UPPER MISSISSIPPI RIVER
MUSSEL SPECIES ACCOUNTS

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Mussel species present and historic distribution, and relative abundance were determined for the Upper Mississippi River (UMR) and Illinois River by navigation pool. Also included were the lower Minnesota and lower St. Croix rivers. Species were designated as Rare, Common, Abundant, or as historically occurring.

For the most part, species listed as rare comprised < 2% of the community within a particular pool for most studies. Common species ranged in relative abundance from approximately 2 to 15% however, if a species was consistently on the low or high end of this range among studies it may have been designated as rare or abundant, accordingly. Common species could be abundant in one or two surveys but rare or common elsewhere within the pool. For the most part, abundant species were reserved for the dominant species in most surveys within a given pool. Species designated as historic have not been reported live within the past ~25 years and may also be the result of recent collections of sub-fossil specimens.

Data were gathered from peer-reviewed literature, technical reports, gray literature, raw survey data, personal communications, museum holdings, and state and personal databases (see Bibliography).

Historically, 53 mussel species have been documented from the Upper Mississippi, Illinois, lower Minnesota, and lower St. Croix rivers (Table 1). The mussel species accounts below briefly summarize species distribution and abundance. Also listed are known migratory fish hosts (non-migratory fish hosts not listed) (in part, this project was undertaken as an attempt to identify locks and dams, which if given fish passageways may benefit disjunct mussel populations by allowing easier fish passage among pools).

Subfamily Cumberlandinae

Cumberlandia monodonta (spectaclecase). Fish host unknown. Historically patchily distributed predominantly below Pool 14 and the lower Illinois River. Presently rare in UMR Pools 10, 15-26, and the St. Croix River. Absent from its historic range in the Illinois River and above Pool 15, except Pool 10. Possibly two disjunct populations exist in Pool 10 and the St. Croix River.

Subfamily Ambleminae

Amblema plicata (threeridge). Black and golden redhorse, northern hogsucker, largemouth bass, northern pike, flathead and channel catfish, white bass, sauger, freshwater drum. Present everywhere within its historic range except the Minnesota River. Abundant in most pools, rare only in Lower St. Anthony Falls Pool. Has

expanded its historic range above St. Anthony Falls where it is common in the St. Anthony Falls Pool.

Cyclonaias tuberculata (purple wartyback). Channel and flathead catfish. Species probably always has been rare in the UMR, Minnesota, and Illinois rivers, and may be near extirpation in the UMR. Recent live records only from Pools 4, 20, 25, and the St. Croix River. Extirpated from the Minnesota and Illinois rivers.

Elliptio crassidens (elephant ear). Skipjack herring. Historically widespread throughout the UMR and its major tributaries, but presently only isolated relict populations exist in the St. Croix River and possibly Pool 17. Very near extirpation from the UMR from impediment of Skipjack upstream migration primarily from Lock and Dam 19. Extirpated from the Minnesota and Illinois rivers.

Elliptio dilatata (spike). Flathead catfish. Historically distributed throughout the UMR drainage. Healthy populations exist in the St Croix River and Pool 4 (Lake Pepin) and Pool 9. Rare in Pools 3, 5a, 6, 10, 11, 14, 17, and 20. Absent in the UMR above the St. Croix River. Perhaps five disjunct populations exist, one from the St. Croix River to Pool 6, one from Pools 9-11, and three in Pools 14, 17, and 20. Extirpated from the Minnesota and Illinois rivers.

Fusconaia ebena (ebonyshell). Skipjack herring. Historically widespread and very abundant in the UMR and its major tributaries, but presently only isolated relict populations exist in the St. Croix River, Pools 9 and 18, and below Lock and Dam 19 including the Alton Pool of the Illinois River. Very near extirpation above Lock and Dam 19 from impediment of Skipjack's upstream migration at Lock and Dam 19. Extirpated from the Minnesota River. The St. Croix River population probably has not reproduced for many years.

Fusconaia flava (Wabash pigtoe). No migratory fish hosts. Present everywhere within its historic range except the Minnesota River. Common to abundant in most pools. Expanded its historic range above St. Anthony Falls where it is now abundant in the Upper St. Anthony Falls Pool.

Megalonaias nervosa (washboard). American eel, flathead and channel catfish, longnose gar, white bass, freshwater drum. Historically widespread, relatively healthy populations in lower UMR reaches; Pools 9-26 and the lower Illinois River, rare in the St. Croix and from Pools 3-8. Absent in the UMR above the St. Croix River including the Minnesota River (extirpated), and Pool 5a.

Plethobasus cyphyus (sheepnose). Sauger. Historically distributed throughout the UMR and it major tributaries but probably never common. May be near extirpation in the UMR and has been extirpated from the Illinois and Minnesota rivers. Several disjunct populations may exist; St. Croix River, and Pools 7, 10, 15-17, 20, and 22-24.

Pleurobema rubrum (pyramid pigtoe). No migratory fish hosts. Historically may have occurred in the lower Illinois River Alton and La Grange pools. Presently does not occur anywhere in the UMR drainage.

Pleurobema sintoxia (round pigtoe). No migratory fish hosts. Historically occurred throughout the UMR drainage. Presently common in the St. Croix River and Pool 11. Rare in most pools, extirpated from the Minnesota and Illinois rivers and absent from its historic range in Pools 5a, 12, 14, and 22. The species has expanded its historic range above St. Anthony Falls where it is rare.

Quadrula fragosa (winged mapleleaf). Fish host unknown. Historically occurred in the Minnesota and St. Croix rivers and the UMR from St. Anthony Falls to at least Pool 10. Presently only exists in the upper reaches of the lower St. Croix River.

Quadrula metanevra (monkeyface). Sauger. Historically occurred throughout the UMR drainage. Presently common in Pools 15, 17, and 19 and rare in most other pools. Extirpated from the Minnesota and Illinois rivers and absent from its historic range in Pools 3 and 5a.

Quadrula nodulata (wartyback). Largemouth bass, channel and flathead catfish. Historically occurred throughout most of the UMR drainage. Common in Pools 1-3, 18-20, and 22-24, rare in Pools 4, 7, 9-17, 21, 25-middle river, and the lower Illinois River. Two relatively healthy disjunct populations may exist; one from Pools 1-3 and another from Pools 18-24. Extirpated from the Minnesota River.

Quadrula pustulosa (pimpleback). Shovelnose sturgeon, channel and flathead catfish. Found in every UMR pool (except Upper and Lower St. Anthony Falls) where it is common or abundant. Found in every Illinois River pool where it is rare to abundant. Extirpated from the Minnesota River.

Quadrula quadrula (mapleleaf). Flathead catfish. Historically occurred throughout most of the UMR drainage. Probably has increased in abundance and become more widespread due to its opportunists nature with impoundments. Presently common in most pools, abundant in the Upper St. Anthony Falls Pool where it has expanded it historic range, Pool 1, and the entire Illinois River. Rare in the St. Croix River, Lower St. Anthony Falls Pool and Pools 5a and 6.

Tritogonia verrucosa (pistolgrip). Flathead catfish. Historically occurred throughout the UMR and its major tributaries. Presently occurs only in a few pools and may be near extirpation in the UMR. Extirpated from the Minnesota River. Rare in the St. Croix River and Pools 2, 4, 7-10, 19, 22-24, and the Illinois River Peoria and Marseilles pools. A few small disjunct populations may exist; St. Croix River, Pools 2 and 4, Pools 7-10, Pools 22-24, and the upper Illinois River.

Uniomerus tetralasmus (pondhorn). No migratory fish hosts. Historically only occurred in the Middle UMR and the Illinois River Alton Pool. Presently rare in the Middle UMR and absent in the lower Illinois River.

Subfamily Anodontinae

Alasmidonta marginata (elktoe). White sucker, shorthead redhorse, northern hogsucker. Typically a smaller river species, but did historically occur in the Minnesota, Illinois, and the upper reaches of the UMR (Pools 2-13), but probably never common. May be near extirpation from the UMR proper. Presently rare in the St. Croix River and Pools 2-3, 6, 8, and 11.

Alasmidonta viridis (slippershell). No migratory fish hosts. Only historic records from UMR Pool 12 and the upper Illinois River Starved Rock and Marseilles pools.

Anodonta suborbiculata (flat floater). Largemouth bass. Probably has expanded its range northward into the UMR as far as Pool 4. Presently rare in UMR Pools 4-6, 8-10, 13, 15-17, 20, 25-Middle UMR, and the Illinois River (Alton, La Grange, and Starved Rock pools). Possibly three disjunct populations; 1) Pools 4-10, 2) Pools 13-17, and 3) the lower UMR (Pool 25-Middle UMR) and Illinois River (Alton, LaGrange, and Starved Rock pools).

Anodontoides ferussacianus (cylindrical papershell). White sucker, largemouth bass. Typically a smaller river or headwater species. Only historic records from the Minnesota River, UMR Pool 4, and the Illinois River Peoria, Starved Rock, and Marseilles pools.

Arcidens confragosus (rock pocketbook). Freshwater drum. Historically occurred throughout the UMR, and its major tributaries. Presently rare in the St. Croix River and most UMR pools, common in the lower Illinois River (Alton Pool). Extirpated from the Minnesota River. Absent from the UMR above Pool 2, UMR Pools 4, 5a, 21, and the upper Illinois River (Marseilles Pool). A healthy and possible disjunct population exists in Pools 2-3.

Lasmigona complanata (white heelsplitter). Largemouth bass, longnose gar, sauger. Historically present throughout the UMR and its tributaries. Presently rare in most UMR pools and the Minnesota, St. Croix, and the upper Illinois rivers. Common in UMR Pool 13 and the lower Illinois River (Alton to Starved Rock pools). Absent from a few pools in the upper reaches of the UMR; Lower St. Anthony Falls, Pool 1, and Pools 4-5a. Possibly two disjunct populations; one above and one below UMR Pools 4-5a, respectively.

Lasmigona compressa (creek heelsplitter). No migratory fish hosts. Typically a smaller river or headwaters species. Found only in the St. Croix River where it is rare, only historic records from UMR Pools 14 and 15.

Lasmigona costata (fluted shell). Smallmouth and largemouth bass, northern pike, walleye. Typically a smaller river species but historically occurred in the Minnesota River, St. Croix River, Illinois River, most UMR pools between Pools 2 and 15, and Pool 22. Presently rare in the St. Croix River, Pools 2, 8, 14, 22, and the Marseilles Pool of the Illinois River. Possible disjunct populations in the St. Croix River, Upper Illinois River, and mid reaches of the UMR (Pools 8-14).

Pyganodon grandis (giant floater). White sucker, largemouth bass, skipjack herring, longnose gar, white bass, freshwater drum. Historically occurred throughout the UMR drainage. Presently rare or common in every UMR pool and the Minnesota, St. Croix, and Illinois rivers.

Simpsonaias ambigua (salamander mussel). No migratory fish hosts. Historic records from the St. Croix River, UMR Pools 3, 10, 12, and 26. Presently rare in the St. Croix River and UMR Pools 10 and 12. Perhaps these areas harbor disjunct populations.

Strophitus undulatus (strange floater). Largemouth bass, walleye. Historically occurred throughout most of the UMR drainage, except the lower reaches. Presently abundant in the Upper St. Anthony Falls Pool where it has expanded its historic range, and common in UMR Pools 1, 2, and 9. Rare in the St. Croix River and upper Illinois River (Marseilles Pool), Lower St. Anthony Falls Pool, and UMR Pools 3-4, 5a-8, 19-17, 19-20, and 24. Absent within its historic range from the Minnesota and lower Illinois rivers, UMR Pools 5 and 18. May never have been present in UMR Pools 21, 22, 25-Middle UMR. Possible disjunct population in the upper Illinois River.

Utterbackia imbecillis (paper pondshell). Largemouth bass. Historically occurred throughout the UMR drainage. Presently abundant in UMR Pool 19, common in UMR Pool 17, and rare in most pools; Minnesota River, St. Croix River, Lower St. Anthony Falls, UMR Pools 1-5, 6-16, 18, 20-Middle UMR, Alton Pool, and Peoria Pool. Absent within its historic range from the Illinois River La Grange, Starved Rock and Marseilles pools, and UMR Pool 5a.

Subfamily Lampsilinae

Actinonaias ligamentina (mucket). American eel, smallmouth bass, largemouth bass, white bass, sauger. Historically occurred throughout the UMR drainage. Presently common in UMR Pool 14 and the Illinois River Marseilles Pool. Rare in the St. Croix River, UMR Pools 2-4, 7-13, 15-20, 22-24, 26, and Illinois River Alton-Starved Rock pools. Extirpated from the Minnesota River, absent from its historic range in UMR Pools 5-6 and 25. Two disjunct populations may exist above and below UMR Pools 5-6, respectively.

Ellipsaria lineolata (butterfly). Sauger, freshwater drum. Historically occurred throughout the UMR and its major tributaries. Presently abundant in UMR Pools 15, 20, 22, 24, and common in UMR Pools 11-12, 14, 16-19, 25-26. Rare in the St. Croix River,

UMR Pools 3-4, 5a-10, 13, 21, and the Middle UMR. Extirpated from the Minnesota and Illinois rivers and absent from its historic range in UMR Pools 2 and 5.

Epioblasma triquetra (snuffbox). No migratory fish hosts. Historically occurred in the St. Croix and Illinois (La Grange, Starved Rock, and Marseilles pools) rivers and UMR Pools 3-4, 5a-6, and 14-16. Presently only occurs in the upper reaches of the lower St. Croix River, where it is rare.

Lampsilis cardium (plain pocketbook). Smallmouth and largemouth bass, sauger, walleye. Historically occurred throughout the UMR drainage. Presently abundant in the Upper St. Anthony Falls Pool, common in UMR Pools 2-3, 6-9, 11-15, 17-19, 24-25. Rare in the Minnesota and St. Croix rivers, Lower St. Anthony Falls Pool, UMR Pools 1, 4-5a, 10, 16, 20-22, 26, Middle UMR, and the Alton and Marseilles pools of the Illinois River. A Possible disjunct population occurs in the upper Illinois River (Marseilles Pool).

Lampsilis higginsii (Higgins eye). Smallmouth and largemouth bass, northern pike, sauger, walleye, freshwater drum. Historically occurred in the UMR from below St. Anthony Falls to Pool 24 and its major tributaries. Presently rare in the St. Croix River, UMR Pools 7-17 and 19. Extirpated from the Minnesota and Illinois rivers and absent from its historic range in UMR Pools 2-6, 22, and 24. Possible disjunct population in the St. Croix River.

Lampsilis siliquoidea (fatmucket). White sucker, smallmouth and largemouth bass, white bass, sauger, walleye. Historically occurred in the UMR above Pool 18 and its tributaries. Probably never abundant in the UMR proper. Presently common in the Upper St. Anthony Falls Pool, rare in the St. Croix River, Lower St. Anthony Falls Pool, UMR Pools 1-5, 6-13, 17, and the Illinois River Peoria and Marseilles pools. Absent within its historic range from the lower Minnesota River, UMR Pools 5a, 14-15, and Illinois River Alton, Le Grange, and Starved Rock pools. Possible disjunct population exists in the Illinois River.

Lampsilis teres (yellow sandshell). Shovelnose sturgeon, largemouth bass, longnose gar. Historically occurred throughout the UMR and its tributaries. Presently common in the lower UMR (Pools 25 to Middle UMR), rare in UMR Pools 4, 7, 9-11, 14, 15, 17, 19-24, and the lower Illinois River (Alton and La Grange pools). Extirpated from the Minnesota and St. Croix rivers. Absent within its historic range from UMR Pools 2, 3, 5-6, 8, 13, 16, 18, and upper Illinois River.

Leptodea fragilis (fragile papershell). Freshwater drum. Historically occurred throughout the UMR drainage. Presently abundant in Upper St. Anthony Falls Pool where it has expanded its historic range, UMR Pools11, 19, Middle UMR, and the Illinois River Marseilles Pool. Common in the Minnesota, St. Croix, and lower Illinois (Alton, La Grange, Peoria) rivers. Rare in UMR Pools 1, 3, 5-7, 10, 13, 14, 16, 20-22, and the Illinois River Starved Rock Pool. Only absent within its historic range from the Lower St. Anthony Falls Pool.

Leptodea leptodon (scaleshell). No migratory fish hosts. Historically occurred in the Minnesota River and UMR Pools 2, 10, and 13 (and most likely in-between). Presently does not exist within the UMR proper or its tributaries above the Middle UMR. Nearest known population occurs in the Meremac River, which enters the Middle UMR.

Ligumia recta (black sandshell). Largemouth, sauger, walleye. Historically occurred throughout the UMR and its tributaries. Presently common in the Upper St. Anthony Falls Pool and UMR Pools 2, 9, 11, 13, and 14. Rare in the St. Croix and lower Illinois (Alton Pool) rivers, and UMR Pools 1, 3-8, 10, 12, and 15-26. Absent within its historic range from the Minnesota and upper Illinois rivers and the Lower St. Anthony Falls Pool.

Ligumia subrostrata (pondmussel). Largemouth bass. Historically occurred in UMR Pools 16-19. Presently does not occur within the UMR proper and its major tributaries.

Obliquaria reflexa (threehorn wartyback). No migratory fish hosts. Historically occurred throughout the UMR drainage. Presently abundant in most pools including the Upper St. Anthony Falls Pool where it has expanded its historic range. Absent within its historic range from the Minnesota and upper Illinois (Starved Rock and Marseilles pools) rivers.

Obovaria olivaria (hickorynut). Shovelnose sturgeon. Historically occurred throughout the UMR and its major tributaries. Presently abundant in UMR Pools 7 and 22, common in UMR Pools 6, 10-14, 17-20, 24-Middle UMR. Rare in the St. Croix River and two Illinois River pools (Alton and Peoria), and in UMR Pools 2-5a, 8-9, 15-16, and 21. Extirpated from the Minnesota River and absent within its historic range from the Illinois River La Grange, Starved Rock, and Marseilles pools.

Potamilus alatus (pink heelsplitter). Freshwater drum. Historically occurred throughout the UMR drainage. Presently abundant in the Upper St. Anthony Falls Pool where it has expanded its historic range. Common in the St. Croix River, UMR Pools 1-3, 7, 9, 10, 14, 16-17, 19, 25-26. Rare in the Minnesota River, Lower St. Anthony Falls Pool, lower Illinois River (Alton, La Grange, Peoria pools), and UMR Pools 4-5, 6, 8, 11-13, 15, 18, 21-24, and Middle UMR.

Potamilus capax (fat pocketbook). Freshwater drum. Historically occurred primarily in the lower reaches of the UMR (below Pool 17) and lower Illinois River, but has been documented from upper UMR Pools; Lower St. Anthony Falls, 4, 5a, 10, 13, 16. Presently only reported from UMR Pools 20 and 24, where it is rare. This species may be near extirpation in the UMR. These populations may be disjunct from Lower Mississippi River drainage populations.

Potamilus ohiensis (pink papershell). Freshwater drum. Historically occurred throughout UMR and its tributaries. Presently common in the Minnesota River and the Illinois River Starved Rock Pool, and UMR Pools 3, 17, 19, and 22. Rare in the St. Croix

River, Illinois River Alton, La Grange, Peoria, Marseilles pools, Upper St. Anthony Falls Pool (expanded historic range), Pools 1, 2, 4-16, 18, 20-21, and 24-Middle UMR.

Potamilus purpuratus (bluefer). Freshwater drum. Historically occurred in the Middle UMR but has been documented from Pool 19. Presently rare in the Middle UMR.

Toxolasma parvus (lilliput). No migratory fish hosts. Historically occurred throughout the UMR drainage. Presently common in UMR Pools 5, 6, and 10-11. Rare in the Minnesota and St. Croix rivers, Illinois River La Grange Pool, Upper St. Anthony Falls (expanded historic range), UMR Pools, 2-4, 7-8, 12-19, 25, and the Middle UMR. Within its historic range the species is absent from UMR Pools 9 and 26, and from the Illinois River Alton, Peoria, and Marseilles pools. Absent from and may never have been present in Lower St. Anthony Falls Pool and UMR Pools 1, 20-24, and Illinois River Starved Rock Pool. Two disjunct populations may exist as result of the gap in the species presence in UMR Pools 20-24.

Toxolasma texasiensis (Texas lilliput). No migratory fish hosts. Only historic record is from the Middle UMR, which is near the northern most extent of this species range. Presently does not occur within the UMR drainage including the Middle UMR.

Trincilla donaciformis (fawnsfoot). Sauger, freshwater drum. Historically occurred throughout the UMR drainage. Presently abundant in UMR Pool 5 and common in UMR Pools 5a, 6, 13, 15, 17-19, 22, 24. Rare in the St. Croix River, Illinois River Alton and Peoria pools, Upper and Lower St. Anthony Fall pools, and in Pools 1-4, 7-12, 14, 16, 2-, 21, 25-Middle UMR. Extirpated from the Minnesota River and absent within its historic range from the Illinois River La Grange and Starved Rock pools.

Truncilla truncata (deertoe). Sauger, freshwater drum. Historically occurred throughout the UMR drainage. Presently abundant in Upper St. Anthony Fall Pool where it has expanded its historic range, and in UMR Pools 1-2, 4, 8, 10-11, 15, 24, and Illinois River La Grange Pool. Common in the St. Croix River, UMR Pools 3, 5, 7, 9, 12-14, 17-20, 22, 25-26, and in the Illinois River Alton and Peoria pools. Rare in the Minnesota River, Lower St. Anthony Falls Pool, Illinois River Marseilles Pool, and in UMR Pools 5a-6, 16, 21, and the Middle UMR. Absent within its historic range only from the Illinois River Starved Rock Pool.

Venustaconcha ellipsiformis (ellipse). No migratory fish hosts. Historic records from the St. Croix River and UMR Pools 3-4, and 15, but probably never very well established in the UMR proper. Presently does not exist in the UMR proper or the St. Croix, Minnesota, or Illinois rivers.

Villosa iris (rainbow). No migratory fish hosts. Historically only occurred in the upper Illinois River in the Starved Rock and Marseilles pools where it has been extirpated. Presently does not exist in the UMR proper.

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