proposed | - | - | - | - | - | - | - | | |
| Habitat | Island | Island | Island | Island | Island | Island | Island | | |
| Depth (m) | - | 1.8 | - | - | - | 0.9 | 3.5 | | |
| Substrate | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | | |
| Boulder | - | - | - | - | - | - | - | | |
| Cobble | - | - | - | - | - | - | - | | |
| Gravel | - | - | - | - | - | - | - | | |
| Sand | 70 | - | - | - | 90 | 50 | - | | |
| Silt | 20 | - | - | - | 5 | - | - | | |
| Clay | - | - | - | - | 5 | 50 | - | | |
| Detritus | 10 | - | - | - | - | - | - | | |
| Shell | - | - | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | - | - | - | | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | | |

*See Tables 1-1 and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-21. Site 13 unionid species and habitat characteristics (page 1 of 6).

| Approx. NM | 146.4 | 146.4 | 146.5 | 146.5 | 146.5 | 146.4 | 146.6 | 146.6 | 146.6 | 146.6 | 146.6 | 146.6 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| Bank | R | R | R | R | R | R | R | R | R | R | R | R |
| Bed/Patch | P13-1 | P13-1 | P13-1 | P13-1 | P13-1 | | P13-2 | P13-2 | P13-2 | P13-2 | P13-2 | P13-2 |
| <i>Amblyma plicata</i> | - | - | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 |
| <i>Lampsilis teres</i> | WD | WD | - | - | - | - | 1 | - | 1 | WD | WD | - |
| <i>Leptodea fragilis</i> | - | - | WD | - | - | - | - | - | - | - | - | - |
| <i>Megaloniais nervosa</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | 2 | 5 | 3 | 4 | 13 | - | 34 | 49 | 16 | 17 | 7 | 2 |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | 1 | 2 | - | 1 | 1 | - |
| <i>Potamilus purpuratus</i> | - | - | WD | WD | - | - | - | WD | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | 1 | - | - | 1 | - | 2 | 2 | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | 2 | - | - | - | - | - |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | - | - | - | 1 | - | - | - | - |
| <i>Quadrula quadrula</i> | 5 | 1 | - | 1 | 2 | - | 22 | 8 | 8 | 2 | 1 | - |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 7 | 6 | 3 | 7 | 15 | 0 | 62 | 60 | 28 | 23 | 10 | 3 |
| No. species live | 2 | 2 | 1 | 4 | 2 | 0 | 7 | 4 | 5 | 5 | 4 | 2 |
| No. species total | 3 | 3 | 3 | 5 | 2 | 0 | 7 | 4 | 5 | 6 | 5 | 2 |
| Appr. Density (no./m ²) | <1 | <1 | <1 | <1 | <1 | - | 2 | 2 | 2 | 2 | 1 | 1 |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | |
| Existing | DI-56 | DI-56 | DI-56 | DI-56 | DI-56 | DI-56 | - | - | - | - | - | - |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | Outside | Outside | Outside | Outside | Outside | Outside | Tributary | Tributary | Tributary | Tributary | Tributary | Tributary |
| Depth (m) | 2.1 | 0.8 | 1.5 | 0.8 | 0.5 | 3.4 | 0.9 | 1.8 | 2.4 | 1.2 | 0.9 | 0.9 |
| Substrate | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | - |
| Gravel | - | - | - | - | - | 70 | 10 | - | - | - | - | - |
| Sand | 20 | 80 | 35 | 90 | 10 | 30 | 50 | 50 | 10 | 10 | 20 | 70 |
| Silt | 30 | 10 | 35 | 5 | 80 | - | 10 | 50 | 70 | 50 | 40 | 30 |
| Clay | 50 | 10 | 30 | 5 | - | - | 30 | - | 20 | 40 | 40 | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | 1% | 1% | - | - | - | - | - |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-21. Site 13 unionid species and habitat characteristics (page 2 of 6).

| Approx. NM | 139.9 | 140.0 | 140.0 | 140.8 | 140.9 | 141.0 | 141.0 | 141.9 | 142.0 | 142.2 | 142.5 | 142.5 | 142.5 |
|-------------------------------------|---------|--------|--------|---------|---------|---------|---------|---------|----------|----------|----------|----------|---------|
| Bank | L | R | R | L | M | M | M | M | R | M | M | R | R |
| Bed/Patch | | | | | | | | | | | | | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Lampsilis teres</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | WD | - | - | - | - | - | - | FD | - | - | - | - | - |
| <i>Megalonaias nervosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | - | - | - | - | 1 | - |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| No. species total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| Existing | - | DI-53 | DI-53 | - | - | - | - | DI-55 | DI-55 | DI-55 | DI-55 | DI-55 | DI-55 |
| Proposed | - | - | - | DR-26 | DR-26 | DR-26 | DR-26 | - | - | - | - | - | - |
| Habitat | Outside | Inside | Inside | Channel | Channel | Channel | Channel | Channel | Straight | Straight | Straight | Straight | Channel |
| Depth (m) | 8.2 | 0.6 | 1.8 | 4.0 | 4.3 | 3.4 | 4.3 | 3.7 | 3.1 | 5.8 | 3.1 | 2.4 | 2.1 |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | 80 | 50 | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | 10 | 25 | - | - | - |
| Gravel | 25 | - | 0.5 | - | 5 | - | 10 | - | 10 | - | - | 10 | - |
| Sand | 75 | 80 | 99.5 | 100 | 95 | 100 | 90 | 100 | - | 25 | 100 | 90 | 100 |
| Silt | - | 20 | - | - | - | - | - | - | - | - | - | - | - |
| Clay | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | - | 0.50% | - | - | - | - | - |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

TS4

Table 3-21. Site 13 unionid species and habitat characteristics (page 3 of 6).

| Approx. NM | 142.7 | 142.1 | 142.1 | 142.3 | 142.5 | 142.8 | 143.0 | 143.0 | 143.0 | 143.3 | 143.5 | 143.7 | 143.7 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|
| Bank | M | L | L | M | M | M | L | L | L | M | M | M | R |
| Bed/Patch | | | | | | | | | | | | | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Lampsilis teres</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | FD | FD | - | - | - | - | WD | - | - | - | - |
| <i>Megalonaias nervosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | WD | - | - | - | - | - | WD | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. species total | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| Existing | DI-55 | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | DR-27 | DR-27 | DR-28 | DR-28 | DR-29 | DR-29 | DR-29 | DR-29 | DR-29 | DR-29 | DR-29 | - |
| Habitat | Channel | Channel | Channel | Channel | Channel | Channel | Channel | Channel | Channel | Straight | Channel | Channel | Channel |
| Depth (m) | 3.1 | 4.9 | 5.2 | 4.3 | 3.7 | 3.7 | - | - | - | 4.0 | - | - | 4.6 |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Gravel | - | - | 30 | - | - | - | - | - | - | - | - | - | - |
| Sand | 99 | 100 | - | 100 | 100 | 99.5 | 100 | 100 | 100 | 80 | 100 | 80 | 100 |
| Silt | - | - | 20 | - | - | - | - | - | - | 15 | - | - | - |
| Clay | - | - | - | - | - | - | - | - | - | - | - | 20 | - |
| Detritus | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | 0.5 | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | 0.50% |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-21. Site 13 unionid species and habitat characteristics (page 4 of 6).

| Approx. NM | 143.9 | 143.9 | 144.1 | 144.1 | 144.1 | 144.1 | 144.3 | 144.3 | 144.5 | 144.5 | 144.6 | 144.6 | 144.6 |
|-------------------------------------|---------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Bank | M | M | L | M | R | R | R | R | R | R | R | R | R |
| Bed/Patch | | | | | | | | | | | | | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Lampsilis teres</i> | - | - | - | - | WD | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Megalonaias nervosa</i> | - | - | - | - | - | - | - | - | 1 | 6 | 3 | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| Total | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 2 | 7 | 3 | 0 | 0 |
| No. species live | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 2 | 2 | 1 | 0 | 0 |
| No. species total | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 2 | 2 | 1 | 0 | 0 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | DR-31 | - | - | - | - | - | - | - | - | - |
| Habitat | Channel | Channel | Inside | Channel | Outside | Outside | Channel | Channel | Outside | Outside | Outside | Outside | Outside |
| Depth (m) | 4.0 | 4.0 | 3.1 | 4.0 | 1.8 | 3.0 | 4.6 | 4.6 | 4.0 | 4.3 | 4.6 | 4.6 | 4.6 |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | 25 | 25 | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | 20 | 20 | - | - |
| Gravel | - | - | 20 | - | - | 20 | 30 | 15 | 5 | 5 | 5 | 5 | - |
| Sand | 100 | 100 | 50 | 97 | - | 10 | 60 | 80 | 90 | 25 | 25 | 90 | 100 |
| Silt | - | - | 10 | 3 | 40 | 30 | 10 | 5 | 5 | 25 | 25 | 5 | - |
| Clay | - | - | 20 | - | 10 | 7 | - | - | - | - | - | - | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | 5 | - | - |
| Zeb coverage of substrate | 1% | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-21. Site 13 unionid species and habitat characteristics (page 5 of 6).

| Approx. NM | 144.9 | 145.0 | 145.0 | 145.2 | 145.2 | 145.3 | 145.5 | 145.5 | 145.6 | 145.6 | 145.6 | 145.6 | 145.6 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Bank | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Bed/Patch | | | | | | | | | | | | | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Lampsilis teres</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Megalonaias nervosa</i> | - | - | 1 | 1 | - | - | - | - | 1 | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | 3 | - | - | - | - | - | 6 |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | 2 | - | - | - | - | - | 2 |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 0 | 0 | 1 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 |
| No. species live | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| No. species total | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 3 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | DR-33 | DR-33 | DR-33 | DR-33 | - | - | - | DR-34 | - | - |
| Habitat | Channel | Outside | Outside | Channel | Outside | Channel | Channel | Outside | Outside | Outside | Outside | Outside | Outside |
| Depth (m) | 4.0 | 2.1 | 4.9 | 4.3 | 3.4 | 3.7 | 4.3 | | 2.1 | 3.7 | 3.7 | 3.7 | 1.8 |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | 90 | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | 20 | 10 | 10 | - | - | - | - | - | 30 | - | - | - | - |
| Gravel | - | - | - | - | 5 | - | - | - | 15 | 45 | 5 | 5 | - |
| Sand | 80 | - | 60 | 35 | 95 | 100 | 10 | - | 25 | 45 | 95 | 95 | 60 |
| Silt | - | - | - | 60 | - | - | 30 | - | 10 | 10 | - | - | 10 |
| Clay | - | - | 30 | 5 | - | - | 30 | - | 35 | - | - | - | 30 |
| Detritus | - | - | - | - | - | - | 30 | - | - | - | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-21. Site 13 unionid species and habitat characteristics (page 6 of 6).

| Approx. NM Bank Bed/Patch | 146.3 L | 146.3 L | 147.1 R | 147.5 R | Total No. | % |
|-------------------------------------|------------|------------|------------|------------|--------------|------|
| <i>Amblema plicata</i> | - | - | - | - | 6 | 2.3 |
| <i>Lampsilis teres</i> | - | - | - | - | 2 | 0.8 |
| <i>Leptodea fragilis</i> | - | - | FD | - | FD | |
| <i>Megalonaias nervosa</i> | - | - | - | - | 13 | 4.9 |
| <i>Obliquaria reflexa</i> | - | 1 | - | - | 163 | 61.5 |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | 5 | 1.9 |
| <i>Potamilus purpuratus</i> | - | - | WD | - | 1 | 0.4 |
| <i>Pyganodon grandis</i> | - | - | - | - | 7 | 2.6 |
| <i>Quadrula aspera</i> | - | - | - | - | 4 | 1.5 |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | 1 | 0.4 |
| <i>Quadrula quadrula</i> | 4 | - | - | - | 59 | 22.3 |
| <i>Truncilla donaciformis</i> | - | - | - | - | 2 | 0.8 |
| <i>Truncilla truncata</i> | - | - | - | - | 1 | 0.4 |
| <i>Utterbackia imbecillis</i> | - | - | - | - | 1 | 0.4 |
| Total | 4 | 1 | 0 | 0 | 265 | |
| No. species live | 1 | 1 | 0 | 0 | 13 | |
| No. species total | 1 | 1 | 2 | 0 | 14 | |
| Appr. Density (no./m ²) | - | - | - | - | | |
| Mean No./5min (CPUE) | | | | | 3.9 | |
| Modification* | | | | | | |
| Existing | - | - | DI-58 | DI-58 | | |
| Proposed | - | - | - | - | | |
| Habitat | Inside | Inside | Island | Island | | |
| Depth (m) | 1.4 | 3.1 | 4.6 | 6.7 | | |
| Substrate | | | | | | |
| Bedrock | - | - | - | - | | |
| Boulder | - | - | - | - | | |
| Cobble | - | - | 20 | 5 | | |
| Gravel | 20 | - | 70 | 40 | | |
| Sand | 60 | 95 | 5 | 50 | | |
| Silt | 10 | 5 | 5 | 5 | | |
| Clay | 10 | - | - | - | | |
| Detritus | - | - | - | - | | |
| Shell | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | | |
| Zeb coverage of substrate | 0.5% | - | - | - | | |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-22. Site 14 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 152.5 | 153.9 | 154.6 | 155.0 | 155.1 | 154.6 | 155.2 | 152.5 | 153.0 | 153.2 | 153.2 | 153.8 | 153.8 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|
| Bank | L | L | L | L | L | M | M | M | M | M | M | M | M |
| Bed/Patch | | | | | | | | | | | | | |
| <i>Leptodea fragilis</i> | WD | FD | - | - | - | - | - | - | - | - | WD | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | - | - | - | - | - | 3 |
| <i>Potamilus purpuratus</i> | WD | WD | - | - | - | - | - | - | - | - | - | - | WD |
| <i>Quadrula quadrula</i> | WD | - | - | - | - | - | - | - | - | - | WD | - | - |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| No. species total | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | DI-61 | DI-61 | DI-61 | DI-61 | DI-61 | DI-61 |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | Outside | Outside | Outside | Outside | Outside | Channel | Channel | Inside | Inside | Inside | Inside | Inside | Inside |
| Depth (m) | 6.1 | 3.7 | - | - | - | - | - | 6.1 | 2.7 | 2.4 | - | 2.1 | 2.1 |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | 10 | - | - | - | - | - | - | - | - | - | - | - | 20 |
| Gravel | 80 | 100 | - | 40 | 90 | - | 5 | 80 | - | - | - | 50 | 10 |
| Sand | 10 | - | 100 | 60 | 10 | 100 | 95 | 10 | 100 | 90 | - | 50 | 70 |
| Silt | - | - | - | - | - | - | - | 10 | - | - | - | - | - |
| Clay | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | 10 | - | - | - |
| Zebras/unionid | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substr | - | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters

R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-22. Site 14 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 153.8 | 153.8 | 154.5 | 154.6 | 155.0 | 155.0 | 155.2 | 155.2 | Total | % |
|-------------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| Bank | M | M | R | R | M | R | R | R | No. | |
| Bed/Patch | | | | | | | | | | |
| <i>Leptodea fragilis</i> | FD | - | - | - | - | - | - | - | FD | 100 |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | - | 3 | |
| <i>Potamilus purpuratus</i> | WD | - | - | - | - | - | - | - | WD | |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | - | - | WD | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| No. species total | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | 0.1 | |
| Modification* | | | | | | | | | | |
| | Existing | DI-61 | DI-61 | DI-61 | DI-61 | DI-61 | DI-61 | DI-61 | DI-61 | |
| | Proposed | - | - | - | - | - | - | - | - | |
| Habitat | | Inside | Inside | Inside | Inside | Inside | Inside | Inside | Inside | |
| Depth (m) | | 2.4 | 3.7 | - | | | | | | |
| Substrate | | | | | | | | | | |
| | Bedrock | - | - | - | - | - | - | - | - | |
| | Boulder | - | - | - | - | - | - | - | - | |
| | Cobble | 25 | - | - | - | - | - | - | - | |
| | Gravel | 25 | 10 | - | - | - | - | 10 | - | |
| | Sand | 50 | 90 | 100 | 100 | 100 | 100 | 90 | 100 | |
| | Silt | - | - | - | - | - | - | - | - | |
| | Clay | - | - | - | - | - | - | - | - | |
| | Detritus | - | - | - | - | - | - | - | - | |
| | Shell | - | - | - | - | - | - | - | - | |
| Zebras/unionid | | - | - | - | - | - | - | - | - | |
| Zeb coverage of substr | | - | - | - | - | - | - | - | - | |

*See Tables 1-1 and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-23. Site 15 unionid species and habitat characteristics.

| Approx. NM | 164.1 | 164.4 | 164.6 | 164.6 | 164.2 | 164.5 | 164.9 | 164.0 | 164.0 | 164.2 | 164.8 | 165.2 | 165.2 | Total | % | |
|-------------------------------------|----------|----------|----------|----------|----------|---------|---------|---------|----------|----------|---------|----------|---------|----------|------|---|
| Bank | L | L | L | M | M | M | M | L | L | M | R | M | R | No. | | |
| Bed/Patch | | | | | | | | | | | | | | | No. | % |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | 1 | - | - | 1 | - | 1 | 3 | 33.3 | |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 | 11.1 | |
| <i>Quadrula quadrula</i> | 1 | - | - | - | - | - | - | 2 | - | - | 1 | - | 1 | 5 | 55.6 | |
| Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 2 | 9 | | |
| No. species live | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 3 | | |
| No. species total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 3 | | |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.7 | | |
| Modification* | | | | | | | | | | | | | | | | |
| | Existing | DI-63 | DI-63 | DI-63 | DI-63 | - | - | - | - | - | - | - | - | - | - | |
| | Proposed | - | - | - | - | DR-47 | DR-47 | DR-48 | - | - | - | - | - | - | - | |
| Habitat | | Straight | Straight | Straight | Straight | Channel | Channel | Channel | Straight | Straight | Channel | Straight | Channel | Straight | | |
| Depth (m) | | - | 4.3 | - | 2.7 | 2.7 | 3.4 | 3.8 | 2.4 | 2.7 | 3.7 | 4.6 | 3.7 | 6.1 | | |
| Substrate | | | | | | | | | | | | | | | | |
| | Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | Cobble | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | Gravel | - | - | - | - | - | 5 | - | - | - | - | 10 | - | 25 | | |
| | Sand | 80 | 100 | 100 | 100 | 100 | 95 | 100 | 40 | 100 | 100 | 50 | 100 | 65 | | |
| | Silt | - | - | - | - | - | - | - | 20 | - | - | 15 | - | 10 | | |
| | Clay | 20 | - | - | - | - | - | - | 40 | - | - | 25 | - | - | | |
| | Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| | Shell | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Zebras/unionid | | - | - | - | - | - | - | - | - | - | - | 20 | - | - | | |
| Zeb coverage of substr | | - | - | - | - | - | - | 1% | - | - | - | - | - | - | | |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-24. Site 16 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 174.1 | 174.8 | 174.8 | 174.1 | 174.2 | 174.4 | 174.8 | 174.5 | 175.2 | 174.3 | 174.3 | 174.4 | 174.4 |
|-------------------------------------|---------|---------|--------|---------|---------|---------|-----------|--------|--------|---------|---------|---------|---------|
| Bank | M | M | M | L | L | L | L | R | R | M | M | M | M |
| Bed/Patch | | | | | | | | | | | | | |
| <i>Leptodea fragilis</i> | - | - | - | 1 | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | WD | - | - | 3 | - | - | - | - | - | - |
| <i>Potamilus ohioensis</i> | - | - | - | WD | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | WD | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | - | - | - | WD | - | 1 | 4 | - | - | - | - | - | - |
| Total | 0 | 0 | 0 | 2 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. species live | 0 | 0 | 0 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. species total | 0 | 0 | 0 | 6 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | DI-70 | DI-70 | - | - | - | - |
| Proposed | - | - | - | - | - | - | - | - | - | DR-52 | DR-52 | DR-52 | DR-52 |
| Habitat | Channel | Channel | Inside | Outside | Outside | Outside | Tributary | Inside | Inside | Channel | Channel | Channel | Channel |
| Depth (m) | 4.6 | 3.1 | 5.8 | 0.8 | 6.1 | 3.7 | 1.5 | 2.1 | 2.4 | 3.1 | 3.7 | 4.6 | 2.4 |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | 30 | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | 25 | 30 | 10 | - | 10 | - | 5 | - | - |
| Gravel | - | - | 25 | 60 | 25 | 30 | - | - | 45 | - | 15 | - | - |
| Sand | 100 | 100 | 70 | 15 | 25 | 5 | 15 | 95 | 45 | 100 | 80 | 100 | 100 |
| Silt | - | - | - | 10 | 25 | 5 | 15 | - | - | - | - | - | - |
| Clay | - | - | - | 15 | - | - | 50 | - | - | - | - | - | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | 5 | - | - | - | 10 | 5 | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substr | - | - | - | 0.50% | - | 10% | - | - | - | - | - | - | - |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

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Table 3-24. Site 16 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 175.0 | 175.0 | 175.1 | 175.2 | 175.2 | 175.2 | 175.6 | Total | % | |
|-------------------------------------|----------|---------|---------|---------|---------|---------|---------|---------|------|---|
| Bank | M | M | M | M | M | M | M | No. | | |
| Bed/Patch | | | | | | | | | No. | % |
| <i>Leptodea fragilis</i> | - | - | - | - | - | 1 | - | 2 | 14.3 | |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | 1 | - | 4 | 28.6 | |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | WD | - | |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | WD | - | |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | 2 | 14.3 | |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | 1 | 7.1 | |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | - | 5 | 35.7 | |
| Total | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 14 | | |
| No. species live | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | | |
| No. species total | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | | |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | 0.7 | | |
| Modification* | | | | | | | | | | |
| | Existing | - | - | Dredge | Dredge | Dredge | Dredge | Dredge | | |
| | Proposed | DR-53 | DR-53 | DR-53 | DR-53 | DR-53 | DR-53 | DR-53 | | |
| Habitat | Channel | Channel | Channel | Channel | Channel | Channel | Channel | Channel | | |
| Depth (m) | 0.9 | 3.7 | 3.1 | 4.6 | 4.0 | 2.4 | 3.7 | | | |
| Substrate | | | | | | | | | | |
| | Bedrock | - | - | - | - | - | - | - | | |
| | Boulder | - | - | - | - | - | - | - | | |
| | Cobble | - | - | - | - | - | - | 10 | | |
| | Gravel | 30 | - | 30 | 30 | 50 | 50 | 50 | | |
| | Sand | 70 | 100 | 70 | 70 | 50 | 50 | 30 | | |
| | Silt | - | - | - | - | - | - | 10 | | |
| | Clay | - | - | - | - | - | - | - | | |
| | Detritus | - | - | - | - | - | - | - | | |
| | Shell | - | - | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | - | - | - | - | | |
| Zeb coverage of substr | - | 0.50% | 0.50% | 1% | - | - | - | 1% | | |

*See Tables 1-1 and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-25. Site 18 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 181.8 | 181.8 | 182.0 | 182.0 | 182.2 | 182.2 | 182.2 | 182.5 | 182.5 | 182.5 | 182.8 | 182.8 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Bank | L | L | L | L | L | L | L | L | L | L | L | L |
| Bed/Patch | | | | | | | | | | | | |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | WD | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. species total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | DR-58 | DR-58 | DR-58 | - | - | - | - | - | - | - | - |
| Habitat | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside |
| Depth (m) | 4.9 | 3.7 | 4.6 | 4.0 | 4.3 | 5.2 | 4.6 | 5.2 | 5.2 | 3.4 | 5.2 | 5.5 |
| Substrate | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | 25 | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | 25 | - | - | - | 10 | 25 | - | - |
| Gravel | - | - | 5 | - | 25 | - | - | - | 50 | 25 | - | - |
| Sand | 98 | 100 | 95 | 100 | 25 | 90 | 100 | 100 | 40 | 25 | 100 | 100 |
| Silt | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Clay | - | - | - | - | - | - | - | - | - | 25 | - | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | 10 | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebra coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1 and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters

R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-25. Site 18 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM Bank Bed/Patch | 183.4 L | 183.4 L | 184.3 L | 184.6 L | 184.9 L | 185.3 M | 185.4 M | Total No. | % |
|-------------------------------------|------------|------------|------------|------------|------------|------------|------------|--------------|----|
| <i>Anodonta suborbiculata</i> | - | - | - | 1 | - | - | - | 1 | 50 |
| <i>Leptodea fragilis</i> | - | - | FD | FD | FD | - | - | FD | |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | 1 | 1 | 50 |
| <i>Potamilus purpuratus</i> | - | - | - | - | FD | - | - | FD | |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | |
| No. species live | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | |
| No. species total | 0 | 0 | 1 | 2 | 2 | 0 | 1 | 4 | |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | 0.1 | |
| Modification* | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | | |
| Proposed | - | - | - | - | - | DR-60 | - | | |
| Habitat | Outside | Outside | Straight | Straight | Straight | Channel | Channel | | |
| Depth (m) | 5.2 | 4.9 | 6.7 | 6.7 | 4.3 | 3.4 | 1.8 | | |
| Substrate | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | | |
| Boulder | 25 | - | 50 | - | - | - | - | | |
| Cobble | 25 | - | - | - | - | - | - | | |
| Gravel | 25 | - | 50 | - | 50 | - | - | | |
| Sand | 25 | 100 | - | 100 | - | 100 | 100 | | |
| Silt | - | - | - | - | 50 | - | - | | |
| Clay | - | - | - | - | - | - | - | | |
| Detritus | - | - | - | - | - | - | - | | |
| Shell | - | - | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | - | - | - | | |
| Zebra coverage of substrate | - | - | - | - | - | - | - | | |

*See Tables 1-1and 1-2

DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-26. Site 22 unionid species and habitat characteristics (page 1 of 3).

| Approx. NM | 206.8 | 206.8 | 206.8 | 206.8 | 206.9 | 206.9 | 207.3 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 |
|-------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Bank | R | R | R | R | R | R | M | M | M | R | R | R |
| Bed/Patch | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | - | - | - | - | 1 | - | - |
| <i>Leptodea fragilis</i> | - | - | - | WD | - | - | - | WD | WD | WD | - | FD |
| <i>Megaloniaias nervosa</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | 1 | - | - | - | - | - | - | - | - | - | - |
| <i>Plectomerus dombeyanus</i> | 7 | 3 | - | 9 | 5 | - | 4 | 5 | 9 | 15 | 21 | 12 |
| <i>Potamilus ohioensis</i> | WD | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | 2 | - | 1 | - | 1 | - | - | 1 | 3 | 5 | - |
| <i>Quadrula aspera</i> | 1 | - | - | 1 | 3 | 1 | 4 | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 3 | 1 | - | 2 | 3 | 11 | 2 | 1 | 1 | 1 | - | 2 |
| Total | 11 | 7 | 0 | 13 | 11 | 13 | 10 | 6 | 11 | 20 | 26 | 14 |
| No. species live | 3 | 4 | 0 | 4 | 3 | 3 | 3 | 2 | 3 | 4 | 2 | 2 |
| No. species total | 4 | 4 | 0 | 5 | 3 | 3 | 3 | 3 | 4 | 5 | 2 | 3 |
| Appr. Density (no./m ²) | - | - | - | 2 | <1 | 2 | <1 | - | 1 | 1 | 1 | 1 |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | | | | | | | | | | | | |
| Depth (m) | Straight 7.6 | Straight 1.2 | Straight 0.6 | Straight 6.1 | Straight 6.4 | Straight 7.6 | Straight 6.1 | Straight 6.7 | Straight 3.0 | Straight 3.0 | Straight 1.5 | Straight 1.5 |
| Substrate | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | - |
| Gravel | - | - | - | - | - | - | - | - | - | - | - | - |
| Sand | - | - | 100 | - | - | - | - | - | - | - | - | 10 |
| Silt | - | - | - | 60 | - | 80 | - | 20 | 80 | 80 | 10 | 20 |
| Clay | 80 | 90 | - | 30 | 80 | - | 90 | 60 | - | - | 80 | 60 |
| Detritus | - | - | - | - | - | - | - | - | - | 20 | 10 | - |
| Shell | 20 | 10 | - | 10 | 20 | 20 | 10 | 20 | 20 | - | - | 10 |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | 100% | 100% | - | - | 30% | 30% |

*See Tables 1-1 and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-26. Site 22 unionid species and habitat characteristics (page 2 of 3).

| Approx. NM | 207.4 | 207.4 | 207.5 | 207.5 | 207.5 | 207.5 | 207.6 | 207.6 | 207.6 | 207.6 | 207.6 | 207.6 |
|-------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Bank | R | R | R | R | R | R | R | R | R | R | R | R |
| Bed/Patch | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 | B22-1 |
| <i>Anodonta suborbiculata</i> | - | 1 | - | 1 | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | 1 | - | - | - | - | 4 | - | - | - | - |
| <i>Megaloniaias nervosa</i> | - | - | - | - | - | - | - | - | 1 | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | 1 | - | - | - | - | - | 2 | - | - | - |
| <i>Plectomerus dombeyanus</i> | 9 | 5 | 13 | 4 | 15 | 4 | 1 | 5 | 11 | 5 | 11 | 11 |
| <i>Potamilus ohioensis</i> | WD | - | - | - | - | - | - | - | - | - | - | - |
| <i>Potamilus purpuratus</i> | - | - | - | WD | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | 1 | - | - | - | - | - | - | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 1 | - | 1 | - | - | 1 | 1 | 4 | 8 | 9 | 9 | 9 |
| Total | 10 | 6 | 17 | 5 | 15 | 5 | 2 | 13 | 22 | 14 | 20 | 20 |
| No. species live | 2 | 2 | 5 | 2 | 1 | 2 | 2 | 3 | 4 | 2 | 2 | 2 |
| No. species total | 3 | 2 | 5 | 3 | 1 | 2 | 2 | 3 | 4 | 2 | 2 | 2 |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight |
| Depth (m) | 1.5 | 4.9 | 1.8 | 2.1 | 5.5 | 6.1 | 6.4 | 6.4 | 7.0 | 7.0 | 7.0 | 7.0 |
| Substrate | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | 15 | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | 15 | - | - | - | - | - | - | - | - | - |
| Gravel | - | - | 10 | - | - | - | - | - | - | - | - | - |
| Sand | - | - | 30 | 45 | 45 | 45 | 70 | 60 | 70 | 70 | 70 | 90 |
| Silt | 40 | 90 | 30 | - | - | - | - | - | 5 | 5 | 5 | - |
| Clay | 50 | - | - | 45 | 45 | 45 | 20 | 20 | 20 | 20 | 20 | 5 |
| Detritus | 10 | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | 10 | - | 10 | 10 | 10 | 10 | 20 | 5 | 5 | 5 | 5 |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | 5% | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1and 1-2 *See Tables 1-1and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-26. Site 22 unionid species and habitat characteristics (page 3 of 3).

| Approx. NM | 207.6 | 206.9 | 206.9 | 206.9 | 207.6 | 207.6 | 207.6 | 207.6 | 207.3 | 207.6 | Total | |
|-------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|-------|------|
| Bank | R | L | L | L | L | L | L | L | M | L | No. | % |
| Bed/Patch | B22-1 | B22-2 | B22-2 | B22-2 | B22-2 | B22-2 | B22-2 | B22-2 | | | | |
| <i>Anodonta suborbiculata</i> | - | - | 1 | - | - | - | - | - | - | - | 4 | 1.1 |
| <i>Leptodea fragilis</i> | 1 | - | - | 1 | - | 1 | 1 | 1 | - | - | 10 | 2.7 |
| <i>Megaloniaias nervosa</i> | - | - | - | - | 1 | 1 | - | 2 | - | - | 5 | 1.4 |
| <i>Obliquaria reflexa</i> | 1 | - | - | - | - | 1 | - | - | - | - | 6 | 1.6 |
| <i>Plectomerus dombeyanus</i> | 3 | 11 | 9 | 1 | 8 | 4 | 8 | 3 | - | - | 231 | 63.3 |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | - | - | - | WD | - |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | - | - | - | - | WD | - |
| <i>Pyganodon grandis</i> | 1 | - | - | - | - | - | 3 | 1 | - | - | 19 | 5.2 |
| <i>Quadrula aspera</i> | - | 2 | - | - | - | - | - | - | - | - | 12 | 3.3 |
| <i>Quadrula quadrula</i> | 3 | - | 2 | 1 | - | - | 2 | - | - | - | 78 | 21.4 |
| Total | 9 | 13 | 12 | 3 | 9 | 7 | 14 | 7 | 0 | 0 | 365 | |
| No. species live | 5 | 2 | 3 | 3 | 2 | 4 | 4 | 4 | 0 | 0 | 8 | |
| No. species total | 5 | 2 | 3 | 3 | 2 | 4 | 4 | 4 | 0 | 0 | 10 | |
| Appr. Density (no./m ²) | - | - | - | - | - | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | 10.7 | |
| Modification* | | | | | | | | | | | | |
| Existing | - | | | | | | | | - | | | |
| Proposed | - | | | | | | | | Dredge | | | |
| Habitat | | | | | | | | | Channel | Straight | | |
| Depth (m) | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | 11.6 | 11.4 | | |
| Substrate | 10.5 | 4.6 | - | - | 3.1 | 6.4 | 8.2 | 9.3 | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | | |
| Boulder | - | - | - | - | - | - | - | - | - | - | | |
| Cobble | - | - | - | - | - | - | - | - | - | - | | |
| Gravel | - | 80 | 80 | - | - | - | - | - | - | - | | |
| Sand | 95 | 10 | 10 | 50 | 45 | 40 | 20 | 20 | 95 | - | | |
| Silt | - | - | - | - | 10 | - | - | - | 5 | - | | |
| Clay | - | 10 | 10 | - | 45 | 60 | 80 | 80 | - | - | | |
| Detritus | - | - | - | - | - | - | - | - | - | - | | |
| Shell | 5 | - | - | 50 | - | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | | |

*See Tables 1-1and 1-2 *See Tables 1-1and 1-2
 DI=Disposal, DF=Dike Field, DR=Dredge, FD=Fresh Dead Shell, WD=Weathered Dead Shell, NM=Navigation Mile, TW=Tailwaters
 R=Right desc. bank, M=Midchannel, L=Left desc. bank, B=Bed, P=Patch

Table 3-27. Unionid species previously collected within Reach 4, Lake Dardanelle¹.

| Species | D220 | D220.5 | D221 | D221 | D223 | Site 23 D226 | D233 | D243.9 | D244 | D251 | Dardanelle |
|-------------------------------|------------------|-----------------|-----------------|------------------|-----------------------|---------------------|---------------|----------------|-----------------|---------------------------|--------------------|
| | 220.0 outside | 220.5 inside | 221.0 island | 221.0 outside | 222.8-223.5 island | 226-226.7 island | 233.0 cove | 243.9 oxbow | 244.0 island | 250.9-251.5 midchannel | 220-251.0 Total |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | - | 2 | - | 1 | - | 3 |
| <i>Arcidens confragosus</i> | - | - | - | - | 1 | - | - | - | - | - | 1 |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | - | 1 | 1 |
| <i>Obliquaria reflexa</i> | - | 1 | 5 | 6 | 8 | 1 | - | - | - | 1 | 22 |
| <i>Plectomerus dombeyanus</i> | 1 | 21 | 19 | 3 | 13 | 1 | - | - | - | - | 58 |
| <i>Potamilus ohioensis</i> | - | - | - | - | 1 | - | - | - | - | - | 1 |
| <i>Pyganodon grandis</i> | - | - | - | - | 2 | 1 | 3 | - | - | - | 6 |
| <i>Quadrula quadrula</i> | 1 | - | 8 | 15 | 21 | 4 | 19 | 1 | - | 5 | 74 |
| Total | 2 | 22 | 32 | 24 | 46 | 7 | 24 | 1 | 1 | 7 | 166 |
| No. species | 2 | 2 | 3 | 3 | 6 | 4 | 3 | 1 | 1 | 3 | 8 |
| Points sampled ² | 2 | 2 | 5 | 6 | 12 | 6 | 8 | 1 | 1 | 3 | 46 |
| Unionids per point | 1.0 | 11.0 | 6.4 | 4.0 | 3.8 | 1.2 | 3.0 | 1.0 | 1.0 | 2.3 | 3.6 |

¹Davidson (1997)

²Only points with unionids counted

DI = disposal, DF = dike field, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile, TW = tailwaters

Table 3-28. MKARNS proposed dredge areas with respect to unionid sample sites in Reach 4, 2004 (page 1 of 2).

| Reach | Pool | Proposed dredge areas | | | | | | | Unionids near proposed dredge areas | | | | | | | | | |
|-------|------|-----------------------|-------|-------|-------|------|----------|-------------|-------------------------------------|-----------|----------|-------------|----------------------|-----------|-------------------|---------|--------|--|
| | | DR/DI | Dn NM | Up NM | Dist. | Site | Habitat | Substrate | B/P | Habitat | Depth | Substrate | Dist from dredge (m) | Direction | CPUE ¹ | Species | % Juv. | |
| 4 | 10 | DR-67 | 221.5 | 221.9 | 0.4 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DR-68 | 225.2 | 225.4 | 0.2 | 23 | Channel | Sd | | | | | | | | | | |
| 4 | 10 | DR-69 | 226.7 | 226.9 | 0.2 | 23 | Channel | Sd | B23-2 | Channel | 4 | Sd | 0 | In | 0 | 0 | 0 | |
| 4 | 10 | DR-70 | 228.5 | 228.8 | 0.3 | 23 | Channel | Sd | | Channel | 1.8-10.0 | Cl/St | 235 | Shoeward | 10 | 8 | 11 | |
| 4 | 10 | DR-71 | 229.5 | 230.1 | 0.6 | 23 | Straight | Sd | | Channel | 4.6 | Sd | 0 | In | 0 | 0 | 0 | |
| | | | | | | | | | B23-1 | Straight | 3.4-4.6 | Sd/Gr/St | 0 | In | 1 | 2 | 0 | |
| | | | | | | | | | | Outside | 2.0-7.3 | Cl/St/Sd/Dt | 140 | Shoreward | 15 | 11 | 55 | |
| 4 | 10 | DI-81 | 232.4 | 233.4 | 1.0 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DR-72 | 232.8 | 233.4 | 0.6 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DR-73 | 233.5 | 233.9 | 0.4 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DI-82 | 235.0 | 236.9 | 1.9 | NS | Straight | | | | | | | | | | | |
| 4 | 10 | DR-74 | 235.9 | 236.4 | 0.5 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DR-75 | 237.3 | 239.1 | 1.8 | NS | Straight | | | | | | | | | | | |
| 4 | 10 | DI-83 | 238.5 | 239.9 | 1.4 | NS | Straight | | | | | | | | | | | |
| 4 | 10 | DR-76 | 240.6 | 240.9 | 0.3 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DI-84 | 240.9 | 241.4 | 0.5 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DR-77 | 241.0 | 241.1 | 0.1 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DR-78 | 241.6 | 242.1 | 0.5 | NS | Outside | | | | | | | | | | | |
| 4 | 10 | DI-85 | 241.7 | 242.4 | 0.7 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DI-86 | 242.0 | 242.7 | 0.7 | NS | Outside | | | | | | | | | | | |
| 4 | 10 | DI-87 | 243.5 | 244.5 | 1.0 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DI-88 | 243.7 | 246.3 | 2.6 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DI-89 | 246.9 | 248.7 | 1.8 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DR-79 | 249.5 | 249.9 | 0.4 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DR-80 | 253.7 | 253.9 | 0.2 | NS | Channel | | | | | | | | | | | |
| 4 | 10 | DI-90 | 255.8 | 256.1 | 0.3 | NS | Inside | | | | | | | | | | | |
| 4 | 10 | DI-91 | 256.0 | 256.2 | 0.2 | NS | TW' | | | | | | | | | | | |
| 4 | 10 | DR-81 | 256.2 | 256.2 | 0 | NS | TW | | | | | | | | | | | |
| 4 | 12 | DR-82 | 271.4 | 271.9 | 0.5 | 26 | Straight | Sd/St/Cl/Gr | P26-2 | Straight | 4.3 | Sd/St/Cl/Gr | 0 | In | 0 | 0 | 0 | |
| | | | | | | | | | | Straight | 6.1 | Cl/St | 2900 | Dnstream | 7 | 3 | 5 | |
| 4 | 12 | DR-83 | 272.0 | 273.0 | 1.0 | 26 | Straight | Cl/Sd/St/Dt | | Straight | 3.1-4.6 | Cl/Sd/St/Dt | 0 | In | 0 | 0 | 0 | |
| | | | | | | | | | P26-1 | Tributary | 1.8-3.1 | Cl/St | Protected | | 6 | 5 | 12 | |
| 4 | 12 | DI-92 | 274.7 | 276.0 | 1.3 | NS | Inside | | | | | | | | | | | |
| 4 | 12 | DR-84 | 274.9 | 275.3 | 0.4 | NS | Inside | | | | | | | | | | | |

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Table 3-28. MKARNS proposed dredge areas with respect to unionid sample sites in Reach 4, 2004 (page 2 of 2).

| Reach | Pool | Proposed dredge areas | | | | | | | Unionids near proposed dredge areas | | | | | | | | |
|---------|------|-----------------------|-------|-------|-------|------|----------|----------------|-------------------------------------|---------|---------|----------------|----------------------|-----------|-------------------|---------|--------|
| | | DR/DI | Dn NM | Up NM | Dist. | Site | Habitat | Substrate | B/P | Habitat | Depth | Substrate | Dist from dredge (m) | Direction | CPUE ¹ | Species | % Juv. |
| 4 | 12 | DR-85 | 275.4 | 276.0 | 0.6 | NS | Inside | | | | | | | | | | |
| 4 | 12 | DI-93 | 275.8 | 276.4 | 0.6 | NS | Straight | | | | | | | | | | |
| 4 | 12 | DR-86 | 276.5 | 276.7 | 0.2 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DI-94 | 276.7 | 277.5 | 0.8 | NS | Inside | | | | | | | | | | |
| 4 | 12 | DR-87 | 276.9 | 277.3 | 0.4 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DR-88 | 277.5 | 278.4 | 0.9 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DR-89 | 278.7 | 278.8 | 0.1 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DI-95 | 279.0 | 280.1 | 1.1 | NS | Straight | | | | | | | | | | |
| 4 | 12 | DI-96 | 279.0 | 280.4 | 1.4 | NS | Outside | | | | | | | | | | |
| 4 | 12 | DR-90 | 279.2 | 281.0 | 1.8 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DR-91 | 281.9 | 282.9 | 1.0 | 27 | Channel | Sd | | Channel | 4.9 | Sd | 0 | In | 0 | 0 | 0 |
| 4 | 12 | DI-97 | 281.9 | 283.4 | 1.5 | 27 | Inside | Sd/Gr/St/Cl | | Inside | 0.9-3.4 | Sd/Gr/St/Cl | 0 | In | 2 | 3 | 0 |
| 4 | 12 | DI-98 | 282 | 283.3 | 1.3 | 27 | Outside | Cl/St/Bd/Cb/Gr | | Outside | 0.9-3.4 | Cl/St/Bd/Cb/Gr | 0 | In | 2 | 4 | 8 |
| 4 | 12 | DR-92 | 283.6 | 284.5 | 0.9 | 27 | Channel | Sd/Gr/St | | Channel | 3.4-4.6 | Sd/Gr/St | 0 | In | <1 | 1 | 0 |
| 4 | 12 | DI-99 | 284.3 | 287.4 | 3.1 | NS | Straight | | | | | | | | | | |
| 4 | 12 | DR-93 | 285.2 | 285.4 | 0.2 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DI-100 | 285.6 | 286.0 | 0.4 | NS | Straight | | | | | | | | | | |
| 4 | 12 | DI-101 | 288.4 | 289.0 | 0.6 | NS | Outside | | | | | | | | | | |
| 4 | 12 | DR-94 | 289.0 | 289.4 | 0.4 | NS | Channel | | | | | | | | | | |
| 4 | 12 | DI-102 | 290.4 | 291.5 | 1.1 | 28 | Outside | Bd/Cb/Gr | | Outside | 4 | Bd/Cb/Gr | 0 | In | 0 | 0 | 0 |
| 4 | 12 | DR-95 | 291.8 | 292.4 | 0.6 | 28 | TW | Gr/Sd/Br/St | | TW | 3.1-4.6 | Gr/Sd/Br/St | 0 | In | <1 | 1 | 0 |
| 4 | 12 | DI-103 | 291.9 | 292.2 | 0.3 | 28 | Inside | Sd/Gr/Cb | | Inside | 1.8 | Sd/Gr/Cb | 0 | In | 0 | 0 | 0 |
| 4 | 13 | DI-104 | 296.6 | 297.3 | 0.7 | NS | Inside | | | | | | | | | | |
| 4 | 13 | DI-105 | 297.5 | 297.5 | 0 | NS | Inside | | | | | | | | | | |
| 4 | 13 | DI-106 | 299.4 | 299.8 | 0.4 | NS | Straight | | | | | | | | | | |
| 4 | 13 | DI-107 | 302.5 | 303 | 0.5 | NS | Outside | | | | | | | | | | |
| 4 | 13 | DI-108 | 306.3 | 306.7 | 0.4 | NS | Outside | | | | | | | | | | |
| 4 | 13 | DI-109 | 306.5 | 307.4 | 0.9 | NS | Inside | | | | | | | | | | |
| Reach 4 | | DR | | | 15.5 | | | | | | | | | | | | |
| | | DI | | | 23.2 | | | | | | | | | | | | |

¹CPUE = unionids/5min.

DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, NM = navigation mile

C = cobble, GR = gravel, Sd = sand, St = silt, Cl = clay, Dt = detritus, B = bed, P = patch

Table 3-31. Species composition and CPUE¹ within unionid beds and patches, Reaches 4

| Reach | 4 | 4 | 4 | 4 | 6 | 6 | 6 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|
| Pool | 10 | 10 | 12 | 12 | 18 | 18 | 18 |
| Site | 23 | 23 | 26 | 26 | 49 | 49 | 50 |
| Species | B23-1 | B23-2 | P26-1 | P26-2 | P49-1 | P49-2 | P50-1 |
| Channel | - | - | - | - | | | |
| Cove | - | - | - | - | | | |
| Inside bend | - | - | - | - | | | |
| Island | - | - | - | - | | | |
| Outside bend | 14.5 | - | - | - | | | |
| Oxbow | - | - | - | - | | | |
| Peninsula | - | - | - | - | | | |
| Straight reach | - | 10 | - | 7.3 | | | |
| Tailwater | - | - | - | - | | | |
| Tributary | - | - | 5.7 | - | | | |
| Ave. CPUE ¹ | 14.5 | 10 | 5.7 | 7.3 | | | |
| Modification ² | | | | | | | |
| Existing | - | - | - | - | | | |
| Proposed | - | - | - | - | | | |
| Depth (m) | | | | | | | |
| min | 2 | 1.8 | 1.8 | 6.1 | | | |
| max | 7.3 | 10 | 3.1 | 6.1 | | | |
| Substrate | | | | | | | |
| Bedrock | - | - | - | - | | | |
| Boulder | - | - | - | - | | | |
| Cobble | - | - | - | - | | | |
| Gravel | - | - | - | - | | | |
| Sand | 10 | - | - | - | | | |
| Silt | 25 | 15 | 15 | 10 | | | |
| Clay | 60 | 80 | 85 | 90 | | | |
| Detritus | 5 | - | - | - | | | |
| Shell | - | 5 | - | - | | | |
| zebras/unionid | - | - | - | - | | | |

Table 3-29. Unionid species previously collected within Reach 4, Ozark Lake¹.

| Species | D258 | D266.5B | D267.2 | Site 26 | Site 26 | D278 | D289.7 | Pool 12 | Reach 4 | % |
|-------------------------------|----------------------|---------------------|-----------------|--------------------------|--------------------------|-------------------|---------------------|----------------|--------------|------|
| | 257.4-258 outside | 266.5 midchannel | 267.2 island | D272 272 tributary | D273 273 tributary | 277-278.9 cove | 289.7 midchannel | Ozark Total | Total No. | |
| <i>Amblema plicata</i> | - | - | - | - | - | 1 | - | 1 | 1 | 0.3 |
| <i>Anodonta suborbiculata</i> | - | - | - | - | 5 | - | - | 5 | 8 | 2.7 |
| <i>Arcidens confragosus</i> | 2 | - | - | - | - | 3 | - | 5 | 6 | 2.0 |
| <i>Lasmigona complanata</i> | 1 | - | - | - | - | - | - | 1 | 1 | 0.3 |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | 1 | 1 | 2 | 0.7 |
| <i>Obliquaria reflexa</i> | 8 | - | 2 | - | - | 11 | - | 21 | 43 | 14.3 |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | 58 | 19.3 |
| <i>Potamilus ohioensis</i> | 2 | - | 1 | 1 | 2 | - | - | 6 | 7 | 2.3 |
| <i>Pyganodon grandis</i> | 1 | - | - | 5 | - | 32 | - | 38 | 44 | 14.7 |
| <i>Quadrula quadrula</i> | 20 | 4 | 3 | - | 3 | 24 | - | 54 | 128 | 42.7 |
| <i>Toxolasma lividus</i> | - | - | - | - | - | 2 | - | 2 | 2 | 0.7 |
| Total | 34 | 4 | 6 | 6 | 10 | 73 | 1 | 134 | 300 | |
| No. species | 6 | 1 | 3 | 2 | 3 | 6 | 1 | 10 | 11 | |
| Points sampled ² | 5 | 1 | 2 | 2 | 3 | 9 | 1 | 23 | 69 | |
| Unionids per point | 6.8 | 4.0 | 3.0 | 3.0 | 3.3 | 8.1 | 1.0 | 5.8 | 4.3 | |

¹Davidson (1997)

²Only points with unionids counted

Table 3-30. Species composition and CPUE¹ within unionid beds and patches, Reaches 4 and 6.

| Reach | 4 | 4 | 4 | 4 | 6 | 6 | 6 |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Pool | 10 | 10 | 12 | 12 | 18 | 18 | 18 |
| Site | 23 | 23 | 26 | 26 | 49 | 49 | 50 |
| Species | B23-1 | B23-2 | P26-1 | P26-2 | P49-1 | P49-2 | P50-1 |
| <i>Amblema plicata</i> | - | 0.1 | - | - | - | - | - |
| <i>Arcidens confragosus</i> | 0.1 | 0.3 | 0.3 | - | - | - | - |
| <i>Leptodea fragilis</i> | 0.1 | - | 0.3 | - | 0.3 | - | 1.0 |
| <i>Megaloniaias nervosa</i> | 0.1 | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | 2.7 | 0.9 | 1.3 | 3.3 | 3.5 | 6.0 | 3.0 |
| <i>Plectomerus dombeyanus</i> | 6.0 | 4.6 | - | 0.3 | - | - | - |
| <i>Potamilus ohiensis</i> | - | - | - | - | - | - | 0.2 |
| <i>Potamilus purpuratus</i> | - | - | - | - | - | - | 0.4 |
| <i>Pyganodon grandis</i> | 0.5 | 0.6 | 1.0 | - | - | - | - |
| <i>Quadrula aspera</i> | 0.9 | 0.3 | - | - | - | - | - |
| <i>Quadrula nodulata</i> | - | - | - | - | 0.5 | - | 0.2 |
| <i>Quadrula p. pustulosa</i> | - | - | - | - | - | 2.0 | 0.6 |
| <i>Quadrula quadrula</i> | 3.8 | 3.0 | 2.7 | 3.7 | 0.5 | - | - |
| <i>Tritogonia verrucosa</i> | - | - | - | - | 0.3 | 0.3 | 0.8 |
| <i>Truncilla donaciformis</i> | 0.1 | 0.3 | - | - | - | - | - |
| <i>Truncilla truncata</i> | 0.1 | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | 0.2 | - | - | - | - | - | - |
| No. of individuals | 174 | 70 | 17 | 22 | | | |
| No. of 5min samples | 12 | 7 | 3 | 3 | | | |
| Average CPUE | 14.5 | 10.0 | 5.7 | 7.3 | 5.0 | 8.3 | 6.2 |
| No of species | 11 | 8 | 5 | 3 | 5 | 3 | 7 |
| % Juveniles | 11.5 | 11.4 | 11.8 | 4.5 | 15.0 | 0.0 | 6.5 |
| % of species w/ juveniles | 54.5 | 37.5 | 40.0 | 33.3 | 40.0 | 0.0 | 28.6 |

Nomenclature follows Turgeon *et al.* (1998) except *Q. aspera* (T. Watters, OSU, pers. comm., 2004)

¹CPUE = unionids/5min.

Table 3-31. Species composition and CPUE¹ within unionid beds and patches, Reaches 4 and 6.

| Reach | 4 | 4 | 4 | 4 | 6 | 6 | 6 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|
| Pool | 10 | 10 | 12 | 12 | 18 | 18 | 18 |
| Site | 23 | 23 | 26 | 26 | 49 | 49 | 50 |
| Species | B23-1 | B23-2 | P26-1 | P26-2 | P49-1 | P49-2 | P50-1 |
| Channel | - | - | - | - | | | |
| Cove | - | - | - | - | | | |
| Inside bend | - | - | - | - | | | |
| Island | - | - | - | - | | | |
| Outside bend | 14.5 | - | - | - | | | |
| Oxbow | - | - | - | - | | | |
| Peninsula | - | - | - | - | | | |
| Straight reach | - | 10 | - | 7.3 | | | |
| Tailwater | - | - | - | - | | | |
| Tributary | - | - | 5.7 | - | | | |
| Ave. CPUE ¹ | 14.5 | 10 | 5.7 | 7.3 | | | |
| Modification ² | | | | | | | |
| Existing | - | - | - | - | | | |
| Proposed | - | - | - | - | | | |
| Depth (m) | | | | | | | |
| min | 2 | 1.8 | 1.8 | 6.1 | | | |
| max | 7.3 | 10 | 3.1 | 6.1 | | | |
| Substrate | | | | | | | |
| Bedrock | - | - | - | - | | | |
| Boulder | - | - | - | - | | | |
| Cobble | - | - | - | - | | | |
| Gravel | - | - | - | - | | | |
| Sand | 10 | - | - | - | | | |
| Silt | 25 | 15 | 15 | 10 | | | |
| Clay | 60 | 80 | 85 | 90 | | | |
| Detritus | 5 | - | - | - | | | |
| Shell | - | 5 | - | - | | | |
| zebras/unionid | - | - | - | - | | | |

Table 3-32. Site 23 unionid species and habitat characteristics (page 1 of 4).

| Approx. NM | 229 | 229 | 229.1 | 229.1 | 230.2 | 230.2 | 230.2 | 230.2 | 230.2 | 230.2 | 230.2 | 230.2 | 226 | 226 |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| Bank | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| Bed/Patch | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-1 | B23-2 | B23-2 |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| <i>Arcidens confragosus</i> | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | - | FD | 1 | - | - | - |
| <i>Megaloniais nervosa</i> | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | 7 | 5 | 2 | 3 | - | - | 1 | - | 1 | 3 | 4 | 6 | - | 2 |
| <i>Plectomerus dombeyanus</i> | 13 | 16 | 12 | 4 | - | 3 | 2 | 4 | 3 | 7 | 1 | 7 | 4 | 7 |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | 1 | - | 1 | - | 4 | - | 1 | 1 |
| <i>Quadrula aspera</i> | - | 1 | - | - | 2 | 1 | 1 | - | 3 | 3 | - | - | 1 | 1 |
| <i>Quadrula quadrula</i> | 2 | 2 | 3 | 1 | 3 | 4 | 7 | 6 | 4 | 3 | 4 | 7 | 2 | 7 |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | 2 | - | - | - |
| Total | 22 | 24 | 17 | 8 | 5 | 8 | 13 | 11 | 13 | 17 | 16 | 20 | 8 | 19 |
| No. species live | 3 | 4 | 3 | 3 | 2 | 3 | 6 | 3 | 6 | 5 | 6 | 3 | 4 | 6 |
| No. species total | 3 | 4 | 3 | 3 | 2 | 3 | 6 | 3 | 6 | 6 | 6 | 3 | 4 | 6 |
| Appr. Density (no./m2) | - | - | - | - | 1 | 1 | 1 | 1.5 | 1.5 | 2 | 2 | <1 | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | | | | | | | | | | | | | | |
| Depth (m) | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Straight | Straight |
| | 6.1 | 7.3 | 4.6 | 4.6 | 2.1 | 2.0 | 3.4 | 3.4 | 3.4 | 3.7 | 4.0 | 4.3 | 1.8 | 1.8 |
| Substrate | | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Gravel | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sand | 40 | 40 | - | - | 10 | 10 | 10 | - | - | - | - | - | - | - |
| Silt | 60 | 60 | 20 | 20 | 30 | 30 | 10 | 10 | 20 | 20 | 10 | - | 10 | 10 |
| Clay | - | - | 80 | 80 | 60 | 60 | 70 | 80 | 70 | 80 | 85 | - | 90 | 90 |
| Detritus | - | - | - | - | - | - | 10 | 10 | 10 | - | 5 | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1and 1-2
 DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile
 R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-32. Site 23 unionid species and habitat characteristics (page 2 of 4).

| Approx. NM | 226 | 226.5 | 227.1 | 227.1 | 227.1 | 229 | 225.8 | 225.8 | 225.9 | 226 | 226 | 226.6 | 227.0 | 227.0 |
|-------------------------------|----------|-----------|----------|----------|----------|---------|---------|---------|---------|--------|--------|--------|---------|--------|
| Bank | L | L | L | L | L | M | M | R | M | M | R | L | M | R |
| Bed/Patch | B23-2 | B23-2 | B23-2 | B23-2 | B23-2 | | | | | | | | | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| <i>Arcidens confragosus</i> | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| <i>Megaloniaias nervosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | 1 | - | 1 | 2 | - | - | - | 1 | - | 1 | - | - | - | - |
| <i>Plectomerus dombeyanus</i> | 3 | 3 | 7 | 6 | 2 | - | - | - | - | 1 | 2 | 3 | - | 2 |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | - | - | - | 1 | 1 | - | - | - | - | - | 1 | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 1 | 6 | 4 | - | 1 | - | - | - | - | - | 1 | - | - | 3 |
| <i>Truncilla donaciformis</i> | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 7 | 9 | 12 | 11 | 4 | 0 | 0 | 1 | 0 | 2 | 4 | 4 | 0 | 6 |
| No. species live | 4 | 2 | 3 | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 3 | 2 | 0 | 3 |
| No. species total | 4 | 2 | 3 | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 3 | 2 | 0 | 3 |
| Appr. Density (no./m2) | <1 | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | - | - | DR-70 | - | DR-68 | DR-68 | - | - | - | DR-69 | - |
| Habitat | Straight | Tributary | Straight | Straight | Straight | Channel | Channel | Channel | Channel | Island | Inside | Island | Channel | Inside |
| Depth (m) | 1.8 | 1.8 | 1.5 | 9.1 | 10.0 | 4.6 | 0.9 | 4.0 | 4.0 | 0.6 | 2.4 | 1.8 | 4.0 | 3.1 |
| Substrate | | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | - | - | - | - | - | - | - | - | - | 5 | - | - |
| Gravel | - | - | - | - | - | - | - | - | - | - | 10 | - | - | - |
| Sand | - | - | - | - | - | 100 | 90 | 100 | 95 | 50 | 10 | - | 100 | - |
| Silt | 10 | 10 | 20 | 25 | 25 | 15 | - | 10 | - | 5 | 20 | 5 | - | 10 |
| Clay | 90 | 90 | 80 | 70 | 70 | 80 | - | - | - | - | 60 | 90 | - | 90 |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | 5 | 5 | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1and 1-2
 DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile
 R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-32. Site 23 unionid species and habitat characteristics (page 3 of 4).

| Approx. NM | 227.0 | 227.0 | 228.0 | 228.0 | 228.1 | 229.0 | 229.2 | 230 | 230 | 230 | 230 | 230 | 230 | 230.3 |
|-------------------------------|--------|--------|---------|--------|---------|---------|--------|----------|--------|--------|--------|--------|--------|--------|
| Bank | R | R | L | R | M | L | R | R | R | R | R | R | R | L |
| Bed/Patch | | | | | | | | | | | | | | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Arcidens confragosus</i> | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - |
| <i>Leptodea fragilis</i> | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| <i>Megaloniais nervosa</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | 2 | 1 | - | - | - | - | 1 | - | 3 | - | 1 | 2 | 1 | 2 |
| <i>Plectomerus dombeyanus</i> | 1 | 2 | 1 | - | - | - | - | - | 2 | 1 | 3 | 4 | 2 | 1 |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 2 | 1 | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 4 | - |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 5 | 4 | 3 | 0 | 0 | 0 | 1 | 0 | 6 | 2 | 5 | 7 | 8 | 4 |
| No. species live | 3 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 3 | 3 | 4 | 3 |
| No. species total | 3 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 3 | 3 | 4 | 3 |
| Appr. Density (no./m2) | - | - | - | - | - | - | - | - | 1 | <1 | <1 | <1 | <1 | <1 |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | Inside | Inside | Outside | Island | Outside | Outside | Island | Straight | Island | Island | Island | Island | Island | Island |
| Depth (m) | 2.4 | 2.4 | 10.7 | 2.7 | 7.0 | 10.0 | 3.7 | 6.1 | 3.1 | 3.4 | 0.6 | 3.1 | 3.1 | 1.8 |
| Substrate | | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cobble | - | - | 20 | - | - | - | - | - | - | - | - | - | - | - |
| Gravel | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sand | - | - | 10 | 70 | 100 | - | 100 | 70 | 40 | 30 | 10 | 20 | 10 | - |
| Silt | 10 | 10 | 50 | 30 | - | 50 | - | 30 | 20 | 10 | 30 | 10 | 30 | 90 |
| Clay | 90 | 90 | 20 | - | - | 50 | - | - | 40 | 60 | 60 | 70 | 50 | 5 |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | 10 | 5 |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1and 1-2
 DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile
 R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-32. Site 23 unionid species and habitat characteristics (page 4 of 4).

| Approx. NM | 230.3 | 230.4 | 230.5 | 230.5 | 230.5 | 230.5 | 230.5 | 230.6 | | |
|-------------------------------|----------|--------|--------|----------|----------|----------|----------|--------|-------|------|
| Bank | L | R | R | R | R | R | R | L | Total | % |
| Bed/Patch | | | | | | | | | No. | |
| <i>Amblema plicata</i> | - | - | - | - | - | - | - | - | 2 | 0.6 |
| <i>Arcidens confragosus</i> | - | - | - | - | - | - | - | - | 4 | 1.3 |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | 3 | 1.0 |
| <i>Megaloniaias nervosa</i> | - | - | - | - | - | - | - | - | 1 | 0.3 |
| <i>Obliquaria reflexa</i> | - | - | - | - | 2 | 1 | - | - | 56 | 18.0 |
| <i>Plectomerus dombeyanus</i> | - | - | - | 1 | - | 1 | - | - | 131 | 42.1 |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | - | 1 | 0.3 |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | 1 | 11 | 3.5 |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | 13 | 4.2 |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | - | 1 | 83 | 26.7 |
| <i>Truncilla donaciformis</i> | - | - | - | - | - | - | - | - | 3 | 1.0 |
| <i>Truncilla truncata</i> | - | - | - | - | - | - | - | - | 1 | 0.3 |
| <i>Utterbackia imbecillis</i> | - | - | - | - | - | - | - | - | 2 | 0.6 |
| Total | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 2 | 311 | |
| No. species live | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 13 | |
| No. species total | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 2 | 13 | |
| Appr. Density (no./m2) | <1 | - | - | - | - | - | - | <1 | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | 6.3 | |
| Modification* | | | | | | | | | | |
| | Existing | - | - | - | - | - | - | - | | |
| | Proposed | - | - | DR-71 | DR-71 | DR-71 | - | - | | |
| Habitat | | Island | Island | Straight | Straight | Straight | Straight | Island | | |
| Depth (m) | | 1.8 | 5.2 | 3.4 | 4.6 | 3.7 | 5.7 | 6.4 | | |
| Substrate | | | | | | | | | | |
| | Bedrock | - | - | - | - | - | - | - | | |
| | Boulder | - | - | - | - | - | - | - | | |
| | Cobble | - | - | - | - | - | - | - | | |
| | Gravel | - | - | - | 5 | 30 | - | - | | |
| | Sand | 90 | 95 | 100 | 90 | 70 | - | 60 | | |
| | Silt | 5 | 5 | - | 5 | - | 10 | 20 | | |
| | Clay | 5 | - | - | - | - | 90 | 20 | | |
| | Detritus | - | - | - | - | - | - | - | | |
| | Shell | - | - | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | - | - | - | - | | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | | |

*See Tables 1-1 and 1-2

DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile
 R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-33. Site 26 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 271.9 | 271.9 | 271.9 | 269.4 | 269.4 | 269.4 | 269.8 | 269.9 | 270.1 | 270.3 | 270.5 | 271.5 | 272.1 |
|-------------------------------|----------|-----------|-----------|-----------|----------|----------|----------|--------|--------|--------|--------|--------|--------|
| Bank | L | L | L | R | R | R | L | L | L | L | L | L | L |
| Bed/Patch | P26-1 | P26-1 | P26-1 | P26-2 | P26-2 | P26-2 | | | | | | | |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| <i>Arcidens confragosus</i> | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Leptodea fragilis</i> | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Obliquaria reflexa</i> | 2 | 2 | - | 1 | 8 | 1 | - | - | - | 2 | - | 2 | - |
| <i>Plectomerus dombeyanus</i> | - | - | - | 1 | - | - | - | - | - | - | - | - | - |
| <i>Potamilus ohiensis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>Pyganodon grandis</i> | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| <i>Quadrula quadrula</i> | 1 | 4 | 3 | 4 | 2 | 5 | - | - | - | - | 1 | 1 | - |
| Total | 7 | 7 | 3 | 6 | 10 | 6 | 0 | 0 | 0 | 2 | 2 | 3 | 0 |
| No. species live | 5 | 3 | 1 | 3 | 2 | 2 | 0 | 0 | 0 | 1 | 2 | 2 | 0 |
| No. species total | 5 | 3 | 1 | 3 | 2 | 2 | 0 | 0 | 0 | 1 | 2 | 2 | 0 |
| Appr. Density (no./m2) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | | |
| | Existing | - | - | - | - | - | - | - | - | - | - | - | - |
| | Proposed | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | | Tributary | Tributary | Tributary | Straight | Straight | Straight | Island | Island | Island | Island | Island | Island |
| Depth (m) | | 2.1 | 1.8 | 3.1 | 6.1 | 6.1 | 6.1 | 7.6 | 2.7 | 0.9 | 0.9 | 1.5 | 5.1 |
| Substrate | | | | | | | | | | | | | |
| | Bedrock | - | - | - | - | - | - | - | - | - | - | - | - |
| | Boulder | - | - | - | - | - | - | - | - | - | - | - | - |
| | Cobble | - | - | - | - | - | - | - | - | - | - | - | - |
| | Gravel | - | - | - | - | - | - | - | - | - | - | - | - |
| | Sand | - | - | - | - | - | 45 | - | 95 | - | - | - | 90 |
| | Silt | 10 | 10 | 20 | 10 | 10 | 10 | 10 | 5 | 10 | 10 | 20 | 10 |
| | Clay | 90 | 90 | 80 | 90 | 90 | 90 | 45 | 90 | - | 90 | 90 | 80 |
| | Detritus | - | - | - | - | - | - | - | - | - | - | - | - |
| | Shell | - | - | - | - | - | - | - | - | - | - | - | - |
| Zebras/unionid | | - | - | - | - | - | - | - | - | - | - | - | - |
| Zeb coverage of substrate | | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1 and 1-2

DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile
R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-33. Site 26 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 272.3 | 272.5 | 272.7 | 270.6 | 271.0 | 271.0 | 272.0 | 272.5 | 272.6 | 272.9 | 273.0 | Total | % |
|-------------------------------|--------|--------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|------|
| Bank | L | L | L | M | R | R | R | R | R | R | R | No. | |
| Bed/Patch | | | | | | | | | | | | No. | % |
| <i>Anodonta suborbiculata</i> | - | - | - | - | - | - | - | - | - | - | - | 1 | 2.0 |
| <i>Arcidens confragosus</i> | - | - | - | - | - | - | - | - | - | - | - | 1 | 2.0 |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | - | - | - | - | 1 | 2.0 |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | 1 | - | - | - | - | - | 19 | 37.3 |
| <i>Plectomerus dombeyanus</i> | - | - | - | - | - | - | - | - | - | - | - | 1 | 2.0 |
| <i>Potamilus ohiensis</i> | - | - | - | - | - | - | - | - | - | FD | - | FD | |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | - | - | - | 3 | 5.9 |
| <i>Quadrula quadrula</i> | 2 | - | - | - | - | 1 | - | - | - | 1 | - | 25 | 49.0 |
| Total | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 51 | |
| No. species live | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 7 | |
| No. species total | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 8 | |
| Appr. Density (no./m2) | - | - | - | - | - | - | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | 2.1 | |
| Modification* | | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | - | | |
| Proposed | - | - | - | - | DR-82 | - | - | DR-83 | DR-83 | DR-83 | - | - | |
| Habitat | Island | Island | Island | Channel | Straight | Straight | Straight | Straight | Straight | Straight | Straight | Straight | |
| Depth (m) | 1.5 | 4.3 | 1.5 | 5.5 | 4.3 | 3.7 | 3.4 | 3.1 | 4.6 | 6.1 | 4.9 | | |
| Substrate | | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - | |
| Boulder | - | - | - | - | - | - | - | - | - | - | - | - | |
| Cobble | - | - | - | - | - | - | 30 | - | - | - | - | - | |
| Gravel | - | - | - | - | 20 | - | - | - | - | 25 | - | - | |
| Sand | 30 | 100 | 50 | 100 | 40 | 30 | - | 50 | 10 | 25 | 60 | | |
| Silt | 10 | - | - | - | 20 | 50 | - | 10 | 10 | 25 | 10 | | |
| Clay | 60 | - | 50 | - | 20 | 20 | 70 | 40 | 70 | 25 | 30 | | |
| Detritus | - | - | - | - | - | - | - | - | 10 | - | - | - | |
| Shell | - | - | - | - | - | - | - | - | - | - | - | - | |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | |

*See Tables 1-1and 1-2

DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile
 R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-34. Site 27 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 281.5 | 281.5 | 281.5 | 281.7 | 282.3 | 283.6 | 284.0 | 284.1 | 282.1 | 282.1 | 282.8 | 283.1 | 282.5 | 282.6 | |
|----------------------------|----------|---------|-----------|-----------|---------|---------|---------|---------|---------|--------|--------|--------|--------|---------|--|
| Bank | M | R | R | R | M | M | L | R | L | L | L | L | R | R | |
| Bed/Patch | | | | | | | | | | | | | | | |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | 1 | 3 | 1 | - | - | - | - | |
| <i>Potamilus ohioensis</i> | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| <i>Pyganodon grandis</i> | - | - | - | - | - | - | - | - | 1 | - | - | - | 2 | - | |
| <i>Quadrula aspera</i> | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | - | - | 1 | - | - | - | 3 | 1 | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 1 | 0 | 0 | 6 | 1 | |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 3 | 1 | |
| No. species total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 3 | 1 | |
| Appr. Density (no./m2) | - | - | - | - | - | - | - | <0.5 | <0.5 | <0.5 | - | - | 0.5 | <0.5 | |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Modification* | | | | | | | | | | | | | | | |
| | Existing | - | - | - | - | - | - | - | DI-97 | DI-97 | DI-97 | DI-97 | DI-98 | DI-98 | |
| | Proposed | - | - | - | - | DR-91 | DR-92 | DR-92 | - | - | - | - | - | - | |
| Habitat | | Channel | Tributary | Tributary | Outside | Channel | Channel | Channel | Channel | Inside | Inside | Inside | Inside | Outside | |
| Depth (m) | | 3.7 | 4.9 | 4.6 | 3.4 | 4.9 | 3.7 | 4.6 | 3.4 | 0.9 | 0.9 | 3.4 | 2.4 | 1.8 | |
| Substrate | | | | | | | | | | | | | | | |
| | Bedrock | - | - | - | 25 | - | - | - | - | - | - | - | - | - | |
| | Boulder | - | - | - | 65 | - | - | - | - | - | - | - | - | - | |
| | Cobble | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | Gravel | - | - | - | 10 | - | - | 70 | - | - | 60 | - | - | - | |
| | Sand | 99 | 10 | - | - | 100 | 90 | 20 | 100 | 70 | 70 | 30 | 80 | 10 | |
| | Silt | 1 | 10 | 10 | - | - | 10 | 10 | - | 10 | 10 | 10 | 20 | 40 | |
| | Clay | - | 70 | 60 | - | - | - | - | - | 20 | 20 | - | - | 70 | |
| | Detritus | - | - | 30 | - | - | - | - | - | - | - | - | - | - | |
| | Shell | - | 10 | - | - | - | - | - | - | - | - | - | - | - | |
| Zebras/unionid | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

*See Tables 1-1and 1-2

DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile

R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-34. Site 27 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 282.6 | 282.7 | 282.7 | 283.0 | 283.6 | 283.9 | 284.2 | | |
|----------------------------|---------|---------|---------|---------|----------|----------|----------|-----------|------|
| Bank | R | R | R | R | R | R | L | | |
| Bed/Patch | | | | | | | | Total No. | % |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | 2 | - | 7 | 31.8 |
| <i>Potamilus ohioensis</i> | 1 | - | - | - | - | - | - | 1 | 4.5 |
| <i>Pyganodon grandis</i> | 1 | - | 1 | - | - | - | - | 5 | 22.7 |
| <i>Quadrula aspera</i> | - | - | 1 | - | - | - | - | 2 | 9.1 |
| <i>Quadrula quadrula</i> | 1 | - | - | - | 1 | - | - | 7 | 31.8 |
| Total | 3 | 0 | 2 | 0 | 1 | 2 | 0 | 22 | |
| No. species live | 3 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | |
| No. species total | 3 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | |
| Appr. Density (no./m2) | <0.5 | - | - | - | <0.5 | <0.5 | - | | |
| Mean No./5min (CPUE) | - | - | - | - | | | | 1.0 | |
| Modification* | | | | | | | | | |
| Existing | DI-98 | DI-98 | DI-98 | DI-98 | - | - | - | | |
| Proposed | - | - | - | - | - | - | - | | |
| Habitat | Outside | Outside | Outside | Outside | Straight | Straight | Straight | | |
| Depth (m) | 0.9 | 3.4 | 1.2 | 1.8 | 2.4 | 3.1 | 4.9 | | |
| Substrate | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | | |
| Boulder | - | 80 | - | - | - | - | 60 | | |
| Cobble | - | - | - | 50 | - | - | - | | |
| Gravel | - | - | - | 50 | - | - | - | | |
| Sand | 10 | 20 | 10 | - | 90 | 30 | 30 | | |
| Silt | 40 | - | 40 | - | 10 | 35 | 10 | | |
| Clay | 50 | - | 50 | - | - | 35 | - | | |
| Detritus | - | - | - | - | - | - | - | | |
| Shell | - | - | - | - | - | - | - | | |
| Zebras/unionid | - | - | - | - | 25 | - | - | | |
| Zeb coverage of substrate | - | - | - | - | - | - | - | | |

*See Tables 1-1 and 1-2

DI = disposal, DF = dike field, DR = dredge, FD = fresh dead shell, WD = weathered dead shell, NM = navigation mile

R = right desc. bank, M = midchannel, L = left desc. bank, B = bed, P = patch

Table 3-35. Site 28 unionid species and habitat characteristics (page 1 of 2).

| Approx. NM | 289.8 | 289.8 | 289.8 | 289.8 | 289.8 | 290.2 | 290.3 | 290.4 | 290.4 | 290.5 | 290.9 | 291.1 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|--------|--------|---------|---------|--------|
| Bank | L | L | L | L | M | R | R | L | L | M | R | L |
| Bed/Patch | | | | | | | | | | | | |
| <i>Leptodea fragilis</i> | - | - | - | - | - | - | - | FD | - | - | - | - |
| <i>Obliquaria reflexa</i> | - | - | - | - | - | - | - | 1 | - | - | - | - |
| <i>Quadrula quadrula</i> | - | - | - | - | - | - | 1 | 1 | - | - | - | - |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| No. species live | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| No. species total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 |
| Appr. Density (no./m2) | - | - | - | - | - | - | - | <0.5 | - | - | - | - |
| Mean No./5min (CPUE) | - | - | - | - | - | - | - | - | - | - | - | - |
| Modification* | | | | | | | | | | | | |
| Existing | - | - | - | - | - | - | - | - | - | - | DI-102 | - |
| Proposed | - | - | - | - | - | - | - | - | - | - | - | - |
| Habitat | Outside | Outside | Outside | Outside | Outside | Outside | Outside | Inside | Inside | Channel | Outside | Inside |
| Depth (m) | 6.4 | 3.1 | 1.5 | 2.4 | 5.5 | 3.4 | 1.7 | 0.9 | 1.8 | 3.1 | 4 | 1.8 |
| Substrate | | | | | | | | | | | | |
| Bedrock | - | - | - | - | - | - | - | - | - | - | - | - |
| Boulder | - | - | - | 50 | 50 | 5 | 25 | - | - | - | 50 | - |
| Cobble | 50 | - | 20 | 25 | 25 | 10 | 40 | 25 | - | - | 25 | - |
| Gravel | 25 | - | - | - | - | - | - | - | - | - | 25 | - |
| Sand | 12.5 | - | 60 | - | 25 | 83 | 10 | 50 | 90 | 100 | - | 80 |
| Silt | 12.5 | 30 | 20 | 25 | - | - | 25 | 25 | 10 | - | - | 20 |
| Clay | - | 70 | - | - | - | - | - | - | - | - | - | - |
| Detritus | - | - | - | - | - | - | - | - | - | - | - | - |
| Shell | - | - | - | - | - | 2 | - | - | - | - | - | - |
| Zebras/unionid | - | - | - | - | - | - | - | 4 | - | - | - | - |
| Zeb coverage of substrate | - | - | - | - | - | - | - | - | - | - | - | - |

*See Tables 1-1and 1-2

DI=disposal, DF=dike field, DR=dredge, FD=fresh dead shell, NM=navigation mile, TW=tailwaters, WD=weathered dead shell
R=right desc. bank, M=midchannel, L=left desc. bank, B=bed, P=patch

Table 3-35. Site 28 unionid species and habitat characteristics (page 2 of 2).

| Approx. NM | 291.4 | 291.6 | 291.9 | 292 | 292 | | |
|---------------------------|----------|-------|-------|-------|--------|-------|----|
| Bank | R | R | R | R | L | | |
| Bed/Patch | | | | | | Total | % |
| | | | | | | No. | |
| <i>Leptodea fragilis</i> | - | - | - | - | - | FD | - |
| <i>Obliquaria reflexa</i> | - | 1 | - | - | - | 2 | 50 |
| <i>Quadrula quadrula</i> | - | - | - | - | - | 2 | 50 |
| Total | 0 | 1 | 0 | 0 | 0 | 4 | |
| No. species live | 0 | 1 | 0 | 0 | 0 | 2 | |
| No. species total | 0 | 1 | 0 | 0 | 0 | 3 | |
| Appr. Density (no./m2) | - | - | - | - | - | | |
| Mean No./5min (CPUE) | - | - | - | - | - | 0.2 | |
| Modification* | | | | | | | |
| | Existing | - | - | - | DI-103 | | |
| | Proposed | - | DR-95 | DR-95 | DR-95 | - | |
| Habitat | Outside | TW | TW | TW | Inside | | |
| Depth (m) | 4 | 4.6 | 3.1 | 3.7 | 1.8 | | |
| Substrate | | | | | | | |
| | Bedrock | 50 | 40 | - | - | - | |
| | Boulder | 50 | - | - | - | - | |
| | Cobble | - | - | 25 | 5 | 15 | |
| | Gravel | - | 50 | 25 | 75 | 35 | |
| | Sand | - | - | 50 | 20 | 50 | |
| | Silt | - | 10 | - | - | - | |
| | Clay | - | - | - | - | - | |
| | Detritus | - | - | - | - | - | |
| | Shell | - | - | - | - | - | |
| Zebras/unionid | - | - | - | - | - | | |
| Zeb coverage of substrate | - | - | - | - | - | | |

*See Tables 1-1 and 1-2

DI=disposal, DF=dike field, DR=dredge, FD=fresh dead shell, NM=navigation mile, TW=tailwaters, WD=weathered dead shell
R=right desc. bank, M=midchannel, L=left desc. bank, B=bed, P=patch