

FINAL JULY 2002
DEFINITE PROJECT REPORT AND ENVIRONMENTAL ASSESSMENT
FOR
RELOCATION PLAN FOR THE ENDANGERED
HIGGINS' EYE PEARLYMUSSEL (*Lampsilis higginsii*)

UPPER MISSISSIPPI RIVER AND TRIBUTARIES
MINNESOTA, WISCONSIN, IOWA, AND ILLINOIS

ST. PAUL DISTRICT
U.S. ARMY CORPS OF ENGINEERS

IN COOPERATION WITH THE
MUSSEL COORDINATION TEAM

RELOCATION PLAN FOR THE ENDANGERED HIGGINS' EYE PEARLYMUSSEL (*Lampsilis higginsii*)

EXECUTIVE SUMMARY

The Draft Definite Project Report and Environmental Assessment describes a proposal to establish five new populations, through relocation, of the Federally-listed Endangered Higgins' eye pearlymussel (*Lampsilis higginsii*). The project stems from the April 2000 U.S. Fish and Wildlife Service Final Biological Opinion report that said continued operation of the 9-Foot Navigation Channel project on the Upper Mississippi River System (UMRS) would likely jeopardize the continued existence of the Higgins' eye pearlymussel. Due to the upstream transport by commercial and recreational craft, zebra mussels are now found in the UMRS. The zebra mussels came from Europe and were introduced into North America by ships discharging their ballast water into the Great Lakes. The zebra mussels eventually got into the Illinois River through the Chicago Sanitary and Shipping Canal, and then into the Mississippi River, by attaching themselves to other ships and boats coming out of the Illinois River. Zebra mussels have a significant adverse impact on Higgins' eye pearlymussel and other native freshwater mussels. The U.S. Fish and Wildlife Service Biological Opinion listed a reasonable and prudent alternative (RPA) believed necessary to avoid jeopardy. "A Reasonable and Prudent Alternative (RPA) is for the Corps to (1) develop a Higgins' eye pearlymussel Relocation Action Plan and (2) to conduct a reconnaissance study to control zebra mussels in the UMR."

The Relocation Plan objective is to establish a minimum of five new and viable populations (minimum of 500 individuals each) of Higgins' eye pearlymussel in areas of the UMRS and/or tributaries that have no or low levels of zebra mussel infestations. Attempts to establish new populations will occur at a minimum of 10 sites, to ensure that at least five new populations are established. The specific locations have not been determined; however, the following potential areas have been identified: Rock and Kankakee Rivers in Illinois; Iowa, Cedar, Des Moines, Upper Iowa, Wapsipipicon, and Turkey Rivers in Iowa; Wisconsin, Chippewa, and Black Rivers in Wisconsin; from the head of navigation to Monticello, Minnesota, and Pools 1 through upper 4 and Pool 24 on the UMRS; and the first 30 miles of the St. Croix River above Taylors Falls, Minnesota.

The Relocation Plan involves collecting adult Higgins' eye pearlymussels from areas heavily infested with zebra mussels, where survival of the Higgins' eye pearlymussel is in question, and cleaning and moving them to an area with no or low levels of zebra mussel infestation. Relocation efforts will also involve raising juvenile mussels on host fish species and at hatcheries, with subsequent stocking at selected relocation sites. A monitoring program to evaluate the long-term effectiveness of the relocation efforts is also part of the plan.

Under the No Action alternative, no Federal actions would be undertaken to relocate endangered mussels for the purpose of establishing new populations in areas with no or low levels of zebra mussel infestation. With the most probable future without action, zebra mussel densities on the main stem of the UMRS are expected to remain high, with some continued expansion into the tributaries. Higgins' eye pearlymussels may continue to exist in

the more marginal secondary and essential habitat areas, which contain low to moderate numbers of zebra mussels, and in areas not infested with zebra mussels. However, until an effective zebra mussel management program is implemented on the UMRS, zebra mussels will continue to be the greatest threat to native mussels of the UMRS. The U.S. Fish and Wildlife Service Biological Opinion concluded that continued operation and maintenance of the 9-Foot Channel Project for another 50 years would jeopardize the continued existence of the Higgins' eye pearlymussel due to the indirect effect of zebra mussels.

Some limited pilot efforts began in 2000/1. Full project implementation will begin in May 2002. The Relocation Plan will take 10 years to fully implement. Monitoring of the newly established populations will continue after the 10-year establishment period. The total Federal project costs (including sunk general planning and study costs of \$229,000) will be \$2,660,000.

Implementation of the proposed Relocation Plan would have overall substantial benefits to Higgins' eye pearlymussel populations in general, although some mortality to individual Higgins' eye pearlymussels would be associated with these activities. Impacts on other natural resources would generally be minor. Relocation of Higgins' eye pearlymussels to tributaries is likely to be controversial because of restrictions on uses associated with endangered species. One of the factors that will be used in selecting the final relocation sites will be the degree of local opposition, which should minimize socioeconomic impacts. The proposed actions would cumulatively aid in the long-term preservation of Higgins' eye pearlymussel populations. Relocation of Higgins' eye pearlymussels would mitigate or reduce the impacts of zebra mussels on this endangered species.

The Higgins' eye pearlymussel Relocation Plan is only one part of the overall effort. The Corps of Engineers is also undertaking, in a separate interrelated effort, a reconnaissance/feasibility study of long-term measures for controlling zebra mussels in the UMRS. Additional mussel work that is under way or will be planned and conducted over the next several years includes monitoring the health and status of the Higgins' eye pearlymussel and other mussels; protecting existing Higgins' eye pearlymussels within Essential Habitat Areas; monitoring the abundance and distribution of zebra mussels; evaluating the opportunity for fish passage at locks and dams for fish species that are hosts of the Higgins' eye pearlymussel glochidia; a relocation plan for winged mapleleaf mussels; and public outreach on the threat to native mussels.

The Mussel Coordination Team (MCT), made up of nine Federal and State government agencies and one private non-profit entity, has been extensively involved in the development of the Relocation Plan and other ongoing mussel related activities. The MCT members include the U.S. Army Corps of Engineers; the U.S. Fish and Wildlife Service; the U.S. Geological Survey; the National Park Service; the U.S. Coast Guard; the departments of natural resources from Minnesota, Wisconsin, Iowa and Illinois; and the Science Museum of Minnesota.

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1.0 INTRODUCTION

1.1 BACKGROUND

In May 2000, the U.S. Fish and Wildlife Service (USFWS) transmitted to the U.S. Army Corps of Engineers (USACE) the April 2000 Final Biological Opinion for the operation and maintenance of the 9-Foot Channel Navigation Project on the Upper Mississippi River System (UMRS) in Illinois, Iowa, Minnesota, Missouri and Wisconsin. In this Biological Opinion, the USFWS determined that operation and maintenance of the navigation pools and project-dependent commercial barge transportation would “facilitate a continued and maintained source of zebra mussels (*Dreissena polymorpha*) in the UMRS and thus, appreciably reduce the likelihood of survival and recovery” of the endangered Higgins’ eye pearl mussel (*Lampsilis higginsii*). The USFWS Biological Opinion listed a reasonable and prudent alternative believed necessary to avoid jeopardy. “A Reasonable and Prudent Alternative (RPA) is for the Corps to (1) develop a *L. higginsii* Relocation Action Plan and (2) to conduct a reconnaissance study to control zebra mussels in the UMR.” This planning effort will focus on the first action item of the RPA. As stated in the Biological Opinion and as modified in a letter of May 21, 2001, to the USACE from the USFWS, the USACE was to:

“Conduct a Higgins’ eye relocation feasibility analysis and prepare a Higgins’ eye Pearlymussel Relocation Plan to address the feasibility of the Reasonable and Prudent Alternative in avoiding jeopardy and reducing incidental take. This will be an interdisciplinary/interagency effort designed to determine the most efficient and cost effective combination of methods and measures to provide for relocation of Higgins’ eye. The effort will follow the Corps’ traditional six-step planning process and include the utilization of pilot field studies if necessary. A report on the findings of this effort will be provided to the Field Supervisor, U.S. Fish and Wildlife Service, 4101 East 80th Street, Bloomington, Minnesota, 55425-1665, by May 31, 2001, for approval. If the feasibility study concludes that relocation of Higgins’ eye is not feasible, the Corps will immediately reinitiate consultation with the Service under Section 7 of the Endangered Species Act to develop an alternative RPA to avoid jeopardy. If relocation is feasible, implementation of the Higgins’ eye Pearlymussel Relocation Plan is to commence by July 16, 2001. The feasibility analysis will include, but not be limited to, the following:

Development of milestones or success criteria and time frames for achieving such goals,

Development of a relocation site criteria plan based on political, institutional and biological parameters,

Development of a search plan for candidate relocation sites,

Implementation of the search plan, including pilot projects necessary to develop site suitability criteria and to evaluate candidate relocation sites,

Preparation of a prioritized list of candidate relocation sites, with narrative evaluation,

Evaluation of relocation methods including relocation of adult and juvenile Higgins' eye from existing populations, hatchery (*in situ*) propagation and rearing where juveniles would be used in relocation, and release of glochidia-laden host fish,

Funding the relocation of Higgins' eye at selected site(s) and evaluating success at the site(s). The relocation plan will include a monitoring component to determine the effectiveness of the relocation program in re-establishing viable populations of *L. higginsii*. Annual status reports of the relocation and monitoring program will be submitted for approval to the Field Supervisor, U.S. Fish and Wildlife Service, 4101 East 80th Street, Bloomington, Minnesota, 55425-1665,

Support and continuation of pilot projects to evaluate relocation techniques.”

1.2 AUTHORITY

The formal authorization for the USACE to perform operation and maintenance activities on the UMRS was given in the Rivers and Harbors Act of 1927; as modified by the Rivers and Harbors Acts of 1930, 1932, and 1935; and a Resolution of the House Committee on Flood Control of September 19, 1944. Original authority for the USACE to work on the Mississippi River was provided in the River and Harbor Act of 1878. These Acts and Resolution authorize the construction, operation, and maintenance of the 9-foot navigation channel on the Mississippi River between the mouth of the Missouri River and St. Paul, Minnesota.

Section 7(a)(2) of the Endangered Species Act requires Federal agencies to insure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of endangered or threatened species. In addition, the Endangered Species Act of 1973 establishes as Federal policy that “*all Federal departments and agencies shall seek to conserve endangered species and threatened species.*”

1.3 PARTICIPANTS

A Mussel Coordination Team (MCT) was established with a Partnership Agreement signed by agency heads of the USACE St. Paul and Rock Island Districts; the USFWS; the U.S. Geological Survey; the National Park Service; the U.S. Coast Guard; the departments of natural resources of Minnesota, Wisconsin, Iowa and Illinois; and the Science Museum of Minnesota. The MCT assisted in the planning of this study and will assist in implementation of recommended actions.

The MCT has an open membership policy. Thus, participation varied throughout the study. The list of the participants is contained in Appendix 1.

1.4 PURPOSE AND SCOPE

The purpose and scope of this study are to address Action Item 1 of the RPA: relocation of *L. higginsii* to suitable sites.

Action Item 2 of the RPA is being addressed in a separate Reconnaissance Study to manage zebra mussels. Action Item 2 of the RPA is: “Prevent zebra mussel infestation above Lake Pepin and into the Lower Wisconsin River and other UMR tributaries and reverse current zebra mussel population trends in the UMR, especially from Lake Pepin downstream to the confluence of the Illinois River.”

Action plans to address the Reasonable and Prudent Measures and Conservation Measures identified by the USFWS in the Biological Opinion (listed below) are being developed in coordination with the interagency MCT. These include the following:

Develop and implement a monitoring program for Higgins' eye and other mussels in the UMRS.

Investigate and implement opportunities to protect live Higgins' eye individuals within Essential Habitat Areas in the UMRS.

Develop and implement an action plan to monitor abundance and distribution of zebra mussels in the UMRS.

Conduct a feasibility analysis to enhance the opportunity for fish passage at locks and dams for species of fish that are hosts of the *L. higginsii* glochidia.

Implement a public outreach effort as a means to disseminate information on life history and distribution of zebra mussels, ecological importance of native mussels to include Higgins' eye, control measures to limit the spread of zebra mussels in the UMR and tributaries, and status of mussel relocation efforts.

1.5 STUDY AREA DEFINITION

The historical distribution of *L. higginsii* is not known with certainty. Although nowhere abundant, it is thought to have previously been more widely distributed, inhabiting the UMR from just north of St. Louis, Missouri, to Minneapolis-St. Paul, Minnesota. It was also found along the main stem of the UMR and several of its tributaries including the Illinois, Kankakee, Sangamon, Iowa, Cedar, Wapsipinicon, Rock, Wisconsin, Black, Minnesota, and St. Croix Rivers. The range of *L. higginsii* has been reduced approximately 50 percent from its historic distribution to a 302-mile reach of the UMR. It is now found only in the UMR upstream of Lock and Dam 19 at Keokuk, Iowa; in the St. Croix River between Wisconsin and Minnesota; in the

Wisconsin River, Wisconsin; and in the lower Rock River in Illinois. The southernmost population is believed to exist in Pool 19 at River Mile 407. The study area for this planning effort includes the main stem of the Mississippi River from the confluence with the Illinois River to Monticello, Minnesota, and all major tributaries within this reach of the Mississippi River, including the Illinois River and its tributaries (see Figure 1-1).

1.6 RELATED STUDIES/PROJECTS

The primary sources used in developing this report are listed below. Many additional relevant reports on zebra mussels, endangered mussel species and the 9-Foot Channel Navigation Project are available.

U.S. Fish and Wildlife Service. 1983. Higgins' eye mussel recovery plan. Ft. Snelling, Minnesota.

The *L. higginsii* recovery plan describes the current status of this endangered species and provides recommendations on actions needed to recover and eventually delist the species. Essential habitats are identified in the report.

*Hornbach, D. J. 1999. Technical/Agency draft revised *Lampsilis higginsii* recovery plan.*

The revised recovery plan reevaluates the current status of *L. higginsii* and provides recommendations on actions needed to recover the species.

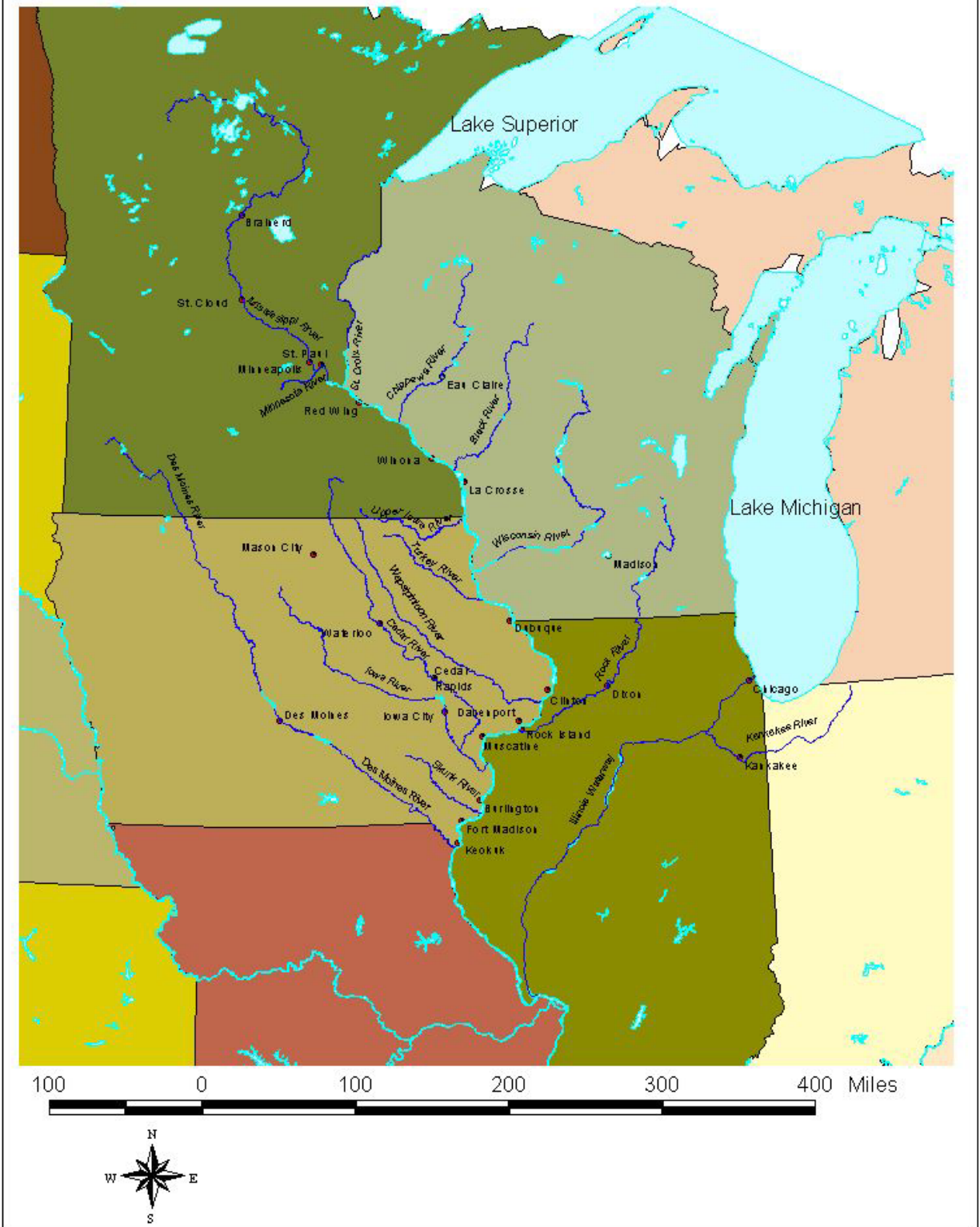
U.S. Army Corps of Engineers. 1999. Biological assessment for operation and maintenance of the Upper Mississippi River Navigation Project within the St. Paul, Rock Island, and St. Louis Districts. Mississippi Valley Division, Vicksburg, Mississippi.

The biological assessment provides the USACE's evaluation of the effects of continued operation and maintenance of the 9-foot channel project on threatened and endangered species. In reference to *L. higginsii*, the USACE determined that continued operation and maintenance of the project was likely to adversely affect *L. higginsii*.

U.S. Fish and Wildlife Service. 2000. Final biological opinion for the operation and maintenance of the 9-foot navigation channel on the Upper Mississippi River System.

The biological opinion provides the USFWS response to the USACE's biological assessment. The opinion describes the existing conditions and provides a determination that continued operation and maintenance of the 9-foot channel project is likely to jeopardize the continued existence of *L. higginsii*. The opinion provides "reasonable and prudent alternatives" and "reasonable and prudent measures" for the USACE to undertake to avoid jeopardy and minimize incidental take.

Figure 1-1. *Lampsilis higginsii* relocation study area.



Mussel Coordination Team. March 2001. Draft Higgins' Eye Pearlymussel Conservation Plan.

The MCT has developed draft short-term and long-term goals and objectives to address the long-term conservation of *L. higginsii*. This planning effort is focusing on Objective 3 of the MCT Conservation Plan.

Interim Goal: In the Interim Period (next 10 years), maintain/establish reproductively viable populations of Higgins' eye pearlymussel.

Objective 1. Maintain viable populations of Higgins' eye and other native mussels at the Interstate, Hudson, Prescott and Orion Essential Habitat Areas.

Objective 2. Protect as many *L. higginsii* as practical in the following Essential Habitat Areas and/or other important habitats: Lower St. Croix River (Hudson), Lower St. Croix River (Prescott), UMR - Pool 9 (Whiskey Rock), UMR - Pool 10 (Harpers Slough), UMR - Pool 10 (Prairie du Chien), UMR - Pool 10 (McMillan Island), UMR - Pool 13 (Bellevue), UMR - Pool 14 (Cordova), UMR - Pool 15 (Sylvan Slough).

Objective 3. Establish a minimum of five new and viable populations of Higgins' eye in the UMR and/or tributaries uninfested or with low level infestations by zebra mussels.

Objective 4. Monitor trends in abundance and distribution of Higgins' eye and other native mussels.

Objective 5. Monitor trends in abundance and distribution of zebra mussels in the UMRS.

Long-term Goal: Maintain existing (year 2000) population levels of Higgins' eye pearlymussels with at least four geographically separate areas meeting the criteria for Essential Habitat.

Objective 1. Prevent zebra mussel infestation above Lake Pepin and into the lower Wisconsin River and other UMR tributaries and reverse current zebra mussel population trends in the UMR, especially from Lake Pepin downstream to the confluence of the Illinois River.

Objective 2. Restore Higgins' eye pearlymussel populations and habitat in essential and secondary habitats.

2.0 GENERAL SETTING

The Upper Mississippi River Basin (UMRB) represents one of the Nation's most diverse and abundant ecological resources. The floodplain of the UMR consists of thousands of acres of urban, agricultural, wetland and bottomland forest areas. Uses of the floodplain include urban, industry, agriculture, recreation and fish and wildlife management. The UMR includes over 450,000 acres of backwater, side channel, marsh and forested wetland habitat. These include

lands managed by the USFWS as National Wildlife Refuges, lands managed by the USACE for fish and wildlife, and those managed by State agencies.

The ecosystem of the UMRB consists of hundreds of thousands of acres of bottomland forest, islands, backwaters, side channels, and wetlands that support over 270 species of birds, 57 species of mammals, 45 species of amphibians and reptiles, 113 species of fish, and nearly 50 species of mussels. More than 40 percent of North America's migratory waterfowl and shorebirds depend upon food resources and other life requisites (shelter, nesting habitat, etc.) that the basin provides.

Principal tributaries of the UMR are the Minnesota, St. Croix, Wisconsin, Rock, Iowa, Des Moines, Illinois and Missouri Rivers, in addition to smaller rivers and streams. Average flow of the UMR ranges from 9,890 cubic feet per second (cfs) at St. Paul, Minnesota, to 175,000 cfs at St. Louis, Missouri. Principal tributaries of the Illinois River are the Des Plaines, Iroquois, Kankakee, Fox, Vermilion, Mackinaw, Spoon, Sangamon and La Moine Rivers, in addition to smaller streams along the waterway. Median flow on the Illinois Waterway ranges from 5,800 cfs at Lockport, Illinois, to 17,300 cfs near the mouth.

Water quality is highly variable throughout the UMRB. Both point and non-point sources determine and/or affect the water quality of the UMRB. Municipal, industrial and storm sewer discharges, as well as agricultural runoff, contribute both organic and inorganic pollutants to the system. Water quality has generally improved throughout the UMRB. However, environmental contaminants and specific areas of the system that are contaminated continue to be items of concern. Contaminants found in the system include heavy metals, pesticides and synthetic organic compounds.

The Mississippi River Basin is home to over 30 million people. Economic activities mainly revolve around machinery manufacturing, food and beverage processing, and crop, dairy, and livestock production. Regional industries produce canned, frozen, and dairy foods, and manufacture broadcast equipment, construction equipment, agricultural machinery, ammunitions, chemicals and aluminum sheet. Recreation activities, waterfowl hunting, sport/commercial fishing and trapping are also valuable to local and regional economies.

3.0 PROBLEM IDENTIFICATION

3.1. PROBLEM IDENTIFICATION

3.1.1 Existing Conditions

The Higgins' eye pearl mussel (*Lampsilis higginsii*) was listed as an endangered species by the USFWS on June 14, 1976 (Federal Register, 41 FR 24064). The major reasons for listing of the *L. higginsii* were the decrease in abundance and range of the species. As stated in the original recovery plan, the *L. higginsii* was not abundant and was becoming increasingly rare around the turn of the twentieth century. The fact that there were few records of live specimens from the early 1900s until the enactment of the Endangered Species Act in 1973 was a major factor in its listing by the USFWS in 1976.

The historical distribution of *L. higginsii* is not known with certainty. Although nowhere abundant, it is believed to have been widely distributed, inhabiting the UMRS from just north of St. Louis, Missouri, to Minneapolis-St. Paul, Minnesota. It was also found along the main stem of the UMRS and several of its tributaries including the Ohio, Illinois, Sangamon, Iowa, Cedar, Wapsipinicon, Rock, Wisconsin, Black, Minnesota, and St. Croix Rivers. The range of *L. higginsii* has been reduced approximately 50 percent from its historic distribution to a 302-mile reach of the UMRS and is now found only in the UMRS upstream of Lock and Dam 19 at Keokuk, Iowa; in the St. Croix River between Wisconsin and Minnesota; in the Wisconsin River, Wisconsin; and in the lower Rock River in Illinois. The southernmost population is believed to exist in Pool 19 at River Mile 407. Nearly all the remaining habitat for *L. higginsii* is within the 9-Foot Channel Project. The *L. higginsii* Recovery Team designated seven “Essential Habitat Areas” for *L. higginsii*. The Essential Habitat Areas are believed to contain viable reproducing *L. higginsii* populations. The seven Essential Habitat Areas are (1) the St. Croix River at Hudson, Wisconsin (River Mile 16.2 - 17.6); (2) the UMRS at Whiskey Rock, at Ferryville, Wisconsin, Pool 9 (River Mile 655.8 - 658.4); (3) the UMRS at Harpers Slough, Pool 10 (River Mile 639.0 - 641.4); (4) the UMRS Main and East Channels at Prairie du Chien, Wisconsin, and Marquette, Iowa, Pool 10 (River Mile 633.4 - 637); (5) the UMRS at McMillan Island, Pool 10 (River Mile 616.4 - 619.1); (6) the UMRS at Cordova, Illinois, Pool 14 (River Mile 503.0 - 505.5); and (7) the UMRS at Sylvan Slough, Quad Cities, Illinois, Pool 15 (River Mile 485.5 - 486.0). Three additional Essential Habitat Areas have been proposed by the *L. higginsii* Recovery Team – the St. Croix River at Prescott, Wisconsin, and near Taylors Falls, Minnesota (Interstate Park), and the Wisconsin River near Muscoda, Wisconsin (Orion mussel assemblage).

The reasons for the long-term decline in distribution and abundance of *L. higginsii* are largely unknown. Significant changes in the UMRS watershed, from extensive urban development and conversion of prairie and forested areas into heavy agricultural use, have greatly affected both water quantity and quality. Contaminants and other pollutants may have had a role in the long-term decline in *L. higginsii* distribution and abundance and may still be affecting *L. higginsii* abundance, distribution, and welfare. The thousands of channel structures built for the 4½ - and 6-Foot Navigation Channel Projects and the construction, operation, and maintenance of the 9-Foot Channel Project may have also contributed to this long-term decline. However, these impacts are largely unknown, and most occurred nearly a century ago.

Studies before 1993 found no recent significant declines in the distribution and abundance of *L. higginsii* in the UMRS. Since completion of the original Recovery Plan in 1983, its known range has been extended by 180 river miles and the *L. higginsii* Recovery Team tentatively proposed an additional three Essential Habitat Areas. For this species, the outlook was cautiously optimistic; it seemed plausible to consider that *L. higginsii* populations were stable and perhaps recovering. Following the Flood of 1993, the *L. higginsii* Recovery Team reassembled and began updating the original Recovery Plan.

The recent invasion of the exotic zebra mussel has changed this scenario. Due to upstream transport by commercial barges and recreational craft, zebra mussels are now found throughout the UMRS and have had a substantial adverse impact on *L. higginsii* and other native freshwater mussels. On the basis of data on freshwater mussels from the Prairie du Chien Essential Habitat Area, and observations

and recommendations of the *L. higginsii* Recovery Team, it is evident that zebra mussels are a threat to native freshwater mussels on the UMRS, including *L. higginsii*.

Zebra mussels have been found throughout the UMRS and have the potential to kill or otherwise eliminate native mussels, including *L. higginsii*. Adult zebra mussels attach to natural substrates, such as rocks, native mussels, wood, aquatic plants, and other zebra mussels. Male zebra mussels release sperm directly to the water to fertilize eggs released to the water by the females. Large females release up to 1 million eggs per season. Eggs are released when water temperatures reach 52 to 54 °F. Immature zebra mussels (veligers) spread via passive drift on water currents. Adults and veligers attach to boat hulls, or to wet compartments, containers, and equipment in boats. Commercial and recreational boats are the main vectors carrying this species upstream and between water bodies, while currents carry veligers and juveniles downstream for further dispersal.

Zebra mussels affect native mussels by competing for food and by attaching to the shells of natives in such numbers that the infested mussel cannot travel or burrow. When infested by approximately 100 or more zebra mussels, native mussels cannot open their shells to respire, feed, burrow, or move, nor can they close their shells for protection. Perhaps even more problematic is the accumulation of dead and rotting zebra mussel flesh and shell debris within the native mussel bed. This accumulation creates sustained anoxic conditions at the substratum-water interface that ultimately are intolerable to native mussels and to fish species that might serve as intermediate hosts for the glochidial life-stage of native mussels. Such conditions prevent successful recruitment of native mussels. These direct and indirect impacts or combinations of impacts can lead to the death of the infested mussel and impaired or no reproduction.

Unlike the Illinois River (via Lake Michigan and the Chicago Sanitary and Ship Canal), the UMRS did not have an upriver source of veligers to spread downriver with the currents. On the basis of the zebra mussel's current distribution within the UMRS, it appears tow traffic is the main transportation vector of upstream spread in the UMRS upstream of the Illinois River, while river currents are responsible for its downstream spread from the UMRS/Illinois River confluence. While recreational boats may transport zebra mussels on the UMRS, commercial barge transportation is a much more reliable vector of transport. Barges have larger submerged surface areas than recreational craft for mussel attachment; barges remain for extended periods in the water, increasing exposure to drifting veligers and opportunities for attachment; barges travel long distances within the UMRS, from below Lock and Dam 26 to the head of navigation in Minneapolis, Minnesota; and barges travel within and downstream of the Illinois River, a constant source of zebra mussels from Lake Michigan to the UMRS.

With a less abundant upriver source, UMRS zebra mussel populations grew at a slower pace than those in the Illinois River. Despite a slower population growth rate, recent reports from Lake Pepin (Pool 4) and Pools 8 through 10 indicate high adult zebra mussel numbers and densities (>20,000/m²). Studies conducted by Minnesota and Wisconsin resource agencies since 1996 indicate Lake Pepin is the likely source population for the increasing zebra mussels in Pools 7 and 8. Lake Pepin may be a substantial and long-term source of zebra mussels to the downstream UMRS. Research has found zebra mussel densities are higher in the UMRS downstream of Lake Pepin than upstream of Lake Pepin.

The continued upstream transport of zebra mussels occurs through use of the 9-Foot Channel Project by commercial barge traffic and recreational traffic infested with zebra mussels. The upstream transport of zebra mussels will continue to support and/or augment populations of zebra mussels in the UMRS, encompassing all UMRS main stem *L. higginsii* Essential Habitat Areas, and the existing/proposed Essential Habitat Areas on the lower St. Croix and lower Wisconsin Rivers. While the lower Wisconsin River site currently is not infested, the State of Minnesota declared the lower St. Croix River site “infested” in 2000. However, surveys completed by the USFWS, the National Park Service and the Minnesota and Wisconsin Departments of Natural Resources in 2001 found only a few individual zebra mussels in the St. Croix River. Continued operation and maintenance of the 9-Foot Channel Project facilitates the upstream transportation of zebra mussels, thus increasing the risk of zebra mussels establishing at currently uninfested mussel beds containing *L. higginsii* in the St. Croix River above Stillwater, Minnesota, and in the lower Wisconsin River.

On the practical side, it must be recognized that zebra mussels are adapted to lacustrine (lake-like) habitats, and most native mussel species do best in lotic (riverine) systems. In many rivers (notably the Ohio and Illinois Rivers), zebra mussel densities increased rapidly after initial infestation, peaked at very high densities within 3 to 5 years and appear now to be stabilizing at moderate densities that native species can tolerate. Many of the Higgins’ eye pearl mussel essential habitats previously considered marginal, such as Whiskey Rock or McMillan Island, have not yet been heavily infested with zebra mussels. However, most of the former areas considered prime Higgins’ eye pearl mussel habitat, such as Harpers Ferry Slough and the East Channel, have now been heavily infested with zebra mussels.

Zebra mussels were first noted in the East Channel of the UMRS near Prairie du Chien, Wisconsin (approximately at River Mile 635), in 1993. In 1994, mean zebra mussel density was less than 100 individuals/m². In 1996, mean density increased to more than 10,000 individuals/m², and between then and 2001, mean density was variable but remained high, typically much more than 1,000 individuals/m². While densities of live organisms remained high, the quantity of dead shell material in the substratum, and associated silt and detritus, increased. In the summer of 2001, divers reported that shells and detritus were 50 cm thick in some parts of the East Channel. Twenty-five to 50 percent of samples consisted of dead zebra mussel shells. In addition, divers reported considerable hydrogen sulfide production associated with dead zebra mussels and detritus.

Prior to zebra mussel infestation, mussel density and species richness in the East Channel of the UMRS were relatively high. The endangered Higgins’ eye pearl mussel composed approximately 0.5 percent of the mussel assemblage and was collected regularly in the East Channel. *Lampsilis teres*, *Ellipsaria lineolata*, and *Quadrula nodulata* were uncommon but present. Mean total live native mussel density was routinely greater than 50 individuals/m². Although the mussel bed was infested with zebra mussels in 1993/1994, the native mussel assemblage remained unaffected for several years. In 1996, zebra mussel densities were approximately 10,000/m²; however, the majority of native unionids were still alive. In 1998, total live unionid density had declined to 20 individuals/m², and in 1999, 2000, and 2001, it had decreased to less than 5 individuals/m². Unionid density may have started to decline in 1997, although no data were collected that year.

Within the unionid community, evidence of recent recruitment was measured in terms of the total individuals less than 30 mm total shell length or the number of species with at least one individual less

than 30 mm total shell length. Prior to 1999, the number of species with at least one individual less than 30 mm total shell length varied from less than 40 to nearly 80 percent. Prior to 1999, the percentage of individuals less than 30 mm total shell length varied from 10 to more than 40 percent. However, evidence of recent recruitment declined abruptly after 1998. No evidence of recent recruitment was noted in 1999 through 2001. These parameters provide an indication of recruitment success 1 to 2 years previously, since individuals in the community less than 30 mm total shell length were not necessarily produced in that year. Although the high zebra mussel infestation starting in 1996 obviously inhibited recruitment, it did not immediately cause mortality of small unionids. Small unionids were found in the assemblage in 1996, probably in 1997, and in 1998. It was not until 1999 that the high-density zebra mussel populations had a noticeable effect on unionid recruitment in the East Channel.

The extended period of high zebra mussel density in the East Channel, from 1996 to 2001, is in marked contrast to conditions at a dense and species-rich mussel bed in the lower Ohio River near Paducah, Kentucky. Zebra mussels were first observed there in 1991; densities were estimated at 190/m² by 1993. By early 1994, mean density was 100,000 individuals/m² at some sites on the mussel bed. By late 1995, the 1994 year class of zebra mussels began to die, and by late October 1995, virtually all of the live zebra mussels had perished. Mean density was less than 100 individuals/m², and most were less than 15 mm total shell length. Since that time, zebra mussel densities in the lower Ohio River have remained moderate, ranging from 200 to 7,000 individuals/m².

In the Illinois River, zebra mussel densities peaked and then declined rapidly, much as they did in the lower Ohio River. Zebra mussels were first noted in the Illinois River in 1992. By 1993, density had increased dramatically; at River Mile 5.5 (at Grafton, Illinois) densities as high as 61,126/m² were reported. However, by fall 1993, zebra mussel mortality in the Illinois River was apparent. By late 1994, it was estimated that a 99-percent reduction in zebra mussels had occurred at River Mile 5.5 as well as at River Mile 66.8. In 1995, investigators collected 34 1-m quadrats in the lower 120 miles and found only 109 adult zebra mussels greater than 20 mm long.

Observations by resource managers have indicated that a partial die-off of zebra mussels might have occurred on portions of the UMR during late summer of 2001. Also in late summer of 2001, accumulations of dead zebra mussels were found in some lock chambers. The magnitude, geographical extent, and effects on future UMR zebra mussel densities of this die-off are unknown. The more lentic environment of the UMR, in contrast to the Illinois and Ohio Rivers, may prevent or reduce the reductions in zebra mussels that have been observed for these rivers.

There is evidence that the zebra mussel has had severe impacts on native mussels in the Great Lakes and in large rivers in this country. However, not all areas in the UMRS are equally infested by zebra mussels. The East Channel of the UMRS has been/is being more severely affected by zebra mussels than more lotic reaches such as the lower Ohio River near Paducah, Kentucky, or some native mussel beds in Pool 7 or 9. An area near Guttenberg, Iowa, in Pool 10, is another important case in point. Although it is downriver of the East Channel and therefore likely to receive zebra mussel larvae from upriver, the substratum was not significantly infested by adult zebra mussels. Substratum is sandy, and the river reach is more lotic than the East Channel. The native mussel community there has not been affected greatly by zebra mussels, and abundance of Higgins' eye pearl mussels has not changed measurably in the last 10 years.

Off-channel areas also appear to have been less affected by zebra mussels. Tucker and Atwood (1995) found that Swan Lake, a backwater of the Illinois River, had significantly fewer zebra mussels and maintained a diverse native mussel community. Sullivan (unpublished data 2000) found fewer zebra mussels in backwater areas versus the main channel in Pool 8.

Unlike zebra mussels, many unionid species are specifically adapted to large rivers; hence, they may have a competitive advantage over zebra mussels throughout much of their range. Zebra mussels do not sustain themselves well in medium-size to small rivers, which are likely to provide refugia for many (although certainly not all) native unionids.

Many native unionids live 30 or more years, tolerate long periods of desiccation, have an extremely strong shell, and can move about to a limited extent. Most zebra mussels live 1 to 2 years, are virtually intolerant of desiccation, and have a weak, relatively fragile shell. Although they can break loose from the substratum and be carried to new habitats on water currents, zebra mussels typically do not move about in response to reduced water levels, as do some unionids. The extreme tolerance to zebra mussel infestation exhibited by some unionids is noteworthy. In the summer of 2000 in the East Channel of the UMRS, many large unionids (specifically *Megalonaias nervosa*) were found still alive after 5 years (1996 - 2000) in substratum heavily infested with zebra mussels.

L. higginsii have been affected by zebra mussel infestation in two main ways. The first is through direct competition for resources and mortality caused by high zebra mussel densities attached to individual *L. higginsii*. Second, high zebra mussel densities have changed UMRS substrates from the sand and gravels preferred by *L. higginsii* to thick layers of zebra mussels with silt and clay interstices.

3.1.2. Future Conditions

It is difficult to predict how future interactions between native mussels and zebra mussels will affect future native mussel densities and distributions in the UMRS. Zebra mussels will probably spread, infesting currently uninfested areas within the UMRS. Also, the UMRS may not experience reductions in zebra mussel densities such as those reported on the Ohio and Illinois Rivers. Even in the absence of upstream transport by barges and recreational craft, the more lentic environment created by the locks and dams on the UMRS and naturally occurring lakes, i.e., Lake Pepin, will continue to replenish zebra mussels throughout the system. Without active zebra mussel management, zebra mussel populations may go through cycles of increased/decreased abundance, but they are likely to maintain relatively high levels on the UMRS. For the purposes of this study, zebra mussel densities on the main stem of the UMRS are expected to remain high, with some continued expansion into the tributaries.

It is reasonable to assume that, with continued high levels of zebra mussels, declines in Higgins' eye pearlymussel numbers/populations are probable. Local extinctions, such as that which has apparently occurred in the East Channel of the UMRS at Prairie du Chien, Wisconsin, have significantly reduced the long-term viability of this species. Thus, the no action alternative would jeopardize the continued existence of the Higgins' eye pearlymussel. However, the current existing conditions at several of the Essential Habitat Areas in terms of zebra mussel infestation and effects on Higgins' eye pearlymussels indicate that remnant Higgins' eye pearlymussel populations are persisting in the UMRS despite heavy zebra mussel infestations. Estimating the long-term viability of these remnant populations is

speculative at best; however, even if the remnant populations of Higgins' eye pearlymussels remain viable and self-sustaining, the condition of Higgins' eye populations as a whole in the UMRS would be uncertain. The alternative and most conservative view would hold that remnant populations of Higgins' eye pearlymussels are not viable, and this species could be destined for possible extinction without immediate and emergency intervention.

3.2. PLANNING OPPORTUNITY

The reproductive cycle of *L. higginsii* is fairly well known and has allowed the species to maintain population levels throughout many environmental perturbations. However, the zebra mussel infestation has had severe impacts on *L. higginsii* populations to levels threatening successful reproduction. There is great potential to increase *L. higginsii* numbers by captive breeding and/or use of an artificial medium for glochidial development.

4.0 GOALS AND OBJECTIVES

4.1 GOALS

The MCT established the following goal: In the Interim Period (next 10 years), establish reproductively viable populations of *L. higginsii*.

4.2 OBJECTIVES

Objective: Establish a minimum of five new and viable populations of *L. higginsii* in the UMRS and/or tributaries uninfested or with low-level infestations by zebra mussels.

Criteria: A viable population is defined as having a minimum of 500 individual *L. higginsii*, and a minimum of 2 year classes between 4 and 10 years of age as evidence of successful reproduction. Once a population is determined to be viable, it must be monitored for a period of at least 20 years under supervision of a qualified malacologist and continue to meet the viability requirements over this time period.

4.3 PLANNING HORIZON

The intent of this study is to evaluate relocation measures. For the purposes of this planning effort, a planning horizon of 10 years to establish stable populations at the relocation sites is used. The populations would have to be evaluated for an additional 20 years to determine that the populations are viable.

5.0 PLANNING CONSTRAINTS

Controlling or managing zebra mussels is a key component of any long-term strategies for conserving endangered mussel species in the UMRS. A separate, but intimately related, reconnaissance/feasibility study is currently under way to investigate alternatives for controlling/managing zebra mussels. This zebra mussel management study will follow a two-phase planning process funded through normal USACE funding mechanisms. Study

completion, if funded, is likely within 3 to 5 years. However, Federal funding for the reconnaissance/feasibility study does not mean that the USACE is solely responsible for the introduction, spread, or management of zebra mussels in the UMRS.

Implementation of any feasible zebra mussel management alternatives and successful management of zebra mussels are unlikely to occur within the next 5 to 10 years. Because of the lag-time associated with implementation of any feasible zebra mussel management alternatives, relocation measures for native mussels must be planned and implemented very soon. A significant time constraint, therefore, is present on completion and implementation of this Definite Project Report. If the zebra mussel control planning studies determine there are no feasible alternatives, the importance of relocation efforts becomes even greater.

6.0 FORMULATION OF ALTERNATIVES

6.1 NO ACTION ALTERNATIVE

Under the No Action alternative, no Federal actions would be undertaken to relocate endangered mussels. Section 3.1.2 provides a projection of the most probable future for *L. higginsii* if no actions are taken. As specified in the USFWS Biological Opinion, dated April 2000, this would jeopardize the continued existence of *L. higginsii*.

6.2 RELOCATION ALTERNATIVES

A potential strategy for protecting uncommon or sensitive unionid species would be to move or reintroduce individuals to suitable habitats that are not severely infested with zebra mussels. Lotic areas of the UMRS, which continue to support low- to moderate-density mussel assemblages without much impact by zebra mussels, offer potential sites for relocation. Essential and secondary habitat areas in Pools 7 (Winters Landing) and 9 (Whiskey Rock), as well as areas in Pool 10 near Guttenberg, Iowa (McMillan Island), appear to provide conditions that will support *L. higginsii* but are not ideal or preferred by zebra mussels. These sites provide a template of the types of conditions to which *L. higginsii* might be relocated.

Tributary streams that historically supported *L. higginsii* and/or have good diverse mussel communities offer other potential relocation sites. Large tributaries such as the St. Croix, Wisconsin and Chippewa Rivers hold potential as relocation sites. Smaller tributaries such as the Rock, Cedar, Des Moines and Black Rivers may also be suitable relocation/reintroduction sites.

There has been criticism of attempts to move adult mussels to new areas, and high mortalities have been associated with some translocation attempts (Cope and Waller 1998). However, the severity of zebra mussel impacts renders these criticisms somewhat moot (i.e., if mussels are not moved, a large percentage will die). Moving mussels takes patience and care; however, there really is no reason why relocated adult mussels would not survive if they were moved short distances carefully. Heath (unpublished data 2001) found only 1.0 percent mortality after 1 year associated with recent translocation efforts. Davis (personal communication 2001) found no mortality associated with the recent relocation of 200 Higgins' eye from Pool 11 to Pools 2 and 3. Relocating adult mussels would be expensive when considered on a cost-per-mussel

basis. However, it may be the only feasible alternative at sites with extremely high zebra mussel densities.

Another potential option for relocating/reintroducing *L. higginsii* involves stocking of host fish species infected with *L. higginsii* glochidia into the same potential habitats as those described above (i.e., areas of the UMRS that still support mussels but are not infested with zebra mussels, tributary streams, areas modified to provide mussel habitat and hatcheries or rearing facilities). The capability to infect host fish species with *L. higginsii* glochidia and transform them to juveniles in a hatchery environment has been demonstrated by Welke et al. (2000). Transformation from encysted glochidia to excysted juveniles was variable (28 to 80 percent). The demonstration project did experience problems with fish host mortality, equipment failure, and high juvenile mortality after several weeks of growing in the laboratory. However, this technology holds great promise and could be used to infect large numbers of either hatchery reared or wild caught host fish (walleye, sauger, smallmouth bass), which would subsequently be stocked in appropriate relocation habitats as defined above. Seeding of new areas with large numbers of glochidia-infected fish appears to be a relatively cost effective method, even if long-term survival of settled juveniles is low. A potential drawback to this method is the possibility that naturally settling *L. higginsii* would not survive in some habitats frequented by infected host fish species but that a larger percentage of juveniles reared to a slightly large size would survive (i.e., the more lotic areas proposed as refuges within the river do not support much natural recruitment but may be moderately well tolerated by large juvenile and adult mussels). Thus, holding some infected host fish in a hatchery environment, pond or in-situ cage and “growing out” transformed juveniles to a more advanced stage for stocking will be tried.

7.0 EVALUATION OF ALTERNATIVES AND PLAN SELECTION

7.1 RELOCATION METHODS

7.1.1 Alternative Relocation Methods

The MCT determined that it would be unwise to use traditional economic benefit analyses such as the Habitat Evaluation Procedure (HEP) or the Wildlife Habitat Appraisal Guide (WHAG) because this species is so rare. Gross evaluations of habitat, as those mentioned, lack the sensitivity required to observe significant changes for this species. Alternative relocation measures identified and discussed in the preceding section are evaluated on the basis of cost to maintain or achieve one live *L. higginsii* (age 2 years or older) at the end of the 10-year planning horizon. High mortality occurs during the first year or two. Mortality of older specimens is much lower. Heath (unpublished data 2001) estimated the mortality rate of 1.26 percent based on catch curves of 73 *L. higginsii*, age 6 to 34. It was assumed that sexual maturity is achieved at age 4. Heath (unpublished data 2001) found female *L. higginsii* ages 3 and 4 to be gravid. Only a limited amount of work has been completed on fecundity, survival, specific habitat requirements, or how to relocate rare mussels. Available information is for common species. Therefore, many of the assumptions used in determining the number of adults and glochidia needed were based on professional judgment of the MCT and experience gained during the Pilot Propagation Efforts at the Genoa Fish Hatchery. Table 7-1 presents the results of the economic analysis of the various relocation alternatives. The population model RAMAS recently

developed by Applied Biomathematics (Akcakaya 1998) was used to estimate the relocation efforts and associated costs needed to reach the project objective of 500 mussels (age greater than 1 year) per relocation site. The results of the RAMAS model are contained in Appendix 2. Section 8.1 provides a more detailed cost estimate.

Table. 7-1. Evaluation of Alternative Relocation Techniques

Relocation/Protection Alternative			Number of <i>L. higginsii</i> needed to achieve target 500	Cost	Cost / 500 (> 1 year old)
Adult relocation	no quarantine	# adults	300	\$112,500	\$112,500
	with quarantine	# adults	300	\$142,500	\$142,500
Glochidia	inoculated fish	# adults	37	\$18,500	
		Glochidia	625,000	\$50,600	\$70,800
Juvenile	caged	# adults	34	\$17,000	
		Juveniles	575,000	\$78,900	\$90,900
Juvenile	hatchery	# adults	34	\$17,000	
		Juveniles	575,000	\$90,900	\$108,000
Sub-adults	caged	# adults	28	\$14,000	
		Sub-adults	425,000	\$94,900	\$93,800
Sub-adults	hatchery	# adults	28	\$14,000	
		Sub-adults	425,000	\$122,400	\$136,400

Adult Relocation: This scenario assumes that mussels would be removed from existing beds, cleaned, quarantined (if necessary) and relocated to suitable sites on tributaries or zebra mussel low-density areas of the UMRS. Natural mortality would continue to decrease the adult population for a while. However, it is assumed that mussels relocated to suitable habitats will reproduce and eventually establish stable to slightly expanding populations (i.e., natural recruitment would slightly exceed mortality).

On the basis of the RAMAS model results, approximately 300 live *L. higginsii* would need to be collected initially to produce 500 live *L. higginsii* at year 10. The cost to collect live *L. higginsii* is a function of diver cost and efficiency and mussel density. On the basis of past experience with mussel surveys, it is estimated that it costs \$375 to collect and relocate one live *L. higginsii*.

Fish Infected with Glochidia Relocation: This scenario assumes that adult mussels would be removed from existing beds, taken to a hatchery facility and spawned, with the resulting glochidia being used to infect a host wild or hatchery fish species. The host fish would then be released in a tributary or other suitable site where transformed glochidia would drop off. It is assumed that glochidia that survived to age 4 would reproduce and eventually establish stable to slightly expanding populations (i.e., natural recruitment would slightly exceed natural mortality).

On the basis of the RAMAS model results, approximately 0.63 million glochidia would be needed to produce 500 live *L. higginsii* at year 10. To produce these glochidia, an estimated

37 live adult female *L. higginsii* (each producing 16,900 encysted glochidia) would be needed (Gordon 2001). Approximately 7,400 fish would need to be infected with glochidia (90 glochidia/fish) (Gordon 2001). The cost to collect live *L. higginsii* is a function of diver cost and efficiency and mussel density. On the basis of past experience with collection of gravid females, it is estimated that it costs \$500 to collect one live gravid *L. higginsii* female. Also, there are costs associated with either collecting wild host fish or rearing host fish in a hatchery. In addition, radio tags would be used to track the movements of the fish to determine the likely drop zone of the juveniles.

Juvenile Caged Relocation: This scenario assumes that adult mussels would be removed from existing beds, taken to a hatchery facility and spawned, with the resulting glochidia being used to infect a host fish species. The host fish would then be placed in a cage in the river until glochidia are transformed and drop off onto the substrates beneath the cage. It is assumed that glochidia that survive to age 4 would reproduce and establish stable to slightly expanding populations.

On the basis of the RAMAS model results, approximately 0.58 million glochidia would be needed to produce 500 live adult *L. higginsii* at year 10. To produce these glochidia, an estimated 34 live adult female *L. higginsii* would be needed. Approximately 6,400 fish would need to be infected with glochidia (90 glochidia/fish). The cost to obtain one live gravid female was estimated at \$500. Additionally, there are costs associated with either collecting wild host fish or rearing host fish in a hatchery.

Juvenile Hatchery Relocation: This scenario assumes that adult mussels would be removed from existing beds, taken to a hatchery facility and spawned, with the resulting glochidia being used to infect a host fish species. The host fish would then be placed in tanks at the hatchery until glochidia are transformed and drop off onto the substrates in the tank or river. After a short holding time (one month), they would be moved to the relocation site. It is assumed that glochidia that survive to age 4 would reproduce and eventually establish stable to slightly expanding populations.

On the basis of the RAMAS model results, approximately 0.58 million glochidia would be needed to produce 500 live *L. higginsii* at year 10. To produce these glochidia, an estimated 34 live adult female *L. higginsii* would be needed. Approximately 6,400 fish would need to be infected with glochidia (90 glochidia/fish). The cost to obtain one live gravid female was estimated at \$500. Additionally, there are costs associated with either collecting wild host fish or rearing host fish in a hatchery. In addition, there would be costs associated with holding the juveniles for a month.

Sub-adult Caged Relocation: This scenario assumes that adult mussels would be removed from existing beds, taken to a hatchery facility and spawned, with the resulting glochidia being used to infect a host fish species. The host fish would then be placed in a cage in the river until glochidia are transformed and drop off onto the substrates within the cage. The mussels would be allowed to grow in the cages until the following summer, when they would be collected and moved to the relocation site. It is assumed that glochidia that survived to age 4 would reproduce and eventually establish stable to slightly expanding populations. Growing the juvenile mussels in a cage should minimize predation and increase overall survival.

On the basis of the RAMAS model results, approximately 0.43 million glochidia would be needed to produce 500 live *L. higginsii* at year 10. To produce these glochidia, an estimated 28 live adult female *L. higginsii* would be needed. Approximately 5,000 fish would need to be infected with glochidia (90 glochidia/fish). The cost to obtain one live gravid female was estimated at \$500. Additionally, there are costs associated with either collecting wild host fish or rearing host fish in a hatchery. There would also be a small additional cost for maintaining the cages for 6 months to a year.

Sub-adult Hatchery Relocation: This scenario assumes that adult mussels would be removed from existing beds, taken to a hatchery facility and spawned, with the resulting glochidia being used to infect a host fish species. The host fish would then be placed in tanks or artificial channels at the hatchery until glochidia are transformed and drop off onto the substrates in the tank. After allowing them to grow for 6 months to a year, they would be moved to the relocation site. It is assumed that glochidia that survived to age 4 would reproduce and eventually establish stable to slightly expanding populations.

On the basis of the RAMAS model results, approximately 0.43 million glochidia would be needed to produce 500 live *L. higginsii* at year 10. To produce these glochidia, an estimated 28 live adult female *L. higginsii* would be needed. Approximately 5,000 fish would need to be infected with glochidia (90 glochidia/fish). The cost to obtain one live gravid female was estimated at \$500. Additionally, there are costs associated with either collecting wild host fish or rearing host fish in a hatchery. Also, there would be hatchery costs of rearing the juveniles for a year.

On the basis of this analysis, the most cost effective method would be to inoculate wild or hatchery fish and then release them. Raising juveniles either in cages or at the hatchery would be the next least costly alternatives. The least cost-effective methods appear to be raising sub-adults in the hatchery and translocation of adults. However, both the hatchery raised and adult relocations have the potential to greatly increase success. For adult relocation, relocating adults would have the added advantage of protecting specimens imperiled by existing zebra mussel infestations. No one method can be used for relocation, because of the uncertainty associated with each method.

7.1.2 Proposed Relocation Method

The objective is to establish five new populations in areas with low or no zebra mussel infestation. In order to achieve five new populations, relocation attempts will be made at 10 sites. It is uncertain how successful any of the proposed relocation methods will be and/or how well we can predict the habitat suitability of the potential relocation sites. In addition, episodes, either naturally occurring such as major floods or diseases or human-induced such as spills and other factors, could wipe out relocation efforts at particular sites. Also, some of these potential sites could experience future infestations of zebra mussels. Therefore, relocation will need to occur at more than five sites to ensure that the objective of five new populations is met. This will also allow us to test the various relocation techniques and suitability of a variety of sites. Sites and techniques would be evaluated throughout the relocation efforts, and adjustments would be made. Some of the sites or relocation techniques may be abandoned in favor of

concentrating efforts on apparently more successful sites or techniques. It should be noted that it might take several years to evaluate the success of the actions taken. Lessons learned from this effort will assist in the development and implementation of a relocation plan for the endangered winged mapleleaf.

Higher priority would be placed on the apparently more economical techniques, with the least emphasis placed on adult relocation, the most expensive. The specific relocation techniques being proposed include adult relocation, glochidia infected fish, hatchery or caged released juveniles, and hatchery or caged reared sub-adults, as shown in Table 7-2. Most of the sites will receive only one relocation technique per site to allow an assessment of the effectiveness of each technique. However, at some of the sites, multiple techniques will be used but sequenced to allow an assessment of the long-term contributions of each technique.

Table 7-2. Selected Alternative

Relocation Method	Number of Sites
Adult Relocation	At two of the sites
Glochidia Relocation	Inoculated hatchery and wild fish at two sites
Juvenile Relocation	Caged fish or hatchery released at two sites
Sub-adult Relocation	Caged or hatchery raised at two sites
Multiple Techniques	- Juveniles, sub-adults, and adults at one site - Glochidia inoculated fish, juveniles, and adults at one site

Relocation at each site would be scheduled over a 3- to 5-year period in alternating and/or sequential years to reduce potential for accidents occurring that could wipe out a given effort, such as a flood immediately following the release of juveniles before they have a chance to establish. In addition, this approach will spread out costs and increase the age and genetic diversity of the populations. The numbers of glochidia and adults needed for each year are summarized in Table 7-3.

Specimens to be used in the relocation efforts for adult relocation or for collecting gravid females will be obtained from any of the *L. higginsii* designated essential and secondary habitat areas. The MCT will decide which areas will be used to collect specimens on the basis of logistics, likelihood of survival in-place, genetic diversity, and other factors. Specimens for relocation will be collected from the *L. higginsii* secondary and essential habitat areas listed in Table 7-4.

Table 7-3. Total number of adults, glochidia, fish, and cages needed for relocation.

	FY 00/01	FY 02	FY 03	FY 04	FY 05	FY 06	Total
Number of Adults for relocation/propagation							
1. Glochidia infested hatchery fish	5	5	7	7	7	7	38
2. Glochidia infested wild fish	12	8	6	6	6	6	45
3. Juveniles		4	7	7	7	7	34
4. Juveniles	5	4	7	7	7	7	37
5. Sub-adults (caged)	4	8	4	4	4	4	28
6. Sub-adults (caged)	5	8	4	4	4	4	29
7. Adult relocation - pool 2	371						371
8. Adult relocation - pool 3	100		100	100			300
9. Juveniles, sub-adults (caged), and adults			11	8	100		120
10. Glochidia inoculated fish, juveniles, and sub-adults (hatchery)		12	6	6	4	4	32
Total Number of Adults for Relocation	471		100	100	100		771
Total Number of Gravid Females for Propagation¹	31	50	53	50	40	40	264
Number of encysted glochidia for propagation							
1. Glochidia infested hatchery fish	69,201	90,085	116,429	116,429	116,429	116,429	625,000
2. Glochidia infested wild fish	75,000	135,127	103,718	103,718	103,718	103,718	625,000
3. Juveniles		72,068	125,733	125,733	125,733	125,733	575,000
4. Juveniles	34,042	72,068	117,223	117,223	117,223	117,223	575,000
5. Sub-adults (caged)	13,841	135,127	69,008	69,008	69,008	69,008	425,000
6. Sub-adults (caged)	13,841	135,127	69,008	69,008	69,008	69,008	425,000
7. Adult relocation - pool 2							
8. Adult relocation - pool 3							
9. Juveniles, sub-adults (caged), and adults			191,667	141,667			333,333
10. Glochidia inoculated fish, juveniles, and sub-adults (hatchery)		208,333	95,833	95,833	70,833	70,833	541,667
Total Number of Encysted Glochidia for Propagation	205,926	847,936	888,618	838,618	671,951	671,951	4,125,000
Number of fish for propagation							
1. Glochidia infested hatchery fish	1,198	1,000	1,292	1,292	1,292	1,292	7,368
2. Glochidia infested wild fish	1,936	1,500	1,151	1,151	1,151	1,151	8,041
3. Juveniles		800	1,396	1,396	1,396	1,396	6,383
4. Juveniles	445	800	1,301	1,301	1,301	1,301	6,450
5. Sub-adults (caged)	525	1,500	766	766	766	766	5,089
6. Sub-adults (caged)	525	1,500	766	766	766	766	5,089
7. Adult relocation - pool 2							
8. Adult relocation - pool 3							
9. Juveniles, sub-adults (caged), and adults			2,128	1,573			3,700
10. Glochidia inoculated fish, juveniles, and sub-adults (hatchery)		2,313	1,064	1,064	786	786	6,013
Total Number of Fish for Propagation²	4,629	9,413	9,864	9,309	7,459	7,459	48,133
Number of cages for propagation							
1. Glochidia infested hatchery fish							0
2. Glochidia infested wild fish							0
3. Juveniles		16	28	28	28	28	128
4. Juveniles	9	16	26	26	26	26	129
5. Sub-adults (caged)	9	30	15	15	15	15	100
6. Sub-adults (caged)	9	30	15	15	15	15	100
7. Adult relocation - pool 2							
8. Adult relocation - pool 3							
9. Juveniles, sub-adults (caged), and adults			43	31			74
10. Glochidia inoculated fish, juveniles, and sub-adults (hatchery)			21	21			43
Total Number of Cages for Propagation³	27	92	148	137	85	85	574

¹ Assumes 16,836 encysted glochidia/female. ² Assumes 90 encysted glochidia/fish. ³ Assumes 50 fish/cage. Numbers based on Gordon (2001).

Table 7-4. *L. higginsii* secondary and essential habitat areas to be used as donor sites

River (Location)	Status as of 2000
St. Croix River near Taylors Falls, Minnesota (Interstate Park)	No zebra mussels, and native mussel community healthy.
St. Croix River at Hudson, Wisconsin (River Mile 16.2 - 17.6)	Low densities of zebra mussels, and native mussel community healthy.
St. Croix River at Prescott, Wisconsin (River Mile 0 - 1)	Low densities of zebra mussels, and native mussel community healthy.
UMR Winters Landing Area, Pool 7 (River Mile 708 - 711)	Moderate densities of zebra mussels, and native mussels surviving at present.
UMR at Whiskey Rock, at Ferryville, Wisconsin, Pool 9 (River Mile 655.8 - 658.4)	Moderate densities of zebra mussels, and native mussels surviving at present.
UMR at Harpers Slough, Pool 10 (River Mile 639.0 - 641.4)	Heavy densities of zebra mussels, and native mussels are in trouble.
UMR Main and East Channels at Prairie du Chien, Wisconsin, and Marquette, Iowa, Pool 10 (River Mile 633.4 - 637)	Heavy densities of zebra mussels, and native mussels are in trouble.
UMR at McMillan Island, Pool 10 (River Mile 616.4 - 619.1)	Moderate densities of zebra mussels, and native mussels surviving at present.
UMR near Cassville, Pool 11 (River Mile 606 - 608)	Heavy densities of zebra mussels, and native mussels are in trouble.
UMR at Cordova, Illinois, Pool 14 (River Mile 503.0 - 505.5)	Heavy densities of zebra mussels, and native mussels are in trouble.
UMR at Sylvan Slough, Quad Cities, Illinois, Pool 15 (River Mile 485.5 - 486.0)	Heavy densities of zebra mussels, and native mussels are in trouble.
Wisconsin River near Muscoda, Wisconsin (Orion mussel assemblage)	No zebra mussels, and native mussel community healthy.
UMR other secondary habitat areas from Pools 7 through 19 identified by the Mussel Coordination Team	Unknown zebra mussel infestation rates and status of native mussels.

7.2 CANDIDATE RELOCATION SITES

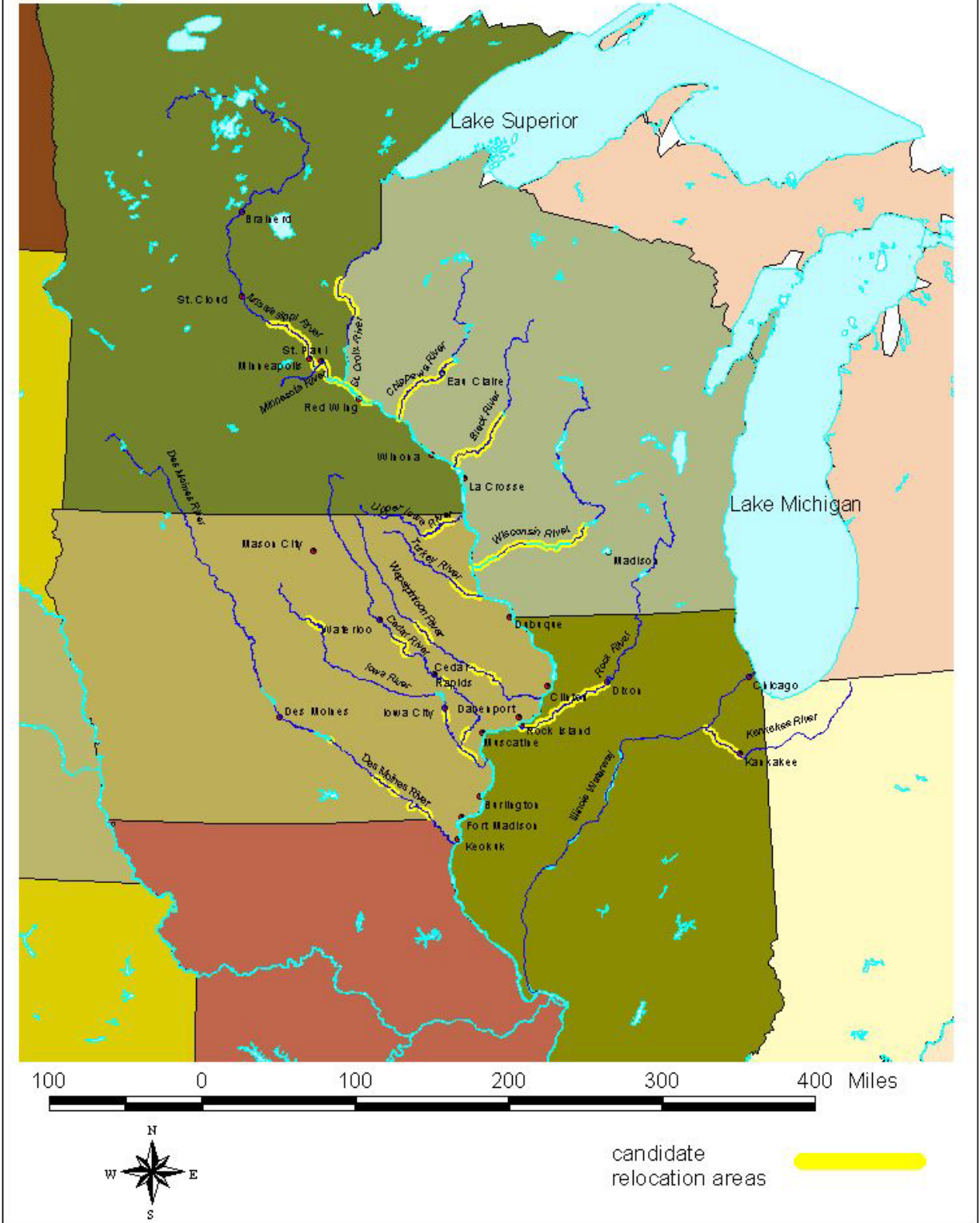
Relocation sites determined by the MCT to provide the best chance for successful establishment of new viable *L. higginsii* populations will be targeted for further evaluation (see Figure 7-1). Where needed, mussel and habitat quality information will be obtained for most of these sites according to Section 7.4 to assess their potential for relocation. *L. higginsii* is generally a large to medium river species. Therefore, hydrologic conditions are an important factor in determining habitat suitability. Figure 7-2 summarizes the hydrologic conditions present at the sites being considered for relocation. Water quality conditions described below for most of the candidate relocation sites were derived from Section 303(b) Water Quality Status reports. In compliance with the requirements of Section 305(b) of the Clean Water Act, States are required to prepare a water quality status report that is provided to the U.S. Environmental Protection Agency. As part of the reporting process, streams and rivers are evaluated on the basis of their ability to support certain designated beneficial uses. One of the uses is for “aquatic life,” which is that aquatic life would be found in the evaluation area under natural conditions. The ability of the system to support aquatic life is then determined for each evaluation area as full, threatened, partial, or not supported on the basis of a number of water quality parameters. A support designation less than “full” (also referred to as impaired) indicates a potential water quality problem that may limit the use of the system by aquatic organisms. Therefore, the support designation attributed to these systems can be used to provide some insight as to the capability of each system to support a *Lampsilis higginsii* population. It should be noted, however, that areas designated as “fully supporting” aquatic life are not necessarily high quality habitats, but the data collected there lacks evidence of a major water quality problem.

Information is presently not available on the candidate areas proposed for relocation to allow for screening of alternative sites. The screening criteria discussed in Appendix 3 will be used to determine the final sites for relocation. Criteria used to evaluate potential sites can be grouped into three main areas of concern: 1) biological, 2) physical habitat, and 3) zebra mussel infestation risks. Political and geographical factors will also be considered in the final selection. Ideally, two to three sites would be located in each of the four States.

Historic *L. higginsii* habitat areas being considered for relocation:

- 1) **Upper Mississippi River (MN) - Pool 2.** Pool 2 has low levels of zebra mussel infestation. The turbid Minnesota River and pollution from the Twin Cities have historically degraded water quality in this area, but conditions have improved greatly since the 1970's. The pool is listed in the 2000 MN 305(b) water quality status report as “full support but threatened” for aquatic life (Minnesota Pollution Control Agency 2002). The reasons for the threatened status were excess nutrients and suspended solids. Water quality above the confluence with the Minnesota River, which carries large nutrient and sediment loads, is better. The poor water quality has historically limited mussel fauna in Pool 2. Pool 2 was surveyed for mussels in 2000 by the Minnesota Department of Natural Resources (MDNR) (Davis unpublished data). The MDNR found good recovery of mussels in Pool 2, including many State listed species and species frequently associated with *L. higginsii*. The MDNR, Wisconsin Department of Natural Resources (WDNR), and USFWS relocated 100 adult *L. higginsii* mussels to Pool 2 from Pool 11 in 2000.

Figure 7-1. Candidate *Lampsilis higginsii* relocation areas.



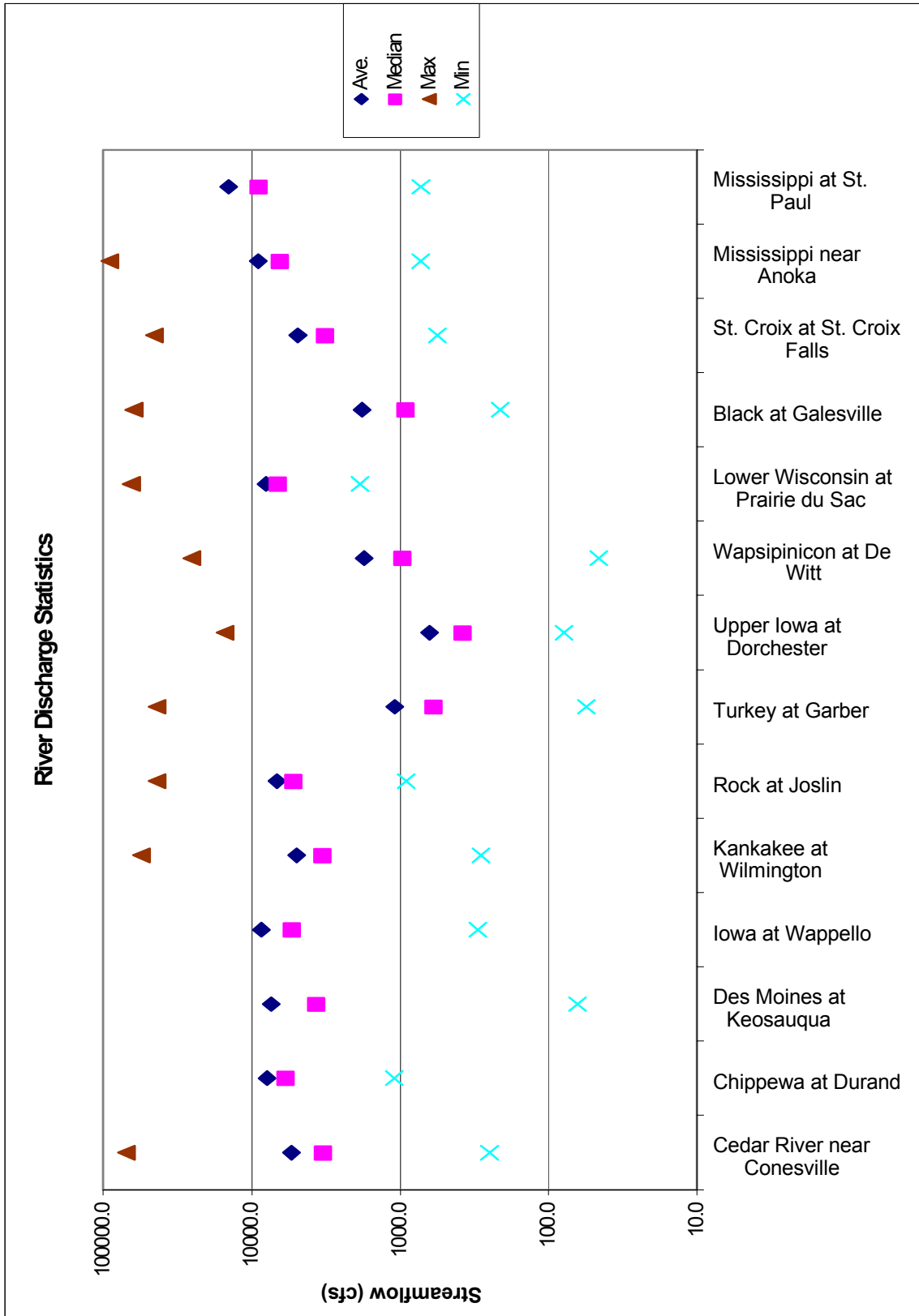


Figure 7-2 Hydrologic Conditions of Candidate Relocation Sites

In 2001, an additional 271 adult *L. higginsii* were relocated to Pool 2 from Pool 14 near Cordova, Illinois. Because of this, Pool 2 is one of the adult relocation sites.

- 2) **Upper Mississippi River (MN) - Pool 3.** Conditions in Pool 3 are very similar to those in Pool 2. Pool 3 was surveyed for mussels in 2000 by the MDNR (Davis unpublished data). As in Pool 2, the MDNR found good recovery of mussels in Pool 3, including many State-listed species and species frequently associated with *L. higginsii*. The pool is listed in the 2000 MN 305(b) water quality status report as “full support” for aquatic life (Minnesota Pollution Control Agency 2002). The MDNR, WDNR, and USFWS relocated 100 adult *L. higginsii* mussels to Pool 3 from Pool 11 in 2000. For this reason, Pool 3 was selected as one of the adult relocation sites.
- 3) **Upper Mississippi River (WI) - Diamond Island Mussel Bed in Pool 4.** Upper Pool 4 has habitat conditions and low levels of zebra mussel infestation similar to Pool 3. Upper Pool 4 was surveyed for mussels in 1999 and 2000 (Farr unpublished data). A very rich mussel assemblage was found in upper Pool 4 and would be a good candidate for potential relocation. However, there is concern that the lower St. Croix River will become heavily infested with zebra mussels. If this happens, the St. Croix River will act as a zebra mussel source, and zebra mussel infestation rates will increase dramatically in lower Pool 3 and upper Pool 4. This site will be considered for potential *L. higginsii* relocation in the future, if the lower St. Croix River does not become heavily infested with zebra mussels.
- 4) **Lower Wisconsin River - Prairie du Sac Dam to Mouth (WI).** The Wisconsin River is a medium-size tributary that enters the Mississippi River in Pool 10. Discharges from 1950 to 1999 at the gaging station at Prairie du Sac have ranged from 1,860 to 64,700 cfs, with a median value of 6,600 cfs (see Figure 7-2). Zebra mussels have not infested this tributary. Extensive mussel survey information is available. There are 42 species of mussels present, including *L. higginsii* (Heath unpublished data). The Orion Essential Habitat on the Wisconsin River is located near Muscoda, Wisconsin. Several other existing mussel beds are good candidate sites for relocation. The lower Wisconsin River generally has good-to-excellent water quality (Fix 1994). Water quality sampling at Muscoda indicates no elevated levels of toxic substances. However, dissolved oxygen depletion problems have been noted below the hydropower dam at Prairie du Sac. There was not a major water quality problem reported on the lower Wisconsin River that would impair the aquatic life beneficial use.
- 5) **Wapsipinicon River (IA).** The Wapsipinicon River is a small tributary entering the Mississippi River at River Mile 506.8 in Pool 14. Discharges from 1950 to 1999 at the gaging station at De Witt, Iowa, have ranged from 46 to 25,400 cfs, with a median value of 968 cfs. Zebra mussels have not infested this tributary. Mussel surveys in the 1980's (Frest 1987) on the Wapsipinicon River have found between 10 and 13 species of mussels (17 total species), including only a few species typically associated with *L. higginsii*. Existing mussel fauna and hydraulic conditions appear to be less favorable for *L. higginsii*, and therefore this candidate relocation area is of lower priority. On the

basis of habitat characteristics and available mussel information, the river reaches presently being considered for potential relocation are as follows:

Independence to Troy Mills - former record of *L. higginsii* in this area but questioned.

Newport to near Hale – approximately 9 river miles.

Oxford Mills to Toronto – approximately 9 river miles.

The reach from Independence to Troy Mills was not assessed in the 2000 305(b) report for this reach because the available data is more than 5 years old (IDNR 2001). A fish kill of undetermined cause occurred on the river at Independence in 1997. For the 1996 report, the aquatic life use was assessed as “full support/threatened.” Sampling for that period failed to detect any major water quality problems and the “threatened” status was applied to the reach for reasons unclear in the report. The reaches from Newport to near Hale and from Oxford Mills to Toronto were assessed as fully supporting the aquatic life beneficial use in the 2000 report. During the sampling period, there were no violations of water quality criteria for pH, dissolved oxygen, ammonia nitrogen, toxic organic compounds, pesticides, or toxic metals.

- 6) **Rock River (IL).** The Rock River is a medium-size tributary to the Mississippi River, entering into Pool 16 at River Mile 479. Discharges from 1950 to 1999 at the gaging station at Joslin, Illinois, have ranged from 910 to 43,300 cfs, with a median value of 5,210 cfs. Zebra mussels have not infested this tributary. The river reach presently being considered for potential relocation is from Dixon, Illinois, down to the confluence with the Mississippi River, approximately 60 river miles. Mussel surveys since the 1980’s in this reach have found between 11 and 17 species of mussels (22 total species), including species typically associated with *L. higginsii* (Cummings unpublished data). All reaches of the Rock River but one were assessed as fully supporting the aquatic life beneficial use in the 2000 305(b) water quality report (Illinois Environmental Protection Agency 2000). The reach from the mouth up to the confluence with the Green River was evaluated as impaired for the aquatic life beneficial use. This site lacks current water quality data, and the assessment was made for unknown reasons but was likely the result of professional judgment.

- 7) **Iowa River (IA).** The Iowa River is a medium-size tributary to the Mississippi River, entering into Pool 18 at River Mile 434. Discharges from 1950 to 1999 at the gaging station at Wapello, Iowa, have ranged from 300 to 106,000 cfs, with a median value of 5,370 cfs. Zebra mussels have not infested this tributary. Good to limited mussel survey information is available. However, 24 mussel species were collected from the Iowa River in the 1980’s (Frest 1987). On the basis of habitat characteristics and available mussel information, river reaches presently being considered for potential relocation are:

Iowa City to Hills, Iowa - good mussel beds were documented in 1987 and 1998 surveys.

Fredonia to Wapello - approximately 10 river miles.

The reach from Iowa City to Hills was not assessed in the 2000 305(b) water quality report or in previous reports (IDNR 2001). There is a monitoring station just upstream of the Burlington Street Dam; however, Iowa City wastewater treatment plants in this reach downstream of the dam likely have a major unmeasured effect on water quality.

The reach from Fredonia to Wapello falls within two study reaches of the 2000 report. The upper half of the reach (down to Long Creek) was assessed as fully supporting the aquatic life beneficial use in the 2000 report. There was only one violation of a water quality criterion during the sampling period. A sample collected on December 1, 1997, had a pH of 9.1, which violated the criterion of 9.0. Because no other violations of water quality criteria were measured, according to Environmental Protection Agency (EPA) guidelines, there was not an impairment of water quality. The lower half of the reach was assessed as partially supporting the aquatic life beneficial use in the 2000 report. This designation was based on a single violation of the chronic water quality criterion for chlorpyrifos and DDE in the 52 samples analyzed, and two violations of the chronic water quality criterion for dieldrin in the 52 samples analyzed.

- 8) **Cedar River (IA).** The Cedar River is a medium-size tributary to the Iowa River. Discharges from 1950 to 1999 at the gaging station near Conesville have ranged from 250 to 69,800 cfs, with a median value of 3,300 cfs. Zebra mussels have not infested this tributary. Very limited mussel survey information is available. On the basis of habitat characteristics and available mussel information, the river reaches presently being considered for potential relocation are as follows:

LaPort City to Vinton - approximately 12 river miles.

Area around Palisades Park, specifically from Highway 30 to Highway 1 - approximately 7 river miles.

Highway 22 (near Nichols) to County Road G28 near Conesville - approximately 5 river miles.

The reach from LaPort City to Vinton was assessed as fully supporting the aquatic life beneficial use in the 2000 305(b) report (IDNR 2001). During the sampling period, there were no violations of water quality criteria for pH, dissolved oxygen, ammonia nitrogen, toxic organic compounds, pesticides, or toxic metals.

The area around Palisades Park was not assessed in the 2000 report because the available data there is more than 5 years old (IDNR 2001). In the 1994 and 1996 reports, the area was assessed as “full support/threatened” for the aquatic life beneficial use. For this sampling period, there were no violations of water quality criteria for pH, dissolved oxygen, ammonia nitrogen, toxic organic compounds, pesticides, or toxic metals; however, there were known threats from agricultural nonpoint source pollution.

The area from Nichols to Conesville was assessed as “full support/threatened” for the aquatic life beneficial use in the 2000 report (IDNR 2001). There were no violations of the water quality criteria for pH, dissolved oxygen, ammonia nitrogen, toxic organic compounds, pesticides, or toxic metals in the sampling period except one. In 1996, one

of nine samples exceeded the chronic water quality criterion for dieldrin. Because no other violations of water quality criterion were measured, according to EPA guidelines, this did not suggest impairment of water quality.

- 9) **Kankakee River (IL).** The Kankakee River is a medium-size tributary joining the Des Plaines River to form the Illinois River, draining an area of 5,164 miles. The Kankakee River in Illinois is primarily free flowing and is listed as a high quality river within the State (Kwak 1993). Most of the upstream portion of the Kankakee River in Indiana has been channelized. Discharges from 1950 to 1999 at the gaging station at Wilmington, Illinois, have ranged from 286 to 55,100 cfs, with a median value of 5,200 cfs. Zebra mussels have not infested this tributary. Water quality is generally good, although portions of the river have been listed as having minor impairment, due to nonpoint agricultural sources. However, in the 2000 305(b) water quality status report, all reaches of the Kankakee River were assessed as fully supporting the aquatic life beneficial use (Illinois Environmental Protection Agency 2000). The river reach presently being considered for potential relocation is from the town of Kankakee down to the confluence with the Illinois River, approximately 30 river miles. Mussel surveys since the early 1900's have recorded 35 species, including *L. higginsii*. Mussel surveys since the 1980's in this reach have typically found between 18 and 21 species of mussels (25 total species), including species typically associated with *L. higginsii* (Cummings unpublished data 2001).
- 10) **Upper Mississippi River (IL) - Pool 24.** Recent mussel surveys conducted by the Illinois Department of Natural Resources (D. Corgiat and T. Moore 2000, unpublished data) have found a fairly diverse mussel fauna, including species typically associated with *L. higginsii*. Zebra mussel densities have been moderate to low. Specific areas in Pool 24 for reintroduction include the Lower Hickory Chute Bed, left descending bank at River Mile 284.7 to 285.5, and Cash Island Bed, left descending bank at River Mile 277.2 to 277.8.
- 11) **Upper Mississippi River - Main Stem.** Other UMR main stem areas may be found with additional investigations that have suitable mussel habitat with low to moderate densities of zebra mussels. These areas will also be considered as potential relocation areas.

Additional non-historical *L. higginsii* potential habitat areas for relocation:

- 1) **Upper Mississippi River (MN) - Coon Rapids to Lock and Dam 1.** Discharges from 1950 to 1999 at the gaging station at Anoka, Minnesota, have ranged from 728 to 90,300 cfs, with a median value of 6,470 cfs. Zebra mussels have not infested this area of the UMR main stem. Mussel surveys completed in 2001 by the Minnesota Department of Natural Resources (Davis, unpublished data) found that areas within this reach contained good mussel diversity and abundance. The reach from the Upper St. Anthony Falls Lock and Dam to Lock and Dam 1 is listed in the 2000 MN 305(b) water quality status report as "full support but threatened" for aquatic life (Minnesota Pollution Control Agency 2002). The reasons for the threatened status were excess nitrites/nitrates and suspended solids. The reach above the Upper St. Anthony Falls Lock and Dam to the Coon Rapids

Dam is listed in the 2000 MN 305(b) water quality status report as not supporting for aquatic life (Minnesota Pollution Control Agency 2002). The reason given for the not supporting status was metals. This reach also had threatened status for nutrients and suspended solids.

- 2) **Upper Mississippi River (MN) - Above Coon Rapids Dam to Monticello, Minnesota.** Conditions are similar to those below the Coon Rapids Dam. Mussel surveys completed in 2001 by the Minnesota Department of Natural Resources (Davis, unpublished data) found this reach to contain very low mussel diversity and abundance. The Coon Rapids Dam may have prevented upstream movement of fish hosts, limiting the ability of the mussel fauna to recover in this reach. As with the reach below the Coon Rapids Dam, the 2000 MN 305(b) water quality status report classifies it as not supporting for aquatic life (Minnesota Pollution Control Agency 2002).
- 3) **St. Croix River above St. Croix Falls.** The St. Croix River below St. Croix Falls contains three designated essential habitat areas for *L. higginsii*. The falls at St. Croix Falls and the present Xcel Energy dam have prevented colonization by *L. higginsii* above St. Croix Falls. Discharges from 1950 to 1999 at the gaging station at St. Croix Falls have ranged from 562 to 45,100 cfs, with a median value of 3,200 cfs. Zebra mussels have not infested this tributary above Stillwater, Minnesota. The reach of interest for introduction of *Lampsilis higginsii* is listed as an Outstanding Resource Water (ORW) by the Wisconsin Department of Natural Resources (Anderson 2002). The ORW classification is given to all waters with the highest water quality in the State and provides a greater level of protection from future water quality problems than is given to other waters in the State. Also, there are no known sources of water quality problems in this reach that would cause impairment to the aquatic life beneficial use. Extensive mussel surveys available for this area indicate a rich mussel fauna. The first 30 miles above the reservoir at St. Croix Falls is being considered for potential relocation.
- 4) **Chippewa River (WI).** The Chippewa River is a medium-size tributary to the Mississippi River, entering into Pool 4 at River Mile 763.4. Discharges from 1950 to 1999 at the gaging station at Durand, Wisconsin, have ranged from 1,100 to 117,000 cfs, with a median value of 5,890 cfs. Zebra mussels have not infested this tributary. Available mussel surveys indicate good species richness and density (Heath unpublished data). A list of impaired waters in the lower Chippewa River basin for Federal Clean Water Act reporting did not include any segments of the Chippewa River main stem from the Dells Dam to the mouth (Voss and Beaster 2001). A trend analysis indicated that ammonia and total phosphorus levels in the Chippewa River have been declining since the 1960's. However, suspended solids, total kjeldahl nitrogen, nitrate-nitrogen, and dissolved phosphorus have not shown a significant change over time. The river reach presently being considered for potential relocation is from the lower dam down to the confluence with the Mississippi River, approximately 60 river miles.
- 5) **Black River (WI).** The Black River is a small tributary to the Mississippi River, entering into Pool 7 at River Mile 709. Discharges from 1950 to 1999 at the gaging station at Galesville, Wisconsin, have ranged from 212 to 62,000 cfs, with a median value of

920 cfs. Zebra mussels have not infested this tributary. There is limited mussel survey information. The river reach presently being considered for potential relocation is from the lower dam at Black River Falls, Wisconsin, down to the confluence with the Mississippi River, approximately 62 river miles. The Black River does not seem to have a major problem with dissolved oxygen (Sorge 1992). Metals were detected at most sites and were found at higher levels below Lake Arbutus. A total of 17 exceedences in metal concentrations were documented. There is no evident source of PCBs in the basin. There was no report of a major water quality problem on the Black River that would impair the aquatic life beneficial use.

- 6) **Turkey River (IA).** The Turkey River is a small tributary entering the Mississippi River at River Mile 607.8 in Pool 11. Discharges from 1950 to 1999 at the gaging station at Garber, Iowa, have ranged from 56 to 43,400 cfs, with a median value of 592 cfs. Zebra mussels have not infested this tributary. Very limited mussel survey information is available. Hydraulic conditions appear to be less favorable for *L. higginsii*, and therefore this candidate relocation area is of lower priority. On the basis of habitat characteristics and available mussel information, the river reach from immediately downstream of the dam at Elkader, Iowa, to the confluence with Highway 52 in Clayton County will be evaluated further for potential relocation. The lower end (the mouth to the Volga River) of the reach of interest for possible *Lampsilis higginsii* reintroduction was assessed as “full support/threatened” for the aquatic life beneficial use in the 2000 305(b) water quality report (IDNR 2001). There were no violations of water quality criteria in the sampling period for pH, dissolved oxygen, ammonia nitrogen, toxic organic compounds, pesticides, or toxic metals. However, potential pollution threats exist from nonpoint sources. The upper end of the reach of interest was not assessed for the aquatic life beneficial use in the 2000 305(b) report because of a lack of information for this reach. This reach was not assessed in earlier reports for the same reason.
- 7) **Upper Iowa River (IA).** The Upper Iowa River is a small tributary entering the Mississippi River at River Mile 671 in Pool 9. Discharges from 1950 to 1999 at the gaging station at Dorchester, Iowa, have ranged from 79 to 15,100 cfs, with a median value of 380 cfs. Zebra mussels have not infested this tributary. Very limited mussel survey information is available. Existing mussel fauna and hydraulic conditions appear to be less favorable for *L. higginsii*, and therefore this candidate relocation area is of lower priority. On the basis of habitat characteristics and available mussel information, the river reach from Freeport, Iowa, in Winneshiek County to the confluence with French Creek in Allamakee County will be investigated further to determine potential suitability as a relocation site. The reach from Freeport to French Creek was not assessed in the 2000 or in earlier 305(b) water quality reports because of a lack of data (IDNR 2001).
- 8) **Des Moines River (IA).** The Des Moines River is a medium-size tributary entering the Mississippi River at River Mile 361.5 in Pool 20. Discharges from 1950 to 1999 at the gaging station at Keosauqua, Iowa, have ranged from 64 to 108,000 cfs, with a median value of 3,680 cfs. Zebra mussels have not infested this tributary. Very limited mussel survey information is available. On the basis of habitat characteristics and available mussel information, the river reaches presently being considered for potential relocation

are as follows:

- Near Pella, Iowa: Outflow of Red Rock Dam - approximately 1 river mile.
- Ottumwa to Fox Hill Wildlife Management Area - approximately 6 river miles.
- Eldon to Selma - approximately 5 river miles.
- Pittsburg to Keosauqua Airport - approximately 4 river miles.
- Bentonsport to Farmington (concentrate Bonaparte) - approximately 15 river miles.

The reaches near Pella and from Ottumwa to Fox Hill Wildlife Management Area were not assessed in the 2000 305(b) report because of the lack of recent water quality data (IDNR 2001). For the 1996 report, the reach was assessed primarily on the basis of professional judgment as “full support/threatened” for the aquatic life beneficial use. High silt load is the reason for the threatened assessment.

The reaches from Eldon to Selma, Pittsburg to Keosauqua Airport, and Bentonsport to Farmington were assessed as “full support/threatened” for the aquatic life beneficial use in the 2000 305(b) report (IDNR 2001). During the sampling period, no violations of water quality criteria for pH, dissolved oxygen, ammonia nitrogen, toxic organic compounds, pesticides, or toxic metals were measured in these reaches. A high load of silt delivered to the river via tributaries was cited as a threat to the continued support of the aquatic life beneficial use.

7.3 RELOCATION SITES ELIMINATED FROM FURTHER CONSIDERATION

A master list of potential sites for relocation was initially developed and evaluated on the basis of existing information and professional judgment of the MCT. The sites listed in Table 7-5 were eliminated from further consideration.

Table 7-5 Relocation sites considered and eliminated.

River	Reason for non-selection
Minnesota River (MN)	Poor water quality and limited mussel fauna
Illinois River (IL)	Poor water quality and presence of zebra mussels
Blue Earth River (MN)	Small tributary – marginal hydrologic conditions
Le Sueur River (MN)	Small tributary – marginal hydrologic conditions
Watonwan River (MN)	Small tributary – marginal hydrologic conditions
Cottonwood River (MN)	Small tributary – marginal hydrologic conditions
Redwood River (MN)	Small tributary – marginal hydrologic conditions
Yellow Medicine River (MN)	Small tributary – marginal hydrologic conditions
Zumbro River (MN)	Small tributary – marginal hydrologic conditions
Root River (MN)	Small tributary – marginal hydrologic conditions
Yellow River (IA)	Small tributary – marginal hydrologic conditions
Middle Wisconsin River (WI) – Lake Wisconsin to Kilgore Dam	Good potential for future considerations, but lower Wisconsin River is higher priority.

7.4 SURVEYING UMR AND TRIBUTARIES TO IDENTIFY POTENTIAL RELOCATION SITES

The UMR and many of the major tributaries to be considered for establishing new populations of *L. higginsii* have not been thoroughly surveyed for unionids. For this reason, the USACE will need to conduct preliminary surveys and/or environmental studies to identify specific relocation sites within these tributaries. After potential sites have been identified, the relocation or introduction of *L. higginsii* will be evaluated on the basis of the site evaluation criteria described in Appendix 3.

Potential relocation sites within major tributaries and the UMR will be identified according to the following methods:

In the defined study reaches on each of the tributaries, initial efforts to identify potential relocation sites will involve low intensity, broad-scale investigations of potential mussel habitat suitability, including substrate characteristics, hydrodynamic conditions, water depths, and geomorphology. Areas defined as potential suitable mussel habitat will be qualitatively surveyed to determine the presence of native mussels. Qualitative unionid bed search surveys will involve the use of unionid sampling sleds or brails, pollywogging, and/or visual search of the shoreline for shells or muskrat middens. Once a potential mussel bed is located, additional qualitative surveys as discussed below will be done to map the general boundaries of the mussel bed.

It is estimated that approximately 10 potential mussel bed sites will be identified during the initial searches, requiring further qualitative survey work. At each site, divers will spend three 20-minute periods (total search time of 60 minutes) searching the bottom for mussels and collecting as many specimens as possible. If depths at the site are suitable, the area may be searched by wading rather than diving. The purpose of the qualitative survey is to better determine the location and extent of any mussel beds present in the area. Therefore, a diver (or wader) will typically swim (walk) in a straight line until a concentration of mussels is encountered and then focus efforts on collecting mussels from the concentration. After collecting for 20 minutes, the diver (wader) will return all collected specimens to the surface for identification. Collected mussels will be identified to species, counted and returned to the river as near as possible to their original collection location.

Sites that indicate high species richness and abundance will be considered for further quantitative sampling.

To obtain quantitative samples, divers will excavate substrata from within 20 to 40 randomly placed 0.25 m² quadrats. Excavated material from each quadrat will be transferred into a 20-L bucket. Each sample will then be brought to the surface and washed through a series of wire mesh sieves with the smallest mesh size being 6.4 mm. Unionids will be removed, identified to species, measured and returned to the river. Quantitative data are required for effective review of several site evaluation criteria. These surveys may also provide an indication of potential problems associated with infestation of zebra mussels and/or water quality in the future.

7.5 POST-RELOCATION EVALUATION OF POPULATIONS

Evaluating the effectiveness of relocation efforts will require monitoring of sites that have received translocants. However, data collection methods will vary depending on the specific type of relocation project to be evaluated. The ultimate goal of relocation projects will be to augment existing populations or to establish new viable populations of *L. higginsii*. Therefore, monitoring efforts will be designed to evaluate mortality, growth and recruitment at relocation sites.

Relocation of adults. Efforts will be made to collect, clean and relocate adult *L. higginsii*. Divers will search designated areas, obtain mussels and bring them to the surface for transport to a cleaning station. Zebra mussels and byssal material will be removed by hand (brush); then each mussel will be measured (shell length) and marked with a Dremel tool or a bee tag affixed with super glue. *L. higginsii* will then be relocated immediately or after quarantining (i.e., to establish or augment a new population).

Some lethal and sub-lethal effects on unionids may be associated with actions required for cleaning and/or relocation. These effects will need to be quantified and evaluated when considering subsequent planning decisions. Because relocated mussels should be relatively easy to examine after placement, divers will be used to assess survival and growth of relocated individuals as well as gravidity of females. These data will be compared to estimates of mortality associated with zebra mussel fouling at other potential source sites to determine whether relocation and/or cleaning activities would be beneficial for resident *L. higginsii*.

Sites with only translocated adults will be monitored initially as described above; assessing the condition of relocated adults will be the primary concern. However, sampling design at these sites will be altered after 3 years to identify whether any recruitment has occurred. After 3 years, a more intensive qualitative sampling design will be initiated to detect juvenile mussels at each site. Divers will be used to search specifically for juvenile *L. higginsii*. If evidence indicates sufficient levels of recent recruitment, quantitative sampling, as described below, may be used to quantify juvenile density.

Relocation of juveniles or sub-adults. Juvenile or sub-adult *L. higginsii* will be obtained through cage and hatchery propagation projects. Sites receiving these individuals will be monitored using methods and conditions similar to those used for adult sites. However, these sites will be monitored annually for the first 3 years. Because the number and general location of individuals will be known, monitoring efforts will be used to estimate mortality and growth of translocated juveniles. If sufficient numbers of juveniles are observed during qualitative searches, quantitative sampling may be used to quantify juvenile abundance. After the initial 3 years, monitoring efforts at these sites will occur bi-annually.

Some juveniles will be propagated using cages. One method will involve closed-bottom cages; juveniles produced in these cages will eventually be collected by hand and relocated at an appropriate time and location. Other cages will be open-bottomed; these cages will be located at an appropriate site prior to the production of juvenile mussels. Therefore, juveniles in open-bottomed cages will drop directly into the water column and colonize the substratum in a much

less predictable manner. Despite the differences between cage-rearing methods, juveniles at each site will be monitored using similar techniques. Divers will have to search a wider area when monitoring sites where open-bottomed cages are used.

Release of glochidia-infested fish. Some sites will be designated to receive fish that have been infested with *L. higginsii* glochidia. Determining the affected area and evaluating juvenile survival at these sites will be difficult, because juveniles usually drop off their fish host within 10 to 14 days after infestation. Unfortunately, many fish will probably swim a considerable distance upriver or downriver by the time juveniles drop off. For this reason, more time may be needed to actually detect successful reintroduction of mussels to these sites. The use of micro radio transmitters to track fish movement and to identify potential drop-off areas will be explored. These sites will be monitored annually starting 3 years after the first release of glochidia-infested fish. Qualitative searches (described above) will be used to detect the presence of juveniles; if feasible, quantitative methods will be used to quantify juvenile density.

Reports and long-term monitoring. Annual reports would be prepared summarizing the results of the relocation and monitoring efforts. At the midpoint and at the end of the 10-year establishment period, a synthesis report would be prepared to document the effectiveness of the Relocation Plan. A long-term monitoring plan (20 years) to evaluate the stability of the relocated *L. higginsii* populations would be developed and included in the final synthesis report.

7.6 HABITAT PROTECTION OR ENHANCEMENT AT THE RELOCATION SITES

To ensure a successful relocation effort, it may be desirable to conduct habitat protection or enhancement projects on tributaries or main stem areas identified for potential relocation. Any needed habitat protection or enhancement measures can be pursued under several authorities, including the USACE Operation and Maintenance (O&M) Natural Resource Management Authority. Other potential USACE authorities that could be used to construct habitat protection and enhancement projects are Section 206 of the Water Resources Development Act (WRDA) of 1996 – Ecosystem Restoration; Section 1135 of WRDA 1986; Section 204 of WRDA 1992, as amended; and Section 1103 of WRDA 1986, as amended (commonly referred to as the Upper Mississippi River System Environmental Management Program). As relocation sites are specifically identified, any needed habitat protection and enhancement measures may also be identified and submitted for funding under the various programs.

In addition, the USACE Regulatory Program, under Section 10 of the Rivers and Harbors Act of 1899, as amended, and under Section 404 of the Clean Water Act, as amended, could be used to provide additional protection measures at the relocation sites.

7.7 MEASURES TO PREVENT THE ACCIDENTAL SPREAD OF ZEBRA MUSSELS DURING RELOCATION EFFORTS

Relocating mussels and mussel sampling have a risk of infesting relocation sites with zebra mussels. Precautions need to be taken when moving mussels and/or sampling equipment from zebra mussel infested waters to uninfested waters. The procedures outlined in Appendix 4 will be taken to reduce the risk of accidental introductions of zebra mussels.

7.8 SPECIAL STUDIES

Research into mussel propagation and holding of adults. Propagation of mussels in the laboratory is still very much in an adaptive mode. Raising juveniles under various treatments needs to be conducted to optimize culture techniques. Juveniles held past several weeks in the laboratory also experience excessive mortality. Research is needed to determine the cause and potential solutions to this mortality. Growing mussels to a year old and hand placing in suitable habitat could significantly improve relocation efficiency.

Holding adults in a hatchery environment offers potential for facilitating future propagation work. Adults held in a hatchery could be a more readily available and economical source of obtaining gravid females for obtaining glochidia. This also provides a means to protect some individual *L. higginsii*.

Genetic diversity. Efforts to reestablish new mussel populations require an understanding of the genetic diversity in natural populations and the recognition of evolutionarily significant separate populations. Relocation plans for endangered species are often developed to 1) save individuals that otherwise would perish and/or 2) establish new populations intended to expand a species' range or to buffer losses in source populations. However, actions taken to accomplish these primary objectives should always be considerate of potential negative effects on the long-term genetic integrity of the species. Genetic analyses of *L. higginsii* are few in number and limited in scope because of small sample sizes and the prohibitive costs associated with obtaining and processing samples. In fact, only one report is available that provides results relative to the question of intra- and inter-population genetic diversity (Bowen and Richardson 2001). Results from this study indicate that genetic diversity of mitochondrial DNA (mtDNA) within populations is relatively high, whereas genetic differences among the three populations sampled were low. The ultimate significance of these results is that relocation projects should involve translocation of a large number of individuals. This is the only way to maintain a high level of genetic diversity in the "new" translocated population.

Two areas of additional genetic investigation are proposed:

1. Expand the mitochondrial genetic *L. higginsii* database to determine the specific number of individuals needed for relocation. Tissue samples (approximately 200) would be obtained from specimens collected over the next 2 years during the relocation and monitoring efforts. The samples would be examined for mtDNA genetic diversity using the three available genetic markers.
2. Species level genetics study (nuclear DNA) of 100 tissue samples: *L. higginsii*, *L. siloquoidea*, and *L. pepinensis* from the St. Croix River. This will involve evaluation of known techniques and development of new ones, if necessary, to distinguish among the three types of individuals.

7.9 COMPARISON OF SELECTED PLAN TO THE REASONABLE AND PRUDENT ALTERNATIVE

The specific requirements specified in the Biological Opinion for the Relocation Feasibility Study are listed below, along with discussion on how they were achieved or where they can be found within this document.

- Development of milestones or success criteria and time frames for achieving such goals.
 - ✓ The objectives and criteria are outlined in Section 4. The overall schedule for implementing the Relocation Plan to meet the goals is contained in Section 8. It will take 10 years or longer to reach stable populations at the potential relocation sites. An additional 20 years of monitoring will be necessary to ensure that the goals are being met.
- Development of a relocation site criteria plan based on political, institutional and biological parameters.
 - ✓ Section 7.4 discusses the potential relocation site evaluation criteria.
- Development of a search plan for candidate relocation sites.
 - ✓ Section 7.4 identifies how candidate sites will be surveyed to evaluate their potential as suitable relocation sites.
- Implementation of the search plan, including pilot projects necessary to develop site suitability criteria and to evaluate candidate relocation sites.
 - ✓ Some of the survey work has been completed. Upon approval and budgeting of this Relocation Plan, the remaining candidate relocation sites will be surveyed and screened against the relocation screening criteria contained in Appendix 3.
- Preparation of a prioritized list of candidate relocation sites, with narrative evaluation.
 - ✓ The MCT developed a preliminary list of potential candidate sites (see Sections 7.2 and 7.3). These sites were screened on the basis of professional judgment of the MCT. The remaining sites will be surveyed where necessary and further screened according to the established criteria in Appendix 3.
- Evaluation of relocation methods including relocation of adult and juvenile *L. higginsii* from existing populations, hatchery (*in situ*) propagation and rearing where juveniles would be used in relocation, and release of glochidia-laden host fish.
 - ✓ Section 7 discusses various alternative relocation measures. Section 7.8 outlines additional studies required to evaluate relocation methods. Very little information exists to screen and select the most likely to succeed relocation method(s). Therefore, a variety of potential methods are proposed for implementation in Section 7. As lessons are learned, the relocation efforts will focus on the most promising.

- Funding the relocation of *L. higginsii* at selected site(s).
 - ✓ Upon approval of the Definite Project Report (DPR), after completion of National Environmental Policy Act (NEPA) documentation if favorable, and when necessary funds are obtained, the recommended Relocation Plan in Section 7 would be implemented.

- The Relocation Plan will include a monitoring component to determine the effectiveness of the relocation program in reestablishing viable populations of *L. higginsii*.
 - ✓ Section 7.5 outlines the post-relocation monitoring that would be completed as part of the overall recommended Relocation Plan.

- Support and continuation of pilot projects to evaluate relocation techniques.
 - ✓ The USACE contributed \$25,000 in fiscal year 2000 and an additional \$30,000 in fiscal year 2001 to the pilot propagation work at the Genoa Fish Hatchery. The USACE will continue to support these pilot efforts, with the implementation of the recommended Relocation Plan.

8.0 SCHEDULE AND COST ESTIMATE

8.1 ESTIMATED COSTS FOR RELOCATION

Adult Relocation:

Cost to collect, clean and move:

100 mussels/event * \$375/mussel	\$37,500	
Total: \$37,500 per event X 3 events		\$112,500

Cost to collect, clean, quarantine, and move:

100 mussels clean * \$375/mussel	\$37,500	
100 mussel quarantine * \$50/mussel	<u>5,000</u>	
Subtotal	\$42,500	
Total: \$42,500 per event X 3 events		\$127,500

Glochidia Inoculated Fish:

Fish:

7,400 fish @ \$1.50/fish		\$11,100
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Gravid females:

37 females @ \$500/female		\$18,500
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Inoculating fish, transport, release:

3 field techs for 2 days	\$3,000	
Travel	1,500	
Equipment	<u>100</u>	
Subtotal	\$4,600	
\$4,600 per event X 5 events		\$23,000

Radio tracking:

Radio tags and other equipment	\$2,100	
1 field tech for 20 days	5,000	
Travel	1,000	
Letter Report	<u>1,000</u>	
Subtotal	\$9,100	
\$9,100 per event X 2 events		\$18,200

Total: \$70,800

Juvenile Caged:

Fish:		
6,400 fish @ \$1.50/fish		\$9,600
Gravid females:		
34 females @ \$500/female		\$17,000
Inoculating fish, holding, transport, and release:		
2 field techs for 1 day (inoculation)	\$1,000	
1 hatchery person 10 days	5,000	
Hatchery facilities 20 days * \$50/day	1,000	
2 field techs for 3 days (cages)	3,000	
Travel	1,500	
Miscellaneous equipment	610	
Cages: 25 cages @ \$30/cage	<u>750</u>	
Subtotal	\$12,860	
\$12,860 per event X 5 events		\$64,300
	Total:	\$90,900

Juvenile Hatchery:

Fish:		
6,400 fish @ \$1.50/fish		\$9,600
Gravid females:		
34 females @ \$500/female		\$17,000
Inoculating fish, holding, transport, and release:		
2 field techs for 1 day (inoculation)	\$1,000	
1 hatchery person 20 days	10,000	
Hatchery facilities 20 days * \$50/day	2,000	
2 field techs for 2 days	2,000	
Travel	1,000	
Miscellaneous equipment	<u>280</u>	
Subtotal	\$16,280	
\$16,280 per event X 5 events		\$81,400
	Total:	\$108,000

Sub-adult Caged:

Fish:		
5,000 fish @ \$1.50/fish		\$7,500
Gravid females:		
28 females @ \$500/female		\$14,000
Inoculating fish, holding, transport, and release:		
2 field techs for 1 day (inoculation)	\$1,000	
1 hatchery tech 15 days	5,000	
Hatchery facilities 20 days * \$50/day	1,000	
2 divers for 2 days (cages)	3,500	
Travel	3,000	
Miscellaneous equipment	360	
Cages: 20 cages @ \$30/cage	<u>600</u>	
Subtotal	\$14,460	
\$14,460 per event X 5 events		\$72,300
	Total:	\$93,800

Sub-adult Hatchery:

Fish:		
5,000 fish @ \$1.50/fish		\$7,500
Gravid females:		
28 females @ \$500/female		\$14,000
Inoculating fish, holding, transport, and release:		
2 field techs for 1 day (inoculation)	\$1,000	
1 hatchery tech 80 days	40,000	
Hatchery facilities 200 days * \$50/day	10,000	
2 divers for 3 days	5,000	
Travel	1,000	
Miscellaneous equipment	<u>450</u>	
Subtotal	\$57,450	
\$57,450 per event X 2 events		\$114,900
	Total:	\$136,400

Costs per site to achieve 500 (>age 1) at the end of 10 years

Adult relocation Pool 2*	Completed
Adult relocation Pool 3*	\$75,000 x 1 site.....	\$75,000
Glochidia inoculated fish	\$70,800 x 2 sites.....	\$141,600
Juvenile caged	\$90,900 x 1 site.....	\$90,900
Juvenile hatchery	\$108,000 x 1 site.....	\$108,000
Sub-adult caged	\$93,800 x 2 sites.....	\$187,600
Juvenile caged/sub-adults caged/adults	\$113,000 x 1 site.....	\$113,000
Glochidia/juvenile caged/sub-adults hatchery	\$85,000 x 1 site.....	\$85,000

*Note: The States and the USFWS have already moved 371 *L. higginsii* mussels to Pool 2 and 100 to Pool 3 site.

8.2 ESTIMATED COSTS FOR SURVEYING POTENTIAL RELOCATION AREAS

The level of effort may vary depending on the length of river to be surveyed and the amount of information available. The average estimated cost to conduct the surveys is listed below.

Qualitative Searches and Quantitative Surveys:

Qualitative labor (2 people, 6 days)	\$ 5,000
Quantitative	5,000
Travel	2,000
Equipment	1,000
Other analyses (water quality, sampling records, flow records, etc.)	1,000
Report	<u>1,000</u>
	\$15,000

<u>Potential relocation sites</u>	<u>Status of existing surveys</u>	<u>Cost</u>
UMR – Coon Rapids to Head of Navigation	Completed (MDNR)(2001)	\$0
UMR – Above Coon Rapids Dam	Completed (MDNR)(2001)	\$0
UMR – Pool 2/3	Completed (MDNR)(2000)	\$0
Chippewa River (WI)	Needs Survey (WDNR)	\$12,000
Black River (WI)	Completed (2001)	\$12,000
Lower Wisconsin River (WI)	Adequate Surveys	\$0
Upper Iowa River/Turkey River	Needs Survey	\$15,000
Wapsipinicon River (IA)	Needs Survey	\$15,000
Rock River (IL)	Needs Survey	\$15,000
Iowa River (IA)	Needs Survey	\$15,000
Cedar River (IA)	Needs Survey	\$15,000
Des Moines River (IA)	Needs Survey	\$15,000
Kankakee River (IL)	Needs Survey	\$15,000
UMR - Pool 24 (IL)	Needs Survey	<u>\$15,000</u>
Total		\$144,000

8.3 ESTIMATED COSTS FOR PERFORMANCE EVALUATION

Performance Evaluation of Adult Relocation:

Initial Cost:

2 divers for 1 day	\$2,000
2 field techs	1,000
Equipment	500
Travel	1,000
Report	<u>500</u>
	\$5,000 per site X 3 sites = \$15,000

Cost after 3 years:

2 divers	@\$2,000/day X 2 days	\$4,000
2 field techs	@\$1,000/day X 2 days	2,000
Equipment		500
Travel		1,000
Report		<u>500</u>
		\$8,000 per site X 3 sites = \$24,000

Performance Evaluation of Glochidia Infested Fish, Juvenile, and Sub-Adult Relocation:

Costs – per sampling period	Qualitative	Quantitative
2 divers @\$2,000/day X 2 days	\$4,000	1 day \$2,000
2 field techs @\$1,000/day X 2 days	2,000	1 day 1,000
Equipment	500	
Travel	1,000	
Report	<u>500</u>	<u>500</u>
	\$8,000	\$3,500 = \$11,500 per site

8.4 SPECIAL STUDIES

Genetics. Most of the tissue samples necessary for genetic analyses will be collected as part of other field projects, so costs specifically associated with sample acquisition will be minimal. Storage and preservation of samples will be accomplished using resources already available. Therefore, the actual costs of these studies will be limited to sample processing, overhead charges, data analyses and the final report.

Population genetics study (mtDNA):

200 tissue samples from Hudson, Cassville, Cordova and other locations

Examine genetic diversity using the three available genetic markers and report results	\$33,000
Overhead	<u>6,000</u>
	\$39,000

Species level genetics study (nuclear DNA):

100 tissue samples: *L. higginsii*, *L. siloquoidea*, and *L. pepinensis* from Hudson

Evaluate known techniques and develop new ones, if necessary, to distinguish among the three types of individuals	\$26,000
Overhead	<u>5,000</u>
	\$31,000

Genoa Fish Hatchery. Research into refining propagation, juvenile and sub-adult culture, and adult holding methods and techniques.

Annual costs for first 3 years of program: \$26,000 + 14% overhead ~ \$30,000

8.5 OVERALL COSTS AND SCHEDULE

Table 8-1 presents the overall schedule and cost. All money is expressed in Fiscal Year 2002 terms. There is a fair amount of uncertainty regarding the proposed propagation work, and it must be recognized that the effort will need to be adaptive. Therefore, a 10 percent contingency has been added to account for this uncertainty.

9.0 IMPLEMENTATION RESPONSIBILITIES

The responsibility for plan implementation would fall to the USACE as the lead Federal agency. The USFWS and State resource agencies are also responsible for conserving threatened and endangered mussels, including State listed species, and should participate at least in an advisory role in the proposed efforts.

Table 8-1. Schedule and budget for *Lampsilis higginsii* Relocation Plan

Task - Note funds listed per task are times \$1,000 in FY 2002 value	FY 00/01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	Total
Task A. Develop Relocation Plan DPR, including EA & Project Management	\$100	\$40	\$40	\$35	\$30	\$30	\$15	\$15	\$15	\$15	\$335
Task B. Annual summary reports and periodic synthesis reports		\$5	\$5	\$20	\$5	\$5	\$30	\$5	\$5	\$40	\$120
Task C. Survey highest priority potential relocation sites	\$24	\$80	\$40								\$144
Task D. Develop new populations at 10 sites											
Genoa Hatchery - Pilot study and research on propagation, holding adults	\$36	\$30	\$30	\$30							\$126
1. Glochidia inoculated hatchery fish	\$8	\$10	\$13	\$13	\$13	\$13					\$70
2. Glochidia inoculated wild fish	\$8	\$15	\$12	\$12	\$12	\$12					\$71
3. Juveniles - caged fish		\$11	\$20	\$20	\$20	\$20					\$91
4. Juveniles - hatchery	\$5	\$11	\$22	\$22	\$22	\$22					\$104
5. Sub-adults - caged	\$3	\$30	\$15	\$15	\$15	\$15					\$93
6. Sub-adults - caged	\$3	\$30	\$15	\$15	\$15	\$15					\$93
7. Adult relocation (Pool 2)	Others										\$0
8. Adult relocation (Pool 3)	Others		\$38	\$38							\$76
9. Juveniles caged fish - sub-adults hatchery - adults			\$30	\$45	\$38						\$113
10. Glochidia inoculated fish, juveniles, and sub-adults (hatchery)		\$24	\$15	\$15	\$16	\$16					\$86
Augmentation of populations based on performance evaluation							\$40	\$40	\$40		\$120
Task E. Performance evaluation											
Evaluate adult relocation		\$5	\$5	\$10	\$21	\$21	\$24	\$35	\$35	\$35	\$155
Evaluate juvenile, glochidia inoculated fish, and sub-adult relocation				\$58	\$69	\$92	\$92	\$92	\$92	\$92	\$495
Task F. Special studies											
Genetics	\$40		\$35								\$75
Contingencies (10 percent of contract work)			\$29	\$29	\$24	\$23	\$16	\$17	\$17	\$13	\$167
Total	\$227	\$291	\$364	\$377	\$299	\$284	\$217	\$203	\$203	\$195	\$2,660

10.0 ENVIRONMENTAL ASSESSMENT

An environmental analysis has been conducted for the proposed action, and a discussion of the impacts follows. As specified by Section 122 of the 1970 Rivers and Harbors Act, the categories of impacts listed in Table 10-1 were reviewed and considered in arriving at the final determinations.

10.1 EXISTING SETTING

10.1.1 Natural Resources

The specific location and general physical habitat characteristics of the potential donor sites and relocation sites are described in Section 7.2. The habitat characteristics of all the potential donor and relocation sites can be characterized as moderate flowing areas with sand to gravel substrate. At some of the donor sites, zebra mussels have significantly changed the substrate and other habitat characteristics. In areas of heavy zebra mussel infestations, the substrate has been modified to a thick layer of dead and live zebra mussels and fine, flocculent sediment. Aquatic vegetation generally is not present at any of the sites because of water depths and current velocity, except along the shoreline. The mussel and fish communities of the sites are generally very diverse and abundant, including the presence of several rare species. As with the substrate characteristics, the mussel and fish communities are being significantly altered at the *L. higginsii* essential and secondary habitat areas, as a result of the invasion of the zebra mussels.

10.1.2 Endangered and Threatened Species

Species using, or which might be found on, the UMRB floodplains and tributaries with Federal threatened or endangered status include the threatened bald eagle (*Haliaeetus leucocephalus*) which nests, roosts, and feeds in the area; the endangered Indiana bat (*Myotis sodalis*); the endangered fat pocketbook mussel (*Potamilus (Proptera) capax*) which may be extirpated in the Upper Mississippi River above Lock and Dam 10; the endangered *L. higginsii*; the endangered winged mapleleaf (*Quadrula fragosa*); the endangered Iowa pleistocene snail (*Discus macclintocki*); the dwarf trout lily (*Erythronium propullans*) known to exist only in the Cannon and Zumbro River watersheds; the threatened northern wild monkshood (*Aconitum noveboracense*); and the threatened prairie bush-clover (*Lespedeza leptostachya*).

The proposed activities will all occur in a lotic environment. Therefore, State listed endangered, threatened, and special concern mussel and fish species have the greatest potential to be affected. Many State (WI, MN, IA, and IL) listed species of mussels and fish may occur at either the donor sites or at the proposed relocation sites. The *L. higginsii* essential and secondary habitat areas that would be used as donor sites have rich mussel communities, including the following State protected species (listed by one or more of the four States): butterfly (*Ellipsaria lineolata*), monkeyface (*Quadrula metanerva*), mucket (*Actinonaisa ligamentina*), pistolgrip (*Tritogonia verrucosa*), rockshell (*Arcidens confragosus*), spike (*Eliptio dilata*), strange floater (*Strophitus undulates*), wartyback (*Quadrula nodulata*), washboard (*Megalonaias nervosa*), and yellow sandshell (*Lampsilis teres*). The candidate relocation sites that will be evaluated further were

selected because they also contain or are thought to contain rich mussel fauna, including many of the same State protected species.

The essential habitat areas and potential relocation areas are high quality lotic fish habitat. As a result, it is anticipated that they might contain several State listed lotic fish species. Lotic species listed by one or more of the States that could be present at the donor or relocation sites include the following fish: black buffalo (*Ictiobus niger*), blue sucker (*Etheostomac chlorosomum*), crystal darter (*Ammocrypta asperella*), greater redhorse (*Moxostoma valenciennesi*), paddlefish (*Polydona spathula*), river redhorse (*Moxostoma carinatum*), speckled chub (*Macrhybopsis aestivalis*), and western sand darter (*Ammocrypta clara*).

10.1.3 Cultural Resources

The submerged cultural resources of the Mississippi River and its tributaries can include shipwrecks, structures such as docks and cribs, channel constriction structures such as wing dams and closing dams, and submerged archaeological sites. The actual or reported location of many historic wrecks is known, especially for the Mississippi River. Some, like the wreck of the War Eagle at the mouth of the Black River in La Crosse, Wisconsin, have been found eligible for the National Register of Historic Places. Databases of the known shipwrecks for the Mississippi River and for some tributaries exist at the St. Paul and Rock Island USACE offices, as well as at the Underwater Archaeology office of the Wisconsin State Historic Preservation Office. The National Register evaluation of the Mississippi River channel constriction structures associated with the historic 4½- and 6-foot channel projects is currently under way.

10.1.4 Socioeconomic Resources

The Mississippi River Basin is home to over 30 million people. Of that population, Mississippi River counties within the St. Paul District (Pools 1-10) include 2.2 million, Rock Island District (Pools 11-22) includes 1 million, and St. Louis District (Pool 24-Ohio River) includes 2.6 million. The Illinois River counties, not including Chicago, have approximately 1 million inhabitants. Nearly 80 percent of the population resides in urban areas such as Minneapolis-St. Paul, the Quad Cities, Peoria, St. Louis, and smaller cities such as Dubuque, Muscatine, La Crosse, Hannibal, Quincy, and Cape Girardeau. Economic activities mainly revolve around machinery manufacturing, food and beverage processing, and crop, dairy, and livestock production. Regional industries produce canned, frozen, and dairy foods, and manufacture broadcast equipment, construction equipment, agricultural machinery, ammunitions, chemicals and aluminum sheet.

The UMR navigation system is an integral part of a broad regional, national, and international transportation network. The river system provides an important link in the movement of goods both into and out of America's heartland. Agricultural products, particularly grain, are the primary commodities. The river system is a vital source of water supply for domestic and manufacturing purposes. Recreation activities, waterfowl hunting, sport/commercial fishing and trapping are also valuable to local and regional economies.

The fish, wildlife and other natural resources associated with the UMRB offer a wide variety of water-based recreational opportunities. Ranging from wide expanses of open water conducive to sailing and water-skiing, to protected backwater areas for quiet fishing or contemplation, the UMR is a virtual sportsman's paradise. Additionally, the many sand beaches offer primitive camping and picnicking opportunities.

Water-based activities dominate recreation use, with boating, boat fishing and sightseeing the most popular activities (Carlson et al. 1995). Recreational boating activity is the number one use on the UMRS and has been increasing in number. Several recreational use surveys conducted between 1972 and 1981 indicated over 10 million sport fishing days occur annually on the UMR alone (UMRCC 1993). Tournament fishing for largemouth bass and walleye/sauger began in the late 1980's and has become increasingly popular in some Illinois and Mississippi River pools.

Hunting along the rivers consists almost exclusively of duck hunting; hunting for other game birds and small or big game animals also occurs, to a smaller extent. Dahlgren (1990) data indicate that trapping is also a minor activity on the system, with an estimated 1,037 active trappers in 1988-89; the maximum estimated number was 2,137 in 1980-81. Despite the small number of trappers, the economic value of the fur harvest is substantial. Total value of the harvest for the years 1984-89 was \$2.3 million.

A variety of pursuits comprise other recreational activities on the UMRS. These may include sightseeing (the third most popular activity on the system), picnicking, hiking, water-skiing, camping, swimming, bird watching, and ice fishing. The numerous established areas such as parks, campgrounds, and other recreational areas facilitate many of these activities.

10.2 ENVIRONMENTAL EFFECTS

10.2.1 Relationship to Environmental Requirements

This assessment was prepared and the proposed work designed to comply with all applicable environmental laws and regulations, including the following: National Environmental Policy Act of 1969; Executive Order 11514, Protection and Enhancement of Environmental Quality (as amended in Executive Order 11991); Executive Order 11593, Protection and Enhancement of the Cultural Environment; Executive Order 11990, Protection of Wetlands; Clean Air Act of 1977; Clean Water Act of 1977; Endangered Species Act of 1973; Fish and Wildlife Coordination Act; National Historic Preservation Act; 40 CFR 1500-1508, Council on Environmental Quality, Regulations for Implementing Procedural Provisions of the National Environmental Policy Act of 1969. The effects of the alternatives are summarized in Table 10-1.

10.2.2 Natural Resources Effects

Relocation of adult mussels, glochidia, juveniles or sub-adults to tributary streams, or other "refuge" areas uninfested or only moderately infested with zebra mussels would likely have minor impacts on natural resources. If successful, *L. higginsii* would be reintroduced into former habitats, and the long-term viability of this species would be greatly enhanced. Cleaning and relocating of endangered mussel species would have relatively minor impacts on other natural

Table 10-1. Environmental assessment matrix for Mussel Relocation Plan, Upper Mississippi River System.

Section 122 of the River and Harbor and Flood Control Act of 1970 (Public Law 91-611)

PARAMETER	MAGNITUDE OF PROBABLE EFFECTS					
	BENEFICIAL EFFECT			NO APPRECIABLE EFFECT		
	SIGNIFICANT	SUBSTANTIAL	MINOR	SUBSTANTIAL	MINOR	SIGNIFICANT
A. SOCIAL EFFECTS						
1. Noise Levels					X	
2. Aesthetic Values			X			
3. Recreational Opportunities					X	
4. Transportation					X	
5. Public Health and Safety					X	
6. Community Cohesion (Sense of Unity)					X	
7. Community Growth and Development					X	
8. Business and Home Relocations					X	
9. Existing/Potential Land Use					X	
10. Controversy					X	
B. ECONOMIC EFFECTS						
1. Property Values					X	
2. Tax Revenues					X	
3. Public Facilities and Services					X	
4. Regional Growth					X	
5. Employment					X	
6. Business Activity					X	
7. Farmland/Food Supply					X	
8. Commercial Navigation					X	
9. Flooding Effects					X	
10. Energy Needs and Resources					X	
C. NATURAL RESOURCE EFFECTS						
1. Air Quality					X	
2. Terrestrial Habitat					X	
3. Wetlands					X	
4. Aquatic Habitat				X		
5. Habitat Diversity and Interspersion				X		
6. Biological Productivity					X	
7. Surface Water Quality					X	
8. Water Supply					X	
9. Groundwater					X	
10. Soils					X	
11. Threatened or Endangered Species				X		
D. CULTURAL RESOURCE EFFECTS						
1. Historic Architectural Values					X	
2. Prehistoric & Historic Archeological Values					X	

resources. Some very minor disturbance of substrates would be associated with removing mussels from the river bottom and relocating them. Overall, cleaning/relocating would have insignificant impacts on natural resources with the exception of the mussels that are collected, cleaned and then relocated.

The process of collecting/cleaning/relocating endangered mussels would likely stress those individual mussels that are processed. Removal from the substrate and water, scraping of zebra mussels from shells and replacement of the cleaned mussel into the substrate would undoubtedly affect the physical condition of individual mussels. Some mortality is likely, especially of those individual mussels that are heavily infested with zebra mussels and already physiologically stressed. In various translocation studies, mortality has varied from 40 percent to less than 1 percent (Cope and Waller 1998, Heath unpublished data, Davis personal communication, 2001). To minimize impacts on cleaned mussels, procedures would be developed and used to minimize stress and handling of processed mussels. Even with careful handling and cleaning, an estimated mortality rate associated with cleaning/stockpiling of 5 percent is expected. However, this mortality compares quite favorably with up to 100 percent mortality expected if mussels are not cleaned. Cleaning of mussels should significantly reduce the physiological stress placed on these mussels from being infested with zebra mussels. Overall, cleaning/relocating would have a positive impact on those endangered mussels that are cleaned and relocated.

The greatest potential negative impact on natural resources resulting from relocation is associated with the possibility of zebra mussels being introduced into an uninfested waterbody on relocated mussels or equipment used to relocate mussels. Equipment cleaning and quarantine procedures outlined in Appendix 4 should ensure zebra mussels are not transferred between infested collection sites and receiving relocation sites. However, even with quarantine procedures, it is possible that zebra mussels could be introduced to relocation sites. Introduction of a few individual zebra mussels probably would not result in establishment of a zebra mussel population, especially if the relocation site is riverine in nature. However, if zebra mussels did establish, then many of the significant impacts on natural resources observed in other river systems would occur.

10.2.3 Endangered and Threatened Species Effects

All the proposed activities will occur in a submerged aquatic setting and therefore would not have an adverse effect on the bald eagle or Indiana bat.

While the proposed actions are intended to benefit *L. higginsii*, they will result in adverse impacts on individuals of the species. Relocation and cleaning efforts will result in incidental take. High mortality can be associated with translocation attempts (Cope and Waller 1998). Cleaning and relocation efforts will result in the death of some individuals. However, the severity of the zebra mussel problem may offset these losses. Regardless of the successes and failures of past studies, moving mussels takes patience and care, and there really is no reason why most of them would not survive if moved short distances carefully. Capturing female *L. higginsii* for obtaining glochidia will reduce the reproduction potential at the capture site and result in some mortality of the individuals. Care must be exercised on where female hosts are

obtained; areas where zebra mussels are inhibiting the reproduction would be the first choice. The incidental take associated with the proposed relocation and protection efforts seems a reasonable trade-off, because the option of not undertaking these efforts according to the USFWS Biological Opinion would likely jeopardize the continued existence of *L. higginsii*.

Many State (MN, WI, IA, or IL) listed mussel species are found at the donor sites and/or at the proposed relocation sites. Relocating *L. higginsii* should not result in any adverse effects on these species. State listed mussel species incidentally collected at the donor sites for adult relocation or for obtaining gravid females would be cleaned of zebra mussels. Depending on the desires of the State, either they would be returned to the collection site or, in the case of adult relocation, they may be moved along with *L. higginsii* to the relocation site. In either case, State listed mussel species would be beneficially affected by the relocation efforts. There is a possibility that placing *L. higginsii* at the relocation sites could displace existing mussels, including State listed species. However, density dependent limiting factors have not been observed in native mussels, and densities can range from over 100 to less than 10/m² depending on habitat quality. No adverse impacts to native mussels at the relocation sites are anticipated.

Many State (MN, WI, IA, or IL) listed endangered and threatened fish species could occur in the donor areas and at the relocation sites. No habitat alterations are being proposed that would affect these species. Some of the State listed species could be hosts for *L. higginsii* glochidia and could become temporarily infected with glochidia. These temporary infections of fish with glochidia are not considered harmful to the fish. No effects on State listed fish species are anticipated with the proposed relocation efforts.

The Illinois, Iowa, Minnesota and Wisconsin Departments of Natural Resources will receive a copy of this Definite Project Report /Environmental Assessment. Comments received pertaining to protection of threatened and endangered species will be addressed.

10.2.4 Cultural Resources Effects

Although the Mississippi River and its tributaries contain many historic and prehistoric resources, the activities associated with the project have little or no potential to affect them. None of the methods of mussel relocation have the potential to affect submerged resources. Divers will collect and deposit mussels by hand. Many of the other relocation methods involve fish release and no disturbance of the river bottom.

The preliminary survey techniques also involve hand collection of mussels by divers. The more intensive methods of the quantitative sampling do involve some river bottom disturbance, as the substrate is collected to be washed through sieves. However, only the top 6 to 8 inches of the river bottom will be disturbed, which is subject to continual disturbance and redeposition by river currents, and is unlikely to contain *in situ* artifacts. Divers will be instructed to avoid any man-made structures visible on the river bottom, and to return any such objects that may turn up in the sieving to their position on the river bottom. The locations of National Register eligible properties, such as the wreck of the War Eagle, will be designated as off-limits for quantitative sampling.

With these extra protective measures in place, the *L. higginsii* mussel relocation project has no potential to affect historic properties. With this determination (CFR 36 800.3(a)(1), the USACE has no further obligations under Section 106 of the National Historic Preservation Act in regard to this project.

10.2.5 Socioeconomic Resources Effects

Relocation or establishment of *L. higginsii* populations in tributaries or other sites that historically have supported *L. higginsii* would result in some restrictions on uses of these waterbodies associated with endangered species. These relocated populations would receive full protection under the Endangered Species Act. Federal activities that could potentially affect these relocated endangered mussels would be regulated under the Endangered Species Act. Additionally, any actions that kill or “take” *L. higginsii* in these locations would be subject to an enforcement action under the Endangered Species Act. For example, monetary damages resulting from spills or other uses that result in the taking of an endangered species could be assessed against the offending party. The relocation could be controversial if the public perceives that some public or private actions could be restricted to avoid take of *L. higginsii* and if such restrictions actually occur. The occurrence of an endangered species in a certain location does not necessarily preclude all activities that may harm that species there. The Endangered Species Act allows for the issuance of permits for the incidental take of endangered species as a result of otherwise legal activities. Such permits may not be issued, however, if such taking is likely to jeopardize the survival and recovery of the species. Locating *L. higginsii* outside the historical range also could be controversial, even within the scientific community, which could question the ecological value of introducing a species outside of its historical distribution. Many non-historical areas such as the Chippewa and Black Rivers could have and may still have *L. higginsii* present, but lack adequate historical mussel surveys to document their presence. One of the factors that will be used in selecting the final relocation sites will be controversy, which should help to minimize the socioeconomic impacts. Priority will be given to known historic habitat areas. Non-historic habitat areas will be pursued only if no substantive, unresolvable concerns are expressed during the public review. In addition, if it is determined, based on the results of the public review, that any of the sites have the potential for a significant impact on the socioeconomic environment, they will not be considered for relocation. If substantive unresolvable concerns are expressed about a particular candidate relocation site during the public review and it is later determined that this site still warrants further consideration based on its habitat quality, additional NEPA documents will be prepared and circulated for public review.

10.3 Summary and Cumulative Effects

Implementation of the proposed Relocation Plan would have overall substantial benefits to *L. higginsii* populations in general, although some mortality to individual *L. higginsii* would be associated with these activities. Impacts on other natural resources would generally be minor. Relocation of *L. higginsii* to tributaries is likely to be controversial because of restrictions on uses associated with endangered species.

The proposed actions would cumulatively aid in the long-term preservation of *L. higginsii* populations. Relocation of *L. higginsii* would mitigate or reduce the impacts of zebra mussels on this endangered species.

11.0 COORDINATION, PUBLIC VIEWS, AND COMMENTS

This study was a multi-party effort involving Federal and State agencies and the public. The study was conducted under the auspices of the Mussel Coordination Team (MCT). The MCT participation includes the following:

Federal

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
U.S. Coast Guard
National Park Service
U.S. Geological Survey

State

Minnesota Department of Natural Resources
Wisconsin Department of Natural Resources
Iowa Department of Natural Resources
Illinois Department of Natural Resources

The Minnesota-Wisconsin Boundary Area Commission is an ex-officio member of the Mississippi River Mussel Coordination Team. The Commission provided input and assistance, primarily in the area of public information and involvement.

A series of public meetings were held in early April 2001 in Wabasha, Minnesota; Prairie du Chien, Wisconsin; Dubuque, Iowa; and Moline, Illinois to solicit public input and provide information concerning the impacts of zebra mussels on native mussels, the USFWS Biological Opinion for the Continued Operation and Maintenance of the 9-foot Navigation Channel Project and the proposed *L. higginsii* Conservation Plan. Invitations were sent to over 1,000 individuals, local agencies and groups, and media outlets. The Dubuque and Prairie du Chien meetings were attended by 20 to 30 individuals each. Less than 10 individuals each attended the Wabasha and Moline meetings. Appendix 5 contains the meeting announcement and attendance sheets.

Two main concerns were expressed at these public meetings:

Concern about whether anything really can be done to manage zebra mussels.
Concern about introducing an exotic (*L. higginsii*) to tributaries.

Appendix 6 contains a list of elected officials, Federal, State, and local agencies, interest groups, media, individuals, and libraries that will receive a copy of the draft Definite Project Report/Environmental Assessment and/or Public Notice. The Public Notice provides an opportunity to receive the entire report upon request.

12.0 RECOMMENDATION

I have weighed the needs and benefits to be obtained from implementing the *L. higginsii* Relocation Plan against the costs, and have considered the alternatives, impacts, and scope of the proposed *L. higginsii* relocation. I have also considered the views expressed by Congressional interests, Federal and State agencies, public interest groups, river users, and the public. In my judgment, the anticipated benefits of the proposed *L. higginsii* relocation outweigh the cost and unavoidable environmental, social, and economic impacts.

I recommend that the 10-year program for the relocation of *L. higginsii* be implemented. The total Federal project costs (including sunk general planning and study costs of \$229,000) will be \$2,660,000.

Robert L. Ball
Colonel, Corps of Engineers
District Engineer

Environmental and Economic Analysis Branch
Planning, Programs and Project Management Division

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, the St. Paul District, U.S. Army Corps of Engineers, has assessed the environmental impacts of the following project:

HIGGINS' EYE PEARLYMUSSEL (*Lampsilis higginsii*) RELOCATION PLAN
UPPER MISSISSIPPI RIVER SYSTEM (UMRS)
MINNESOTA, WISCONSIN, IOWA, ILLINOIS

The primary purpose is to provide for the relocation of *L. higginsii* to suitable habitat because of the threat to the species from zebra mussels.

The proposed actions should have long-term positive impacts on *L. higginsii* and other native mussels and their habitat. Relocating *L. higginsii* could result in some mortality. This is considered an acceptable trade-off to achieve the overall long-term benefits to *L. higginsii*. Relocating *L. higginsii* to tributaries and other areas could have minor adverse impacts to the socioeconomic environment, mainly in the areas of land use restrictions and controversy. If substantive, unresolvable concerns are expressed about a particular candidate relocation site during public and agency review and it is later determined that this site still warrants further consideration, additional NEPA documents will be prepared and circulated for public review.

This finding of no significant impact is based on the fact that no significant adverse environmental impacts were identified as resulting from the proposed actions. The environmental review indicates that the proposed actions do not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

Date

Robert L. Ball
Colonel, Corps of Engineers
District Engineer

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APPENDIX 1
COORDINATION

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COORDINATION

MUSSEL COORDINATION TEAM PARTICIPANTS

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U.S. Coast Guard
Todd Dudley
John Grez

U.S. Geological Survey
Teresa Newton
Ken Lubinski

MN-WI Boundary Area Commission
Jim Harrison
Robin Grawe
Bill Howe

COMMENT LETTERS RECEIVED ON
DRAFT DEFINITE PROJECT REPORT AND ENVIRONMENTAL ASSESSMENT

APPENDIX 2

USING A RAMAS POPULATION MODEL TO DEVELOP PLANS FOR *Lampsilis higginsii* RELOCATION PROJECTS

APPENDIX 2

USING A RAMAS POPULATION MODEL TO DEVELOP PLANS FOR *Lampsilis higginsii* RELOCATION PROJECTS

INTRODUCTION

The U.S. Army Corps of Engineers is responsible for developing a Relocation Plan for the federally endangered *Lampsilis higginsii* unionid in the Upper Mississippi River System (UMRS). Zebra mussels represent a major stressor to unionid populations within the UMRS; some areas, previously considered “essential habitat areas” for *L. higginsii*, have been infested by zebra mussels. Unionid assemblages generally have been negatively affected by zebra mussel invasions. However, the degree to which unionids have declined varies among sites.

One way to combat the threat posed by zebra mussels involves implementation of a Relocation Plan that would result in creation of new *L. higginsii* populations within the historic species range. Several types of relocation projects have been proposed, but estimating an appropriate level of resource investment needed to achieve project goals is difficult. For this reason, we used RAMAS population model software to improve our understanding of the costs that would be associated with producing viable *L. higginsii* populations (500 individuals of age-2 or older) 10 years following our initial relocation efforts.

Unfortunately, much of the information needed to develop a population model is unavailable. Data describing the early life-history dynamics of unionids, particularly *L. higginsii*, are uncommon. Therefore, we used conservative estimates for various model parameters based on the limited data available. The most critical parameter for which there is no data is fecundity. Therefore, we ran a sensitivity analysis using three different fecundity/recruitment estimates.

Results from this model will be used to evaluate different proposals for specific relocation project designs; for instance, deciding how many adult mussels should be moved to achieve a target population size after 10 years.

Major Assumption: No density dependence. Space may become limited over time, but dispersal of new recruits (for which we also have no estimate) is assumed to occur over a much larger area than the original site of translocation.

PARAMETER ESTIMATES

The two most basic parameters of any population model are *fecundity* and *survival*.

Fecundity

Fecundity is the **potential number of viable offspring a female is capable of producing.**

Recruitment is the **number of offspring a female actually produces.** Because we have no real knowledge of what percentage of glochidia actually survive to age-1, we used “recruitment”

estimates. Our recruitment estimates are based on the average number of age-1 individuals a female produces each year. We used age-specific estimates of recruitment because we know that larger (older) females produce more glochidia than smaller (younger) females. These age-specific estimates are provided in Table 1. The **greatest relative recruitment estimate** is 0.5 $\{(one\ age-1\ individual/female/year)/2\}$ to account for males}; this assumes that one glochidium per female survives to age-1 every year. Our **lowest relative recruitment estimate** is 0.166 $\{(one\ age-1\ individual/female/3\ years)/2\}$ to account for males}; this assumes that one glochidium per female survives to age-1 every 3 years. Lower recruitment estimates were also applied to the model, but the required starting number of translocated individuals increases to 650 at one/female/4 years and 1,750 at one/female/5 years; these numbers exceed the 10-year target population size.

Table 1. Age-specific parameter estimates for *L. higginsii* population model. RR = Relative Recruitment = number of age-1 individuals produced per year per mussel (divided by 2 to account for males).

Age	Survival	RR	RR=0.5*	RR=0.25**	RR=0.166***
1	90%	0.000	0.000	0.000	0.000
2-3	95%	0.000	0.000	0.000	0.000
4-5	95%	0.500	0.250	0.125	0.083
6-7	95%	0.500	0.250	0.125	0.083
8-9	95%	0.500	0.250	0.125	0.083
10-11	95%	0.750	0.375	0.188	0.125
12-13	95%	0.750	0.375	0.188	0.125
14-15	95%	0.750	0.375	0.188	0.125
16-17	95%	1.000	0.500	0.250	0.167
18-19	95%	1.000	0.500	0.250	0.167
20-21	95%	1.000	0.500	0.250	0.167
22-23	95%	1.000	0.500	0.250	0.167
24-25	95%	1.000	0.500	0.250	0.167
26-27	95%	1.250	0.625	0.313	0.208
28-29	95%	1.250	0.625	0.313	0.208
30-31	95%	1.250	0.625	0.313	0.208
32-33	95%	1.250	0.625	0.313	0.208
34-35	95%	1.500	0.750	0.375	0.250
36-37	95%	1.500	0.750	0.375	0.250
38-39	95%	1.500	0.750	0.375	0.250

* - assumes an average female produces one age-1 individual every year

** - assumes an average female produces one age-1 individual every 2 years

*** - assumes an average female produces one age-1 individual every 3 years

Age of sexual maturity is generally thought of as **the age at which females can contribute to recruitment**. Available data suggest that age-3 *L. higginsii* are capable of producing glochidia (Heath, *pers. observ.*); we used **age-4 as the age of sexual maturity**.

Unionids have complex life histories involving release of parasitic larvae, infection of an intermediate fish host, transformation and successful settlement, and finally survival to sexual maturity. Because most species are long-lived, a “successful” recruitment event can actually result in the production of a relatively small number of juveniles each year without substantial changes in population size. Some unionid populations demonstrate a long-term trend of sporadic recruitment, with a typically low level but occasionally high level of annual recruitment. Our model does not attempt to mimic this phenomenon. **We assumed an unchanging level of age-specific recruitment.**

Survival

Annual survival rates of unionids are generally accepted to be high. Existing data indicate that annual survival rates of adult *L. higginsii* are between 97 and 99 percent (Heath, *unpub. data*). Our estimates of **annual adult survival were 95 percent (age-2 to age-39)**. Our estimate of **age-1 survival to age-2 was 90 percent**. It is likely that one strategy for starting new populations will require survival of age-0 individuals (dropped from fish in a laboratory and then translocated to a site) to age-1. Our assumption for the **survival rate of age-0 individuals to age-1 is 1 in 1,000 (0.1 percent)**.

Longevity

Existing data suggest that *L. higginsii* can live up to 40 years, although very few probably survive to ages above 30 (Heath, *unpub. data*). Age-classes in our model extend to age-39; individuals surviving past age-39 remain in the same age-class until mortality (< 1 percent of the total population are \geq age-39 after 10 years).

APPLICATION OF THE MODEL

We used the population model to estimate the resources necessary to create self-sustaining *L. higginsii* populations (500 individuals > age-2) 10 years after implementing a Relocation Plan. Strategies that we evaluated were based on two scenarios:

- 1) Adults are obtained from elsewhere and translocated to start a new population.
- 2) Age-0 individuals are taken from a laboratory setting and translocated to start a new population.

Adult Relocation

Age Distribution: The typical relative age distribution of relocated adults was estimated as:

Age-4 to 5	= 1
Age-6 to 9	= 2
Age-10 to 11	= 3
Age-12 to 19	= 4
Age-20 to 21	= 3
Age-22 to 25	= 2
Age-26 to 27	= 1

As the initial number of relocated adults increases, the ratio of individuals among classes remains constant.

Question 1. How many adults are initially required to result in 500 age-2 or older mussels after 10 years? The model was replicated 250 times. **Results are in Table 2 and on Figures 1 through 3.** *30-year results are summarized on Figures 7 through 12.

If an average female usually recruits:

1 juvenile to age-1 each year	160 adults needed	mean = 610 ± 65 , ± 1 SD
1 juvenile to age-1 every 2 years	300 adults needed	mean = 566 ± 56
1 juvenile to age-1 every 3 years	420 adults needed	mean = 572 ± 52

Juvenile Translocation

Question 2. How many thousands of age-0 mussels would need to be translocated in the first 5 years to eventually result in a population of 500 individuals > age-1 after 10 years?

The model was replicated 250 times. The results are in Table 3 and on Figures 4 through 6. ***30-year results are summarized on Figures 13 through 18.**

Major assumption: 1 in 1,000 age-0 juveniles survives to age-1

If an average female usually recruits:

1 juvenile to age-1 each year	90,000 age-0 needed for 5 years	mean = 600 ± 48
1 juvenile to age-1 every 2 years	120,000 age-0 needed for 5 years	mean = 584 ± 42
1 juvenile to age-1 every 3 years	130,000 age-0 needed for 5 years	mean = 551 ± 39

Table 2. Final population size, number of age-1, and number of individuals > age-1 as determined by the initial number of adults relocated to a site.

Initial #	Adult Relocation								
	1 female = 1 age-1 / yr			1 female = 1 age-1 / 2yrs			1 female = 1 age-1 / 3 yrs		
Initial #	Final #	# age-1	# > age-1	Final #	# age-1	# > age-1	Final #	# age-1	# > age-1
120	418	69	349						
130	465	78	387						
140	512	84	428						
150	656	93	472						
160	610	103	507						
170									
180	702	117	585						
190	760	128	632						
200	795	132	663						
210									
220									
230									
240									
250									
260				476	57	419			
270				491	60	431			
280				517	63	454			
290				539	65	474			
300				566	67	499			
310				593	71	522			
320				608	73	535			
330				634	76	558			
340				649	78	571			
350				682	81	601	458	45	413
360							471	45	426
370							483	47	436
380							505	49	456
390							521	52	469
400							535	53	482
410							548	53	495
420							572	54	518
430							595	58	537
440							600	58	542
450							619	59	560

Table 3. Final population size, number of age-1, and number of individuals > age-1 as determined by initial number of thousands of age-0 mussels introduced to a site for the first 5 years.

Juvenile Translocation									
	1 female = 1 age-1 / yr			1 female = 1 age-1 / 2yrs			1 female = 1 age-1 / 3 yrs		
Initial #	Final #	# age-1	# > age-1	Final #	# age-1	# > age-1	Final #	# age-1	# > age-1
60,000	384	60	324						
70,000	459	71	388	322	32	290			
80,000	528	83	445	377	38	339			
90,000	600	94	506	427	42	385			
100,000	667	105	562	479	48	431	419	30	389
110,000	739	115	624	534	53	481	464	34	430
120,000	814	128	686	584	57	527	511	37	474
130,000	876	136	740	631	63	568	551	40	511
140,000	955	149	806	685	68	617	600	43	557
150,000				735	73	662	643	47	596
160,000							684	50	634
170,000							736	53	683
180,000							784	57	727

Figure 1

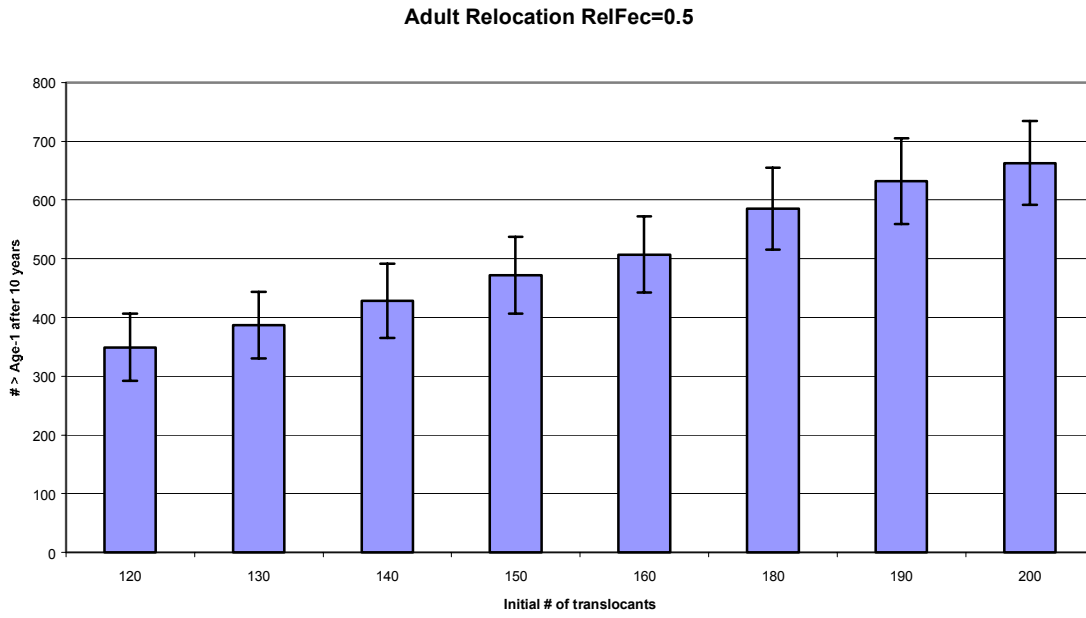


Figure 2

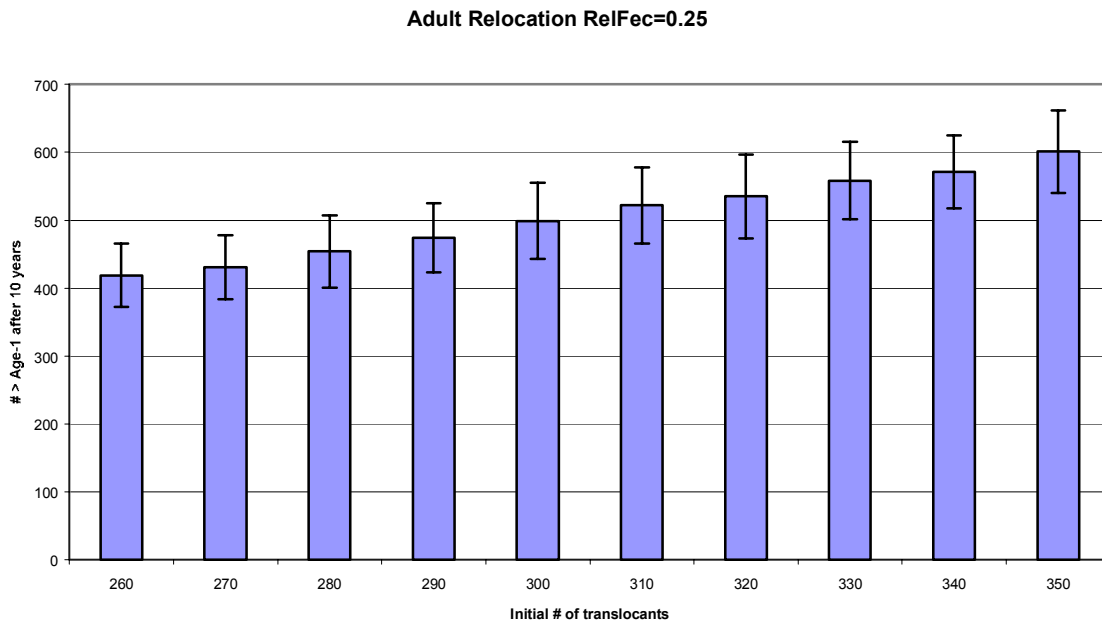


Figure 3

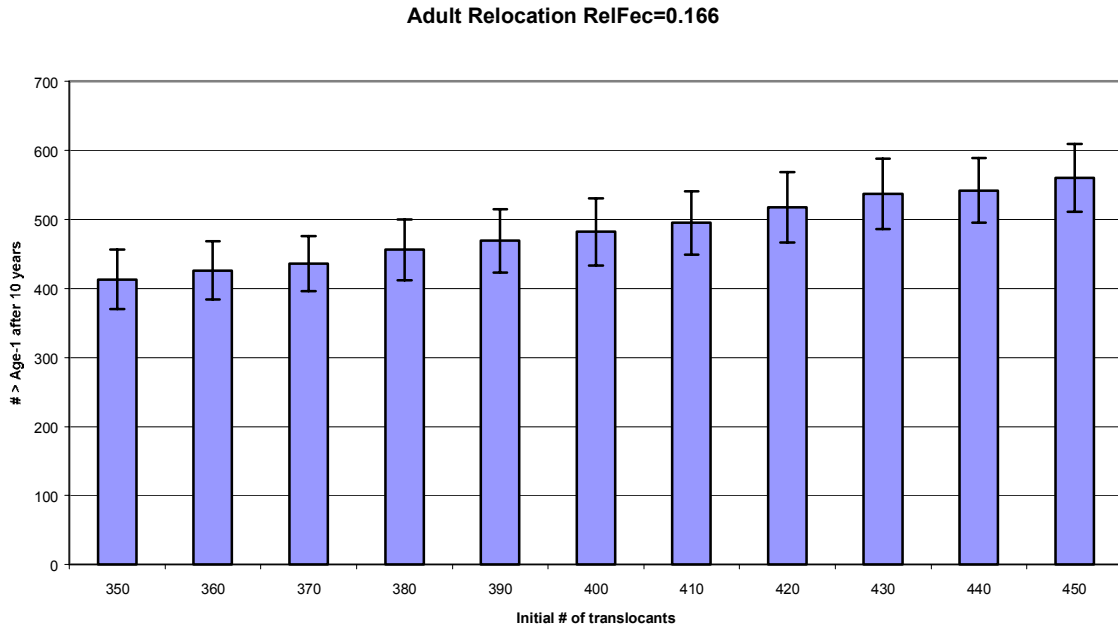


Figure 4

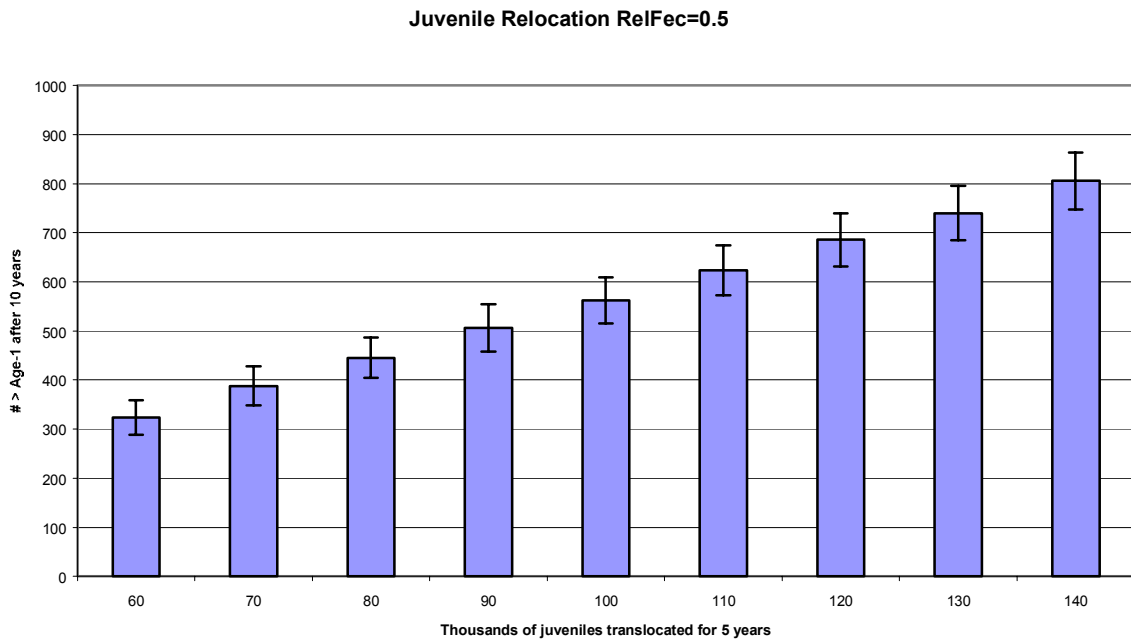


Figure 5

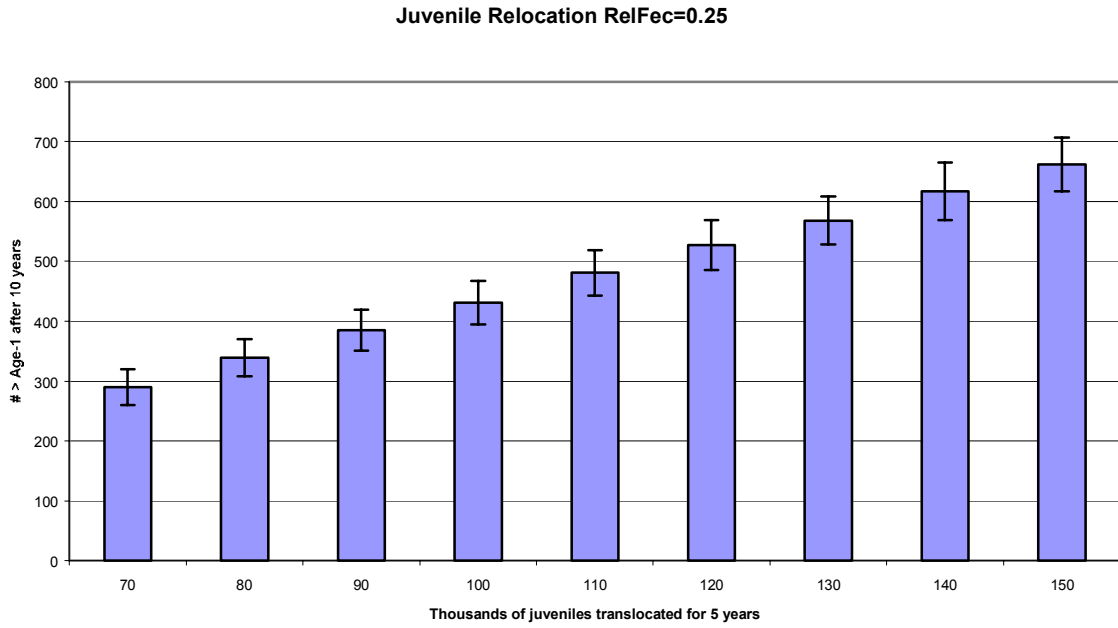


Figure 6

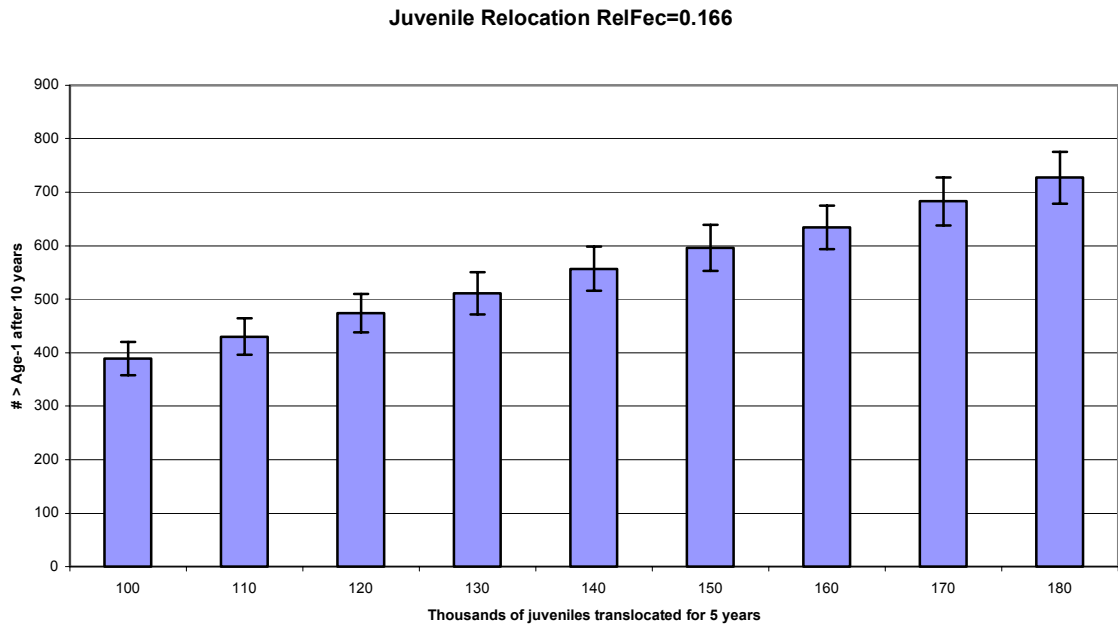


Figure 7. Change in population size if 160 adults are used to start a new population. Model was run 250 times; bars represent ± 1 SD.

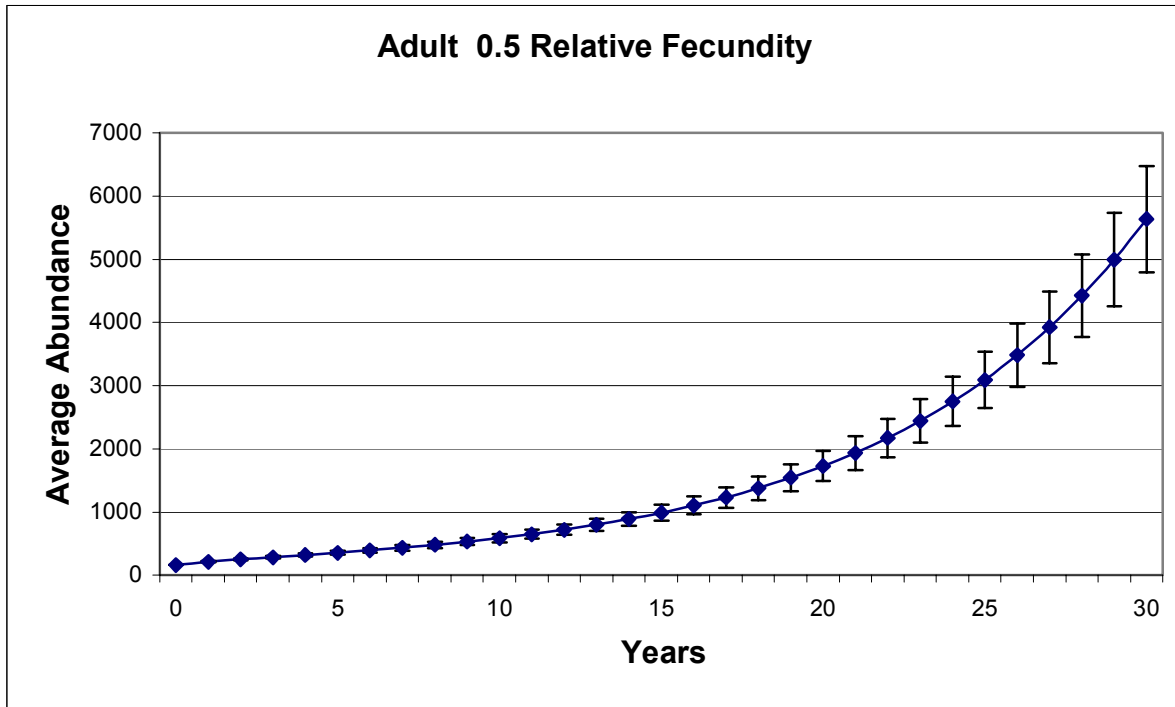


Figure 8. Final stage abundance after 30 years if 160 adults are used to start a new population. Bars represent ± 1 SD.

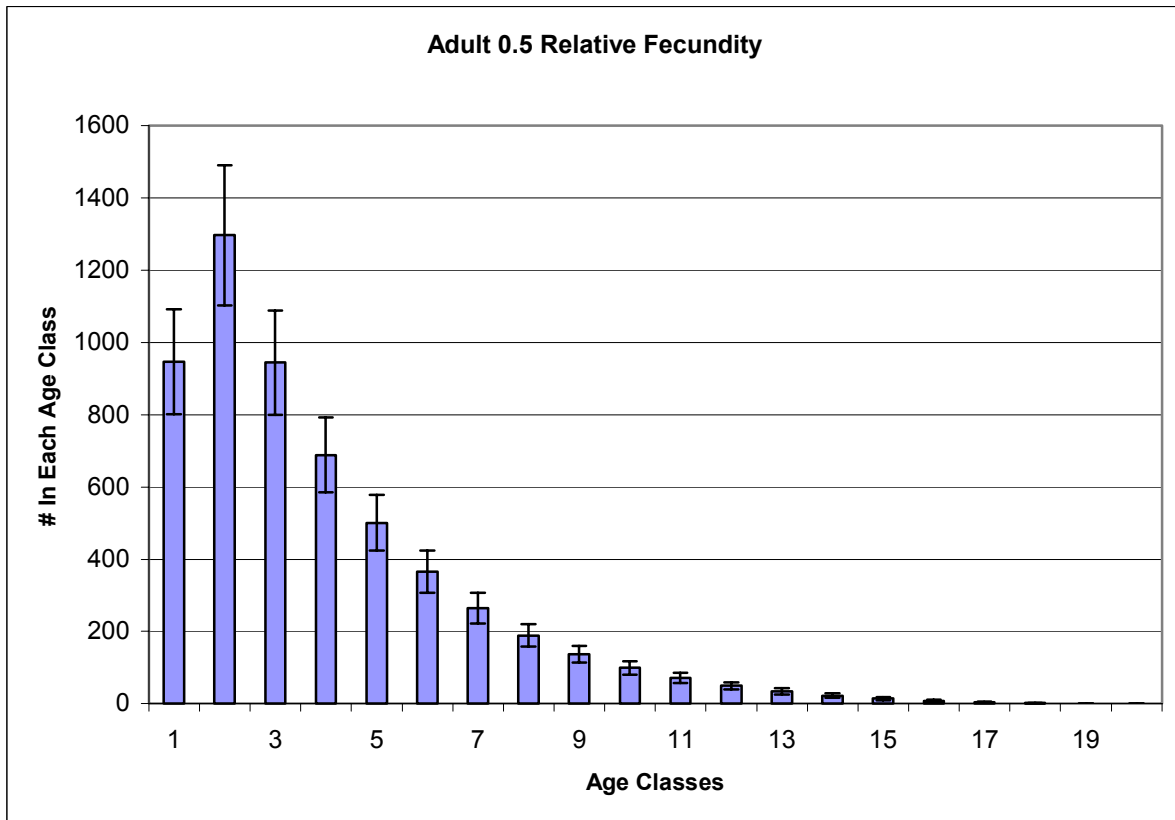


Figure 9. Change in population size if 300 adults are used to start a new population. Model was run 250 times; bars represent ± 1 SD.

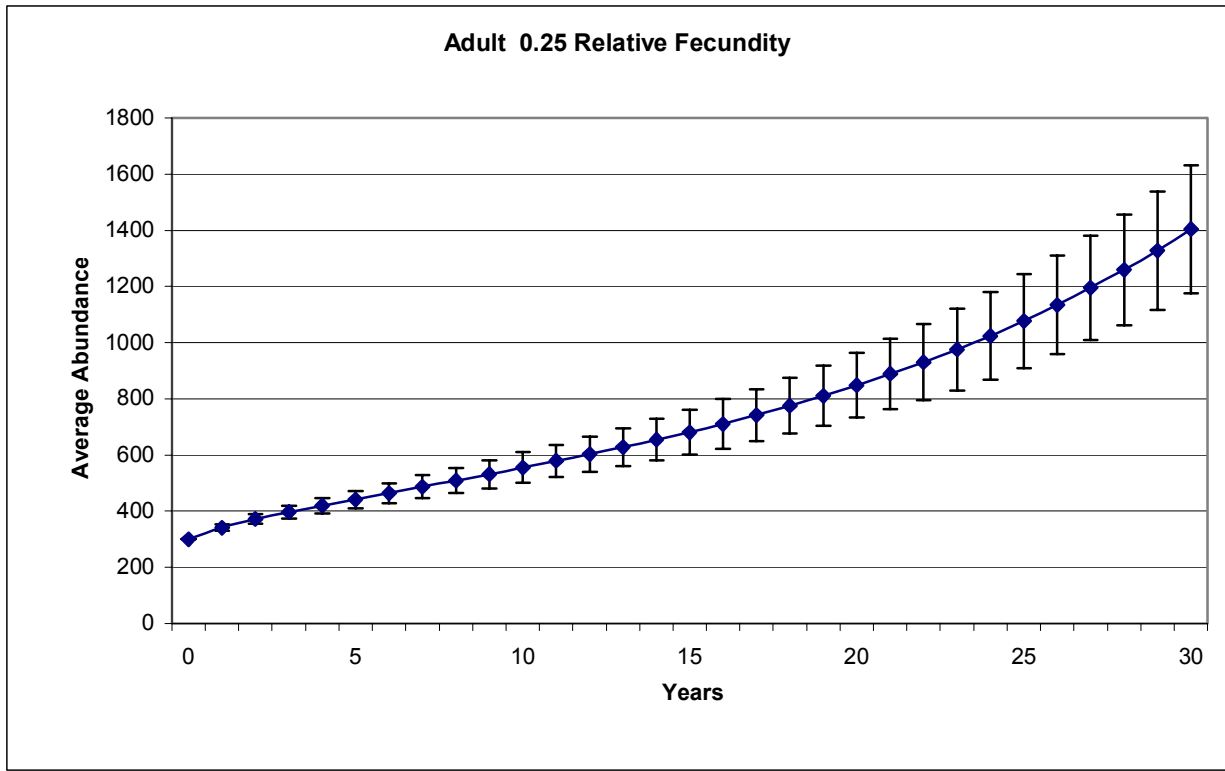


Figure 10. Final stage abundance after 30 years if 300 adults are used to start a new population. Bars represent ± 1 SD.

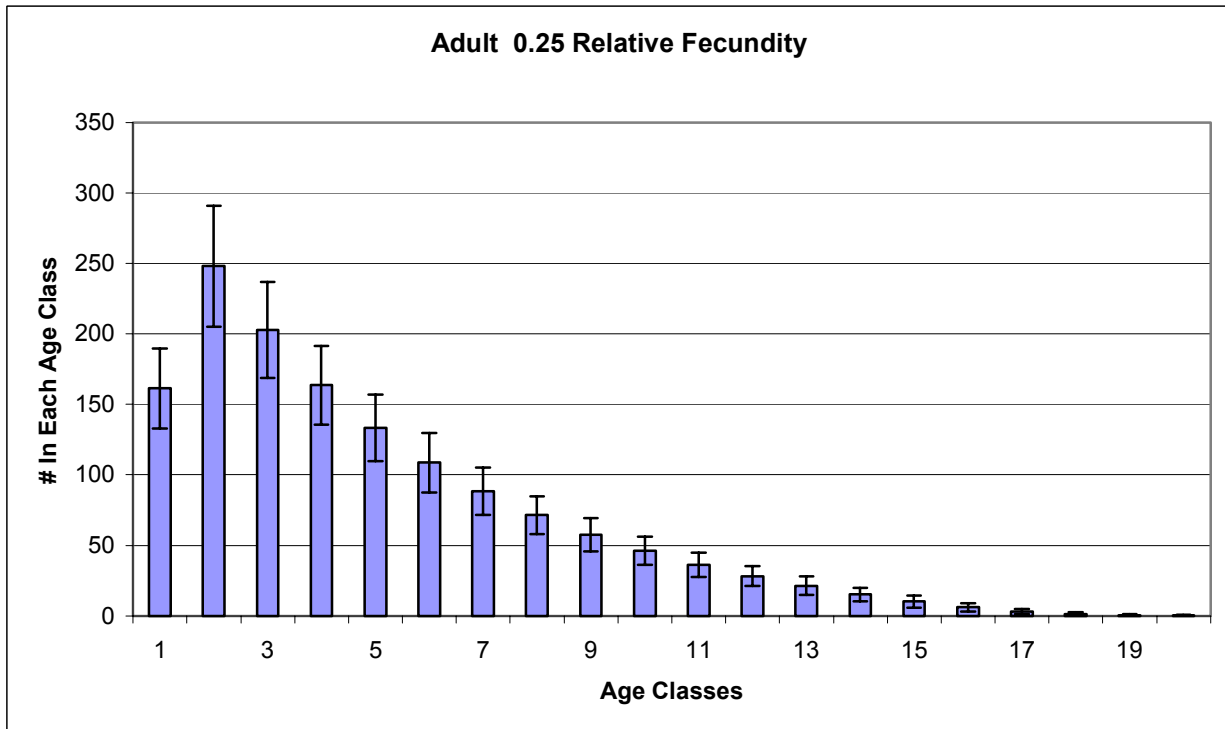


Figure 11. Change in population size if 420 adults are used to start a new population. Model was run 250 times; bars represent ± 1 SD.

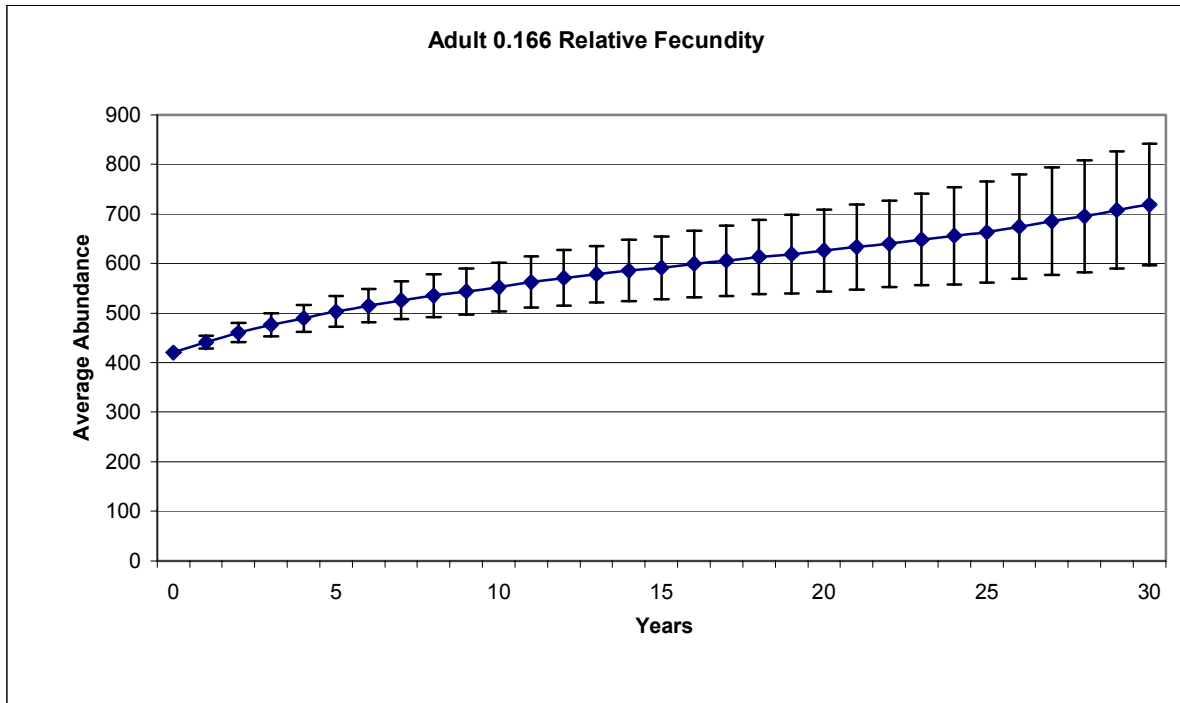


Figure 12. Final stage abundance after 30 years if 420 adults are used to start a new population. Bars represent ± 1 SD.

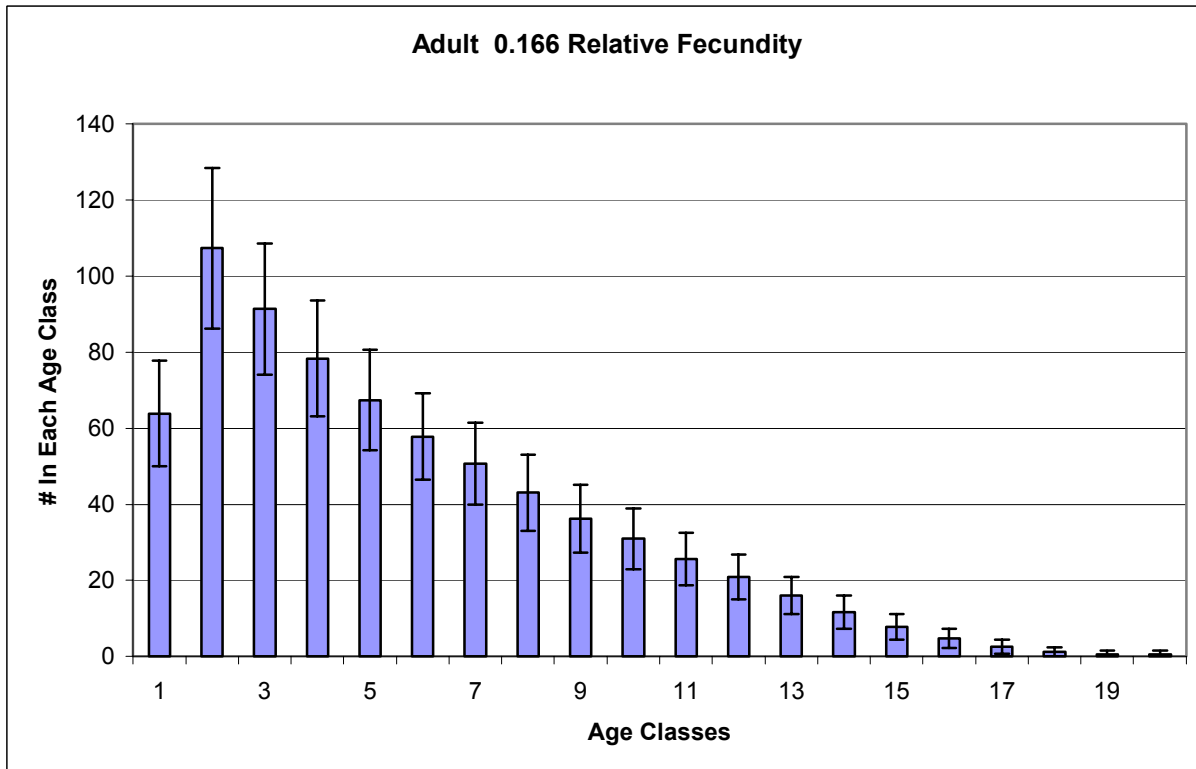


Figure 13. Change in population size if 90,000 age-0 are translocated for the first 5 years to start a new population. Model was run 250 times; bars represent ± 1 SD.

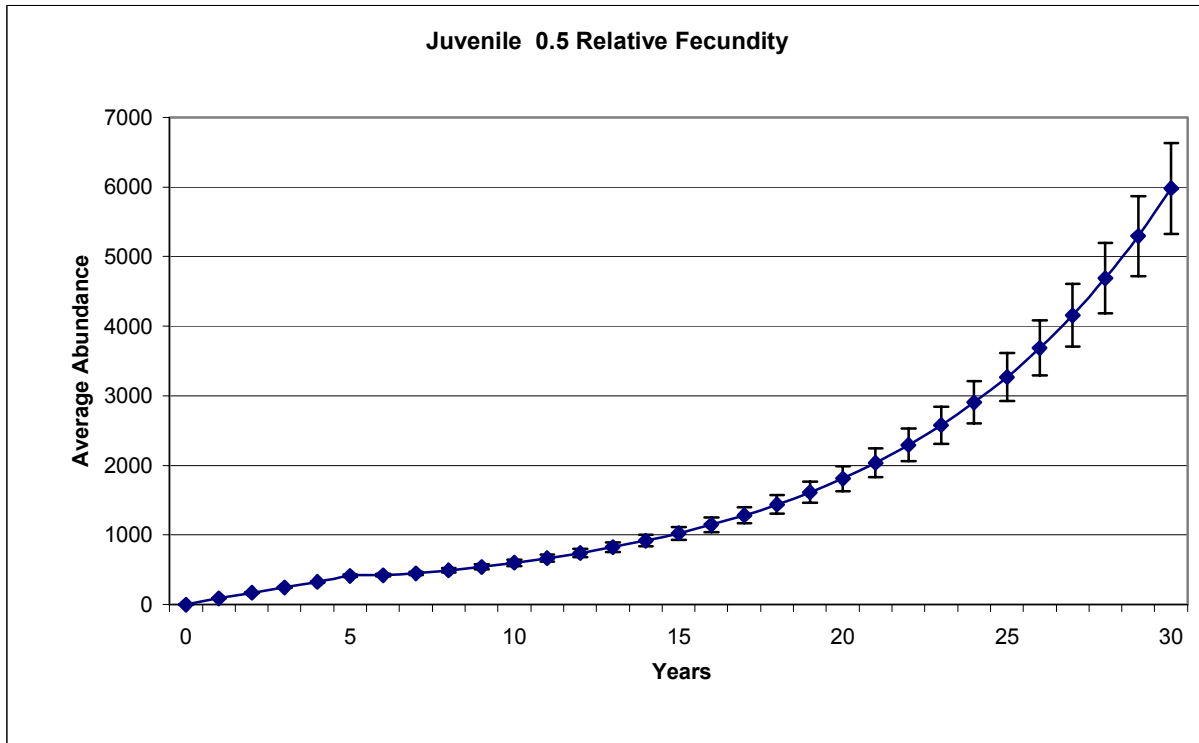


Figure 14. Final stage abundance after 30 years if 90,000 age-0 are translocated for the first 5 years to start a new population. Bars represent ± 1 SD.

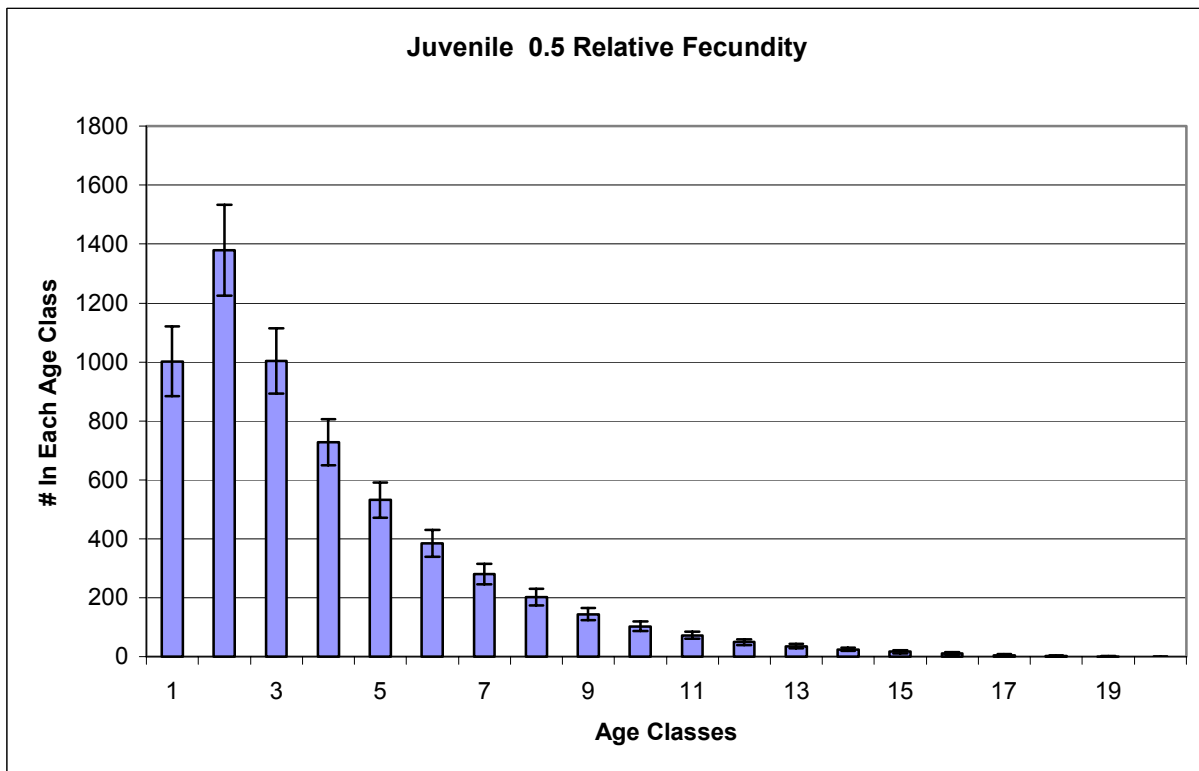


Figure 15. Change in population size if 120,000 age-0 are translocated for the first 5 years to start a new population. Model was run 250 times; bars represent ± 1 SD.

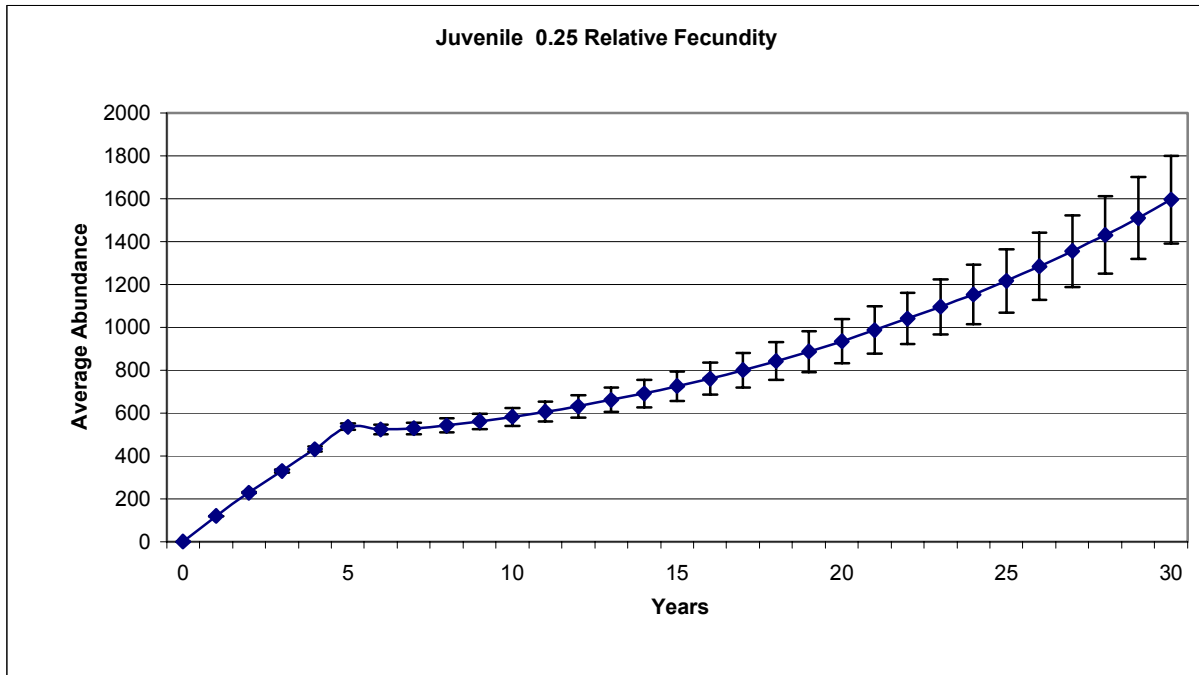
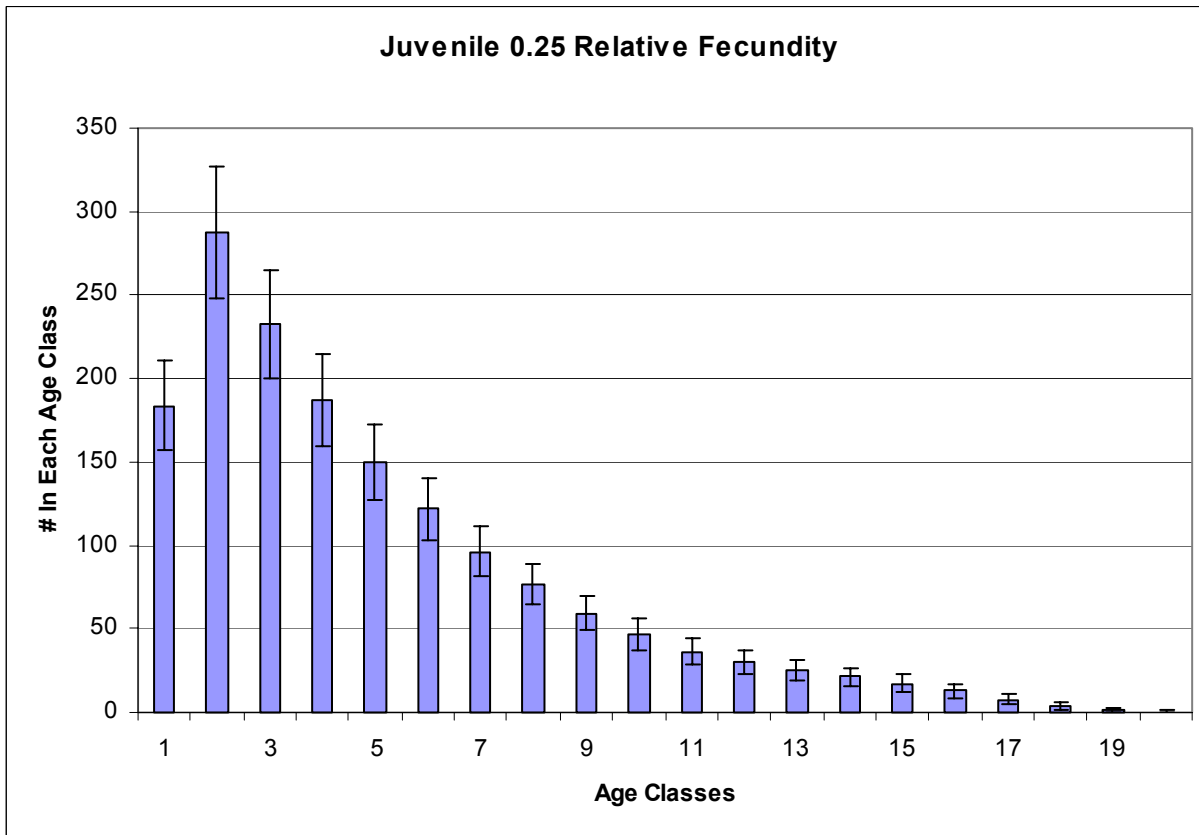


Figure 16. Final stage abundance after 30 years if 120,000 juveniles are translocated for the first 5 years to start a new population. Bars represent ± 1 SD.



F

Figure 17. Change in population size if 130,000 age-0 are translocated for the first 5 years to start a new population. Model was run 250 times; bars represent ± 1 SD.

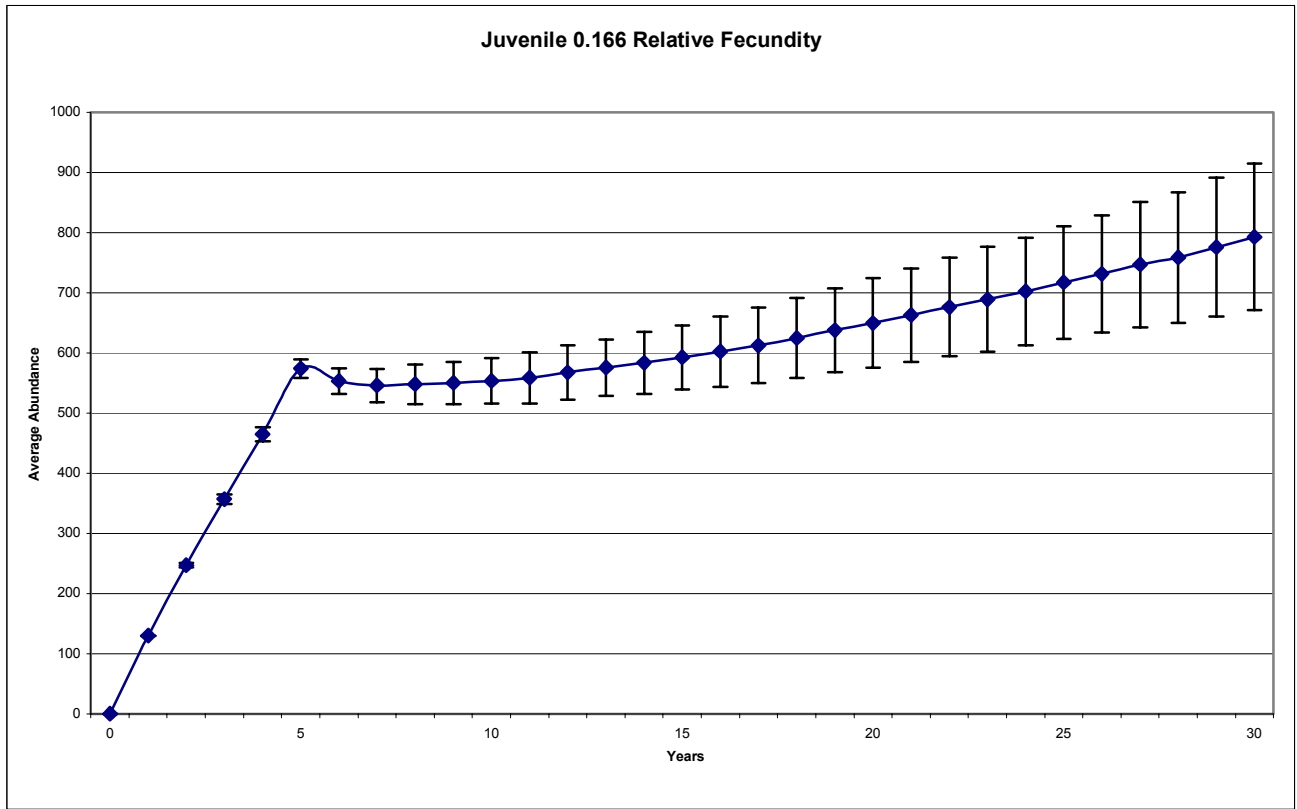
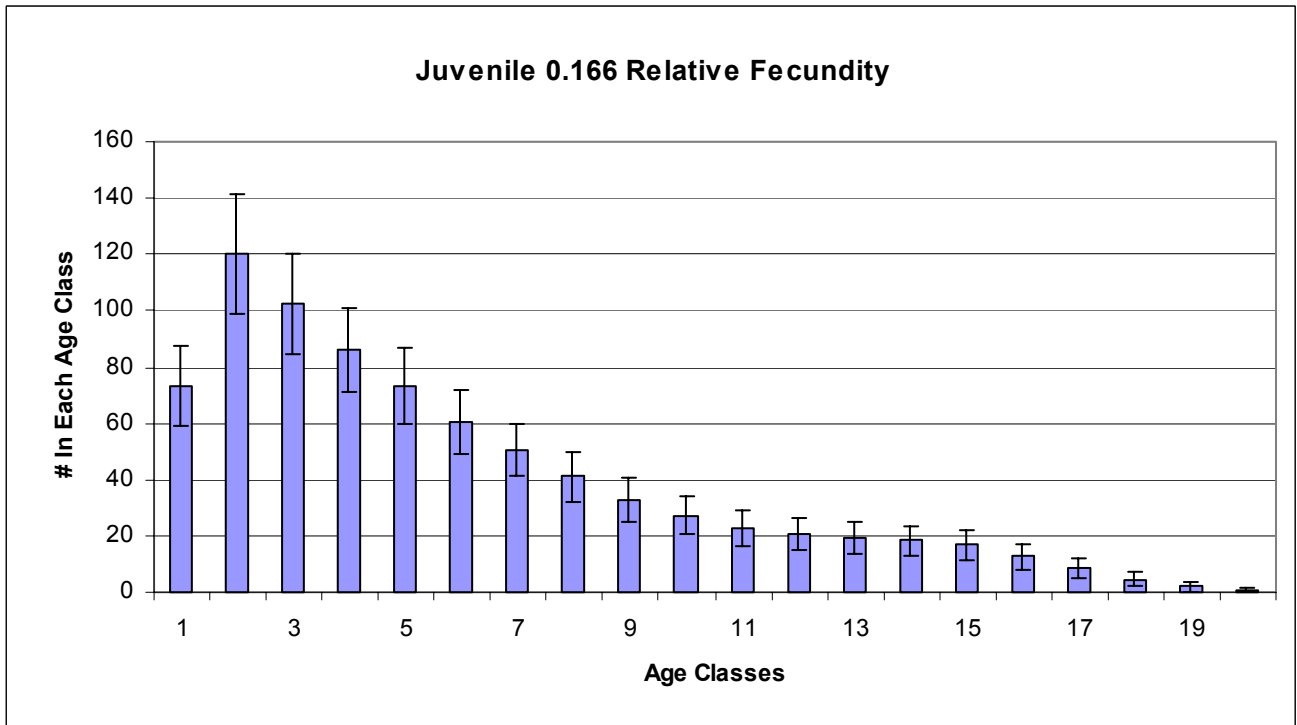


Figure 18. Final stage abundance after 30 years if 130,000 juveniles are translocated for the first 5 years to start a new population. Bars represent ± 1 SD.



APPENDIX 3

EVALUATION OF SUITABILITY OF POTENTIAL RELOCATION SITES

APPENDIX 3

EVALUATION OF SUITABILITY OF POTENTIAL RELOCATION SITES

An important aspect of a successful Relocation Plan involves development of criteria to delineate suitable sites for translocated unionids. A variety of factors must be considered. However, quantifying suitable habitat conditions for unionids is very difficult. For this reason, we will consider many criteria when deciding where to relocate adult and propagated mussels. It is hoped that careful evaluation of potential relocation sites will result in greater success of newly established *L. higginsii* populations.

Biological criteria for evaluation of relocation sites

- 1) **Unionid species richness** – Most mussel assemblages that contain *L. higginsii* are relatively rich; the number of species often exceeds 15 to 20.
- 2) **Key indicator species** – Even among sites with species-rich assemblages, the presence of certain indicator species (e.g., hickorynut, washboard, wartyback, etc.) can serve as a surrogate for intensive evaluation of environmental parameters. These species are often good indicators of appropriate habitat conditions associated with *L. higginsii*.
- 3) **Population structure of other populations** – If other unionid populations demonstrate good size-class structure at a site, it is reasonable to assume that adult survival and recruitment of *L. higginsii* will be successful.
- 4) **Unionid abundance** – Relatively high abundances of other unionid species indicate favorable environmental conditions.
- 5) **Abundance of host species** – The presence of host species within a drainage is necessary for successful recruitment of *L. higginsii*.

Physical habitat criteria for evaluation of relocation sites

- 6) **Flow regime/current velocity** – Native unionids are well adapted for survival under a variety of flow conditions. However, areas of moderate to high current velocities (more erosional) are considered better suited for maintaining healthy unionid populations, because such areas are considered less suitable for zebra mussels.
- 7) **Susceptibility to spates** – Although erosional habitats may offer advantages to unionids relative to zebra mussels, relocation sites should not be established in areas where extreme erosional events occur with regularity.
- 8) **Water quality** – Areas that exhibit high concentrations of nutrients, chemical contaminants, suspended sediments, etc., should not be considered as relocation sites.

9) **Water depth** – Sites that maintain water depths greater than 3 feet during low river discharge will be considered suitable.

Criteria for evaluating relocation sites based on potential for zebra mussel infestation

10) **Proximity to viable zebra mussel populations** – *L. higginsii* obviously should not be relocated to areas highly susceptible to invasion of zebra mussels.

11) **Hydrologic conditions of drainage** – Zebra mussels seem less capable of establishing high-density populations in areas of elevated flow/current velocity. For this reason, sites located within more riverine drainages are expected to support newly established unionid populations better than sites in lentic or impounded rivers.

12) **Potential for human introduction of zebra mussels** – Areas that support greater recreational use of aquatic resources may be more likely to experience zebra mussel infestation through upstream and overland transport of zebra mussel adults or veligers.

Other criteria for evaluating relocation sites

13) **Site security** – Sites that provide some form of security from disturbance are preferred.

14) **Political, social, and legal constraints** – Compliance with laws and regulations and/or controversy may preclude some sites from further consideration.

15) **Site access** – Easy logistical access to sites must be balanced with site security. However, monitoring translocated unionids will require a reasonable level of accessibility.

Judging the relevance of many criteria is a subjective process. In fact, the relative importance of some criteria may vary depending on the status of others. For this reason, developing a standard process by which these criteria can be used to evaluate potential relocation sites is virtually impossible. However, the following outline demonstrates how these criteria would be used to evaluate relocation sites:

1. Do zebra mussel populations already exist in the area or within 100 miles downriver?
 - If yes, then the site is excluded.
2. Are political or regulatory constraints probable?
 - If yes, then the site is excluded.
3. Do any nutrient, chemical, suspended sediment, etc., concentrations substantially exceed those of source sites for translocants?
 - If yes, then the site is excluded.
4. Does the water level exceed 3 feet during 100-year drought conditions?
 - If no, then the site is excluded.

5. Species richness at a potential relocation site exceeds:
 - 20 – excellent
 - 15 – good
 - 10 – acceptable
 - <10 – site is excluded

6. Have any key indicator species been identified at the site?
 - >2 – excellent
 - 1-2 – good
 - 0 – poor

7. Unionid abundance exceeds:
 - 15/m² – excellent
 - 5/m² – good
 - 1/m² – acceptable
 - <1/m² – site is excluded

8. Population structure – recent unionid recruitment (% individuals/species < 30 mm):
 - high (50%) – excellent
 - moderate (20%) – good
 - low (5-10%) – acceptable
 - very low (<5%) – site is excluded

9. Abundance of fish host species is:
 - high – excellent
 - moderate – good
 - low – acceptable
 - none – site is excluded

10. Site access can be characterized as:
 - high – excellent
 - moderate – good
 - limited – acceptable
 - very limited or none – site is excluded

11. Hydrologic conditions specifically at the site and generally within the drainage are:
 - very erosional – site is excluded
 - erosional – excellent
 - moderate – good
 - low – acceptable
 - depositional – site is excluded

12. Public access and use of the site can be characterized as:
 - none – excellent
 - low – good
 - moderate – acceptable
 - high – site is excluded

13. Potential for human introduction of zebra mussels is:
- improbable – excellent
 - moderate – acceptable
 - high (over time) – site is excluded

APPENDIX 4

MEASURES TO PREVENT THE ACCIDENTAL SPREAD OF ZEBRA MUSSELS DURING RELOCATION EFFORTS

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MEASURES TO PREVENT THE ACCIDENTAL SPREAD OF ZEBRA MUSSELS DURING RELOCATION EFFORTS

Relocating mussels and mussel sampling have a risk of infesting relocation sites with zebra mussels. Precautions need to be taken when moving mussels and/or sampling equipment from zebra mussel infested water to uninfested waters. The procedures outlined below will be taken to reduce the risk of accidental introductions of zebra mussels.

Cleaning of equipment used in the relocation effort.

All equipment, including boats, diving equipment, etc., used in the relocation and monitoring efforts would be cleaned when moving from zebra mussel infested waters to non-infested waters according to established State and Federal guidelines (Yager 1997). The following Standard Operating Procedure is to be followed:

- A. Before leaving an infested area, inspect boats and equipment, particularly items remaining in the water for an extended period of time, for any visible zebra mussels.
- B. Remove any visible zebra mussels by scraping and dispose of them in an approved manner.
- C. Completely drain all water from boats, boat motors and drive components, and other equipment. No water should be transported from an infested area.
- D. Flush boat motor cooling systems with clean water.
- E. Thoroughly dry boats, trailers, and other equipment in the sun for a minimum of 3 days. Zebra mussels can survive out of water in moist, damp, and/or humid conditions for more than a week. Therefore, if there is any doubt whether the piece of equipment is truly dry, one of the following alternate decontamination procedures should be implemented:
 - 1) Wash all equipment with hot water. To be effective, the water should be a minimum of 140 °F.
 - 2) Thoroughly clean with a pressurized steam cleaning unit.
 - 3) Thoroughly clean the equipment using a mild chlorine solution of 2 tablespoons of bleach per gallon. Chlorine solutions are effective for killing veligers, but are not recommended for killing adult zebra mussels. Because of their effects on the environment, chlorine solutions are recommended for use only if none of the alternate cleaning methods listed above can be implemented. Chlorine solutions should not be disposed of in the water.

Zebra mussel control associated with adult relocation.

Adults that are to be moved to zebra mussel low-infested waters such as the St. Croix River, below Stillwater, or Pools 2 and 3 would be cleaned and immediately relocated. Adults that are relocated to zebra mussel uninfested water would initially be thoroughly scrubbed, hand inspected, and placed in aerated clean quarantine tanks for a minimum of 30 days to allow juvenile zebra mussels missed during the initial scrubbing and inspection phase to become visible. At the end of the initial 30-day quarantine, individual mussels would be inspected under 10X magnification. If zebra mussels are found, all individuals would be thoroughly rescrubbed, placed in new clean quarantine tanks, and quarantined for an additional 30 days. This would be repeated, until no zebra mussels are found after 30 days of quarantine. They would then be certified as zebra mussel free and be available for translocation. Mussels in quarantine would be fed every 3 days from a fertilized algae tank. Patterson et al. (1997) found small zebra mussels attached to some of the mussels after 60 days of being quarantined and having been scrubbed and placed in clean containers twice. The authors quarantined their specimens for a total of 130 days before certifying them to be zebra mussel free and available for translocation.

Zebra mussel (*Dreissena polymorpha*) control protocol associated with culture of freshwater mussels.

The following procedures were prepared by Roger Gordon of the USFWS Genoa National Fish Hatchery (NFH) for use in propagation work associated with the proposed relocation efforts.

Purpose. Concerns over the potential spread of the zebra mussel (*Dreissena polymorpha*), through propagation practices at the Genoa National Fish Hatchery, have prompted the adoption of this standard protocol for the importation of feral mussels into the facility. The potential does exist that zebra mussels could colonize fish production units and consequently seriously affect the ability of this facility to produce and distribute various species of fish and mussels. Adherence to these established procedures by project personnel should reduce the possibility of the inadvertent spread of this invasive species by normal hatchery practices.

Concern. Currently, Genoa NFH operates a mussel propagation project for the purpose of producing various life stages of the endangered freshwater mussel *Lampsilis higginsii* for distribution into the Upper Mississippi River and its major tributaries within several States in the Upper Midwest. Inherent to the propagation process is the need to bring feral female *L. higginsii* mussels onto the facility. Potential for contamination of the facility by *D. polymorpha* may exist through the direct transfer of viable adults or larval stages of this species on or inside these donor mussels. Another possible vector for the introduction of this species is through the importation of feral fishes from waters that may harbor free-swimming larval stages. And finally, a concurrent project to evaluate the potential for long-term care and propagation of adult native mussels, which used feral mussels native to the Upper Mississippi River, St. Croix River, and lower Wisconsin River, also poses a danger of introducing *D. polymorpha* to waters within the Genoa NFH.

Methods. The current need to import feral *L. higginsii* females from populations within the Mississippi River watershed does pose a potential for introducing *D. polymorpha* onto the Genoa

NFH. Possible solutions to reduce this risk include the following: 1. Halt the importation of feral female *L. higginsii* donor mussels by collecting glochidia off-site. 2. Reduce the potential for transfer of *D. polymorpha* by inspection/scrubbing/isolation.

Cessation of importation of adult *L. higginsii* would provide the most positive control of inadvertent transfer of *D. polymorpha* onto the facility, but would entail off-site collection of glochidia. This option would greatly reduce the flexibility of the project as well as introduce the risk of losing the entire progeny of some donor *L. higginsii* due to unforeseen problems with storage of harvested glochidia. Studies have shown that the glochidia of several freshwater Unionids remain viable for up to 40 hours post harvest with proper care, but environmental conditions such as temperature, physical shock, and changing water chemistries can reduce viability. Because of the risks involved, lack of off-site holding capabilities, and restriction of program flexibility, this option is currently being rejected.

The potential for importation of *D. polymorpha* onto the Genoa NFH through the transfer of live adult *L. higginsii* must be recognized. Several simple steps can be implemented to reduce this risk.

1. Remove all visible *D. polymorpha* attached to the outside of mussels to be transferred to the Genoa NFH at the time of collection.
2. If possible, transfer adult mussels in early spring or late fall when ambient water temperatures in the river system are not above 12 °C.
3. Donor mussels from waters with lower *D. polymorpha* densities are preferable for reasons addressed by this protocol, but may not be practical/prudent in regard to genetic, management, or availability considerations.
4. Upon arrival at the hatchery, all mussels will be transferred from off-site carrying container(s) to a clean hatchery vessel containing facility water of the proper temperature (~2 °C). Prior to transfer, hatchery personnel will inspect mussels to ensure no *D. polymorpha* are present externally. Hatchery personnel will invert mussels to remove as much internal water as possible from the shell.
5. Feral mussels will be maintained in an isolation tank within the mussel propagation building. All water associated with the maintenance of these mussels will be wasted to the Bad Axe River and not used for other mussel/fish culture. Prior to transfer to isolation tanks, all mussels will be inverted again and as much water as practical allowed to drain from the shell. Caution should be observed with regard to premature aborting of glochidia. If evidence suggests that donor mussels are aborting, every effort should be made to save mussel discharges for later use.
6. All water associated with off-station containers should be considered contaminated by *D. polymorpha*. All equipment connected with transfer of mussels will be disinfected with a solution of no less than 200 ppm chlorine for 20 minutes. All equipment associated with the culture and maintenance of feral mussels will be considered contaminated and segregated from normal culture use anywhere on the facility until proper disinfection is carried out.

The importation of feral fishes from waters containing *D. polymorpha* poses a risk of colonization by this species. While this risk exists, current management plans require the use of several species of feral fishes from the Upper Mississippi River to meet management objectives. The continued operation of the mussel culture project at the Genoa NFH depends on fish produced from wild broodstocks from the Mississippi River. Several factors in the facility's management of wild fish importation have reduced the potential for transfer of *D. polymorpha* onto the station and are outlined below.

1. Wild broodstocks are transferred in early spring when water temperatures are below 10 °C.
2. All equipment associated with off-site operations is routinely disinfected to prevent inadvertent introduction of *D. polymorpha* and other fish pathogens.
3. The use of Bad Axe River water in the culture of fishes on the Genoa NFH has been restricted to one pond located outside the facility's main perimeter dike. Water for use in this propagation pond is collected in early spring when water temperatures are below 10.0 °C. No water from this rearing unit is imported inside the main station.

A project to test the viability of the Genoa NFH as a long-term holding facility for freshwater mussels is currently under way. Risks involved with the maintenance of this project are similar to those expressed in the *L. higginsii* culture project previously outlined. Adult mussels from the Mississippi River, as well as some of the larger tributaries, are held long term to assess survival, growth, and reproductive capabilities in captivity. This project is a precursor to the potential creation and maintenance of a captive broodstock of *L. higginsii*. Protocols and procedures for the importation of these mussels are similar to those carried out in *L. higginsii* importation with several exceptions:

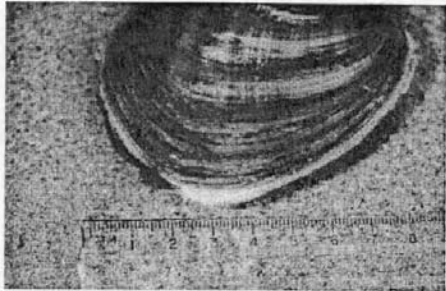
* After initial inspection and transfer into isolation tanks, all mussels will be held 30 days prior to introduction into current populations. After the 30-day isolation period, all mussels will be inspected under magnification for the presence of *D. polymorpha*. If *D. polymorpha* is detected, all mussels will be scrubbed and a second 30-day isolation period will be initiated. If after the second inspection no *D. polymorpha* are detectable, the mussels may be introduced into the facility's culture program. If at any time additional mussels are introduced into the isolation tank(s), the 30-day isolation period reinitiates.

References

- Patterson, M. A., B. C. Parker, and R. J. Neves. 1997. Effects of quarantine times on glycogen levels of native freshwater mussels (*Bivalvia: Unionidae*) previously infested with zebra mussels. *American Malacological Bulletin*, Vol. 14(1) (1997): 75-79.
- Yager, T. K. 1997. Zebra Mussel Response Plan, St. Paul District, U.S. Army Corps of Engineers. St. Paul District, U.S. Army Corps of Engineers, 190 Fifth Street East, St. Paul, Minnesota.

APPENDIX 5
PUBLIC MEETINGS

These Mississippi River System Endangered Species Need Our Help



Higgins' Eye Pearlymussel
Lampsilis Higginsii



Winged Mapleleaf Mussel
Quadrula fragosa

**- THEY ARE THREATENED BY EXOTIC ZEBRA MUSSELS -
- THEIR SURVIVAL MATTERS FOR THE RIVER ECOSYSTEM -**

Find out why it matters and what's being done about it

PUBLIC INFORMATION OPEN HOUSES

April 2, 3, 4 and 11, 2001 - 6:00 - 9:00 pm
(Informational Presentation at 7:30 pm)

Monday, April 2	Dubuque, IA	Mississippi River Museum 3rd St. at the Ice Harbor
Tuesday, April 3	Prairie du Chien, WI	Huckleberry's Restaurant 1916 S. Marquette Rd. (US 61)
Wednesday, April 4	Wabasha, MN	Wabasha-Kellogg High School 2113 E. Hiawatha Dr.
Wednesday, April 11	Moline, IL	Holiday Inn-Airport 6902 27 th St.

Sponsored by

Mississippi River Mussel Coordination Team

For information call Dennis Anderson (651) 290-5272 St. Paul District, US Army Corps of Engineers

Dubuque Public Meeting

Dubuque
Mussel Meeting Sign-In

Robin Gawe	MWBAC	Wanna, MN
Dennis Anderson	St. Paul District, Corps	St. Paul, MN
BOB SCHIESL	CITY OF DBQ, ENGINEERING	
DAVE CZARNECKI	LOKAS COLLEGE	DBQ
Larry Stone	Elkader, Ia	
Charles Guel/Winterwood	Dubuque, IA	
Shannon Ault	Bellevue	
Jost PETERSEN	Bellevue	
Theresa Blackburn	Dubuque	
Mindy Hubler	Dubuque	

Prairie du Chien Public Meeting

Mussel Meeting Sign. In
Prairie du Chien

Bob & Anne	MWBAC	Wenona
Lois Gordon	USFWS	Gosport
Joe and June Shim		Suttonburg
Marianne Fawcett	Malacological Consultants	La Crosse
Don Valley		P.D.C.
Sten Kolbacz		Marquette
Laurie Fosterboer		Elkader

Wabasha Public Meeting

Wabasha Kellogg - Mussel Meeting

Peter Adams	MCWBAC	Winona
Roger Gordon	USFWS	Genoa
Doug Beisell		WABASHA
Shirley Beisell	realtor	Wabasha
Dennis Anderson	Corps	St. Paul, MN
Beezas7@aol.com Nicole Ward	student	Rochester
MARY JOHNSON		Dep't
Jane R. Smith		Peper

Moline Public Meeting

SIGN-IN SHEET

NAME	ADDRESS
Dick & Bess Pierce	734-18 AVENUE A MOLINE, IL 61265 309/764/553; Gemini@aol.com

APPENDIX 6

DISTRIBUTION LIST

List of elected officials, Federal, State, and local agencies, interest groups, media, individuals, and libraries that will receive a copy of the draft Definite Project Report/Environmental Assessment and/or Notice of Availability

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MARIA PEARSON		GOV'S LIAISON FOR INDIAN AFFAIRS	AMES	IA	50010
G. GENE JONES		DEPT OF TRANSPORTATION	AMES	IA	50010
MR. LES HOLLAND		IA DEPT OF TRANSPORTATION	AMES	IA	50010
CRAIG W. O'RILEY		DEPT OF TRANSPORTATION	AMES	IA	50010
MR BOB KRAUSE		IOWA DOT	AMES	IA	50010
	DIVISION ADMINISTRATOR	FEDERAL HIGHWAY ADMINISTRATION	AMES	IA	50010
JOEL BRINKMAYER	BRANCH MANAGER	STATE OF IOWA	AMES	IA	50010-0451
MR. BRAD BARRETT		OFFICE OF BRIDGES AND STRUCTURES	AMES	IA	50010-6915
MR. ROBERT L. HUMPHREY		STATE OF IOWA	AMES	IA	50010-6915
	CTRE	LIBRARY	AMES	IA	50010-8632
		DEPART OF COMMERCE	ANKENY	IA	50021
DON BRAZLTON		IA ASSN OF COUNTY CONSERVATION BOARDS	ANKENY	IA	50021-3052
DALE FAULKNER	BRANCH MANAGER	STATE OF IOWA	INDIANOLA	IA	50125-2802
MR. BILL BALLENTYNE	CHAIRMAN OF THE BOARD	COUNTY OF DECATUR	LEON	IA	50144-1647
HONORABLE T. R. THOMPSON, JR.	MAYOR & CITY COUNCIL	CITY HALL	MARSHALLTOWN	IA	50158
MR. ALLEN HILLEMANN	DIRECTOR	US DEPT OF AGRICULTURE	MARSHALLTOWN	IA	50158-4548
ROYCE J. FICHTNER	ENGINEER	COUNTY OF MARSHALL	MARSHALLTOWN	IA	50158-4906
MR ROBERT SUEPPEL	IOWA FIELD OFFICE	CONGRESSMAN BOSWELL	OSCEOLA	IA	50213
		PELLA CHAMBER OF COMMERCE	PELLA	IA	50219
MR. RICHARD JOHNSON	BRANCH MANAGER	STATE OF IOWA	WILLIAMS	IA	50271
MR. TODD R. HAGAN	PRINCIPAL	MADISON COUNTY ROADS DEPT	WINTERSET	IA	50273
	DIRECTOR	STATE OF IOWA	DES MOINES	IA	50306-9204
HONORABLE TOM HARKIN	UNITED STATES SENATOR		DES MOINES	IA	50309
MARK ACKELSON		IOWA NATURAL HERITAGE FOUNDATION	DES MOINES	IA	50309
BRENT HALLING		IOWA DEPT OF AGRI	DES MOINES	IA	50309
MR BOB RENAND	IOWA FIELD OFFICE	SENATOR GRASSLEY	DES MOINES	IA	50309
MR DICK VEGORS	MARKETING MANAGER	IOWA DEPT OF ECONOMIC DEVELOPMENT	DES MOINES	IA	50309
HONORABLE GREG GANSKE	REPRESENTATIVE IN CONGRESS		DES MOINES	IA	50309
MS DIANNE LIEPA	IOWA FIELD OFFICE	SENATOR HARKIN	DES MOINES	IA	50309
HONORABLE CHARLES E. GRASSLEY	UNITED STATES SENATOR		DES MOINES	IA	50309
MR. LEROY BROWN	BRANCH MANAGER	NATURAL RESOURCES CONSERVATION SERVICE	DES MOINES	IA	50309-2180
HONORABLE NEAL SMITH	REPRESENTATIVE IN CONGRESS		DES MOINES	IA	50309-3904
MR. JOHN BELLIZZI	BRANCH MANAGER	CITY OF DES MOINES	DES MOINES	IA	50309-4820
HONORABLE WILLIAM D. PALMER	UNITED STATES SENATOR		DES MOINES	IA	50317-7068
	DIRECTOR	IA DEPT OF SOIL CONSERVATION	DES MOINES	IA	50319
LYLE ASELL		IOWA DNR	DES MOINES	IA	50319
DARRELL MCALLISTER	BUREAU CHIEF	SURFACE & GROUNDWATER PROT BUREAU-DNR	DES MOINES	IA	50319
ALLEN STOKES	DIVN ADMIN	ENVIRONMENTAL PROTECTION	DES MOINES	IA	50319
ANDREW VARLEY		IOWA COMMERCE COMMISSION	DES MOINES	IA	50319
ARNOLD SOHN	CHIEF	PLANNING BUREAU - DNR	DES MOINES	IA	50319
DAN LINDQUIST	NAT RES ENGR	DEPT OF AGRICULTURE & LAND STEWARDSHIP	DES MOINES	IA	50319
MR. PAUL JOHNSON	DIRECTOR	DNR	DES MOINES	IA	50319
AL FARRIS	ADMINISTRATOR	DNR	DES MOINES	IA	50319
HONORABLE DALE M. COCHRAN	SECRETARY OF AGRICULTURE		DES MOINES	IA	50319
HAROLD HOMMES		IA DEPT OF AGRI & LAND STEWARDSHIP	DES MOINES	IA	50319
MARY JANE OLREY		IOWA DEPT OF AGRI	DES MOINES	IA	50319
PATTY JUDGE		IOWA DEPT OF AGRI	DES MOINES	IA	50319
J. EDWARD BROWN		STATE WATER COORDINATOR	DES MOINES	IA	50319
JACK RIESSEN	ENV PROG SUPV	DNR	DES MOINES	IA	50319
JIM BROWN	LEGISLATIVE LIAISON	DNR	DES MOINES	IA	50319
RALPH CHRISTIAN		BUREAU OF HISTORIC PRESERVATION	DES MOINES	IA	50319
MARION CONOVER		DNR	DES MOINES	IA	50319
HONORABLE SHELDON RITTMER	UNITED STATES SENATOR		DES MOINES	IA	50319
PATRICIA OHLERKING	DEPUTY STATE HISTORIC PRESERV. OFCR	BUREAU OF HISTORIC PRESERVATION	DES MOINES	IA	50319
MR. JEFFREY R. VONK	DIRECTOR	IOWA DNR	DES MOINES	IA	50319-0034
KEVIN SZCODRONSKI	MISSISSIPPI RIVER COORDINATOR	IA DNR	DES MOINES	IA	50319-0034
MR. GLENN BUSH	BRANCH MANAGER	US DEPT OF TRANSPORTATION	DES MOINES	IA	50321-2805
MR. JERRY BOOTH	BRANCH MANAGER	US DEPT OF AGRICULTURE	DES MOINES	IA	50322-7907
HONORABLE JIM NUSSLE	REPRESENTATIVE IN CONGRESS		MASON CITY	IA	50401
MR. JOSEPH MCLAUGHLIN	BRANCH MANAGER	US DEPT OF AGRICULTURE	MASON CITY	IA	50401-5615
MR. ROBERT BORTLE	BRANCH MANAGER	STATE OF IOWA	MASON CITY	IA	50402-0741
MR. ARNOLD JOHNSON	BRANCH MANAGER	STATE OF IOWA	BRITT	IA	50423-0187
MR. JIM WAHL	BRANCH MANAGER	STATE OF IOWA	CLEAR LAKE	IA	50428-1233
		US DEPT OF AGRICULTURE	GARNER	IA	50438-0040
MR. RANDALL J. WILL	BRANCH MANAGER	COUNTY OF FRANKLIN	HAMPTON	IA	50441-0118
HONORABLE TOM LATHAM	REPRESENTATIVE IN CONGRESS		FORT DODGE	IA	50501
MR. ROGER L. KEITH	COUNTY EXECUTIVE DIRECTOR	US DEPT OF AGRICULTURE	POCAHONTAS	IA	50574-0189
JAMES DUNHAM		PARK RECREATION & CEMETERY DEPT	WEBSTER CITY	IA	50595
		CENTRAL IOWA TOURISM REGION	WEBSTER CITY	IA	50595-0454
MR. BRIAN HOLT	EXECUTIVE DIRECTOR	HAMILTON COUNTY CONSERVATION BOARD	WEBSTER CITY	IA	50595-9799
MR. DENNIS EBERLE	DIRECTOR	US DEPT OF AGRICULTURE	ALLISON	IA	50602-0068
MR. LARRY SCHWAB	BRANCH MANAGER	STATE OF IOWA	ALLISON	IA	50602-0625
MR. STEVE LINDAMAN	PURCHASING	CITY OF CHARLES CITY	CHARLES CITY	IA	50616-2229
MR. JOHN BAHNSEN	BRANCH MANAGER	US DEPT OF AGRICULTURE	CHARLES CITY	IA	50616-3722

HONORABLE CHARLES E. GRASSLEY	UNITED STATES SENATOR		WATERLOO	IA	50701
HONORABLE JIM NUSSLE	REPRESENTATIVE IN CONGRESS		WATERLOO	IA	50702
ROD LARSEN		IOWA NORTHLAND REGIONAL	WATERLOO	IA	50703-4651
MR. ED CULPEPPER	BRANCH MANAGER	US DEPT OF TRANSPORTATION	WATERLOO	IA	50703-9677
HONORABLE JOHN R. ROOFF, III	MAYOR	CITY HALL	WATERLOO	IA	50704
MR. BILL BERTENHAGEN		ADAMS COUNTY FARM SERVICE AGENCY	CORNING	IA	50841-8087
MR. LAWRENCE WESTPHAL	MAYOR	CITY OF CHEROKEE	CHEROKEE	IA	51012-0721
MR. LARRY BAUDER	BRANCH MANAGER	CITY OF HAWARDEN	HAWARDEN	IA	51023-0231
HONORABLE TOM LATHAM	REPRESENTATIVE IN CONGRESS		ORANGE CITY	IA	51041
MR. DENNIS LANGE	AUDITOR	SIoux COUNTY	ORANGE CITY	IA	51041-1751
MR BEN POST	IOWA FIELD OFFICE	CONGRESSMAN GANSKE	COUNCIL BLUFFS	IA	51053
RICH LEE		AG PROCESSING INC	SERGEANT BLUFF	IA	51054
HONORABLE CHARLES E. GRASSLEY	UNITED STATES SENATOR		SIoux COUNTY	IA	51101
HONORABLE TOM LATHAM	REPRESENTATIVE IN CONGRESS		SIoux CITY	IA	51101
HONORABLE TOM HARKIN	UNITED STATES SENATOR		SIoux CITY	IA	51101-1244
MS. ANGELINE TORRAY	BRANCH MANAGER	STATE OF IOWA	SIoux CITY	IA	51104-2407
MR. DAVID BECK	BRANCH MANAGER	US DEPT OF AGRICULTURE	SIoux CITY	IA	51106-4707
MR. CHARLES VAN BOTEN	BRANCH MANAGER	US DEPT OF DEFENSE	SIoux CITY	IA	51110-1215
MS. CAROL S. GROEN	BRANCH MANAGER	US DEPT OF AGRICULTURE	ROCK RAPIDS	IA	51246-0389
HONORABLE TOM LATHAM	REPRESENTATIVE IN CONGRESS		SPENCER	IA	51301
MS BONNIE VETTER		STATE TRANSPORTATION COMMISSIONER	SPENCER	IA	51301
MR. LARRY LAGO	BRANCH MANAGER	US DEPT OF AGRICULTURE	SPIRIT LAKE	IA	51360-0156
MR. NEIL TROBAK	CHAIRMAN OF THE BOARD	CARROLL COUNTY	CARROLL	IA	51401-2717
MR. DAVID KUHN	BRANCH MANAGER	US DEPT OF AGRICULTURE	DENISON	IA	51442-2457
HONORABLE CHARLES GRASSLEY	UNITED STATES SENATOR		COUNCIL BLUFFS	IA	51501
MR. PAUL BRUECKNER	BRANCH MANAGER	GOVERNMENT OF UNITED STATES	COUNCIL BLUFFS	IA	51501-7042
HONORABLE GREG GANSKE	REPRESENTATIVE IN CONGRESS		COUNCIL BLUFFS	IA	51503
SHIRLEY FREDERIKSEN	BRANCH MANAGER	US DEPT OF AGRICULTURE	HARLAN	IA	51537-2331
MR. DUANE GROOMS	SUPERVISOR	COUNTY OF HARRISON	LOGAN	IA	51546
MS. MARY J. BARNEY	BRANCH MANAGER	US DEPT OF AGRICULTURE	LOGAN	IA	51546-1042
MR. MICHEAL KRESIN	BRANCH MANAGER	US DEPT OF AGRICULTURE	MALVERN	IA	51551-0607
MR. WARREN SCHULER	BRANCH MANAGER	US DEPT OF AGRICULTURE	RED OAK	IA	51566-1043
MR. PAUL MARSHALL	MANAGER	CITY OF WOODBINE	WOODBINE	IA	51579-0112
HONORABLE JIM ROSS LIGHTFOOT	REPRESENTATIVE IN CONGRESS		SHENANDOAH	IA	51601-1513
MS. JUDY CLARK	AUDITOR	COUNTY OF PAGE	CLARINDA	IA	51632-2111
MS. ROBERTA SCHAAF	BRANCH MANAGER	US DEPT OF AGRICULTURE	SIDNEY	IA	51652
DON STOLL		NEWT MARINE SERVICE	DUBUQUE	IA	52001
HONORABLE MIKE CONNOLLY	UNITED STATES SENATOR		DUBUQUE	IA	52001
	CHAIRMAN	COUNTY BOARD OF SUPERVISORS	DUBUQUE	IA	52001
	DIRECTOR OF PUBLIC WORKS	CITY HALL	DUBUQUE	IA	52001
	COUNTY CLERK	DUBUQUE COUNTY	DUBUQUE	IA	52001
DEAN RAMPSON			DUBUQUE	IA	52001
WAYNE KINNAIRD		CONTINENTAL CARRIER	DUBUQUE	IA	52001
CHARLE RUFF		DUB COUNTY CONSERVATION BOARD	DUBUQUE	IA	52001
		MOLO SAND & GRAVEL COMPANY	DUBUQUE	IA	52001
		DUBUQUE AREA CHAMBER OF COMMERCE	DUBUQUE	IA	52001
HONORABLE TERRENCE M. DUGGAN	MAYOR	CITY HALL	DUBUQUE	IA	52001
LESLIE NEYENS		CITY OF DUBUQUE	DUBUQUE	IA	52001
ROGER KINGERY		DUBUQUE RIVER TERMINALS	DUBUQUE	IA	52001
MR. GARY W. NEWT		NEWT MARINE SERVICE	DUBUQUE	IA	52001
HONORABLE TOM HARKIN	UNITED STATES SENATOR		DUBUQUE	IA	52001
THOMAS B. CLAYTON		ARROWHEAD MARINA	DUBUQUE	IA	52001
	OFFICER IN CHARGE	USCGC WYACONDA	DUBUQUE	IA	52001
		KOCH ASPHALT TERMINAL	DUBUQUE	IA	52001-2333
MR. DONALD SHANLEY	PRESIDENT	DUBUQUE YACHT BASIN INC	DUBUQUE	IA	52001-2334
MR. WAYNE KINNAIRD	BRANCH MANAGER	CONTINENTAL GRAIN COMPANY	DUBUQUE	IA	52001-2339
LAURA CARSTENS	PLANNING SVCS. MGR	CITY OF DUBUQUE	DUBUQUE	IA	52001-4845
MR BENJAMIN GREEN	PRESIDENT	INLAND MOLASSES COMPANY	DUBUQUE	IA	52001-7613
WILLIAM SCHMITT		ARROWHEAD MARINA	DUBUQUE	IA	52001-9501
MR. THOMAS WINSLOW	PRESIDENT	W W CORP	DUBUQUE	IA	52001-9501
KATHY REED			DUBUQUE	IA	52002-2883
HONORABLE JIM NUSSLE	REPRESENTATIVE IN CONGRESS		DUBUQUE	IA	52002-2883
MR. GARY W. NEWT	PRESIDENT	DUBUQUE BARGE & FLEETING SERVICE	DUBUQUE	IA	52003
MR. KENNETH J. BONNET	PRESIDENT	ROBERTS RIVER RIDES INC	DUBUQUE	IA	52004-0419
MR. WILLIAM BAUM	DIRECTOR	US DEPT OF HUD	DUBUQUE	IA	52004-1140
TOM BOLAND		UMACC / IDNR	BELLEVUE	IA	52031
TOM ROTH		CITY OF BELLEVUE	BELLEVUE	IA	52031
MIKE GRIFFIN		IA DNR	BELLEVUE	IA	52031
MR. SCOTT PUTMAN			BELLEVUE	IA	52031-0194
MR. RUSS GENT	BRANCH MANAGER	STATE OF IOWA	BELLEVUE	IA	52031-1402
MIKE STEUCK			BELLEVUE	IA	52031-9402
MR. BOB KRAUSE	PLANNER	IOWA DEPT OF TRANSPORTATION	DYERSVILLE	IA	52040
MR. FRANK PHIPPEN	DIRECTOR	US DEPT OF AGRICULTURE	ELKADER	IA	52043
	COUNTY AUDITOR	CLAYTON COUNTY COURTHOUSE	ELKADER	IA	52043
MR. BILL KUEHL		BILLS BOAT LANDING & MARINA	GARNAVILLO	IA	52049-0020
SCOTT GRITTERS		IA DNR	GUTTENBERG	IA	52052

MR. GARY STIRN	PRESIDENT	TWIN TOWER SERVICES	GUTTENBERG	IA	52052-0788
GARY SIEGWARTH		IA DNR	MANCHESTER	IA	52057
MR. BOB CLEMEN	SUPERVISOR	DELAWARE COUNTY	MANCHESTER	IA	52057
ART ROSELAND	DISTRICT WILDLIFE SUPERVISOR	IA DNR	MANCHESTER	IA	52057
GREG SIMMONS		IA DNR	MANCHESTER	IA	52057
HONORABLE JIM NUSSLE	REPRESENTATIVE IN CONGRESS		MANCHESTER	IA	52057
DAVE MOELLER		IA DNR	MANCHESTER	IA	52057-8779
	CHAIRMAN	BOARD OF SUPERVISORS	MAQUOKETA	IA	52060
CLARK SCHLOZ		JACKSON COUNTY	MAQUOKETA	IA	52060
MR. DOUG LARSEN	DIRECTOR	US DEPT OF AGRICULTURE	MAQUOKETA	IA	52060-0758
BRIAN PRESTON		DUBUQUE COUNTY CONSERVATION BOARD	PEOSTA	IA	52068
MR. JERRY LAWSON		ISLAND CITY HARBOR INC	SABULA	IA	52070-0346
KURT KRAMER			SHERRILL	IA	52073
MR. STEVEN R. STAEBLER	FIELD SUPERVISOR	IOWA DEPT OF TRANSPORTATION	DECORAH	IA	52101-0140
L. BERNARD PATTISON		PATTISON BROTHERS	FAYETTE	IA	52142
LYMAN J. HANSON	MAYOR	HARPER'S FERRY	HARBERS FERRY	IA	52146
JAMES JANETT		ALLAMAKEE COUNTY CONSERVATION	HARBERS FERRY	IA	52146-0278
JACK LIBBEY			LANSING	IA	52151
DONALD D. WEYMILLER		WEYMILLER MARINE INC	LANSING	IA	52151
MR. NEIL GALEMA		LANSING MARINA	LANSING	IA	52151-0069
JOHN LINDELL		US FISH AND WILDLIFE SERVICE	MC GREGOR	IA	52157
MR. STAN WEBENA	BRANCH MANAGER	AGRI GRAIN MARKETING	MC GREGOR	IA	52157-0160
MR. ROBERT W. MYERS	PRESIDENT	BOATELS INC	MC GREGOR	IA	52157-0219
MR. JEFF JOHNSON	OFFICER	J G JOHNSON INC	MC GREGOR	IA	52157-0328
	CHAIRPERSON	COUNTY BOARD OF SUPERVISORS	WAUKON	IA	52172
MS. KAREN LOEB	BRANCH MANAGER	US DEPT OF AGRICULTURE	WAUKON	IA	52172-1448
HONORABLE JIM LEACH	REPRESENTATIVE IN CONGRESS		IOWA CITY	IA	52240-4003
MR. ROGER FISHER	BRANCH MANAGER	CITY OF CORALVILLE	IOWA CITY	IA	52241-0127
DR. WILLIAM GREEN	DIRECTOR, OFFICE OF THE STATE ARCHE.	THE UNIVERSITY OF IOWA	IOWA CITY	IA	52242-1030
CLEO TROYER	MAYOR	CITY OF KALONA	KALONA	IA	52247-9743
GENE WOLTER	BRANCH MANAGER	US DEPT OF AGRICULTURE	MARION	IA	52302-3715
JOHNATHAN BUFFALO	HISTORIC PRESERVATION COORDINATOR	SAC & FOX NATION OF THE MISS	TAMA	IA	52339-9629
MR. ROBERT ETZEL	MANAGER	TAMA COUNTY CONSERVATION BOARD	TOLEDO	IA	52342-9456
MR. STEVEN JOHNSTON	BRANCH MANAGER	US DEPT OF AGRICULTURE	WILLIAMSBURG	IA	52361
MR. DOUG MORNINGSTAR	CIVIL ENGINEER	US DEPT OF AGRICULTURE - NRCS	WILLIAMSBURG	IA	52361-0210
HONORABLE CHARLES E. GRASSLEY	UNITED STATES SENATOR		CEDAR RAPIDS	IA	52401
MS MARY DAY	IOWA FIELD OFFICE	CONGRESSMAN GRASSLEY	CEDAR RAPIDS	IA	52401
MR GARY GRANT	IOWA FIELD OFFICE	CONGRESSMAN LEACH	CEDAR RAPIDS	IA	52401-1837
HONORABLE JIM LEACH	REPRESENTATIVE IN CONGRESS		CEDAR RAPIDS	IA	52401-1837
	CHAIRPERSON	COUNTY BOARD OF SUPERVISORS	ELKADER	IA	52403
MR. GERALD HAAS	DIVISION MANAGER	JAMES W BELL COMPANY INC	CEDAR RAPIDS	IA	52403-1713
MR. RON DUMKE	BRANCH MANAGER	CITY OF CEDAR RAPIDS	CEDAR RAPIDS	IA	52403-3329
MR. DANIEL E. SANDOVAL	BRANCH MANAGER	US DEPT TRANSPORTATION	CEDAR RAPIDS	IA	52404
HONORABLE TOM HARKIN	UNITED STATES SENATOR		CEDAR RAPIDS	IA	52407-4884
STEVE WATERS		IA DNR	BRIGHTON	IA	52540
MR. MARLIN HENDERSON	MAYOR	CITY OF CENTERVILLE	CENTERVILLE	IA	52544-0578
MR. EDWARD MCDONOUGH	BRANCH MANAGER	JEFFERSON COUNTY SOIL CONSERVATION	FAIRFIELD	IA	52556-0196
A. G. STEVENSON		BURLINGTON RIVER TERMINAL INC	BURLINGTON	IA	52601
	CHAIRMAN	COUNTY BOARD OF SUPERVISORS	BURLINGTON	IA	52601
JAMES E. BANKER		HOME OIL STATIONS INC	BURLINGTON	IA	52601
JOHN STIENER		BURLINGTON RIVER TERMINAL	BURLINGTON	IA	52601
	MAYOR	CITY HALL	BURLINGTON	IA	52601
MR. DAVID SMITH		BLUFF HARBOR MARINA	BURLINGTON	IA	52601-1073
MR. DONALD FRY	BRANCH MANAGER	USDA NATURAL RESOURCES CONSERVATION	BURLINGTON	IA	52601-1988
	MANAGER	GEODES STATE PARK	DANVILLE	IA	52623-8900
HONORABLE EUGENE FRAISE	UNITED STATES SENATOR		FORT MADISON	IA	52627
	COUNTY CLERK	LEE COUNTY	FORT MADISON	IA	52627
DON F. HALL		HALL TOWING INC	FORT MADISON	IA	52627
MS. ANNE PEDERSON	AUDITOR	LEE COUNTY	FORT MADISON	IA	52627
	MAYOR	CITY HALL	FORT MADISON	IA	52627
TOM SEIBERG		HUBINGER RIVER TERMINAL	KEOKUK	IA	52632
G. E. CAMPBELL, JR.	MANAGER-PURCH & TRANS	KEOKUK FERRO-SIL INC	KEOKUK	IA	52632
W. BREEN TURLEY		ORBA JOHNSON TRANSHIPMENT COMPANY	KEOKUK	IA	52632
LT DAVID K. HEBERT		US COAST GUARD GROUP - UPPER MISS	KEOKUK	IA	52632
MR. WALTER CALDWELL	PRESIDENT	IOWA GATEWAY INC	KEOKUK	IA	52632-0157
MR. BRIAN FORD	BRANCH MANAGER	US DEPT OF TRANSPORTATION	KEOKUK	IA	52632-5800
MIKE RITCHIE		COAST GAURD	KEOKUK	IA	52632-5851
HAROLD HUNOLD		HUNOLD ELEVATOR INC	MONTROSE	IA	52639
	CHAIRMAN	BOARD OF SUPERVISORS	WAPELLO	IA	52653
MR. CORWIN WILLIAMS		BOAT SHOP	WAPELLO	IA	52653
	COUNTY CLERK	LOUISA COUNTY COURTHOUSE	WAPELLO	IA	52653
HONORABLE VIRGIL E. COREY	REPRESENTATIVE IN CONGRESS		WAPELLO	IA	52653-1218
MR. JOHN BARTENHAGEN	BRANCH MANAGER	FSA-FARM SERVICE AGENCY	WAPELLO	IA	52653-1225
NICK HOUSTON, JR.		GREEN BAY ELEVATOR COMPANY	WEVER	IA	52658
LYNN TALCOTT		AMOCO OIL COMPANY	BETTENDORF	IA	52722
		ALTER BARGE LINE INC	BETTENDORF	IA	52722

JOHN MCKENZIE		ALTER BARGE LINE	BETTENDORF	IA	52722
	MAYOR	STEAMBOAT CASINO RIVER CRUISES	BETTENDORF	IA	52722
		CITY HALL	BETTENDORF	IA	52722
DALE GOODMUNDSON		ALTER BARGE LINE	BETTENDORF	IA	52722
JERRY RASMUSSEN		MI INTERSTATE COOP RESOURCE ASSN	BETTENDORF	IA	52722-0774
HONORABLE MARGARET TINSMAN	UNITED STATES SENATOR		BETTENDORF	IA	52722-2185
MR. BRAD PETERSON	SUPERINTENDENT	CITY OF BETTENDORF	BETTENDORF	IA	52722-5022
MR LARRY DAILY		ALTER BARGE LINE	BETTENDORF	IA	52722-5030
MR. JEFFEREY GOLDSTEIN	PRESIDENT	AGS CHARTERING COMPANY	BETTENDORF	IA	52722-5030
JOHN MEULKEN		CARGILL INC	BUFFALO	IA	52728
	MAYOR	CITY HALL	BUFFALO	IA	52728
OWE BERGH	BRANCH MANAGER	CARGILL INC	BUFFALO	IA	52728-0558
MR. WARREN L. AHRENS	BRANCH MANAGER	VERTEX CHEMICAL CORP	CAMANCHE	IA	52730-0047
	MAYOR	CITY OF CAMANCHE	CAMANCHE	IA	52730-0077
	CHAIRMAN	BOARD OF SUPERVISORS	CLINTON	IA	52732
JIM HARING		CLINTON COUNTY IZAAK WALTON LEAGUE	CLINTON	IA	52732
HONORABLE DARRELL G. SMITH	MAYOR	CITY HALL	CLINTON	IA	52732
		CLINTON HARBOR SERVICE	CLINTON	IA	52732-5924
HONORABLE SHELDON RITTMER	UNITED STATES SENATOR		DE WITT	IA	52742
		CLINTON COUNTY FARM BUREAU	DE WITT	IA	52742
MR. KEN KRUGER	BRANCH MANAGER	US DEPT OF AGRICULTURE	DE WITT	IA	52742-0305
RON FOREBACK	DIR. OF PUBLIC WORKS	DE WITT CITY	DE WITT	IA	52742-0407
SHELDON RITTMER	UNITED STATES SENATOR		DE WITT	IA	52742-9208
		FARM BUREAU OF SCOTT COUNTY	ELDRIDGE	IA	52748
MR. FRANK PANCRATZ	MAYOR	CITY OF ELDRIDGE	ELDRIDGE	IA	52748-1234
MR. GRANT V. HOYT		H & J ASSOCIATES	LE CLAIRE	IA	52753-9527
DAVE POLLOCK		MONSANTO AGRICULTURAL PRODUCTS	MUSCATINE	IA	52761
BERNARD SCHONHOFF		DNR	MUSCATINE	IA	52761
	MAYOR	CITY HALL	MUSCATINE	IA	52761
	CHAIRMAN	BOARD OF SUPERVISORS	MUSCATINE	IA	52761
HONORABLE RICHARD F. DRAKE	UNITED STATES SENATOR		MUSCATINE	IA	52761
RICHARD E. MELSON		RIVER TERMINAL CORP	MUSCATINE	IA	52761-0026
G. J. KOENIGSAECKER	CHAIRMAN	IOWA MISSISSIPPI RIVER PARKWAY COMM	MUSCATINE	IA	52761-3619
		MUSCATINE CHAMBER OF COMMERCE	MUSCATINE	IA	52761-4100
MR. TIM SCHOENTHAL		FAIRPORT LANDING MARINA	MUSCATINE	IA	52761-8308
MR. BUTCH BALLENGER	PRESIDENT	MISSISSIPPI VALLEY SHELL COMPANY	MUSCATINE	IA	52761-9128
	MAYOR	CITY HALL	PRINCETON	IA	52768
GLEN A. SUITER		PRINCETON LANDING INC	PRINCETON	IA	52768
THOMAS M. ROGERS		PRINCETON MARINA	PRINCETON	IA	52768
MR. GLEN SUITER	PRESIDENT	PRINCETON LANDING INC	PRINCETON	IA	52768-0006
MR. DAVID MCLAUGHLIN	MAYOR	CITY OF PRINCETON	PRINCETON	IA	52768-0307
MR. CHARLES R. SEITZ		PRINCETON BEACH MARINA	PRINCETON	IA	52768-0308
MR. CARL CARPENTER		BOAT BARN	PRINCETON	IA	52768-9630
	MAYOR	CITY HALL	TIPTON	IA	52772
MR. WAYNE DEERBERG	MAYOR	CITY OF TIPTON	TIPTON	IA	52772-1633
MR.		ASCS	TIPTON	IA	52772-1658
MR. DON PETERSON	PRESIDENT	SMOOTH ROCK CAMP	WHEATLAND	IA	52777-0385
HONORABLE JACK RIFE	UNITED STATES SENATOR		WILTON	IA	52778
HONORABLE JIM LEACH	REPRESENTATIVE IN CONGRESS		DAVENPORT	IA	52801
HONORABLE TOM HARKIN	UNITED STATES SENATOR		DAVENPORT	IA	52801
HONORABLE CHARLES E. GRASSLEY	UNITED STATES SENATOR		DAVENPORT	IA	52801
	MAYOR	CITY HALL	DAVENPORT	IA	52801
EDWIN WINBORN		COUNTY BOARD OF SUPERVISORS	DAVENPORT	IA	52801
MR. CHARLIE HESTON	PROJECT MANAGER	CITY OF DAVENPORT - COMM. & ECON. DEVOP.	DAVENPORT	IA	52801
PENNY VACEK	IOWA FIELD OFFICE	SENATOR GRASSLEY	DAVENPORT	IA	52801
MR. JAMES B. SWEET	PRESIDENT	QUAD CITY MARINE COMPANY	DAVENPORT	IA	52803-5736
DOUGG D. WILLIAMS		AMOCO OIL COMPANY	DAVENPORT	IA	52804
MR. HOWARD VENDEN	PRESIDENT	VENDEN DOCK SERVICE INC	DAVENPORT	IA	52804-5031
HONORABLE PATRICK J. DELUHERY	UNITED STATES SENATOR		DAVENPORT	IA	52804-9110
ROGER BIRDSALL		BUILDERS SAND & CEMENT COMPANY	DAVENPORT	IA	52806
MR. MARK CORNISH			DAVENPORT	IA	52807
ROBERT J. FRANDSEN		LINWOOD MINING & MINERAL CORP	DAVENPORT	IA	52807-2991
		LINWOOD STONE PRODUCTS COMPANY INC	DAVENPORT	IA	52807-2991
		PEAVEY COMPANY	DAVENPORT	IA	52808
		CAPTAIN WHEEL MARINA	DAVENPORT	IA	52808-3484
MR. FRED DEAN	TRANSPORTATION CENTER PLANNER	IOWA DEPT OF TRANSPORTATION	DAVENPORT	IA	52809
MR. DOUGLAS RICK			DAVENPORT	IA	52809-2646
MATTHEW ZIEBERT	ASST TO REP SENSENBRENNER		BROOKFIELD	WI	53005
HONORABLE F. JAMES SENSENBRENNER, JR.	REPRESENTATIVE IN CONGRESS		BROOKFIELD	WI	53005-6294
MR. RON TENHAKEN	BRANCH MANAGER	STATE OF WISCONSIN	HARTFORD	WI	53027-0000
MARK SESING		STATE OF WISCONSIN	HORICON	WI	53032-9783
HONORABLE LOLITA SCHNEIDERS			MENOMONEE FALLS	WI	53051-7231
MR. WILLIAM MITCHELL	BRANCH MANAGER	STATE OF WISCONSIN	WEST BEND	WI	53095-5030
MR. PAUL ORMSON	MAYOR	CITY OF ELKHORN	ELKHORN	WI	53121-0920
MR. DONALD FIELDSTACK	MANAGER	VILLAGE OF GREENDALE	GREENDALE	WI	53129-1815
MR. RICK SPENCER	BRANCH MANAGER	US DEPT OF TRANSPORTATION	KENOSHA	WI	53140-2902

MR. WALTER TARMANN	BRANCH MANAGER	COUNTY OF WAUKESHA	WAUKESHA	WI	53188-3632
HONORABLE RUSSELL FEINGOLD	UNITED STATES SENATOR		MILWAUKEE	WI	53202
HONORABLE HERBERT KOHL	UNITED STATES SENATOR		MILWAUKEE	WI	53203
AB KAALELE	BRANCH MANAGER	STATE OF WISCONSIN	MILWAUKEE	WI	53203-1606
KENNETH SZALLAI	PORT DIRECTOR	GREAT LAKES & RIVER ACCESS TERMINALS	MILWAUKEE	WI	53207
MR. JEROME NAULT	BRANCH MANAGER	STATE OF WISCONSIN	MILWAUKEE	WI	53207-1027
	COMMANDING OFFICER	US COAST GUARD	MILWAUKEE	WI	53207-1997
F. P. MATTHEWS	PRESIDENT	VILLAGE OF WHITEFISH BAY	MILWAUKEE	WI	53217-5344
HONORABLE GERALD D. KLECZKA	HOUSE OF REPRESENTATIVES		MILWAUKEE	WI	53219
MS. JENNY GOODE	BRANCH MANAGER	BROWN DEER VILLAGE	MILWAUKEE	WI	53223-2406
MR. JAMES F. ROONEY			RACINE	WI	53402
MS. JANE CRISLER	SYSTEMS/DATA PROCESSING	STATE OF WISCONSIN	JANESVILLE	WI	53546-5699
HONORABLE RUSSELL FEINGOLD	UNITED STATES SENATOR		MIDDLETON	WI	53562
MR. GRANT LOY	BRANCH MANAGER	US DEPT OF AGRICULTURE	RICHLAND CTR	WI	53581-2200
DEB WEIDERT	SUPERINTENDENT	STATE OF WISCONSIN	STOUGHTON	WI	53589-2840
HONORABLE SCOTT MC CALLUM	GOVERNOR OF WISCONSIN		MADISON	WI	53702
HONORABLE HERBERT KOHL	UNITED STATES SENATOR		MADISON	WI	53703
MR. TIM PERRY	BRANCH MANAGER	STATE OF WISCONSIN	MADISON	WI	53703
MR. DAN HOKE	BRANCH MANAGER	US DEPT OF TRANSPORTATION	MADISON	WI	53704-3163
CAROL CUTSHALL		DEPT OF ADMINISTRATION	MADISON	WI	53705
	DIRECTOR	UNIVERSITY OF WISCONSIN	MADISON	WI	53706
DR. ROBERT BIRMINGHAM	STATE ARCHEOLOGIST	STATE HISTORICAL SOCIETY OF WISCONSIN	MADISON	WI	53706
JEFF DEAN	STATE HISTORIC PRESERVATION OFCR	STATE HISTORICAL SOCIETY OF WISCONSIN	MADISON	WI	53706
JEFFREY SCHOEPKE	ENVIRONMENTAL POLICY ADVISOR	DEPT OF INDUSTRY LABOR & HUMAN RELATIONS	MADISON	WI	53707
MARYANN SUMI	EXECUTIVE ASSISTANT	WI DNR	MADISON	WI	53707
ELLEN FISHER	CHIEF-HARBOR & WATERWAYS SEC	WI DEPT OF TRANSPORTATION	MADISON	WI	53707
GEORGE GUNDERSON		DEPT OF TRANSPORTATION	MADISON	WI	53707
MR. TIMOTHY ASPLUND		WDNR	MADISON	WI	53707
MARY ELLEN VOLLBRECHT		DNR	MADISON	WI	53707
LINDA BOCHERT		DNR	MADISON	WI	53707
JOHN HARTZ		WI DEPT OF TRANSPORTATION	MADISON	WI	53707
MR. CHARLES H. THOMPSON	SECRETARY	WI DEPT OF TRANSPORTATION	MADISON	WI	53707-7910
		DIVISION OF HIGHWAYS/OEA	MADISON	WI	53707-7916
MR. DARRELL BAZZELL	SECRETARY	WI DNR	MADISON	WI	53707-7921
MR. GREG HILL	GREAT LKS ENVIRON ISSUES TEAM LEADER	WI DEPT. OF NATURAL RESOURCES	MADISON	WI	53707-7921
JEFF SMOLLER	DIRECTOR	WI DNR/BUREAU OF INFO & ED	MADISON	WI	53707-7921
MS. SHERRY SCHULTZ	SUPERVISOR	WI DEPT OF TRANSPORTATION	MADISON	WI	53707-7955
MR. STAN SHAW	MARKETING DIVISION	WI DEPT OF AGRICULTURE	MADISON	WI	53708
MR. ALAN TRACY	SECRETARY	STATE OF WISCONSIN	MADISON	WI	53708-8911
MR. DAVID C DRYER, PE	CITY TRAFFIC ENGINEER	MADISON TRANSPORTATION DEPT	MADISON	WI	53710-2986
DR. MILTON FRIEND	BRANCH MANAGER	US DEPT OF INTERIOR	MADISON	WI	53711-2531
MR. RODGER GOODMAN	BRANCH MANAGER	CITY OF MADISON	MADISON	WI	53713-2307
EARL COSBY	STATE CONSERVATIONIST	SOIL CONSERVATION SERVICE-USDA	MADISON	WI	53719
MR. DOUGLAS J. CAROUSE	EXECUTIVE DIRECTOR	US DEPT OF AGRICULTURE	MADISON	WI	53719-2726
WILLIAM FUNG	DIVISION ADMINISTRATOR	US DOT - FEDERAL HWY ADMIN	MADISON	WI	53719-2814
MR. WILLIAM K. FUNG	BRANCH MANAGER	US DEPT OF TRANSPORTATION	MADISON	WI	53719-2814
MR. ROBERT IRISH		RIVER OF LAKES RESORT	BAGLEY	WI	53801-9728
MR. ROBERT HUDSON	BRANCH MANAGER	ARCHER DANIELS MIDLAND COMPANY	CASSVILLE	WI	53806-0585
		BOARD OF SUPERVISORS	LANCASTER	WI	53813
MR. STAN ABING	ENGINEERING-R&D	GRANT COUNTY	LANCASTER	WI	53813-0150
JAMES MCNETT			PLATTEVILLE	WI	53818
MR. TED SCHNEPS	MANAGER	STATE OF WISCONSIN	PLATTEVILLE	WI	53818-3012
MR. RALPH BLUM		BLUM MARINE & SAW SERVICE	POTOSI	WI	53820-9745
TERRY REGLIN			PRAIRIE DU CHIEU	WI	53821
WILLIAM FARNUM	MAYOR		PRAIRIE DU CHIEN	WI	53821
MR. DENNIS REGAL	PRESIDENT	REGAL MARINE GROUP INC	PRAIRIE DU CHIEN	WI	53821-0380
MR. KURT DEY	COMMISSIONER	COUNTY OF COLUMBIA	WYOCENA	WI	53969-0875
MS. KATHY MORTENSEN		MORTS MARINA INC	AMERY	WI	54001-5132
MR. JOHN DUNTLEY	DIRECTOR	YMCA OF GREATER ST PAUL	HUDSON	WI	54016-8006
TONY ANDERSON	BRANCH MANAGER	US DEPT OF INTERIOR	ST CROIX FALLS	WI	54024-0708
MR. CARL WEBER	MANAGER	DE PERE MUNICIPAL SERVICE CENTER	DE PERE	WI	54115-1163
MR. GLEN T. MILLER	CHAIRMAN	MENOMINEE INDIAN TRIBE OF WISCONSIN	KESHENA	WI	54135-0910
MS. DEBBIE DOXTATOR	CHAIRMAN OF THE BOARD	ONEIDA TRIBE OF INDIANS OF WISCONSIN	ONEIDA	WI	54155-0365
MR. RONALD W. KAZMIERCZAK	REGIONAL DIRECTOR	WISCONSIN DEPT OF NATURAL RESOURCES	GREEN BAY	WI	54303-4413
MS. LINDA LEWIS	DISTRICT MANAGER	STATE OF WISCONSIN	GREEN BAY	WI	54304-0080
HONORABLE RUSSELL FEINGOLD	UNITED STATES SENATOR		WAUSAU	WI	54403
MR. MARC KRAMER	SUPERVISOR	US DEPT OF AGRICULTURE	STEVENS POINT	WI	54481-2432
MR. RICHARD BONNEVILLE	DIRECTOR	STATE OF WISCONSIN	WISCONSIN RAPIDS	WI	54495-8021
MR. JAMES GRUENDLER	BRANCH MANAGER	STATE OF WISCONSIN	RHINELANDER	WI	54501-0777
HARTFORD SHEGOONY	CHAIRMAN	FOREST COUNTY POTAWATOMI COMPANY	CRANDON	WI	54520-0340
MR. ARLIN ACKLEY	CHAIRMAN OF THE BOARD	SOKAOGAN CHIPPEWA COMMUNITY	CRANDON	WI	54520-9635
MR. LARRY WAWRONOWICZ	BRANCH MANAGER	US DEPT OF INTERIOR	LAC DU FLAMBU	WI	54538-0067
MR. MIKE ALLEN, SR.	PRESIDENT	LAC DU FLAMEAU BAND	LAC DU FLAMBU	WI	54538-0067
MICHAEL COLLINS		LACROSSE COUNTY SHERIFFS DEPT	LA CROSSE	WI	54601
ROGER BINSFELD		LA CROSSE COUNTY HARBOR COMMISSION	LA CROSSE	WI	54601
GEORGE L. JOHNSTON		DAIRYLAND POWER COOP	LA CROSSE	WI	54601

JOHN MEDINGER	U.S. SENATOR		LA CROSSE	WI	54601
WILLIAM STEINMETZ		LAKE ONALASKA PORT & REHAB DISTRICT	LA CROSSE	WI	54601
	CH ENVIRON COMM	LA CROSSE CHAMBER OF COMMERCE	LA CROSSE	WI	54601
PAM THIEL		US FWS	ONALASKA	WI	54601
JENNIFER SAUER		USGS-EMTC	ONALASKA	WI	54601
KEITH CARSON		LACROSSE COUNTY SHERIFF'S PATROL	LA CROSSE	WI	54601
JENNIFER EHLENFELDT		US REPRESENTATIVES	LA CROSSE	WI	54601
		ROBERTS DREDGE INC	LA CROSSE	WI	54601
MARC SCHULTZ		LA CROSSE COUNTY CONSERVATION ALLIANCE	LA CROSSE	WI	54601
JAMES EHRSAM	CHAIRPERSON	COUNTY BOARD	LA CROSSE	WI	54601
DAVID HEATH		WI DNR	LA CROSSE	WI	54601
GRETCHEN BENJAMIN		DNR	LA CROSSE	WI	54601
HONORABLE RON KIND	REPRESENTATIVE IN CONGRESS		LACROSSE	WI	54601
PATRICK T. ZIELKE	MAYOR		LA CROSSE	WI	54601
MR. JEFF JANVRIN		WDNR	LA CROSSE	WI	54601
JAMES EHRSAM	CHAIRPERSON	COUNTY BOARD	LA CROSSE	WI	54601
TERRY MOE	MISS. LOWER ST. CROIX TEAM LEADER	WI DNR	LA CROSSE	WI	54601
GERALD BROWN		CARGILL INC	LA CROSSE	WI	54601
MR. RICHARD SHAEFFER		SCHAEFFER TRANSMISSION	LA CROSSE	WI	54601-3048
JAMES EHRSAM	CHAIRPERSON	LA CROSSE COUNTY ADMINISTRATIVE CTR	LA CROSSE	WI	54601-3200
GREGORY D. FLOGSTAD	DIRECTOR	MISSISSIPPI RIV REG PLANNING COMMISSION	LA CROSSE	WI	54601-4228
MR. ROBERT FISHER		MISS RIVER REG PLANNING COMMISSION	LA CROSSE	WI	54601-4228
H. J. NAPER	PRESIDENT	BEACON BAY OF LA CROSSE INC	LA CROSSE	WI	54601-4267
NOEL JORDAN	PRESIDENT	SKIPPERLINER INDUSTRIES INC	LA CROSSE	WI	54601-4443
MR. ERIC IVERSON	PRESIDENT	CHUTS BOAT LANDING INC	LA CROSSE	WI	54601-6417
MR. DANIEL NETWAL	PRESIDENT	NORTHPORT MARINE INC	LA CROSSE	WI	54602-0098
MR. CHARLES E. ROBERS		F J ROBERS MARINE TERMINAL	LA CROSSE	WI	54602-0484
MARK STEINGRAEBER		NATL BIOLOGICAL SURVEY	LA CROSSE	WI	54602-0818
MR. BUD RAYMER	COMMODORE	LA CROSSE PETTIBONE BOAT CLUB	LA CROSSE	WI	54602-1042
MR. STEVEN MILLS	PRESIDENT	LA CROSSE MUNICIPAL BOAT HARBOR	LA CROSSE	WI	54602-1051
MS. LINDA SAYTHER	PRESIDENT	RIVERBOATS AMERICA INC	LA CROSSE	WI	54602-1805
KENT PEHLER		BRENNAN MARINE INC	LA CROSSE	WI	54602-2557
MR. ANTHONY BINSFIELD	PRESIDENT	BRENNAN MARINE INC	LA CROSSE	WI	54602-2557
HARRY MEINKING SR		LA CROSSE COUNTY CONSERVATION ALLIANCE	LACROSSE	WI	54603
HONORABLE RUSSELL FEINGOLD	UNITED STATES SENATOR		LA CROSSE	WI	54603
LESLIE HOLLAND BERTELS	CENTER DIRECTOR	UPPER MIDWEST ENVIRO SCIENCES CTR	LA CROSSE	WI	54603
CORA BERG		NATL FISHERIES RESEARCH CENTER	LA CROSSE	WI	54603-1223
DR. DAVID M. KENNEDY		US FISH AND WILDLIFE SERVICE	LA CROSSE	WI	54603-1223
MR. ALEXANDER POKRZYWINSKI			LA CROSSE	WI	54603-1481
MR. TOM KUBISTAL	BRANCH MANAGER	ALTER COMPANY	LA CROSSE	WI	54603-2347
BRIAN BRECKA		WI DNR	ALMA	WI	54610
MR. EDWARD LUCHT	PRESIDENT	NORTH PORT MARINE INC	ALMA	WI	54610
JACOB LONETREE	PRESIDENT		BLACK RIVER FALLS	WI	54615
MS. JO A. JONES	CHAIRMAN	WI WINNEBAGO BUS COMMITTEE	BLACK RIVER FALLS	WI	54615-0667
MS. ALICE LARSON	CLERK	COUNTY OF JACKSON	BLACK RIVER FALLS	WI	54615-1756
ROBERT DELANEY		US FISH AND WILDLIFE SERVICE	ONALASKA	WI	54650
BOB & MARY ANN MULLALLY		MW BOUNDARY AREA COMM	ONALASKA	WI	54650
ROBERT MULLALLY		LA CROSSE COUNTY HARBOR COMMISSION	ONALASKA	WI	54650
WAYNE OLIVER		PETTIBONE BOAT CLUB	ONALASKA	WI	54650-2269
JIM NISSEN		US FISH & WILDLIFE SERVICE	ONALASKA	WI	54650-8552
RAYMOND KLAFKE			STODDARD	WI	54658-8963
MR. KEN SCHINDER	MANAGER	TREMPEALEAU MARINA INC	TREMPEALEAU	WI	54661-0157
MR THOMAS LYNCH			WEST SALEM	WI	54669
MIKE HUEBSCH	STATE ASSEMBLYMAN		WEST SALEM	WI	54669-1531
HONORABLE RON KIND	REPRESENTATIVE IN CONGRESS		EAU CLAIRE	WI	54701
HONORABLE HERBERT KOHL	UNITED STATES SENATOR		EAU CLAIRE	WI	54701-3674
MR. SCOTT HUMRICKHOUSE	REGIONAL DIRECTOR	STATE OF WISCONSIN	EAU CLAIRE	WI	54702-4001
MR. JOSEPH BELLERIVE		MARINA PEPIN INC	PEPIN	WI	54759-0318
MR. GEORGE HEINEMANN	PRESIDENT	VIKING SKYLINE RECREATION	STRUM	WI	54770-9801
MR. KEITH JOHNSON	MAYOR	CITY OF WHITEHALL	WHITEHALL	WI	54773-9442
MS. ROSE GURNOE	CHAIRMAN OF THE BOARD	RED CLIFF CHIPPEWA TRIBAL FUND	BAYFIELD	WI	54814-0529
LOE LAFERNIER	MANAGER	RED CLIFF CHIPPEWA TRIBAL FUND	BAYFIELD	WI	54814-0529
MR. BRUCE SWANSON	BRANCH MANAGER	STATE OF WISCONSIN	BAYFIELD	WI	54814-0589
MR. JOHN ORDWAY, JR.		CEDAR ISLAND PRIVATE	BRULE	WI	54820-0110
MR.	CHAIRMAN	ST CROIX TRIBAL COUNCIL	HERTEL	WI	54830-0098
MR. KENNETH OBSZARNY	PRESIDENT	IKE WALTON INC	DANBURY	WI	54830-8512
MR. GEORGE SHUETTE		SUNNY POINT RESORT	GORDON	WI	54838-9746
MR. LEWIS TAYLOR	CHAIRMAN	ST CROIX TRIBAL COUNCIL	HERTEL	WI	54845-0287
MR. HAROLD SKOW	MAYOR	VILLAGE OF LUCK	LUCK	WI	54853-0351
MR. HUBERT SMITH	CHAIRMAN	COUNTY OF WASHBURN	SHELL LAKE	WI	54871-0340
MR. CHARLES TOLLANDER	CHAIRMAN OF THE BOARD	BURNETT COUNTY	SIREN	WI	54872-9043
MR. JOHN ETHEN	PRESIDENT	MIDWEST ENERGY RESOURCES COMPANY	SUPERIOR	WI	54880-0787
MR. LARRY KROLL	FINANCE	DOUGLAS COUNTY	SUPERIOR	WI	54880-2792
MR. JACK CULLEY	PRESIDENT	SAILBOATS INC	SUPERIOR	WI	54880-3285
MR. DUANE KICKS	BRANCH MANAGER	US DEPT OF AGRICULTURE	WASHBURN	WI	54891-0578
MS. MARY L. ALLEN	EXECUTIVE DIRECTOR	HERZL CAMP ASSN	WEBSTER	WI	54893-7930

HONORABLE THOMAS E. PETRI	REPRESENTATIVE IN CONGRESS		OSHKOSH	WI	54901
MR. STEVE KEES	BRANCH MANAGER	CITY OF APPLETON	APPLETON	WI	54911-8688
HONORABLE HERBERT KOHL	UNITED STATES SENATOR		APPLETON	WI	54914-3901
MR. ROBERT SCHOFIELD	BRANCH MANAGER	US DEPT OF TRANSPORTATION	APPLETON	WI	54915
HONORABLE THOMAS E. PETRI	REPRESENTATIVE IN CONGRESS		FOND DU LAC	WI	54937-8609
MR. RAYMOND HOEFT	MAYOR	CITY OF OMRO	OMRO	WI	54963-0399
MS. DOROTHY IMMER	TREASURER	WINNECONNE VILLAGE	WINNECONNE	WI	54986-0650
MR. JERRY KELLOGG	MAYOR	CITY OF AFTON	AFTON	MN	55001-0219
MR. JOSEPH RILEY	GENERAL MANAGER	MARINA WINDMILL ASSN	AFTON	MN	55001-0279
MR. WILLIAM HOOPER	PRESIDENT	H & J INC	AFTON	MN	55001-9749
MR. MARSHALL NOWLAN	GENERAL MANAGER	BAYPORT MARINA ASSN	BAYPORT	MN	55003-1468
MR. JOHN NELSON	BRANCH MANAGER	MN DNR	CAMBRIDGE	MN	55008-2305
MR. CHARLES KARTAK	BRANCH MANAGER	MN DNR	CENTER CITY	MN	55012
MR. KEN ANDERSON	MANAGER	COUNTY OF CHISAGO	CENTER CITY	MN	55012-9663
MR. DAVID OHNSTAD	BRANCH MANAGER	CHISAGO COUNTY PUBLIC WORKS	CENTER CITY	MN	55012-9663
MR. GEORGE FRISCH	CHAIRMAN OF THE BOARD	DEPUTY REGISTRAR 150 CIRCLE PINE	CIRCLE PINES	MN	55014-0068
MR. JAMES KEINATH	ADMINISTRATOR	CITY OF CIRCLE PINES	CIRCLE PINES	MN	55014-1788
MR. RON SHELTON			COTTAGE GROVE	MN	55016-2104
ALLENE MOESHR		CANNON RIVER WATERSHED	FAIRBAULT	MN	55021
MS. CINDY ERICKSON	BRANCH MANAGER	CITY OF FARIBAULT	FARIBAULT	MN	55021-6018
MR. JIMMY WALKER	BRANCH MANAGER	US DEPT OF TRANSPORTATION	FARMINGTON	MN	55024-1258
MR. TOM HOCKERT	BRANCH MANAGER		FARMINGTON	MN	55024-8087
	MAYOR	CITY HALL	HASTINGS	MN	55033
MR. WILLIAM H. KING	PRESIDENT	KINGS COVE INC	HASTINGS	MN	55033-1201
MR. EMMETT PLAN	PRESIDENT	HASTINGS MARINE INC	HASTINGS	MN	55033-1446
MR. BRANDT RICHARDSON	ADMINISTRATOR	DAKOTA COUNTY	HASTINGS	MN	55033-2343
ROBERT BURDIS		MN DNR-ECOLOGICAL SERVICES	LAKE CITY	MN	55041
MARK STOPYRO		MN DNR-ECOLOGICAL SERVICES	LAKE CITY	MN	55041
		DNR	LAKE CITY	MN	55041
BILL HUBER		MN DNR-DIV OF WATERS	LAKE CITY	MN	55041
TIM SCHLAGENHAFT		AREA FISHERIES HEADQUARTERS	LAKE CITY	MN	55041
MR. MIKE DAVIS		MN DNR	LAKE CITY	MN	55041
WALT POPP		MN DNR-ECOLOGICAL SERVICES	LAKE CITY	MN	55041
PETER HANSEN		HAUSEINS HARBOR	LAKE CITY	MN	55041
MR. WILLIAM THORNE	SUPERVISOR	MN DNR	LAKE CITY	MN	55041-0069
MR. HARRY ROBERTS	PARK MANAGER	MN DNR	LAKE CITY	MN	55041-0134
MR. ALEX PLOMP	BRANCH MANAGER	AQUAFARMS 2000 INC	LAKE ELMO	MN	55042-9516
MR. DICK PEARSON	BRANCH MANAGER	NATL SKI PATROL SYSTEM	LAKE ELMO	MN	55042-9524
GAYLEN W. SPRINGBORN			LAKE ELMO	MN	55042-9549
MR. GARY MAU	PRESIDENT	MAUIS LANDING INC	LAKELAND	MN	55043-9620
E. C. MORRIS		CITY OF LAKELAND	LAKELAND	MN	55043-9643
MR. JOHN BURRILL	PRESIDENT	MARINE LANDING BOAT CANOE SERVICE	MARINE ST CROIX	MN	55047-0142
MR. DANIEL E. CHASE	PRESIDENT	MARINE SUPPLY INC	MARINE ST CROIX	MN	55047-9658
MR. DOUG ROWLETT	BRANCH MANAGER	MN DNR	MORA	MN	55051-1038
JOEL MELANDER		ERICKSON PETROLEUM COMPANY	NEWPORT	MN	55055
LEONARD BIRSTOCH		MN LICA	OWATONNA	MN	55060
	MAYOR	CITY HALL	RED WING	MN	55066
MR. ROBERT KNUTSON		OLE MISS MARINA	RED WING	MN	55066
DEWEY BARINGER		CITY OF RED WING	RED WING	MN	55066
MR. WILLIAM NAFE	PRESIDENT	BILLS BAY MARINA INC	RED WING	MN	55066-0225
MS. PEGGY METZER	DIRECTOR	CITY OF RED WING	RED WING	MN	55066-0244
MR. ERIC STELTER			RED WING	MN	55066-2182
MR. CURTIS WARWICK			RED WING	MN	55066-4022
JOELLYN ALLEVA		OLE MISS MARINA	RED WING	MN	55066-4027
MR. EUGENE MC CLELLAND	PRESIDENT	RED WING RIVER TOWING INC	RED WING	MN	55066-9802
MR. JIM TOPITZHOFER	DIRECTOR	CITY OF ROSEMOUNT	ROSEMOUNT	MN	55068-4941
MR. WILLIE BROWN	PRESIDENT	WILLIES HIDDEN HARBOR MARINE	ST PAUL PARK	MN	55071-0301
MR. JOHN HUCIBER	MAYOR	ST PAUL PARK VILLAGE	ST PAUL PARK	MN	55071-1857
HARLIND A. JOHNSON	MAYOR	CITY OF SANDSTONE	SANDSTONE	MN	55072-0005
DAN BRUMMER		PACKER RIVER TERMINAL	ST PAUL	MN	55075
MR. GREGORY J. GENZ		OLYMPIC MARINE COMPANY	SOUTH SAINT PAUL	MN	55075-1746
BRANA LINDELL	EXECUTIVE DIRECTOR	HOUSING	SOUTH ST PAUL	MN	55075-2097
MR. DONALD E. BRUMMER	PRESIDENT	DAKOTA BULK TERMINAL INC	SOUTH ST PAUL	MN	55075-2463
ED WILLIAMS			INVER GROVE HGTS	MN	55076
MR. JAMES AYOTTE	PRESIDENT	TWIN CITY MARINA INC	INVER GROVE HGTS	MN	55076-1835
MR. FRANK MAULIK	PRESIDENT	RIVER GROVE HARBOR INC	SOUTH ST PAUL	MN	55076-3849
JAMES EHRSAM	CHAIRPERSON	COUNTY BOARD	STILLWATER	MN	55082
MR. DICK ANDERSON	PRESIDENT	ANDIAMO ENTERPRISES INC	STILLWATER	MN	55082-0406
MR. FRANK E. AIPLE		AIPLE TOWING COMPANY	STILLWATER	MN	55082-4200
		AIPLE BARGE & TOWING COMPANY	STILLWATER	MN	55082-4200
LYNN W. WOLF	PRESIDENT	WOLF MARINE INC	STILLWATER	MN	55082-4223
MR. RICHARD MULLER	PRESIDENT	MULLER BOAT WORKS INC	STILLWATER	MN	55082-5343
MR. ALAN BUTTERFIELD	CHIEF OPERATING OFFICER	PORT OF SUNNYSIDE CLUB INC	STILLWATER	MN	55082-6934
	COMMUNITY COUNCIL	PRAIRIE ISLAND SIOUX	WELCH	MN	55089
MR. KENNETH N. MUELLER		NORTHERN STATES POWER COMPANY	WELCH	MN	55089
CURTIS CAMPBELL		PRAIRIE ISLAND COMMUNITY COUNCIL	WELCH	MN	55089

GARY NORDSTROM		SOIL CONSERVATION SERVICE - USDA	ST PAUL	MN	55101
		STATE CONSERVATIONIST-SCS USDA	ST PAUL	MN	55101
		NATIONAL PARK SERVICE	ST. PAUL	MN	55101-1239
MR. ROGER HEAD	EXECUTIVE DIRECTOR	STATE OF MINNESOTA	ST PAUL	MN	55101-2506
	MAYOR	CITY HALL	ST PAUL	MN	55102
HOLLY STOERKER	DIRECTOR	UPPER MISS RIVER BASIN ASSN	ST PAUL	MN	55102
MS SUSAN HAIGH	CHAIRPERSON	BOARD OF RAMSEY COUNTY COMMISSIONERS	ST PAUL	MN	55102
	EXECUTIVE DIRECTOR	MINNESOTA AGR-GROWTH COUNCIL INC	ST PAUL	MN	55102-1185
MR. ROBERT PIRAM	SUPERINTENDENT	CITY OF ST PAUL MN	ST PAUL	MN	55102-1634
MR. KENNETH R. JOHNSON	PRESIDENT	PORT AUTHORITY OF THE CITY OF ST PUL	ST PAUL	MN	55102-1637
MR. RANDY ASUNMA	BRANCH MANAGER	MGMC CORPORATION	ST PAUL	MN	55102-4613
MR. PHILLIP LUNE	BRANCH MANAGER	MN DEPT OF PUBLIC SAFETY	ST PAUL	MN	55104-3901
RICHARD MOORE	MISS. RIVER COORDINATOR	IZAACK WALTON LEAGUE	ST PAUL	MN	55104-6206
GORDON MEYER		WEATWAY TRADING CORP	ST PAUL	MN	55106
DAVE ENGLISH		MN DNR	ST PAUL	MN	55106
JON EATON		HAWKINS CHEMICAL VEL TEX DIVISION	ST PAUL	MN	55106
JEFF DAHN		JL SHIELY YARD A	ST PAUL	MN	55106
MR. J. DAVID ENESTVEDT	MANAGER	GREAT WESTERN DOCK AND TERMINAL	ST PAUL	MN	55106-6702
ROGER HINES		ST PAUL RIVER TERMINAL	ST PAUL	MN	55107
JERRY HEIL		DEPT OF AGRICULTURE	ST PAUL	MN	55107
MR. CAPT W. BOWELL, SR.	PRESIDENT	PADEL FORD PACKET BOAT COMPANY INC	ST PAUL	MN	55107
	EXECUTIVE DIRECTOR	UPPER MISSISSIPPI WATERWAY ASSN	ST PAUL	MN	55107
HOKAN MILLER	PORT CAPTAIN	UPPER RIVER SERVICES INC	ST PAUL	MN	55107
		FARMLAND INDUSTRIES	ST PAUL	MN	55107
LEE NELSON		UPPER RIVER SERVICES INC	ST PAUL	MN	55107-1429
MR. THOMAS HAGERTY	DIRECTOR	MN BOARD OF ANIMAL HEALTH	ST PAUL	MN	55107-2004
MR. ELTON R. REDALEN	COMMISSIONER	MN DEPT OF AGRICULTURE	ST PAUL	MN	55107-2004
MS. MARYJO ANDERSON		MN DEPT OF AGRICULTURE	ST PAUL	MN	55107-2025
BRUCE COLTVET		PEAVEY RED ROCK ELEVATOR	ST PAUL	MN	55109
RAY SIEBENALER		WHITE BEAR LAKE LICENSE BUREAU	ST PAUL	MN	55110-3227
MR. KEN JOHNSON		TALLYS WHITE BEAR DOCKING	ST PAUL	MN	55110-3452
MR. IVER F. JOHNSON	PRESIDENT	JOHNSON BOAT WORKS INC	ST PAUL	MN	55110-3490
MR. JOHN P. MADGETT, III	PRESIDENT	WELLSPRING CORP	SAINT PAUL	MN	55110-5246
LYNWOOD MACLEAN		US FISH & WILDLIFE SERVICES	FORT SNELLING	MN	55111
DR. MAMIE PARKER		US FISH AND WILDLIFE SERVICE	FORT SNELLING	MN	55111
MR. DAVID BLACKMORE	BRANCH MANAGER	US DEPT OF TRANSPORTATION	ST PAUL	MN	55111-4007
JOHN BLANKENSHIP	ASSISTANT REGIONAL DIRECTOR	US FISH AND WILDLIFE SERVICE REG 3	FORT SNELLING	MN	55111-4056
MR. EARLE BARLOW	DIRECTOR	US DEPT OF INTERIOR	MINNEAPOLIS	MN	55111-4080
MR. ANDY KARL	BRANCH MANAGER	AMERICAN PRESIDENT LINES LTD	ST PAUL	MN	55113-1322
HONORABLE PAUL WELLSTONE	UNITED STATES SENATOR		ST PAUL	MN	55114
FRED CORRIGAN		MN TRANSPORTATION ALLIANCE	ST PAUL	MN	55114-1055
MR. DAVID A. HELMINIAK	BRANCH MANAGER	CITY OF ST PAUL MN	ST PAUL	MN	55116-2651
MR. MICHAEL BISANZ	MAYOR	CITY OF WEST ST PAUL	ST PAUL	MN	55118-3905
	BRANCH MANAGER	LAFARGE CEMENT COMPANY	ST PAUL	MN	55119-6012
	BRANCH MANAGER	CANADA MARITIME AGENCIES LTD	EAGAN	MN	55121-1152
MR. JOHN GETZ	BRANCH MANAGER	CITY OF APPLE VALLEY	ST PAUL	MN	55124-6916
MR. DAVID L. EVERDS	BRANCH MANAGER	DAKOTA COUNTY	ST PAUL	MN	55124-8579
HONORABLE BILL LUTHER			WOODBURY	MN	55125
		MARINE CONSTRUCTION INC	ST PAUL	MN	55127
HONORABLE JIM VICKERMAN	UNITED STATES SENATOR		ST PAUL	MN	55155
ROBERT DUNN	CHAIRMAN - REPRESENTAIVE OF UMRBA	ENVIRONMENTAL QUALITY BOARD	ST PAUL	MN	55155
MR. LAWRENCE S. ZDON		MN POLLUTION CONTROL AGENCY	ST PAUL	MN	55155
JOHN WELLS	UMRBA	ENVIRONMENTAL QUALITY BOARD	ST PAUL	MN	55155
RICHARD LAMBERT	DIRECTOR, PORTS AND WATERWAYS	MN DEPT OF TRANSPORTATION	ST PAUL	MN	55155
CHARLES WILLIAMS	COMMISSIONER	MN POLLUTION CONTROL AGENCY	ST PAUL	MN	55155
		MN SECRETARY OF STATE	ST PAUL	MN	55155-1298
MS. LINDA KOHL	MANAGER	MN OFFICE STRATEGIC LONG RANGE	ST PAUL	MN	55155-1603
MR. JAMES R. NOBLES	BRANCH MANAGER	STATE OF MINNESOTA	ST PAUL	MN	55155-1603
MR. JAMES N. DENN	COMMISSIONER	MN DEPT OF TRANSPORTATION	ST PAUL	MN	55155-1801
MR. BRUCE TABER	DIRECTOR	MN DEPT OF ADMIN	ST PAUL	MN	55155-3000
MR. GARY GREFFENBERG	BRANCH MANAGER	STATE OF MINNESOTA	ST PAUL	MN	55155-3000
ALLEN GARBER	COMMISSIONER	MN DNR	ST PAUL	MN	55155-4002
MS. MARGARET WINKEL	BRANCH MANAGER	MN DNR	ST PAUL	MN	55155-4002
MR. GERALD ROSE	DIRECTOR	MN DNR	ST PAUL	MN	55155-4002
STEPHEN LIGHT	RESOURCE MGMT ADVISOR	MN DNR	ST PAUL	MN	55155-4010
THOMAS W. BALCOM	SUPERVISOR	NATURAL RESOURCES PLANNING & REVIEW SVCS	ST PAUL	MN	55155-4010
LEE PFANNMULLER		MN DNR-ECO SERVICES	ST PAUL	MN	55155-4025
MR. JACK ENBLOM		MDNR	ST PAUL	MN	55155-4025
OGBAZGHI SIUM		MN DNR/WATER	ST PAUL	MN	55155-4032
STEVE JOHNSON	RIVER MANAGEMENT SUPERVISOR	MN DNR	ST PAUL	MN	55155-4032
ALAN ROBBINS-FENGER		MN DNR	ST PAUL	MN	55155-4032
MS. MARCY DOWSE	DIRECTOR	DNR	ST PAUL	MN	55155-4046
DENNIS STAUFFER		MN DNR-BUR OF INFO & ED	ST PAUL	MN	55155-4046
STEVE MORSE	DEPUTY COMMISSIONER	MN DNR	ST PAUL	MN	55155-4050
LCDR JASON NEUBEUER		US COAST GUARD	ST PAUL	MN	55165
HONORABLE ROD GRAMS	UNITED STATES SENATOR		ANOKA	MN	55303

MR. GIL BRUNER	BRANCH MANAGER	ANOKA COUNTY	ANOKA	MN	55303-0278
CHRIS LORD	BRANCH MANAGER	MN DEPT OF AGRICULTURE	HAM LAKE	MN	55304-5618
MS. SHERRY HANSON	MANAGER	HANSON IMPLEMENT & STORAGE	OSSEO	MN	55311-2914
MR. STEVE HOBBS	DISTRICT MANAGER		MAPLE GROVE	MN	55311-3541
DEAN BRAATZ		RIVER FORECAST CENTER	CHANHASSEN	MN	55317-8581
PAT NEUMAN		NATL WEATHER SERVICE	CHANHASSEN	MN	55317-8581
HONORABLE DAVID MINGE	REPRESENTATIVE IN CONGRESS		CHASKA	MN	55318-1433
MR. GREG GAPPA	DIRECTOR OF PUBLIC SERVICES	ORONO CITY OFFICES	CRYSTAL BAY	MN	55323-0066
MR. GERALD MINOR	PRESIDENT	RENT A GARAGE INC	ELK RIVER	MN	55330-6308
		US DEPT OF AGRICULTURE	ELK RIVER	MN	55330-7606
MR. EDWIN H. COCHRANE	PRESIDENT	COCHRANES BOATYARD INC	EXCELSIOR	MN	55331-0320
MR. JAMES D. BEAN	PRESIDENT	BEANS GREENWOOD MARINA INC	EXCELSIOR	MN	55331-0329
MR. BOB JOHNSON	PRESIDENT	HOWARDS POINT MARINA	EXCELSIOR	MN	55331-8374
MR. GORDON KOCH	PRESIDENT	CURLYS MINNETONKA MARINA INC	EXCELSIOR	MN	55331-9541
MS. BEVERLY MILLER	EXECUTIVE DIRECTOR	MN VALLEY TRANSIT AUTHORITY	BURNSVILLE	MN	55337-2866
MR. HENRY M. BASKERVILLE, JR.	CHAIRMAN OF THE BOARD	RIVERWAY COMPANY	EDEN PRAIRIE	MN	55344-3375
	PRESIDENT	LEE JNO B COMPANY INC	MINNETONKA	MN	55345-0905
	CITY MANAGER	CITY OF MINNETONKA	HOPKINS	MN	55345-1502
MR. JAMES F. MILLER		R J BAUMAN ENTERPRISES	MINNETONKA	MN	55345-5650
MR. ROBERT J. BAUMAN		CITY OF EDEN PRAIRIE	EDEN PRAIRIE	MN	55346-4243
MR. BOB LAMBERT	DIRECTOR	MN DNR	HUTCHINSON	MN	55350-4356
MR. CHRIS CAVANAUGH	BRANCH MANAGER	US FISH & WILDLIFE SERVICE	LITCHFIELD	MN	55355-2613
MR. THOMAS BELL		J R LAKES SERVICE	LORETTO	MN	55357-9788
MR. GERALD J. YARNES, JR.		MINNETONKA DOCK SERVICE INC	MAPLE PLAIN	MN	55359-9519
MS. TAMMY MCCLELLAN	PRESIDENT	S & T BOAT TRANSFER & STORAGE	MAPLE PLAIN	MN	55359-9623
MR. STEVE TIBBETTS		MARINE UNLIMITED	MAPLE PLAIN	MN	55359-9718
MR. JEFF ARENDT		LAKESHORE DOCK & BOAT LIFT SERVICE	MOUND	MN	55364-1939
MR. CURT BEE		CITY OF MAPLE GROVE	OSSEO	MN	55369-9745
MR. JAMES KUJAWA	WATER RESOURCES COORDINATOR	SHAKOPEE SIOUX COMMUNITY COUNCIL	PRIOR LAKE	MN	55372
STANLEY CROOKS	CHAIR	ROGERS CITY OF INC	ROGERS	MN	55374-9401
MR. GARY J. EITEL	ADMINISTRATOR	HARVEST STATES COOP	SAVAGE	MN	55378
CLINT GREGEN		ROCKVAM BOAT YARDS INC	SPRING PARK	MN	55384-0335
MR. JEROME P. ROCKVAM	PRESIDENT	SURFSIDE INC	SPRING PARK	MN	55384-0482
JOEL R. ESSIG	PRESIDENT		WACONIA	MN	55387-1862
MR. TIM GIESEKE	DIST MANAGER	VETS SALVAGE DIVING INC	WAYZATA	MN	55391-0562
MR. GERALD J. PROVOST	PRESIDENT	GRAYS BAY RESORT	WAYZATA	MN	55391-2847
MR. PAUL PEDERSEN	GENERAL PARTNER	WINDWARD MARINE INC	WAYZATA	MN	55391-9767
MR. JAMES P. RIVERS	PRESIDENT	SAILORS WORLD MARINA BOAT CLUB	WAYZATA	MN	55391-9772
MR. GARY DE SANTIS			MINNEAPOLIS	MN	55401-2169
HONORABLE MARTIN SABO	REPRESENTATIVE IN CONGRESS		MINNEAPOLIS	MN	55402
MR. ANDREW HUNTER, III	PRESIDENT	CENTRAL HOLDING COMPANY INC	MINNEAPOLIS	MN	55402-3325
MR. GRAHAM LOUNT	CHAIRMAN OF THE BOARD	GRALO HOLDINGS LIMITED	MINNEAPOLIS	MN	55403-1505
MR. DAVID GRADICK	BRANCH MANAGER	US DEPT OF AGRICULTURE	MINNEAPOLIS	MN	55403-1505
MR. MIKE MONEHAN	DIRECTOR	CITY OF MINNEAPOLIS	MINNEAPOLIS	MN	55405-1528
MR. MIKE MONEHAN	DIRECTOR	YMCA CAMP INFORMATION	MINNEAPOLIS	MN	55409-2537
MS. NANCY HOPPE		AMERICAN IRON & SUPPLY	MINNEAPOLIS	MN	55411
JOHN ISAAC		RIVER SERVICES INC	MINNEAPOLIS	MN	55412-2140
MR. THOMAS CONLAN	PRESIDENT	W OF MINNETONKA INC	MINNEAPOLIS	MN	55413-2246
MR. GABRIEL E. JABBOUR	PRESIDENT	NATURE CONSERVANCY	MINNEAPOLIS	MN	55414
SHARON SAYLES BELTON	MAYOR		MINNEAPOLIS	MN	55415
MS. EMMA HICKSON	DIRECTOR	CITY OF MINNEAPOLIS	MINNEAPOLIS	MN	55415-1318
MR. DAVID FISHER	SUPERINTENDENT	MINNEAPOLIS PARK RECREATION BOARD	MINNEAPOLIS	MN	55415-1400
JEFF BERRINGTON			MINNEAPOLIS	MN	55417
MS. PAM KATIRAE	BRANCH MANAGER	TRIMODAL INC	MINNEAPOLIS	MN	55418-2004
MR. JERRY TORREY		PINE GROVE CABINS	MINNEAPOLIS	MN	55419-1121
MR. RICHARD HATHAWAY	DISTRICT MANAGER	MN DEPT OF TRANSPORTATION	GOLDEN VALLEY	MN	55422-4038
MR. JACK DUCKWORTH	PRESIDENT	SUPERIOR TRANSPORTATION SERVICE INC	MINNEAPOLIS	MN	55425-1328
MR. THOMAS LARSON	BRANCH MANAGER	US DEPT OF INTERIOR	MINNEAPOLIS	MN	55425-1659
MR. DAN STINNETT		US FISH AND WILDLIFE SERVICE	BLOOMINGTON	MN	55425-1665
GERALD F. BRUGGEMAN			BLOOMINGTON	MN	55425-5097
MR. CARL ORSTAD	PRESIDENT	CRUISE AWEIGH INC	MINNEAPOLIS	MN	55427-1557
MR. CHUCK VENSKE	BRANCH MANAGER	HENNEPIN COUNTY MINNESOTA	MINNEAPOLIS	MN	55427-3728
MS. JOYCE ERICKSON	BRANCH MANAGER	GREATER MINNEAPOLIS GIRL SCOUT	MINNEAPOLIS	MN	55432-4119
H. P. KYBURZ	DIRECTOR	US DEPT OF AGRICULTURE	MINNEAPOLIS	MN	55435-5037
		RIVERLAND RESOURCES INC	MINNEAPOLIS	MN	55435-5307
MR. MICHAEL SEELANE	PRESIDENT	METRO RV MINI STORAGE INC	MINNEAPOLIS	MN	55438-2661
MR. GERALD BROWN	PRESIDENT	CARGO CARRIERS	MINNEAPOLIS	MN	55440
MR. THOMAS A. GROVES	VICE PRESIDENT - OPERATIONS	CARGO CARRIERS (CARGILL)	MINNEAPOLIS	MN	55440
GARY L. MILLS	COMMODITY MARKETING DIVN	CARGILL INC	MINNEAPOLIS	MN	55440
	OPERATIONS MANAGER - DEPT 8	CARGO CARRIERS INC	MINNEAPOLIS	MN	55440
JIM KANE		CARGO CARRIERS	MINNEAPOLIS	MN	55440-5608
MR. CLINTON B. ODELL	PRESIDENT	CARGILL MARINE AND TERMINAL	MINNEAPOLIS	MN	55440-5608
GERALD BROWN		CARGILL INC	MINNEAPOLIS	MN	55440-5608
MR. CLINTON B. ODELL	BRANCH MANAGER	CARGILL MARINE AND TERMINAL	MINNEAPOLIS	MN	55440-9300
MR. JOHN EDMAN	MANAGER	MISSISSIPPI RIVER COUNTRY USA	MINNEAPOLIS	MN	55459-8299
		MISSISSIPPI RIVER PARKWAY COMMISSION	MINNEAPOLIS	MN	55459-8299
MR. RICHARD EDBLOM	BRANCH MANAGER	HENNEPIN COUNTY MINNESOTA	MINNEAPOLIS	MN	55487

MR. NORMAN DESCHAMPE	CHAIRMAN OF THE BOARD	GRAND PRTRG RESERVATION BUS COMMISSION	GRAND PORTAGE	MN	55605
MS. DONNA HART	BRANCH MANAGER	US DEPT OF AGRICULTURE	ISABELLA	MN	55607-9722
MR. STEVEN RAILSON	MANAGER	MN DNR	CALUMET	MN	55716-0376
MS. JEANNE MULDER	EXECUTIVE DIRECTOR	FOND DU LAC RESERVATION	CLOQUET	MN	55720-9702
NORY HUNZE	BRANCH MANAGER	US DEPT OF AGRICULTURE	COOK	MN	55723-1085
MR. BRUCE PETERSON	EXECUTIVE DIRECTOR	COVENANT PINES BIBLE CAMP INC	MC GREGOR	MN	55760
MR. TODD STREETER	PRESIDENT	WILLEYS MARINE INC	MC GREGOR	MN	55760-9500
HONORABLE PAUL WELLSTONE	UNITED STATES SENATOR		VIRGINIA	MN	55792
MR. JERRY KUJALA	ASST DISTRICT ENGINEER	MN DEPT OF TRANSPORTATION	VIRGINIA	MN	55792-3412
MS. SUE HILTUNEN	BRANCH MANAGER	C W D C INDUSTRIES INC	VIRGINIA	MN	55792-3741
HONORABLE JAMES OBERSTAR	REPRESENTATIVE IN CONGRESS		DULUTH	MN	55802-1302
HONORABLE GIL GUTKNECHT	REPRESENTATIVE IN CONGRESS		ROCHESTER	MN	55902
MR. RICK ERPEKLING		MDNR	ROCHESTER	MN	55902
MR. ROY SUTHERLAND	PRINCIPAL	ROCHESTER PARK RECREATION DEPT	ROCHESTER	MN	55904-3708
MR. TIM SCHLAGENHAFT		MN DNR	ROCHESTER	MN	55906
MARK HEYWOOD	REGIONAL FISHERIES MANAGER	MN DNR	ROCHESTER	MN	55906
	CHAIRMAN	MN DNR	ROCHESTER	MN	55906-4505
	REGIONAL DIRECTOR	MN DNR	ROCHESTER	MN	55906-4505
MR. HAROLD BECKER			MINNEISKA	MN	55910
MR. JOHN HUBER	BRANCH MANAGER	MN DNR	ALTURA	MN	55910-9507
MR. LARRY DOLPHIN	BRANCH MANAGER	CITY OF AUSTIN	AUSTIN	MN	55912-0673
JOHN HICKEY	MAYOR		BROWNSVILLE	MN	55919
	CHAIRMAN	DNR	CALEDONIA	MN	55921
	BRANCH MANAGER	COUNTY COMMISSIONERS	CALEDONIA	MN	55921
MR. MARK LANABALE		US DEPT OF AGRICULTURE	DODGE CENTER	MN	55927-0488
JACKIE KELLER		DEPUTY REGISTRAR 95 INC	KASSON	MN	55944-1469
MICHELLE RUFENBERG		STATE REPRESENTATIVE	LA CRESCENT	MN	55947-1057
AL MATHEWS		US ARMY CORPS OF ENGINEERS	LA CRESCENT	MN	55947-1560
MR. RICHARD OTTO	BRANCH MANAGER	US DEPT OF DEFENSE	LA CRESCENT	MN	55947-1560
DALE HOADLEY		MN CONSERVATION FEDERATION	LA CRESCENT	MN	55947-1822
MS. DIANE WALLER			LA CRESCENT	MN	55947-9621
MR. EUGENE ULRING	BRANCH MANAGER	FILLMORE COUNTY	PRESTON	MN	55965
	CHAIRMAN	COUNTY COMMISSIONERS	WABASHA	MN	55981
JAMES EHRSAM	CHAIRPERSON	COUNTY BOARD	WABASHA	MN	55981
MS. GERALDINE TIBEOR	RECORDER	COUNTY OF WABASHA	WABASHA	MN	55981
		WABASHA MARINA/BOAT YARD	WABASHA	MN	55981-0110
KIRTH SMITH	MANAGER	MARINE INVESTMENT COMPANY INC	WABASHA	MN	55981-0186
PHIL ROSENDALE	ZONING ADMINISTRATOR		WABASHA	MN	55981-0268
	ACTING REFUGE MANAGER COMPLEX	US FISH AND WILDLIFE SERVICE	WINONA	MN	55987
TEX HAWKINS		UPPER MISS RIVER NAT WILDLIFE REFUGE	WINONA	MN	55987
TOM SLAGGIE	MAYOR		WINONA	MN	55987
KEITH NELSON	DIRECTOR OF PUBLIC WORKS		WINONA	MN	55987
JAMES EHRSAM	CHAIRPERSON	COUNTY BOARD	WINONA	MN	55987
MARK SACKMUSTER		HARVEST STATES COOPERATIVE	WINONA	MN	55987
DAVE AMUNDSON			WINONA	MN	55987
	EXE DIRECTOR	WINONA AREA CHAMBER OF COMMERCE	WINONA	MN	55987
MR. STEVEN KOHNER	PRESIDENT	MODERN TRANSPORT INC	WINONA	MN	55987-1208
MR. BILL GRANT	BRANCH MANAGER	BOARD OF SOCIAL MINISTRY	WINONA	MN	55987-1331
MR. MARTIN KUJAK	PRESIDENT	KUJAK BROS CORP	WINONA	MN	55987-2270
MR. ROBERT KEIPER		CITY OF WINONA WATER DEPT.	WINONA	MN	55987-3419
MR. MILTON OWENS	AUDITOR	COUNTY OF BLUE EARTH	MANKATO	MN	56002-8608
	MAYOR	CITY OF BELLE PLAINE	BELLE PLAINE	MN	56011-0129
MR. THOMAS ROMAINE		MN DNR	NEW ULM	MN	56073-0607
	MAYOR	CITY OF SLEEPY EYE	SLEEPY EYE	MN	56085-1638
MR. DOUGLAS LEET	BRANCH MANAGER	US DEPT OF AGRICULTURE	WASECA	MN	56093
MR. DAVE JACOBSON	MAYOR	CITY OF WELLS	WELLS	MN	56097-1627
MR. GEORGE WELK	ENGINEER	MN DEPT OF TRANSPORTATION	WINDOM	MN	56101-1868
MR. JOHN BLOOM	BRANCH MANAGER	US DEPT OF TRANSPORTATION	RUTHTON	MN	56170-0186
HONORABLE PAUL WELLSTONE	UNITED STATES SENATOR		WILLMAR	MN	56201
MR. ALVIN HOOGEVEN	AUDITOR	COUNTY OF KANDIYOHI	WILLMAR	MN	56201-0936
MR. TOM ANDERSON	BRANCH MANAGER	SWIFT COUNTY	BENSON	MN	56215
MR. LYLE POPMA	DIRECTOR	US DEPT OF AGRICULTURE	BENSON	MN	56215-1139
MR. STEVE LUTES	BRANCH MANAGER	MN DEPT OF AGRICULTURE	CLARKFIELD	MN	56223-0545
MR. DARRELL BERNDT	BRANCH MANAGER	MN DEPT OF AGRICULTURE	GRANITE FALLS	MN	56241
MR. STU PETERSON	BRANCH MANAGER	MN DEPT OF TRANSPORTATION	MARSHALL	MN	56258-0029
HONORABLE DAVID MINGE	REPRESENTATIVE IN CONGRESS		MONTEVIDEO	MN	56265
MR. BRADLEY HOUDAT	BRANCH MANAGER	US DEPT OF AGRICULTURE	MONTEVIDEO	MN	56265
MR. JERRY MILLER	BRANCH MANAGER	MN DEPT OF TRANSPORTATION	MORRIS	MN	56267-0410
		MN DNR	WATSON	MN	56295-9713
MR. LARRY HAWS	DIRECTOR	CITY OF ST CLOUD	ST CLOUD	MN	56301-3622
		MN DEPT OF TRANSPORTATION	ST CLOUD	MN	56303-2130
MR. BILL DAVIDSON	PURCHASING AGENT	COUNTY OF STEARNS	ST CLOUD	MN	56303-4781
MR. EARL R. DANZELFEN	MAYOR	CITY OF COLD SPRING	COLD SPRING	MN	56320-2536
MR. RUSS NYGREN	AUDITOR	COUNTY OF MORRISON	LITTLE FALLS	MN	56345-3100
SANDY ROHR	DISTRICT MANAGER	MN DEPT OF AGRICULTURE	LONG PRAIRIE	MN	56347-7126
		MILLE LACS BAND OF CHIPPEWA	ONAMIA	MN	56359

MR. JEFFEREY MCCARRON	DIRECTOR	PACESETTER	PAYNESVILLE	MN	56362-0222
MR. WILLIAM G. BUGBEE		BUGBEE HIVE RESORT	PAYNESVILLE	MN	56362-9334
MS. TAMMY MOLITORS		MOLITORS TROUT HEAVEN	SAUK RAPIDS	MN	56379-9751
HONORABLE COLLIN PETERSON	REPRESENTATIVE IN CONGRESS		WAITE PARK	MN	56387
MS. SHARON LEAN	BRANCH MANAGER	US DEPT OF AGRICULTURE	BRECKENRIDGE	MN	56520-1117
MR. FRED SNEDKER	BRANCH MANAGER	STATE OF MINNESOTA	BRECKENRIDGE	MN	56520-2028
MR. ROGER HEAD	BRANCH MANAGER	STATE OF MINNESOTA	BEMIDJI	MN	56601-3866
MR. ROGER AITKEN	EXECUTIVE DIRECTOR	LEECH LAKE RESERVATION TRIBAL COUNCIL	CASS LAKE	MN	56633-8911
MR. BILL MAY	PRESIDENT	RED LAKE FISHERIES ASSN	REDBY	MN	56670-0056
MR. GERALD BRUN	CHAIRMAN OF THE BOARD	RED LAKE TRIBAL COUNCIL	REDLAKE	MN	56671-0550
MR. RUDY NELSON	DIRECTOR	ROLLING MEADOWS PARK DISTRICT	ROLLING MEADOWS	IL	60008-2559
MR. RICHARD E. MILLER	DIRECTOR	BARRINGTON PARK DISTRICT	BARRINGTON	IL	60010-3103
HONORABLE RICHARD O. KLEMM	REPRESENTATIVE IN CONGRESS		CRYSTAL LAKE	IL	60014
HONORABLE DONALD MANZULLO	REPRESENTATIVE IN CONGRESS		CRYSTAL LAKE	IL	60014
MR. DAVID PRICE	BRANCH MANAGER	MOUNT PROSPECT PARK DISTRICT	DES PLAINES	IL	60016-6036
AL AMES	GREAT LAKES REGION DIRECTOR	US DEPT OF TRANSPORTATION	DES PLAINES	IL	60018-2413
MR. JOSEPH BUDZYN	BRANCH MANAGER	US DEPT OF INTERIOR	DES PLAINES	IL	60018-3706
MR. EDWARD J. PHILLIPS	BRANCH MANAGER	US DEPT OF TRANSPORTATION	DES PLAINES	IL	60018-4605
MR. THOMAS J. RICHARDSON	DIRECTOR	GLENCOE PARK DISTRICT	GLENCOE	IL	60022-1263
MR. ROBERT DREHER	BRANCH MANAGER	IL DEPT OF TRANSPORTATION	GRAYSLAKE	IL	60030-1637
MR. KEITH BEMIS	PRESIDENT	WILDWOOD PARK DISTRICT	GRAYSLAKE	IL	60030-2158
CHARLES T. BALLING	DIRECTOR	GURNEE PARK DISTRICT	GURNEE	IL	60031-2740
MS. MARLENE MILLER	PRESIDENT	LAKE BLUFF PARK DISTRICT	LAKE BLUFF	IL	60044-0095
MR. FREDERICK E. JACKSON	DIRECTOR	CITY OF LAKE FOREST	LAKE FOREST	IL	60045-2119
MR. TOM LIPPERT	FINANCE	LINDENHURST PARK DISTRICT	LAKE VILLA	IL	60046-8934
MR. STEVE KENESSIE	PRESIDENT	FOSS PARK DISTRICT	NORTH CHICAGO	IL	60064-2061
MR. JAMES DE VOS	DIRECTOR	PROSPECT HEIGHTS PARK DISTRICT	PROSPECT HTS	IL	60070-1532
MR. BRUCE HUNTER	MAYOR	VILLAGE OF RICHMOND	RICHMOND	IL	60071
MR. ROBERT ROLEK	PURCHASING	ROUND LAKE AREA PARK DISTRICT	ROUND LAKE	IL	60073-3719
MR. STEVEN HARTMAN	DIRECTOR	SKOKIE PARK DISTRICT	SKOKIE	IL	60076-1875
MR. WALTER T. JONES	EXECUTIVE DIRECTOR	WAUKEGAN PORT DISTRICT	WAUKEGAN	IL	60079-0620
W.W. ILIFFE	DIR., CORP. HLTH & RSPNSBL CARE	STEPAN COMPANY	NORTHFIELD	IL	60093
GEORGE KEENON		STEPAN COMPANY	NORTHFIELD	IL	60093
MR. BRUCE MINS	BRANCH MANAGER	IL DEPT OF PUBLIC HEALTH	BELLWOOD	IL	60104-1146
MR. ROBERT KUNKEL	EXECUTIVE DIRECTOR	BENSENVILLE PARK DISTRICT	BENSENVILLE	IL	60106-2079
MR. RICK PYLE	DIRECTOR	STREAMWOOD PARK DISTRICT	STREAMWOOD	IL	60107-1311
MR. DAVID EMANUELSON	EXECUTIVE DIRECTOR	PARK DE KALB DISTRICT	DE KALB	IL	60115-2029
MR. MARLIN ERICKSON	BRANCH MANAGER	IL DEPT OF TRANSPORTATION	ELGIN	IL	60123-7661
MR. MICHAEL LUCCHESI	DIRECTOR	FRANKLIN PARK PARK DISTRICT	FRANKLIN PARK	IL	60131-2717
GENE JONES	DIRECTOR	US DEPT OF AGRICULTURE	GLEN ELLYN	IL	60137-5839
F. M. WELLS	MIDWEST DIVISION	VULCAN MATERIALS COMPANY	LOMBARD	IL	60148-5038
MS. SHARON NEUBAUER	EXECUTIVE DIRECTOR	YORK CENTER PARK DISTRICT	LOMBARD	IL	60148-5070
MR. MIKE WALLAERT	DIRECTOR	MARENGO PARK DISTRICT	MARENGO	IL	60152-0292
MR. GARY KASANDERS	DIRECTOR	WESTCHESTER PARK DISTRICT	WESTCHESTER	IL	60154-4359
HONORABLE J. BRADLEY BURZYNSKI	REPRESENTATIVE IN CONGRESS		SYCAMORE	IL	60178
MR. CARL DINWIDDIE	BRANCH MANAGER	NATL TRANSPORTATION SAFETY BOARD	WEST CHICAGO	IL	60185-6402
MR. CARL FRY	ENGINEER	COUNTY OF DU PAGE	WHEATON	IL	60187-3905
MR. RAYMOND MORRILL	BRANCH MANAGER	WHEATON PARK DISTRICT	WHEATON	IL	60187-8231
MS. CAROL O'BRIEN	EXECUTIVE DIRECTOR	WOOD DALE PARK DISTRICTS	WOOD DALE	IL	60191-1535
MR. WILLIAM KLAAS	COMMISSIONER	TOWNSHIP OF ADDISON	WOOD DALE	IL	60191-1801
	BRANCH MANAGER	IL DEPT OF TRANSPORTATION	SCHAUMBURG	IL	60195-3169
		IL DNR	SCHAUMBURG	IL	60196-1096
MR. BRIAN ROSINSKI	DIRECTOR	RIDGEVILLE PARK DISTRICT	EVANSTON	IL	60202-2809
MR. JOHN L. HEDGES	EXECUTIVE DIRECTOR	PARK DISTRICT OF OAK PARK	OAK PARK	IL	60302-4108
MR. JOSEPH MCDERMOTT	BRANCH MANAGER	IL DEPT OF TRANSPORTATION	OAK PARK	IL	60304-1449
		LAKE RIVER TERMINALS INC	BERWYN	IL	60402
		AMOCO OIL COMPANY	BERWYN	IL	60402
MS. BARBARA SCHLEIZER	EXECUTIVE DIRECTOR	NORTH BERWYN PARK DISTRICT	BERWYN	IL	60402-1849
		PETROLEUM FUEL & TERMINAL COMPANY	FOREST VIEW	IL	60405
		CLARK OIL & REFINING CORP	BLUE ISLAND	IL	60406
SANDY WARTMAN	DIRECTOR	CALUMET MEMORIAL PARK DISTRICT	CALUMET CITY	IL	60409-0558
MICKY POPPLEWELL		CANAL BARGE COMPANY	CHANNAHON	IL	60410
C. R. HEAP		CANAL BARGE COMPANY	CHANNAHON	IL	60410
MR. ROBERT SCHWIESEW	SUPERINTENDENT	IL DEPT OF CONSERVATION	CHANNAHON	IL	60410-0054
MR. DAVE DUNN	SUPERINTENDENT	CHICAGO HEIGHTS PARK DISTRICT	CHICAGO HEIGHTS	IL	60411-3478
MR. MIKE DANIELS	PRESIDENT	DWIGHT COUNTRY CLUB	DWIGHT	IL	60420-0100
MR. JAMES KLAFEA	BRANCH MANAGER	IL DEPT OF TRANSPORTATION	HARVEY	IL	60426-4498
MR. WILLIAM PATTERSON	DIRECTOR	HAZEL CREST PARK DISTRICT	HAZEL CREST	IL	60429-1178
BRENT WILLITS		IL RIVER CARRIERS	JOLIET	IL	60431
MS. JUDIE WELCH	BRANCH MANAGER	ILLINOIS STATE POLICE	JOLIET	IL	60432-1260
JIM TESTIN		WILL CO. LAND USE DEPARTMENT	JOLIET	IL	60433
		MOBIL CHEMICAL COMPANY	JOLIET	IL	60434
ARTHUR SCHULTZ	MAYOR	CITY HALL	JOLIET	IL	60434
	CHAIRMAN	COUNTY BOARD OF SUPERVISORS	JOLIET	IL	60434
HONORABLE JOHN C (JACK) MCGUIRE	REPRESENTATIVE IN CONGRESS		JOLIET	IL	60435
HONORABLE GERALD WELLER	REPRESENTATIVE IN CONGRESS		JOLIET	IL	60435-2926

HONORABLE THOMAS A. DUNN	UNITED STATES SENATOR		JOLIET	IL	60435-4469
MR. RONALD DODD	EXECUTIVE DIRECTOR	JOLIET PARK DISTRICT	JOLIET	IL	60435-5277
		AMOCO CHEMICALS CORP	JOLIET	IL	60436
	SULFURIC ACID TERMINAL	OLIN CORP	JOLIET	IL	60436
		B&B TOWING CORP	LANSING	IL	60438
TOM BARNABY			LANSING	IL	60438
TODD HUDSON		ILLINOIS RIVER CARRIERS	LEMONT	IL	60439
MARY THOMAS		ILLINOIS MARINE	LEMONT	IL	60439
RONALD NOVAK		NATL MARINE	LEMONT	IL	60439
ROBERT HENSLEY		IL RIVER CARRIERS	LEMONT	IL	60439
JAMES A. DURHAM		IMTT-LEMONT	LEMONT	IL	60439
DONALD C. HANNAH		HANNAH MARINE CORP	LEMONT	IL	60439
		K A STEEL CHEMICALS	LEMONT	IL	60439
		CITGO PETROLEUM CORP	LEMONT	IL	60439
		SCHMIDT BARGE LINES	LEMONT	IL	60439
	PRESIDENT	ILLINOIS MARINE TOWING COMPANY	LEMONT	IL	60439
LEO J. CATTONI		UNOCAL CORP	LEMONT	IL	60439-4604
PATRICK GLYNN		K A STEEL CHEMICALS INC	LEMONT	IL	60439-7029
BARRY BRAUNS		CARGILL INC	LOCKPORT	IL	60441
	EXECUTIVE DIRECTOR	NATIONAL TRUST FOR HISTORIC PRESERVATION	LOCKPORT	IL	60441
ANN G. HINTZE		HOMER TOWNSHIP	LOCKPORT	IL	60441
JOHN A. MCINTYRE CED	ECONOMIC DEVELOPMENT COORDINATOR	MARINE SERVICE CORP	LOCKPORT	IL	60441
JACK MOORE	ASSISTANT MANAGER, MARINE DEPT	MATERIAL SERVICE CORP	LOCKPORT	IL	60441
EDWARD SENN	PRESIDENT	TRI-CENTRAL MARINE TERMINAL	LOCKPORT	IL	60441-3234
	TERMINAL MANAGER	LOCKPORT TOWNSHIP PARK DISTRICT	LOCKPORT	IL	60441-4412
MR. MAX L. WOODS	MANAGER	MIDLOTHIAN PARK DISTRICT	MIDLOTHIAN	IL	60445-2695
MS. LORRI MILEWSKI	DIRECTOR		MOKENA	IL	60448-9416
HONORABLE GEORGE SANGMEISTER	REPRESENTATIVE IN CONGRESS	QUANTUM CHEMICAL COMPANY	MORRIS	IL	60450
FRAN KASTEN		NORTHERN PETROCHEMICALS COMPANY	MORRIS	IL	60450
		GROWMARK INC	MORRIS	IL	60450
		GRUNDY ECONOMIC DEVELOPMENT COUNCIL	MORRIS	IL	60450
CHRIS J. MANHEIM	EXECUTIVE DIRECTOR	IL DEPT OF CONSERVATION	MORRIS	IL	60450-0272
MR. GREG KILE	BRANCH MANAGER	IL DEPT OF CONSERVATION	MORRIS	IL	60450-9628
MR. JOSEPH NYHOFF	BRANCH MANAGER		NEW LENOX	IL	60451
HONORABLE LARRY WENNLUND	REPRESENTATIVE IN CONGRESS	OAK FOREST PARK DISTRICT	OAK FOREST	IL	60452-3298
MR. JAMES CHEVALIER	DIRECTOR	OAK LAWN PARK DISTRICT	OAK LAWN	IL	60453-2603
MR. BILL SUJKA	BRANCH MANAGER		OAK LAWN	IL	60453-2603
ERNEST W. NANCE		US DEPT OF TRANSPORTATION	OLYMPIA FIELDS	IL	60461-1021
MR. HERBERT R. TEETS	BRANCH MANAGER	US DEPT OF TRANSPORTATION - REG 5	OLYMPIA FIELDS	IL	60461-1021
JOHN O. HIBBS	REGIONAL DIRECTOR	INTERSTATE COMMERCE COMMISSION	OLYMPIA FIELDS	IL	60461-1059
P. E. BINDER	BRANCH MANAGER	CITY OF PALOS HILLS	PALOS HILLS	IL	60465-1315
DEAN CARRERO	DIRECTOR	VILLAGE OF STEGER	STEGER	IL	60475-1013
MR. LOUIS SHERMAN	PRESIDENT	COUNTRY CLUB HILLS PARK DISTRICT	TINLEY PARK	IL	60478-5272
MR. ALAN FINK	ADMINISTRATOR	ASHLAND CHEMICALS	WILLOW SPRINGS	IL	60480
		CANAL BARGE COMPANY	CHANNAHON	IL	60481
TINA NELSON		WORTH PARK DISTRICT	WORTH	IL	60482-2713
MS. HELEN GOY	TREASURER	GATX TERMINAL CORP	ARGO	IL	60501
		SHELL OIL COMPANY	ARGO	IL	60501
		GREAT LAKES TERMINAL & TRANSPORT	ARGO	IL	60501
			BATAVIA	IL	60510
HONORABLE J. DENNIS HASTERT	REPRESENTATIVE IN CONGRESS	VILLAGE OF CLARENDON HILLS	CLARENDON HILLS	IL	60514-1227
HURD ALAN, I	PRESIDENT	IL STATE TOLL HIGHWAY AUTHORITY	DOWNERS GROVE	IL	60515-1703
MR. JOHN GARROW	CHAIRMAN OF THE BOARD	WOODRIDGE PARK DISTRICT	DOWNERS GROVE	IL	60517-2713
MR. KEITH FRANKLAND	DIRECTOR	GREAT LAKES DREDGE & DOCK COMPANY	OAK BROOK	IL	60521
W. MEIER		OAK BROOK PARK DISTRICT	OAK BROOK	IL	60521-2151
MR. ROY A CRIPE	DIRECTOR OF PARKS AND REC	BURR RIDGE PARK DISTRICT	HINSDALE	IL	60521-6839
PURDIE MC CULLOUGH	PRESIDENT	US COAST GUARD - MSO CHICAGO	BURR RIDGE	IL	60521-7059
	COMMANDING OFFICER	US COAST GUARD MARINE SAFETY OFFICE	HINSDALE	IL	60521-7059
CDR ROBERT BATES		HAPAG-LLOYD L CHANCE INCE (AMERICA) INC	OAK BROOK	IL	60523-1925
SHAORN HILLIARD	BRANCH MANAGER	HODGKINS PARK DISTRICT	LA GRANGE	IL	60525-7640
MR. RON KUBICI	DIRECTOR	PLEASANT DALE PARK DISTRICT	LA GRANGE	IL	60525-7713
MR. WILLIAM HUGHES	SECRETARY	MATERIAL SERVICE CORP	LYONS	IL	60534
DAN SCHWIND		OSWEGOLAND PARK DISTRICT	OSWEGO	IL	60543
MR. ROBERT GRAY			PLAINFIELD	IL	60544
HONORABLE EDWARD F. PETKA	REPRESENTATIVE IN CONGRESS	VILLAGE OF NORTH RIVERSIDE	RIVERSIDE	IL	60546-1519
MR. RICHARD N. SCHECK	MAYOR	WESTERN SPRINGS PARK DISTRICT	WESTERN SPRINGS	IL	60558-0035
MR. CRAIG HIMMELMANN	SUPERINTENDENT	WESTMONT PARK DISTRICT	WESTMONT	IL	60559-1849
MR. RONALD GUNTER	EXECUTIVE DIRECTOR	KENDALL COUNTY	YORKVILLE	IL	60560
	COUNTY CLERK	DARIEN PARK DISTRICT	WESTMONT	IL	60561-4216
	ADMINISTRATOR	WATERWAYS TRANSPORT SERV INC	DARIEN	IL	60561-4458
KERRY P. HAYES			CHICAGO	IL	60601
GERALD W. BERNARDO		REGIONAL MANAGER FOR NORTHER ILLINOIS	CHICAGO	IL	60601
ROBERT W. BRUCE CED	FOREIGN DIRECT INVESTMENT MANAGER	CITY OF CHICAGO	CHICAGO	IL	60602-2570
CARL BIBBS		US ENVIRONMENTAL PROTECTION AGENCY	CHICAGO	IL	60604
MR. JOSEPH F. BOYLE, JR.	COMMISSIONER	US ENVIRONMENTAL PROTECTION AGENCY	CHICAGO	IL	60604
ROBERT SPRINGER		DEPT OF TRANSPORTATION	CHICAGO	IL	60604
HARLAN HIRT					
JAMES A. JOHNSON					

AL FENEDICK		US ENVIRONMENTAL PROTECTION AGENCY	CHICAGO	IL	60604
DAVE ULLRICH		US EPA	CHICAGO	IL	60604
HONORABLE RICHARD DURBIN	UNITED STATES SENATOR		CHICAGO	IL	60604
MILO ANDERSON		US ENVIRONMENTAL PROTECTION AGCY	CHICAGO	IL	60604
MS. EMELIA SCRODER	DIRECTOR	CHICAGO PUBLIC LIBRARY	CHICAGO	IL	60604
WILLIAM FRANZ	CHIEF, ENVIRONMENTAL REVIEW BRANCH	US EPA	CHICAGO	IL	60604-3590
THOMAS SKINNER	REGIONAL ADMINSTRATOR	US ENVIROMENTAL PROTECTION AGENCY	CHICAGO	IL	60604-3590
KEN HINTERLONG		FEDERAL EMERGENCY MGMT AGENCY	CHICAGO	IL	60605-1509
WILLIAM C. FUCIK	DIRECTOR	FEDERAL EMERGENCY MGMT AGENCY	CHICAGO	IL	60605-1509
PHILLIP BERNSTEIN	CHIEF	US ARMY ENGINEER DISTRICT - CHICAGO	CHICAGO	IL	60606
SHERRIE BARHAM	CHIEF	US ARMY ENGINEER DISTRICT - CHICAGO	CHICAGO	IL	60606
PAUL BENKOWSKI	CHIEF	US ARMY ENGINEER DISTRICT - CHICAGO	CHICAGO	IL	60606
		US ARMY ENGINEER DIV - GREAT LAKES	CHICAGO	IL	60606
		US ARMY ENGINEER DIV - GREAT LAKES	CHICAGO	IL	60606
		US ARMY ENGINEER DIV - GREAT LAKES	CHICAGO	IL	60606
	COMMANDER	US ARMY ENGINEER DISTRICT - CHICAGO	CHICAGO	IL	60606
TOM HEMPFING		US ARMY ENGINEER DIV - GREAT LAKES	CHICAGO	IL	60606
MR. EDWIN SILVERMAN	BRANCH MANAGER	IL DEPT OF PUBLIC AID	CHICAGO	IL	60607-3800
	CHIEF ENGINEER	MET SAN DISTRICT OF GREATER CHICAGO	CHICAGO	IL	60611
MR. ANDREW ARWAY	BRANCH MANAGER	STATE OF ILLINOIS	CHICAGO	IL	60612-7232
TERRANCE A. HOLM		THE NARRAGANSETT	CHICAGO	IL	60615
ROBERT J. LAURISCH		CARGILL	CHICAGO	IL	60617
COLLIE HEADLAND		HOLLEY MARINE TOWING	CHICAGO	IL	60617
TOM KRAMER		KCBX TERMINALS COMPANY	CHICAGO	IL	60617
	OIL (TAD) DEPT	CARGILL INC	CHICAGO	IL	60617
KAARE EILERAAS	BRANCH MANAGER	IL INTERNATIONAL PORT DISTRICT	CHICAGO	IL	60617-4645
MR. ANTHONY IANELLO	EXECUTIVE DIRECTOR	IL INTERNATIONAL PORT DISTRICT	CHICAGO	IL	60617-5100
MR. WILLIAM PENN	BRANCH MANAGER	CHICAGO PARK DISTRICT	CHICAGO	IL	60622-2738
		BELLS FUELS LIQUID TERMINAL	RIVERDALE	IL	60627
MR. LOUIS KOPESHKE	SUPERINTENDENT	PARK RIVERDALE	CHICAGO	IL	60627-1652
FRANK KUDRNA		ILLINOIS INTERNATIONAL PORT DISTRICT	CHICAGO	IL	60633
		CHICAGO REGIONAL PORT DISTRICT	CHICAGO	IL	60633
TIM BERENS		STOLTHAVEN CHICAGO INC	CHICAGO	IL	60633
		BIGANE VESSEL FUELING COMPANY	CHICAGO	IL	60643-2529
MR. CHARLES PENDLETON	BRANCH MANAGER	CHICAGO PARK DISTRICT	CHICAGO	IL	60646-5316
		MOBIL OIL COMPANY	CHICAGO	IL	60650
		CITGO	CHICAGO	IL	60650
		KOCH MARINE OIL TERMINAL	CHICAGO	IL	60650
MR. MARK DE SALVO	DIRECTOR	NORRIDGE PARK DISTRICT	CHICAGO	IL	60656-4522
MR. DAVE THOMPSON		PRESTONE PRODUCTS CORP	ALSIP	IL	60658
MR. JOHN CURRAN	DIRECTOR	ALSIP PARK DISTRICT	CHICAGO	IL	60658-2624
MR. DAVID MOSENA	BRANCH MANAGER	CITY OF CHICAGO	AMF OHARE	IL	60666-0142
MR. RAYMOND FOLTZ	BRANCH MANAGER	US DEPT OF TRANSPORTATION	AMF OHARE	IL	60666-0959
MR. NICHOLAS B. BLASE	PRESIDENT	VILLAGE OF NILES	NILES	IL	60714-3132
TOM SURACE	BRANCH MANAGER	VILLAGE OF NILES	NILES	IL	60714-4519
MS. CHARLENE DYBEDOCK	PRESIDENT	KANKAKEE VALLEY PARK DISTRICT	KANKAKEE	IL	60901
HONORABLE JOHN PHILLIP NOVAK	REPRESENTATIVE IN CONGRESS		KANKAKEE	IL	60901
MR. JAMES A. MOODY	PRINCIPAL	CITY OF MOMENCE	MOMENCE	IL	60954-1515
MR. RONALD R. GRUBBS	PRESIDENT	VILLAGE OF ST ANNE	ST ANNE	IL	60964-0396
HONORABLE RONALD A WAIT	REPRESENTATIVE IN CONGRESS		BELVIDERE	IL	61008
MR. KEITH MILLER	BRANCH MANAGER	US DEPT OF AGRICULTURE	BELVIDERE	IL	61008-0218
MR. NEAL PAVLUS	DIRECTOR	BYRON PARK DISTRICT	BYRON	IL	61010
MR. RONALD GIBSON		TOWNSHIP OF BYRON	BYRON	IL	61010
MR. STEVE APPELL	MAYOR	VILLAGE OF CHERRY VALLEY	CHERRY VALLEY	IL	61016-0368
HONORABLE RICHARD MULCAHEY	REPRESENTATIVE IN CONGRESS		DAVIS	IL	61019-9537
MR. ROBERT M. O'SHAUGHNESSY	EXECUTIVE DIRECTOR	DIXON PARK DISTRICT	DIXON	IL	61021-1960
ARNOLD MCDOWELL		MID-TOWN MARINA	EAST DUBUQUE	IL	61025
		JO DAVIESS COUNTY HIGHWAY	ELIZABETH	IL	61028-9304
LARRY RICHARDSON		GALENA BOAT CLUB	WEST GALENA	IL	61036
		BOARD OF SUPERVISORS	GALENA	IL	61036
DENNIS TRONE		RIVER CRUISES-GALENA	GALENA	IL	61036
	COUNTY CLERK	JO DAVIESS COUNTY COURTHOUSE	GALENA	IL	61036
		GALENA PUBLIC LIBRARY	GALENA	IL	61036-2322
	COUNTY CLERK	CARROLL COUNTY COURTHOUSE	MT CARROLL	IL	61053
VAL GUNNARSSON	STATE'S ATTORNEY	CARROLL COUNTY COURTHOUSE	MT CARROLL	IL	61053
	CHAIRMAN	BOARD OF SUPERVISORS	MT CARROLL	IL	61053
MR. HENRY GEHANT	BRANCH MANAGER	US DEPT OF AGRICULTURE	MOUNT CARROLL	IL	61053-9701
MR. BRUCE LYZER	COMMISIONER	PECATONICA TOWNSHIP GARAGE	PECATONICA	IL	61063
MR. DONALD NELSON	SUPERVISOR	LINCOLN TOWNSHIP	POLO	IL	61064
MR. LARRY C. LOOMIS	PRESIDENT	POLO SWIMMING POOL	POLO	IL	61064-1310
MR. JAMES KENNEY	PRESIDENT	FLAGG-ROCHELLE COMMUNITY PARK DISTRICT	ROCHELLE	IL	61068-1767
MR. GARY PFIEFLE	BRANCH MANAGER	US DEPT OF AGRICULTURE	ROCK FALLS	IL	61071
HONORABLE PENNY VON BERGEN-WESSELS	REPRESENTATIVE IN CONGRESS		ROCK FALLS	IL	61071-1442
LARRY WARGOWSKY		UPPER MISSISSIPPI RIVER NTL	SAVANNA	IL	61074
MR. DENNIS McFADDEN	PRESIDENT	SAVANNA PARK DISTRICT	SAVANNA	IL	61074-0329
HARLENE HERMITT		MOONLIGHT BAY MARINA & REST	STERLING	IL	61081

MR. LARRY SCHULTZ	DIRECTOR	STERLING PARK DISTRICT	STERLING	IL	61081-0958
MR. RONALD SWANSON		ROCKFORD TOWNSHIP GOVERNMENT	ROCKFORD	IL	61101-5041
MR. RICHARD HERTZING		STATE OF ILLINOIS	ROCKFORD	IL	61107-4264
HONORABLE PAULA RASCHKE-LIND	REPRESENTATIVE IN CONGRESS		ROCKFORD	IL	61107-4328
HONORABLE DONALD MANZULLO	REPRESENTATIVE IN CONGRESS		ROCKFORD	IL	61108
DARRYL LINDBERG	MAYOR	CITY OF LOVES PARK	LOVES PARK	IL	61111-4785
HONORABLE DONALD MONZULLO	REPRESENTATIVE IN CONGRESS		ROCKFORD	IL	61126
JUDY PATSCH		OF RIVERS AND STEAMBOATS	ROCK ISLAND	IL	61201
	MAYOR	CITY HALL	ROCK ISLAND	IL	61201
MR JON DUYYENJONCK		US FISH & WILDLIFE SERVICE	ROCK ISLAND	IL	61201
HONORABLE JOEL BRUNSVOLD	REPRESENTATIVE IN CONGRESS		ROCK ISLAND	IL	61201
DENISE BULAT		BI-STATE REGIONAL COMMISSION	ROCK ISLAND	IL	61201
	DIRECTOR	BI STATE METRO PLANNING COMMISSION	ROCK ISLAND	IL	61201
BOB RYKEN	CHAIRMAN	DAVENPORT CC-TRANSP COMMISSION	ROCK ISLAND	IL	61201
BOB CLEVENSTINE		US DEPT OF INTERIOR	ROCK ISLAND	IL	61201
CHUCK DAVIS		US FISH AND WILDLIFE SERVICE	ROCK ISLAND	IL	61201
MR. RICK NELSON	BRANCH MANAGER	US DEPT OF INTERIOR	ROCK ISLAND	IL	61201-9213
COLONEL WILLIAM J. BAYLES	DISTRICT ENGINEER	ROCK ISLAND DISTRICT, CORPS OF ENGINEERS	ROCK ISLAND	IL	61204-2004
	SUPERVISOR	US COAST GUARD	ROCK ISLAND	IL	61204-3220
MR. JOHN MC KENZIE	PRESIDENT	ROCK ISLAND RIVER TRML CORP	ROCK ISLAND	IL	61204-4566
MR MICHAEL K. McCAW		MISSMAN STANLEY & ASSOCIATES	ROCK ISLAND	IL	61204-6040
	MAYOR	CITY HALL	ALBANY	IL	61230
BILL A. BERTRAND		IL DEPT OF CONS	ALEDO	IL	61231
	COUNTY CLERK	MERCER COUNTY	ALEDO	IL	61231
		MERCER CARNEGIE LIBRARY	ALEDO	IL	61231-1460
	MAYOR	CITY HALL	ANDALUSIA	IL	61232
	MAYOR	CITY HALL	CORDOVA	IL	61242
WILLIAM J. LAUPER		CITY OF EAST MOLINE	EAST MOLINE	IL	61244
	MAYOR	CITY HALL	EAST MOLINE	IL	61244
HONORABLE M. BOB DEJAEGER	REPRESENTATIVE IN CONGRESS		EAST MOLINE	IL	61244
MR. ROBERT E. MURPHY, JR.	PRESIDENT	MURPHYS BOATYARD INC	EAST MOLINE	IL	61244-9526
MR. DAVID B. LORIMER	PRESIDENT	ISLAND MARINA CORP	EAST MOLINE	IL	61244-9767
MR. MARK MCDERMOTT	BRANCH MANAGER	BURLINGTON RIVER TERMINAL INC	FULTON	IL	61252-1724
HONORABLE TODD SIEBEN	REPRESENTATIVE IN CONGRESS		GENESEO	IL	61254
MR. BOB ORSI	DIRECTOR	GENESEO PARK DISTRICT	GENESEO	IL	61254-0267
	MAYOR	VILLAGE OF HAMPTON	HAMPTON	IL	61256-0212
MR. LEONARD SCHWENNEKE			ILLINOIS CITY	IL	61258-9782
	MAYOR	USDA SOIL CONSERVATION SERVICE	MOLINE	IL	61264-5758
DON MARGENTHALER	DIRECTOR OF COMMUNITY AFFAIRS	CITY HALL	MOLINE	IL	61265
		DEERE AND COMPANY	MOLINE	IL	61265
		IL QUAD CITY CHAMBER OF COMMERCE	MOLINE	IL	61265
HONORABLE DENNY JACOBS	UNITED STATES SENATOR		MOLINE	IL	61265
MR. DAN KEHLE	PRESIDENT	TEMPO DISTRIBUTING COMPANY INC	MOLINE	IL	61265-1326
MR. JOE SCHADLER	PRESIDENT	SCHADLER RIVER ADVENTURES INC	MOLINE	IL	61265-1671
		ROCK ISLAND COUNTY FARM BUREAU	MOLINE	IL	61265-6389
HONORABLE LANE EVANS	REPRESENTATIVE IN CONGRESS		MOLINE	IL	61265-7217
RAY WELVAERT		LECLAIRE QUARRIES INC	MOLINE	IL	61265-7908
	COUNTY ENGINEER	COUNTY HIGHWAY DEVELOPMENT	MORRISON	IL	61270
MR. DOYCE HISCOCKS	BRANCH MANAGER	CONTINENTAL GRAIN COMPANY	NEW BOSTON	IL	61272-0218
HONORABLE CALVIN W. SCHUNEMAN	UNITED STATES SENATOR		PROPHETSTOWN	IL	61277
MARJORIE DOLAN	VILLAGE PRESIDENT	RAPIDS CITY	RAPIDS CITY	IL	61278
	MAYOR	CITY HALL	THOMSON	IL	61285
BARBARA L. KOCH	EXECUTIVE DIRECTOR	CHAMBER OF COMMERCE & ECONOMIC DEVEL	LASALLE	IL	61301-0446
		PUTNAM COUNTY LIBRARY	HENNEPIN	IL	61327
	COUNTY CLERK	PUTNAM COUNTY	HENNEPIN	IL	61327
		HENNEPIN BOAT MARKET INC	HENNEPIN	IL	61327-0380
		CHAMBER OF COMMERCE	MARSEILLES	IL	61341
		KAISER AGRICULTURAL CHEMICALS COMPANY	MARSEILLES	IL	61341
TED SUMMERS		GARVEY PROCESSING INC	OTTAWA	IL	61350
	MAYOR	CITY HALL	OTTAWA	IL	61350
DAN WIESBROCK		OTTAWA BARGE TERMINAL INC	OTTAWA	IL	61350
	CHAIRMAN	BOARD OF SUPERVISORS	OTTAWA	IL	61350
DAN PARTRIDGE		MARSEILLES MARINE & FLEETING	OTTAWA	IL	61350
		CHAMBER OF COMMERCE	OTTAWA	IL	61350
JAMES HILTON		ILLINOIS WATERWAY	OTTOWA	IL	61350
HONORABLE TOM P. WALSH	REPRESENTATIVE IN CONGRESS		OTTAWA	IL	61350
		S T SERVICES - SUNMARK SMITH OIL	PERU	IL	61354
		MERTEL GRAVEL COMPANY	PERU	IL	61354
HONORABLE PATRICK D. WELCH	UNITED STATES SENATOR		PERU	IL	61354-0341
MR. JOHN WALTERS	BRANCH MANAGER	CITY OF PERU	PERU	IL	61354-3322
	COUNTY CLERK	BUREAU COUNTY	PRINCETON	IL	61356
	MANAGER	BUREAU COUNTY FARM BUREAU	PRINCETON	IL	61356
JIM HAMACKER		CONSOLIDATED GRAIN & BARGE COMPANY	PRINCETON	IL	61356
MR. DEAN MAHON	BRANCH MANAGER	US DEPT OF AGRICULTURE	PRINCETON	IL	61356-9560
		ANCHOR MARINE	SENECA	IL	61360
GLENN MCDONALD		SENECA PORT OPERATING COMPANY	SENECA	IL	61360-9688

MR. STEVE MOSER	BRANCH MANAGER	IL DEPT OF CONSERVATION	SHEFFIELD	IL	61361-9571
DON GREYER	SPRING VALLEY ELEVATOR	CARGILL	SPRING VALLEY	IL	61362
HONORABLE RICHARD R. MAUTINO	REPRESENTATIVE IN CONGRESS		SPRING VALLEY	IL	61362-1951
MR. MARVIN DEAN	SUPERVISOR	UTICA TOWNSHIP	UTICA	IL	61373
HONORABLE CARL E. HAWKINSON	UNITED STATES SENATOR		GALESBURG	IL	61401
HONORABLE LANE EVANS	REPRESENTATIVE IN CONGRESS		GALESBURG	IL	61401-1319
MR. LAWRENCE ASARO	CITY MANAGER	CITY OF GALESBURG	GALESBURG	IL	61402-1387
	MAYOR	CITY HALL	KEITHSBURG	IL	61442
MR. RAYMOND PETERSON	SECRETARY	MACOMB PARK DISTRICT	MACOMB	IL	61455
NORMAN C. WALZER	DIRECTOR	ILLINOIS INSTITUTE FOR RURAL AFFAIRS	MACOMB	IL	61455
MR. WILLIAM REICHOW	CHAIRMAN OF THE BOARD	COUNTY OF WARREN	MONMOUTH	IL	61462
MS. CLAUDINE JOHNSON	CLERK	VILLAGE OF WINDSOR	NEW WINDSOR	IL	61465
	MAYOR	CITY HALL	OQUAWKA	IL	61469
	COUNTY CLERK	HENDERSON COUNTY	OQUAWKA	IL	61469
MR. JERRY DEVORE	PRESIDENT	DEVORE MARINE SALES INC	OQUAWKA	IL	61469-0216
MR. KENNETH R. DUNN	PRESIDENT	R & R MARINE	OQUAWKA	IL	61469-0433
GALE HURT	PRESIDENT	YELLOW BANKS MARINA INC	OQUAWKA	IL	61469-9745
RICHARD SPANGLER		SPOON RIVER LEVEE VIST #1	SMITHFIELD	IL	61477
MR. ROGER COX	BRANCH MANAGER	IL DEPT OF CONSERVATION	ASTORIA	IL	61501-0052
MR. ROBERT PEDIGO	BRANCH MANAGER	COUNTY OF FULTON	CANTON	IL	61520-3155
MR. WILLIAM DOUGLAS	BRANCH MANAGER	IL DEPT OF CONSERVATION	CANTON	IL	61520-9419
RAY E. JACKSON		B E J INC	CANTON	IL	61520-9801
	MAYOR	CITY HALL	CHILLICOTHE	IL	61523
PATRICIA WILLARD		CHILLICOTHE CHAMBER OF COMMERCE	CHILLICOTHE	IL	61523-0106
MR. BOB KING		CHILLICOTHE RECREATION AREA	CHILLICOTHE	IL	61523-1253
	COUNTY CLERK	WOODFORD COUNTY	EUREKA	IL	61530
		EUREKA PUBLIC LIBRARY	EUREKA	IL	61530-1347
	MAYOR	CITY HALL	HENRY	IL	61537-0196
	COUNTY CLERK	MARSHALL COUNTY COURTHOUSE	LACON	IL	61540
		BOARD OF SUPERVISORS	LACON	IL	61540
	MAYOR	CITY HALL	LACON	IL	61540
JIM HAMACKER		CONTINENTAL GRAIN COMPANY	LACON	IL	61540
	COUNTY CLERK	FULTON COUNTY	LEWISTOWN	IL	61542
		BOARD OF SUPERVISORS	LEWISTOWN	IL	61542
MR. BILL SCOTT	PRESIDENT	HOLLIS PARK DISTRICT	MAPLETON	IL	61547-9703
HONORABLE JOHN C. ACKERMAN	REPRESENTATIVE IN CONGRESS		MORTON	IL	61550-9367
DICK WATSON		TRI CO DUCKS & GEESE	PEKIN	IL	61554
	COUNTY CLERK	TAZEWELL COUNTY	PEKIN	IL	61554
		CENTRAL ILLINOIS DOCK COMPANY	PEKIN	IL	61554
		SHELL OIL COMPANY	PEKIN	IL	61554
HONORABLE RICHARD LUFT	UNITED STATES SENATOR		PEKIN	IL	61554
	MAYOR	CITY HALL	MARQUETTE HEIGHTS	IL	61554
RON TULEY		MIDWEST GRAIN PRODUCTS OF ILLINOIS	PEKIN	IL	61554
JOHN SOURS		SGC (SOURS GRAIN COMPANY)	PEKIN	IL	61554
MR. DAN HOLM		IL DEPT OF CONSERVATION	PEKIN	IL	61554
MR. JERRY SEA		IL COMMERCIAL FISHING ASSN	PEKIN	IL	61554-2222
MR. ROBERT N. BLACKWELL	CONTROLLER	PEKIN PARK DISTRICT	PEKIN	IL	61554-5121
MR. GREG RANNEY	SUPERINTENDENT	CITY OF PEKIN	PEKIN	IL	61554-5855
DELBERT KNOY		DELMAR MARINE INC	PEKIN	IL	61555
MARK KNOY		DELMAR MARINE INC	PEKIN	IL	61555
DONALD G. MEINEN		TRI COUNTY RIVERFRONT-ACTION FORUM	PEKIN	IL	61555-0131
G. L. COOK		SHELL OIL COMPANY	PEKIN	IL	61555-0546
MR. DANIEL R. MC NALLY	PRESIDENT	CENTRAL ILLINOIS DOCK COMPANY	PEKIN	IL	61555-0638
MR. ROBERT LANGE	BRANCH MANAGER	CARGILL MARINE AND TERMINAL	PEKIN	IL	61555-0876
MR. RICHARD HAMM	PRESIDENT	HAMMS HOLIDAY HARBOR INC	ROME	IL	61562-0405
	MAYOR	CITY HALL	SPARLAND	IL	61565
LES BORDELL			WASHINGTON	IL	61571
JAMES GEE		CITY OF WASHINGTON, IL	WASHINGTON	IL	61571
MR. THOMAS E. FINCH	PRESIDENT	PEORIA BARGE TERMINAL INC	PEORIA	IL	61601-5187
		PEORIA BARGE TERMINAL	PEORIA	IL	61601-5187
STEVE BALISTRERI			PEORIA	IL	61602
RANDY J. BELSLEY	TAZEWELL COUNTY DEVELOPMENT DIRECTOR		PEORIA	IL	61602
ED EVANS		IL DEPT OF TRANSPORTATION	PEORIA	IL	61602
	COUNTY CLERK	PEORIA COUNTY COURTHOUSE	PEORIA	IL	61602
		IL DEPT OF TRANSPORTATION	PEORIA	IL	61602
HONORABLE RAY LAHOOD	REPRESENTATIVE IN CONGRESS		PEORIA	IL	61602
MICHAEL PLATT	EXECUTIVE DIRECTOR	HEARTLAND WATER RESOURCES COUNCIL	PEORIA	IL	61602-1116
MS. TEENA THALMANN	BRANCH MANAGER	IL INDUSTRIAL COMMISSION	PEORIA	IL	61602-1335
RUSSELL CONKLIN		US ARMY CORPS OF ENGINEERS	PEORIA	IL	61603
MR. JOHN J. SULKA, JR.	PRESIDENT	WHARF HARBOR SALES INC	PEORIA	IL	61603
CAPT ROBERT ANTON		BOATWORKS	PEORIA	IL	61603
HONORABLE DAVID LEITCH	REPRESENTATIVE IN CONGRESS		PEORIA	IL	61604
HONORABLE DONALD L. SALTSMAN	REPRESENTATIVE IN CONGRESS		PEORIA	IL	61604
EDWARD KAVANAUGH		TRI CO DUCKS & GEESE	PEORIA	IL	61604
MR. RONALD BABB	BRANCH MANAGER	US DEPT OF TRANSPORTATION	PEORIA	IL	61607
	MAYOR	CITY HALL	BARTONVILLE	IL	61607

	PRESIDENT	VILLAGE OF CREVE COEUR	CREVE COEUR	IL	61610
JOE JAMISON		PEORIA HARBOR & FLEETING SERVICE	CREVE COEUR	IL	61611
CHRIS KELLER		KELLER'S PEORIA HARBOR AND FLEETING	CREVE COEUR	IL	61611
JAMES RASMUS		US COAST GUARD	EAST PEORIA	IL	61611
ROBERT N. SPERLING		USCG SANGAMON (wlr 65506)	EAST PEORIA	IL	61611
MR. ROBERT C. MOONEY	OWNER	RAINBOW COVE MARINA	EAST PEORIA	IL	61611-1148
MR. JEFF GIEBELHOUSEN	MAYOR	CITY OF EAST PEORIA	PEORIA	IL	61611-2457
MR. ROBERT T. KELLER	PRESIDENT	PEORIA HARBOR & FLEETING SERVICE	PEORIA	IL	61611-3118
DOROTHY SINCLAIR		TRI COUNTY RIVER FRONT ACTION FORUM	PEORIA	IL	61614
MARY DICKISON		TRI COUNTY RIVERFRONT	PEORIA	IL	61614
R. SCOTT OWEN		GALENA MARINE	PEORIA	IL	61614-5432
DALE BURKLAND	CHAIRMAN OF THE BOARD	NATL MARINE SALES INC	PEORIA	IL	61614-5445
GEORGE LAMB	SENECA TERMINAL	SHIPYARD TERMINAL & INDUSTRIAL PARK	SENECA	IL	61630
PETE COFER		TABOR MARINE	PEORIA	IL	61650
DANA B. SHACKLEFORD		IL STATE WATER SURVEY	PEORIA	IL	61652
THOMAS A. BUTTS		IL STATE WATER SURVEY	PEORIA	IL	61652
RICK TWAIT		IL STATE WATER SURVEY	PEORIA	IL	61652
LEONARD GARDNER	EXEC DIR-GOVERNMENTAL AFFAIRS	IL FARM BUREAU	BLOOMINGTON	IL	61701
HONORABLE JOHN W. MAITLAND, JR.	UNITED STATES SENATOR		BLOOMINGTON	IL	61701
KEVIN RUND		IL FARM BUREAU	BLOOMINGTON	IL	61701
MR. DAVE ABERLE	BRANCH MANAGER	IL DEPT OF TRANSPORTATION	FORREST	IL	61741
LYNN NORMAN	BRANCH MANAGER	IL DEPT OF CONSERVATION	LE ROY	IL	61752-9531
MR. JAMES B. JOHNSON	BRANCH MANAGER	US DEPT OF AGRICULTURE	NORMAL	IL	61761-1957
HONORABLE THOMAS W. EWING	REPRESENTATIVE IN CONGRESS		PONTIAC	IL	61764
HONORABLE THOMAS EWING	REPRESENTATIVE IN CONGRESS		URBANA	IL	61801
HONORABLE STANLEY B. WEAVER	UNITED STATES SENATOR		URBANA	IL	61801
	DIRECTOR	WATER RESOURCES CENTER	URBANA	IL	61801
	MANAGER	VILLAGE OF CATLIN	CATLIN	IL	61817-0627
MR. JERRY DOLAN		IL STATE WATER SURVEY	CHAMPAIGN	IL	61820
BILL VOGNER		ILLINOIS STATE GEOLOGICAL SURVEY	CHAMPAIGN	IL	61820-6964
C. BRIAN TRASK		US DEPT OF AGRICULTURE	CHAMPAIGN	IL	61820-7334
JERRY LEONARD		US DEPT OF AGRICULTURE	CHAMPAIGN	IL	61820-7334
MR. CHARLES WHITMORE	BRANCH MANAGER	IL STATE WATER SURVEY	CHAMPAIGN	IL	61820-7495
DR. NANI G. BHOWMIK		CHAMPAIGN PARK DISTRICT	CHAMPAIGN	IL	61821-4112
MR. ROBERT F. TOALSON		US ARMY CORPS OF ENGINEERS	CHAMPAIGN	IL	61826-9005
MR. DAVID MCKAY	CIVIL ENGINEER	IL DEPT OF AGRICULTURE	DANVILLE	IL	61832-5352
MR. JOHN MAUDLAIN	CHAIRMAN		OAKWOOD	IL	61858
	SITE SUPERINTENDENT				
MR. LEWIS C. CHIEF	BRANCH MANAGER	RANTOUL PARK DISTRICT	RANTOUL	IL	61866
MR. GEORGE DAVIS	BRANCH MANAGER	US DEPT OF TRANSPORTATION	SAVOY	IL	61874
MARY KAY SOLECKI		IL NATURE PRESERVE COMMISSION	SIDNEY	IL	61877-9702
MR. MICHAEL COLLINS	MANAGER	BETHANY VLG MUNICIPAL ELECTRIC COMPANY	BETHANY	IL	61914-0352
CE WILSON		DORA TOWNSHIP ROAD DISTRICT	DALTON CITY	IL	61925-0043
TODD STROLE		IDNR	ALTON	IL	62002
	MAYOR	CITY HALL	ALTON	IL	62002
MR. CHARLES J. NORMAN, III	PRESIDENT	NORMAN BROTHERS INC	ALTON	IL	62002-0100
MR. STEVEN BAALMAN		WINFIELD FERRY	BATCHTOWN	IL	62006
JUSTINE JOHNES			BATCHTOWN	IL	62006
RANDY CLARAMUNT		IL NATURAL HISTORY	BRIGHTON	IL	62012-2032
		IL NATURAL HISTORY SURVEY	BRIGHTON	IL	62012-2032
MR. DAN DAVIS	PRESIDENT	MARK TWAIN NATIONAL WILDLIFE REFUGE	BRUSSELS	IL	62013
		MARINE TRANSPORTATION COMPANY INC	BUNKER HILL	IL	62014-9801
		CARROLLTON PUBLIC LIBRARY	CARROLLTON	IL	62016
		LEWIS & CLARK LIBRARY	EDWARDSVILLE	IL	62025
GEORGE R. ARNOLD		MADISON COUNTY CONSERV. ALLIANCE	EDWARDSVILLE	IL	62025
GEORGE R. ARNOLD		MISS CORRIDOR STUDY COMMISSION	EDWARDSVILLE	IL	62025
RAY GBILLO	DIRECTOR	MADISON COUNTY A S C S	EDWARDSVILLE	IL	62025-0246
MR. RUDOLPH PAPA	CHAIRMAN OF THE BOARD	COUNTY OF MADISON	EDWARDSVILLE	IL	62025-1963
MR. WILLIAM P. BROWN			GLEN CARBON	IL	62034
MR. RONALD FOSTER	MAYOR	VILLAGE OF GLEN CARBON	GLEN CARBON	IL	62034-0317
MR. DICK NIEMEYER	BRANCH MANAGER	IL DEPT OF CONSERVATION	GRAFTON	IL	62037-0158
PAUL WELLHOUSEN		BULK SERVICE CORP	GRANITE CITY	IL	62040
STEVEN G. SIEMERS		TIDE TOWING	GRANITE CITY	IL	62040
	GENERAL MANAGER	TRI CITY REGIONAL PORT DISTRICT	GRANITE CITY	IL	62040-1838
JIM LABIT		TRI-CITY REGIONAL PORT	GRANITE CITY	IL	62040-1838
MR. STEVEN R. KESSEL	DIRECTOR	GRANITE CITY PARK DISTRICT	GRANITE CITY	IL	62040-3568
MR. JIM GREER	BRANCH MANAGER	IL SECRETARY OF STATE	GRANITE CITY	IL	62040-4609
MR. PAUL WELLHAUSEN	PRESIDENT	MID COAST TERMINAL INC	GRANITE CITY	IL	62040-6839
MR. ALBERT WATTERS			HAMBURG	IL	62045-9801
MARTHA SHEPPARD		USDA - NRCS	HARDIN	IL	62047
MR. DAVID ANDERSON	BRANCH MANAGER	US DEPT OF AGRICULTURE	HARDIN	IL	62047-0374
HONORABLE TOM RYDER	REPRESENTATIVE IN CONGRESS		JERSEYVILLE	IL	62052
MR. HERMAN BLACKORBY	MAYOR	CITY OF JERSEYVILLE	JERSEYVILLE	IL	62052-0037
MR. JEROME HAYN	PRESIDENT	POOL 24 TUG SERVICE INC	KAMPSVILLE	IL	62053-0276
HONORABLE GARY HANNIG	REPRESENTATIVE IN CONGRESS		LITCHFIELD	IL	62056-0402
KEN WILLARD		PEAVEY GRAIN COMPANY	SAUGET	IL	62201
BILL GREBENCE		CONTINENTAL GRAIN COMPANY	EAST ST LOUIS	IL	62201

MR. EUGENE SLAY	PRESIDENT	CAHOKIA MARINE SERVICE INC	EAST ST LOUIS	IL	62201-1015
MR. KEN WILLARD	BRANCH MANAGER	CONAGRA INC	EAST ST LOUIS	IL	62201-1066
MR. GEORGE ANDERSON	BRANCH MANAGER	THE OHIO RIVER COMPANY	FAIRVIEW HEIGHTS	IL	62208-1342
MR. ROGER GARELLI	DIRECTOR	CITY OF FAIRVIEW HEIGHTS	FAIRVIEW HTS	IL	62208-1703
		BELLEVILLE PUBLIC LIBRARY	BELLEVILLE	IL	62220
MR. HARRY MANN	BRANCH MANAGER	US DEPT OF AGRICULTURE	BELLEVILLE	IL	62220-3418
JIM MCEVILLY		EAST SIDE RIVER TRANSPORTATION INC	BELLEVILLE	IL	62221
MR. ROBERT COFFIE	PRESIDENT	EAST SIDE RIVER TRANSPORTATION	BELLEVILLE	IL	62221-2016
HONORABLE JERRY F. COSTELLO	REPRESENTATIVE IN CONGRESS		BELLEVILLE	IL	62221-5884
MR. JAMES RADISIC	PRESIDENT	B N B TOWING SERVICE INC	BELLEVILLE	IL	62223-3469
MR. WILLIAM POLKA	BRANCH MANAGER	COUNTY OF ST CLAIR	BELLEVILLE	IL	62223-5918
MR. CARLOS HAMMOND	BRANCH MANAGER	IL DEPT OF CONSERVATION	CARLYLE	IL	62231-6224
MS. PATRICIA WATKINS	MAYOR	VILLAGE OF CASEYVILLE	CASEYVILLE	IL	62232-1513
BARB EGGENMEYER		CONSOLIDATED COAL COMPANY	MODOC	IL	62233
S.F. BROWN		SOUTHERN ILLINOIS TRANSFER COMPANY	CHESTER	IL	62233
		SOUTHERN ILLINOIS SAND CO	CHESTER	IL	62233
S. F. BROWN	PRESIDENT	ST JUDE HARBOR SERVICE INC	CHESTER	IL	62233-0242
MR. DAVID OTTEN		DAVE OTTEN COMPANY	CHESTER	IL	62233-9886
HONORABLE JOHN SHIMKUS	REPRESENTATIVE IN CONGRESS		COLLINSVILLE	IL	62234
MR. NICK MAHLANDT	REGIONAL MANGAGER	IL ENVIRONMENTAL PROTECTION AGENCY	COLLINSVILLE	IL	62234-1832
MR. LARRY TRUCANO		COLLINSVILLE TOWNSHIP ROAD DISTRICT	COLLINSVILLE	IL	62234-5279
BILL GARDNER		LUHR BROS INC	COLUMBIA	IL	62236
BRAD STONE	OPERATIONS DEPT	RIVERWAY COMPANY	EAST CARBONDALE	IL	62240
JAY WORTHINGTON		CARGO CARRIERS	EAST CARBONDALE	IL	62240
MR. GERALD BROWN	PRESIDENT	CARGO CARRIERS	EAST CARBONDALE	IL	62240
MR. THOMAS A. GROVES	BRANCH MANAGER	CARGILL MARINE AND TERMINAL	EAST CARBONDALE	IL	62240-0140
MR. HAROLD BRUNER	VICE-PRESIDENT	RIVERWAY HARBOR SERVICE ST LOUIS	EAST CARBONDALE	IL	62240-0168
BUTCH ATWOOD		IL DEPT OF CONSERVATION	GREENVILLE	IL	62246
MR. RICHARD MOCHO	BRANCH MANAGER	US DEPT OF AGRICULTURE	MASCOUTAH	IL	62258-2229
MR. ALBERT C. VOLLMER	SUPERVISOR	MILLSTADT TOWNSHIP	MILLSTADT	IL	62260-2023
MR. BILL JACK	BRANCH MANAGER	COUNTY OF WASHINGTON	NASHVILLE	IL	62263
MR. ERVIN SMITH	PRESIDENT	KASKASKIA RVER MRN/CAMPGROUNDS	NEW ATHENS	IL	62264
MR. JOHN HUETSCH	GENERAL MANAGER	KASKASKIA REGIONAL PORT DISTRICT	RED BUD	IL	62278-1103
JOE O'TOOLE		CORA TERMINAL LP	ROCKWOOD	IL	62280
MR. MIKE RIEBELING	SUPERINTENDENT	COUNTY OF RANDOLPH	SPARTA	IL	62286-0243
MR. VIRGIL RIPPERDA	MAYOR	CITY OF TRENTON	TRENTON	IL	62293-1304
	COUNTY CLERK	ADAMS COUNTY	QUINCY	IL	62301
MR. CARL JOHNSON	MANAGER	US POSTAL SERVICE	QUINCY	IL	62301-3070
MICHAEL D. KLINGNER	SECRETARY	KLINGER & ASSOCIATE	QUINCY	IL	62301-3248
HONORABLE LAURA KENT DONAHUE	UNITED STATES SENATOR		QUINCY	IL	62301-3708
MR. STEVE CARPENTER	EXECUTIVE DIRECTOR	QUINCY PARK DISTRICT	QUINCY	IL	62301-5213
MR. RICHARD A. KLUSMEYER	MANAGER	COUNTY OF ADAMS	QUINCY	IL	62305-3797
MR. ROBERT MYERS	BRANCH MANAGER	IL DEPT OF CONSERVATION	AUGUSTA	IL	62311-0203
	CHAIRMAN	BOARD OF SUPERVISORS	CARTHAGE	IL	62321
	COUNTY CLERK	HANCOCK COUNTY	CARTHAGE	IL	62321-0039
MR. DENNIS PAGDETT	SUPERVISOR	CLAYTON TOWNSHIP & ROAD DISTRICT	CLAYTON	IL	62324-0446
	MAYOR	DALLAS CITY	DALLAS CITY	IL	62330
HONORABLE ARTHUR TENHOUSE	REPRESENTATIVE IN CONGRESS		LIBERTY	IL	62347
MR. ALBERT MCEWAN	PRESIDENT	LOWER IL TOWING COMPANY	MILTON	IL	62352-0116
	COUNTY CLERK	BROWN COUNTY COURTHOUSE	MT STERLING	IL	62353
		BOARD OF SUPERVISORS	MT STERLING	IL	62353
	MAYOR	CITY HALL	MT STERLING	IL	62353
	MAYOR	CITY HALL	NAUVOO	IL	62354
MR. PETE BODDEKER	PRESIDENT	BODDEKER BOATS INC	NIOTA	IL	62358-0077
	MAYOR	CITY HALL	PEARL	IL	62361
		BOARD OF SUPERVISORS	PITTSFIELD	IL	62363
GERALD BROWN		CARGILL	PITTSFIELD	IL	62363
ROBIN L. HENDLEY	ECONOMIC DEVELOPMENT DIRECTOR	CITY OF PITTSFIELD	PITTSFIELD	IL	62363
MR. LOU MC KENNA	PRESIDENT	TDJ INC	ROCKPORT	IL	62370-9727
	MAYOR	CITY HALL	WARSAW	IL	62379
		MEYER ELEVATOR	WARSAW	IL	62379
MR. HAROLD STUCKWISH	PRESIDENT	WARSAW PARK DISTRICT	WARSAW	IL	62379
LAWRENCE MEEKER		HUNT DRAINAGE DISTRICT	WARSAW	IL	62379-3307
	BRANCH MANAGER	IL DEPT OF TRANSPORATION	EFFINGHAM	IL	62401
MR. JOHN ST JOHN	REGIONAL MANAGER	IL SECRETARY OF STATE	EFFINGHAM	IL	62401-3764
MS. PAM DAVIS	EXECUTIVE DIRECTOR	ASCS OFFICE	LAWRENCEVILLE	IL	62439-0575
CORDEN C. NICHOLSON	PRESIDENT	DECATUR PARK DISTRICT	DECATUR	IL	62521
MR. ROBERT K. WILSON	PRESIDENT	IL GRAIN INSPECTION SERVICE	DECATUR	IL	62521-1642
HONORABLE JOHN F. DUNN	REPRESENTATIVE IN CONGRESS		DECATUR	IL	62523
J. A. SMITH	ASST. CITY MANAGER	CITY OF DECATUR	DECATUR	IL	62523
FRANK CASTLEMAN		AMERICAN RIVER TRANSPORTATION	DECATUR	IL	62525
HONORABLE N DUANE NOLAND	REPRESENTATIVE IN CONGRESS		DECATUR	IL	62526-1156
MR. JOHN CURTIN	CHAIRMAN OF THE BOARD	COUNTY OF CHRISTIAN	TAYLORVILLE	IL	62568-2244
DALE LAIR	COMMISSIONER	MORGAN COUNTY	ASHLAND	IL	62612-9801
	MAYOR	CITY HALL	BATH	IL	62617
ROBERT W. HALE	BEARDSTOWN TERMINAL	CONTINENTAL GRAIN COMPANY	BEARDSTOWN	IL	62618

DANA LOGSDON	PRESIDENT	TUG LOGSDON SERVICE	BEARDSTOWN	IL	62618-1134
JEANETT BUHLIG	BRANCH MANAGER	IL SECRETARY OF STATE	BEARDSTOWN	IL	62618-1701
		BEARDSTOWN PUBLIC LIBRARY	BEARDSTOWN	IL	626188119
JOE JAMISON		CONSOLIDATED GRAIN & BARGE	BLUFFS	IL	62621-0290
		CONSOLIDATED GRAIN & BARGE	BLUFFS	IL	62621-0290
LARRY JAMISON		CONSOLIDATED GRAIN & BARGE	BLUFFS	IL	62621-0290
JIM STITZLEIN		CONSOLIDATED GRAIN & BARGE	BLUFFS	IL	62621-0290
	MAYOR	CITY HALL	BROWNING	IL	62624
	MAYOR	CITY HALL	FREDERICK	IL	62639
		HAVANA PARK DISTRICT	HAVANA	IL	62644
MR. ED BRITTON		US FISH & WILDLIFE	HAVANA	IL	62644
STEVE HAVERA		IL NATURAL HISTORY SURVEY	HAVANA	IL	62644
DOUG BLODGETT	IL NATURAL HISTORY SURVEY		HAVANA	IL	62644
DANIEL HOUGHTON		JACK TANNER TOWING COMPANY	HAVANA	IL	62644
	COUNTY CLERK	MASON COUNTY COURTHOUSE	HAVANA	IL	62644
		BOARD OF SUPERVISORS	HAVANA	IL	62644
	MAYOR	CITY HALL	HAVANA	IL	62644
DENICE RAY	EXCUTIVE DIRECTOR	CHAMBER OF COMMERCE	HAVANA	IL	62644-0116
JIM WHALEN		ADM (TABOR GRAIN)	HAVANA	IL	62644-0560
MR. LLOYD COLE	PRESIDENT	JACK TANNER TOWING COMPANY INC	HAVANA	IL	62644-1613
MR. ANDREW FRENCH	BRANCH MANAGER	US DEPT OF INTERIOR	HAVANA	IL	62644-9517
PORTIA H. BROWN		CITY OF HAVANA	HAVANA	IL	62644-9739
HONORABLE RAY LAHOOD	REPRESENTATIVE IN CONGRESS		JACKSONVILLE	IL	62650
HONORABLE ROBERT H. MICHEL	REPRESENTATIVE IN CONGRESS		JACKSONVILLE	IL	62650-2002
		JACKSONVILLE PUBLIC LIBRARY	JACKSONVILLE	IL	62650-2497
HONORABLE ROBERT A. MADIGAN	UNITED STATES SENATOR		LINCOLN	IL	62656-2131
MR. WILBER L. RENKEN	MAYOR	CITY OF MASON CITY	MASON CITY	IL	62664-1460
MARK BIBER		CARGILL INC	MEREDOSIA	IL	62665
MR. RICHARD DAVIDSMEYER	BRANCH MANAGER	IL ROAD CONTRACTORS	MEREDOSIA	IL	62665
	MEREDOSIA TERMINAL, INC	R WM DAVIDSMEYER	MEREDOSIA	IL	62665
		MEREDOSIA TERMINAL INC	MEREDOSIA	IL	62665
NORMAN LITTLE		MEREDOSIA TERMINAL	MEREDOSIA	IL	62665
	COUNTY CLERK	SCHUYLER COUNTY COURTHOUSE	RUSHVILLE	IL	62681
		BOARD OF SUPERVISORS	RUSHVILLE	IL	62681
	COUNTY CLERK	CASS COUNTY COURTHOUSE	VIRGINIA	IL	62691
		BOARD OF SUPERVISORS	VIRGINIA	IL	62691
MR. STEVE TURNER	BRANCH MANAGER	CASS COUNTY CFSA OFFICE	VIRGINIA	IL	62691-1541
ROBERT SCHANZLE		IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62701
SCOTT STUEWE		IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62701
NIKKI VOLVAR	DIRECTOR	IL DEPT PROF REGULATION	SPRINGFIELD	IL	62701-1135
DICK LUTZ	SUPERVISOR	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62701-1787
BRUCE BARKER		IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62701-1787
GLEN KRUSE	NATURAL HERITAGE	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62701-1787
MR. BRENT MANNING	DIRECTOR	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62701-1787
MR. RONALD MORSE	DIRECTOR	IL DEPT MINES & MINERALS	SPRINGFIELD	IL	62702
MR. JIM MORLEY	MANAGER	IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62702-2310
MR. JEFF V. STEEG	BRANCH MANAGER	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62702-2538
MR. JOHN TRANQUILLI	BRANCH MANAGER	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62702-2538
MR. MIKE CONLIN	BRANCH MANAGER	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62702-2538
MR. MICHAEL LELYS	BRANCH MANAGER	CITY OF SPRINGFIELD	SPRINGFIELD	IL	62702-4044
DONALD VONNAHME	DIRECTOR	DEPT OF TRANSPORT-OFW OF WATER RESOURCES	SPRINGFIELD	IL	62703
VIC THOMPSON		IL FERT & CHEM ASSOCIATION	SPRINGFIELD	IL	62703
HONORABLE CAROL MOSELEY-BRAUN	UNITED STATES SENATOR		SPRINGFIELD	IL	62703
GARY CLARK		IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62703
HONORABLE RICHARD DURBIN	REPRESENTATIVE IN CONGRESS		SPRINGFIELD	IL	62703
	DIVISION ADMINISTRATOR	FEDERAL HIGHWAY ADMIN	SPRINGFIELD	IL	62703
MR. KIRK BROWN	SECRETARY	IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62703-4555
HONORABLE RAY LAHOOD	REPRESENTATIVE IN CONGRESS		SPRINGFIELD	IL	62704
MR. TIMOTHY J. HICKMAN	EXECUTIVE DIRECTOR	IL ABANDND MINED LANDS	SPRINGFIELD	IL	62704-2725
MR. JOHN W. MCCREE	ENGINEER	IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62704-4766
HONORABLE JOHN SHIMKUS	REPRESENTATIVE IN CONGRESS		SPRINGFIELD	IL	62704-5307
MR. JOHN LINXWILER	EXECUTIVE DIRECTOR	SPRINGFIELD PARK DISTRICT	SPRINGFIELD	IL	62705-5052
BILL DONNELLS		IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62706
VERN KLEEN		IL DNR - NAT HERITAGE DEPT	SPRINGFIELD	IL	62706
HONORABLE KIRK DILLAR	REPRESENTATIVE IN CONGRESS		SPRINGFIELD	IL	62706
MARVIN HUBBELL	WETLAND WATERSHED & EMP PROGRAM ADMN	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62706
JOHN COMERIO	DEPUTY DIRECTOR	IL DEPT OF NATURAL RESOURCES	SPRINGFIELD	IL	62706
GEORGE R. ARNOLD		MISS RIVER PARKWAY ADVISORY COUNCIL	SPRINGFIELD	IL	62706
DR. MICHAEL D WIAANT		IL STATE MUSEUM	SPRINGFIELD	IL	62706
MR. BRUCE CARTER		CITY OF SPRINGFIELD	SPRINGFIELD	IL	62707
		US FISH & WILDLIFE DIVISION OF LAW E	SPRINGFIELD	IL	62707-6044
MR. DICK WASSLER	DIRECTOR	IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62707-8415
MEL ALLISON	CHIEF-BUREAU OF PLANNING	IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62764
AL KELLERSTRASS		IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62764
RANDALL S. BLANKENHORN		IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62764
TODD HILL		IL DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62764

LEE M. RIFE	FEDERAL PROJECTS MANAGER	IL DEPT OF TRANSPORTATION IL DEPT OF AGRICULTURE IL DEPT OF AGRICULTURE-DIVN OF MARKETNG	SPRINGFIELD SPRINGFIELD SPRINGFIELD	IL IL IL	62764 62791 62794
MR. JOE HAMPTON	DIRECTOR	IL DEPT OF AGRICULTURE	SPRINGFIELD	IL	62794
BRUCE YURDIN		ENVIRONMENTAL PROT SPCLST DWPC	SPRINGFIELD	IL	62794-9276
BERNARD P. KILLIAN	DIRECTOR	IL ENVIRONMENTAL PROTECTION AGENCY	SPRINGFIELD	IL	62794-9276
AL KELLER		IL EPA LIBRARY 18	SPRINGFIELD	IL	62794-9276
DENNIS L. SWEATMAN	ECONOMIC DEVELOPMENT DIRECTOR	IL EPA-PERMITS SECTION	SPRINGFIELD	IL	62794-9276
MR. JIM HARTWIG		IL COMMERCE COMMISSION	SPRINGFIELD	IL	62794-9280
STEVEN A WENTWORTH	AG POLICY ADVISOR	IL DEPT OF AGRICULTURE	SPRINGFIELD	IL	62794-9281
SIAVASH MOSTOUFI	MANAGER OF PROJECTS	DEPT OF TRANSPORTATION	SPRINGFIELD	IL	62794-9484
HONORABLE JOHN SHIMKUS	REPRESENTATIVE IN CONGRESS		CENTRALIA	IL	62801
MR. DAVE RENOLDS	DIRECTOR	IL DEPT OF AGRICULTURE	CENTRALIA	IL	62801-5837
MR. BERNARD PODOLSKY	PRESIDENT	FAIRFIELD PARK DISTRICT	FAIRFIELD	IL	62837-0467
HONORABLE LARRY W. HICKS	REPRESENTATIVE IN CONGRESS		MOUNT VERNON	IL	62864
HONORABLE WILLIAM L. O'DANIEL	UNITED STATES SENATOR		MOUNT VERNON	IL	62864-2383
MR. PHILLIP FRAKES	BRANCH MANAGER	IL SECRETARY OF STATE	SALEM	IL	62881-2031
MR. JOHN SIMMONS	MAYOR	CITY OF WEST FRANKFORT	W FRANKFORT	IL	62896-2426
K.L. BARTELSMEYER	ATTN - J LENZINI	IL DEPT OF TRANSPORTATION	CARBONDALE	IL	62903-0100
MR. GEORGE WHITEHEAD	DIRECTOR	CARBONDALE PARK DISTRICT	CARBONDALE	IL	62903-1326
		STINSON MEMORIAL LIBRARY	ANNA	IL	62906
MR. GEOFF C. SMITH	PRESIDENT	WATERFRONT SERVICES COMPANY	CAIRO	IL	62914-0433
MR. AL PANNIER	BRANCH MANAGER	AMERICAN COML MAR SERVICE COMPANY	CAIRO	IL	62914-9729
MR. BILL WIGGS	MAYOR	VILLAGE OF CRAINVILLE	CARTERVILLE	IL	62918-9803
DONALD A. COMBS, JR.	PRESIDENT	BLACK DIAMOND	COBDEN	IL	62920-9506
MR. DON TOORE	MAYOR	CITY OF ELDORADO	ELDORADO	IL	62930-1201
MR. BILL REYNOLDS	BRANCH MANAGER	IL DEPT OF NATURAL RESOURCES	GOREVILLE	IL	62939
MR. WILLIAM M. LEWIS		FOUNTAIN BLUFF FISH FARM	GORHAM	IL	62940-9721
GARY DUNCAN		BUNGE GRAIN COMPANY	GRAND TOWER	IL	62942
MS. LOUISE O'DEGAARD	BRANCH MANAGER	US DEPT OF AGRICULTURE	HARRISBURG	IL	62946-2640
MR. RANDY LIVELY	PRESIDENT	PARK HERRIN DISTRICT CONCESSION	HERRIN	IL	62948-0130
MS. MARY MUMFORD	BRANCH MANAGER	US DEPT OF AGRICULTURE	JONESBORO	IL	62952-9568
COLLIN CAIN		GRASSY LAKE HUNTING CLUB	JONESBORO	IL	62952-9802
MR. DICK NANCE	BRANCH MANAGER	IL DEPT OF NATURAL RESOURCES	JONESBORO	IL	62952-9998
		LITTLE GRASSY BOAT DOCKS	MAKANDA	IL	62958
MR. DANIEL RUNNELS	BRANCH MANAGER	US DEPT OF AGRICULTURE	MARION	IL	62959-1000
HONORABLE RICHARD DURBIN	UNITED STATES SENATOR		MARION	IL	62959-1709
DON SALSBUURY		MID-SOUTH TOWING COMPANY	METROPLIS	IL	62960
MR. DAVID FLIGOR		KINKAID AREA SYSTEM WATER PLANT	MURPHYSBORO	IL	62966
MR. DAN WARD	DIRECTOR	MURPHYSBORO PARK DISTRICT	MURPHYSBORO	IL	62966-0795
MR. GERALD UPDIKE	GENERAL MANAGER	US DEPT OF INTERIOR	ULLIN	IL	62992-9753
MR. ALAN GAINES	PRESIDENT	GAINES ART BASEBALL CAMP INC	BALLWIN	MO	63011-4225
MR. RONALD GREGORY	BRANCH MANAGER	THE YOUTH AND FAMILY CENTER	CEDAR HILL	MO	63016
MR. MARK K. KNOY	SENIOR VICE-PRESIDENT	MARINE EQUIPMENT MANAGEMENT CORP	CHESTERFIELD	MO	63017-2064
SCOTT PUETTMMANN		MIDWEST MARINE MANAGEMENT COMPANY	ELLISVILLE	MO	63021-4500
MR. RONALD MOORE	PRESIDENT	MIDWEST MARINE MANAGEMENT COMPANY	ELLISVILLE	MO	63021-4500
DALE SONDERGROTH	PARTNER	KANTOW COMPANY	BALLWIN	MO	63021-5015
	PRESIDENT	BARGE MANAGEMENT INC	BALLWIN	MO	63022-3567
MR. DAVID A. HILLIARD	EXECUTIVE DIRECTOR	WYMAN CAMP INC	EUREKA	MO	63025-2212
MR. BRAD EISENBEIS	PRESIDENT	HOLIDAY LAKES RESORT INC	FESTUS	MO	63028-0127
MR. CHARLES MCQUILLIAN			FESTUS	MO	63028-9339
MR. JAMES D. MANNING	SUPERINTENDENT	UNITED PENTECOSTAL CHURCH INTERNATIONAL	FLORISSANT	MO	63031-0167
MS. JOAN GATSON	BRANCH MANAGER	STATE OF MISSOURI	FLORISSANT	MO	63031-5108
G. R. VEACH	BRANCH MANAGER	CITY OF FLORISSANT	FLORISSANT	MO	63033-3642
MR. CHARLES HOPKINS		HOPPIES MARINE SERVICE	KIMMSWICK	MO	63053-0044
HONORABLE KENNY HULSHOF		HOUSE OF REPRESENTATIVES	WASHINGTON	MO	63090-2706
JOHN SHOULBERG		WATERWAYS JOURNAL	ST LOUIS	MO	63102
RONALD N. ZIMMER		SVERDRUP CORP	ST LOUIS	MO	63102-1826
THOMAS J HODGINI	COMMANDER	US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
SANDRA CLAWSON		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
OWEN D. DUTT		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
RICHARD F. ASTRACK		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
BRIAN L. JOHNSON		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
THOMAS M. KEEVIN		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
DAVE LEAKE		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
JAMES CARTER	CHIEF, CON OPS	CEMVS - CO	ST LOUIS	MO	63103
DAVID H. KELLY		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
GERALD W. BARNES		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
KENNETH R. KOLLER		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
BRUCE MCLAREN	COMMANDER (OB)	US COAST GUARD SECOND DISTRICT	ST LOUIS	MO	63103
SCOTT COOPER		US COAST GUARD COTP	ST LOUIS	MO	63103
ANSON EICHORST		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
JOHN DIERKER		US ARMY CORPS OF ENGINEERS-ST LOUIS	ST LOUIS	MO	63103
	COMMANDING OFFICER	US COAST GUARD	ST LOUIS	MO	63103-2832
COMMANDER ERIC WASHBURN	COMMANDING OFFICER	US COAST GUARD MARINE SAFETY	ST. LOUIS	MO	63103-2835

CDR JOHN M. HOLMES		US COAST GUARD	ST LOUIS	MO	63103-2835
	BRANCH MANAGER	US DEPT OF TRANSPORTATION	ST LOUIS	MO	63103-2837
ROGER WIEBUSCH	COMMANDER (OB)	SECOND COAST GUARD DISTRICT	ST LOUIS	MO	63103-2838
CHRIS CRAIG		ST LOUIS COUNTY PORT AUTHORITY	ST LOUIS	MO	63105
MR. ROBERT B. MILLER, JR.	PRESIDENT	ROBERT B MILLER & ASSOCIATES	ST LOUIS	MO	63105
CPT GARY CRADER		APEX TOWING COMPANY	ST LOUIS	MO	63105
DONALD HUFFMAN		HUFFMAN TOWING COMPANY	ST LOUIS	MO	63105-1685
MR. ROBERT H. HUFFMAN, JR.	PRESIDENT	INLAND WATERWAYS INC	ST LOUIS	MO	63105-1694
MR. THOMAS E. PHELPS	PRESIDENT	BONHOMME GROUP LTD	ST LOUIS	MO	63105-1906
S. N. ROSEBERRY	CHAIRMAN OF THE BOARD	CLIPPER CRUISE LINE INC	ST LOUIS	MO	63105-1908
HONORABLE WILLIAM L. CLAY	REPRESENTATIVE IN CONGRESS		ST LOUIS	MO	63108
ROYCE WILKEN		ARTCO	ST LOUIS	MO	63111
MR TIM ROBINSON	CO-CHAIRMAN, RIAC	ACBL	ST LOUIS	MO	63111
JACK HYNES		SCNO BARGE LINE INC	ST LOUIS	MO	63111
BILL BOYD		REIDY TERMINAL/ARTCO	ST LOUIS	MO	63111
CPT JOHN SEALS		ACBL AMERICAN COMM BARGE LINE COMPANY	ST LOUIS	MO	63111-3637
MS. SID HOLTHAUS	PRESIDENT	A STORAGE INN INC	ST LOUIS	MO	63119-4407
E. K. SHAW	BRANCH MANAGER	US DEPT OF AGRICULTURE	ST LOUIS	MO	63120-1703
MR. DON G. LEEKER	PRESIDENT	OLYMPIC MARINE COMPANY	ST LOUIS	MO	63122-4204
HONORABLE JAMES MURPHY	UNITED STATES SENATOR		ST LOUIS	MO	63123
HONORABLE RICHARD A GEPHARDT	REPRESENTATIVE IN CONGRESS		ST LOUIS	MO	63123-7830
MR. DAVID LUEBBERS	BRANCH MANAGER	US DEPT OF TRANSPORTATION	ST LOUIS	MO	63126-1522
MR. MARK BUSSEN	PRESIDENT	BUSSEN TERMINAL	ST LOUIS	MO	63129-4405
MR. LUKE BYRNE	BRANCH MANAGER	WHITE HOUSE RETREAT INC	ST LOUIS	MO	63129-5701
MR. NEWELL A. BAKER	MAYOR	CITY OF FRONTENAC	ST LOUIS	MO	63131-2915
MR. MONTE R. FINDLEY	BRANCH MANAGER	GENERAL SERVICES ADM	ST LOUIS	MO	63132-1547
MR. MARK TABAKA	BRANCH MANAGER	CITY OF BERKELEY	ST LOUIS	MO	63134-2004
HONORABLE JAMES TALENT	REPRESENTATIVE IN CONGRESS		ST LOUIS	MO	63141
RICK SADTLER		BUNGE CORP - MARINE DEPT	ST LOUIS	MO	63141
MR. STEVEN F. LEER	PRESIDENT	ARCH MINERAL CORP	ST LOUIS	MO	63141-7014
MR. MICHAEL MCDOWELL	ADMINISTRATOR	CITY OF CREVE COEUR	ST LOUIS	MO	63141-7533
MR. CHARLES W. CASPARI	EXECUTIVE DIRECTOR	SHERWOOD FOREST CAMP INC	ST LOUIS	MO	63143-3008
MS. SARA J. MAY	BRANCH MANAGER	STATE OF MISSOURI	ST LOUIS	MO	63143-3709
MR. HERBERT WOLKOWITZ	PRESIDENT	FREDERICK BARGE COMPANY	ST LOUIS	MO	63144-2328
WILLIAM J. SCHMIDT, JR.	ASST. VICE PRESIDENT	BUNGE CORP	ST LOUIS	MO	63146
MR. LARRY KITCHEN	BRANCH MANAGER	STATE OF MISSOURI	ST LOUIS	MO	63147-3314
MR. GEORGE FOSTER	PRESIDENT	JEFFERSON BARRACKS MAR SERVICE INC	ST LOUIS	MO	63151-0320
MR. HORACE ALLEN	PRESIDENT	HORACE ALLEN WATER TOY	ST CHARLES	MO	63301
ALLENE GIBSON	PRESIDENT	GIBSON INC (NOT INC)	ST CHARLES	MO	63301
HONORABLE JAMES TALENT	REPRESENTATIVE IN CONGRESS		ST CHARLES	MO	63301
MR. OLIVER K. MOORE	PRESIDENT	MOORE OKIE DIVING & SALVAGE	ST CHARLES	MO	63301-0249
MR. RICHARD L. ASH, JR.	DIRECTOR	CITY OF ST CHARLES	ST CHARLES	MO	63301-0842
MR. WADE FUCHS		HICKORY HILLS BOAT STORAGE	ST CHARLES	MO	63301-0929
MR. GARY SUBLETT	BRANCH MANAGER	STATE OF MISSOURI	ST CHARLES	MO	63301-2748
MS. BARBARA HALL		COUNTY RECORDER OF DEEDS	ST CHARLES	MO	63301-2852
MR. TIMOTHY MCDONALD		SOUTHSHORE MARINA	ST CHARLES	MO	63301-6123
DALE PLANK		ALL VEHICLE STORAGE	ST CHARLES	MO	63303-3815
MR. DENNIS O'DANIELS	PRESIDENT	ODANIELS & ASSOCIATES INC	ST CHARLES	MO	63303-6236
MR. ROY GRIMES	BRANCH MANAGER	STATE OF MISSOURI	ST CHARLES	MO	63304-2215
		MAIN STREET CLARKSVILLE	CLARKSVILLE	MO	63336
MR. TED WERENSKI		CURRYVILLE FISHERIES	CURRYVILLE	MO	63339-2605
JIM GIERKE			LOUISIANA	MO	63353
MR. JOHN COKER		HUTCHINS CO BOATYARD	O FALLON	MO	63366-9543
MR. JOSEPH R. CORDARO	PRESIDENT	DIVERSIFIED MARINE ENTERPRISES	LAKEAST ST LOUIS	MO	63367-1515
MR. RICHARD SHOAF	PRESIDENT	SHOAF ENTERPRISES INC	LAKEAST ST LOUIS	MO	63367-2904
WARREN L. SPIELMAN	PRESIDENT	VENETIAN HARBOR INC	PRTG DE SIOUX	MO	63373-0130
MR. MICHAEL DALLWITZ	PRESIDENT	MY RIVER HOME BOAT HARBOR INC	PRTG DE SIOUX	MO	63373-1318
MR. LEO SKRABACZ		PALISADES BOAT HARBOR	PRTG DE SIOUX	MO	63373-1319
MR. CHESTER F. MIKA, JR.	PRESIDENT	C AND B ENTERPRISES INC	ST PETERS	MO	63376-1403
		MALLARD MARINE CORP	ST PETERS	MO	63376-6642
MR. STEVE MYATT	PRESIDENT	PINEWOOD ENTERPRISES INC	WENTZVILLE	MO	63385-4439
C. R. ALTHEIDE	PLANT MANAGER	CONTINENTAL CEMENT COMPANY	HANNIBAL	MO	63401
DALE HILLMAN		CENTRAL STONE COMPANY	HANNIBAL	MO	63401
		JACK'S HARBOR MARINE COMPANY	HANNIBAL	MO	63401
GEORGE PACE	MANAGER CHAMBER OF COMMERCE		HANNIBAL	MO	63401
MR. DICK JONES	BRANCH MANAGER	STATE OF MISSOURI	HANNIBAL	MO	63401
GARY DUNCAN		EAST HANNIBAL TERMINAL	HANNIBAL	MO	63401
CHARLIE DUCHARME		MDNR, WRP	JEFFERSON CITY	MO	63401
MR. ROBERT LUMPP		MARK TWAIN RIVERBOAT	HANNIBAL	MO	63401-0288
HONORABLE KENNY HULSHOF	REPRESENTATIVE IN CONGRESS		HANNIBAL	MO	63401-3503
SCOTT CALLICOTT		CONGRESS	HANNIBAL	MO	63401-3503
		CANTON MARINE TOWING COMPANY INC	CANTON	MO	63435
JOHN J. CLARK		CITY HALL	CANTON	MO	63435
	MAYOR	CITY HALL	CANTON	MO	63435
		LOGSDON'S ELEVATOR	CANTON	MO	63435
		AYERS OIL COMPANY	CANTON	MO	63435

TOM COTTRELL	PORT AUTHORITY	LEWIS COUNTY/CANTON	CANTON	MO	63435-0126
MR. JAMES K. CALDWELL	PRESIDENT	CANTON MARINE TOWING COMPANY	CANTON	MO	63435-9594
MR. DAVID WALLER	BRANCH MANAGER	STATE OF MISSOURI	HUNNEWELL	MO	63443-9801
		BOARD OF SUPERVISORS	KAHOKA	MO	63445
	COUNTY CLERK	CLARK COUNTY COURTHOUSE	KAHOKA	MO	63445
	COUNTY CLERK	LEWIS COUNTY	MONTECELLO	MO	63457
	COUNTY CLERK	MARION COUNTY	PALMYRA	MO	63461
MR. WAYNE LUCKE	PRESIDENT	LUCKY LAKES INC	PALMYRA	MO	63461-1140
MR. KENT ADAMS		MARINA BLACKJACK	PERRY	MO	63462-0310
MR. RANDY MIKEL	BRANCH MANAGER	CITY OF KIRKSVILLE	KIRKSVILLE	MO	63501
MR. ROBERT FUNK	MAYOR	CITY OF KIRKSVILLE	KIRKSVILLE	MO	63501-3580
MR. RICHARD WHITTAKER	ADMINISTRATOR	STATE OF MISSOURI	KIRKSVILLE	MO	63501-4664
MR. KEN FRYER	BRANCH MANAGER	STATE OF MISSOURI	MACON	MO	63552-9640
MR. JACK WINBURN	BRANCH MANAGER	STATE OF MISSOURI	MACON	MO	63552-9804
MS. ADRIANNA BRIGGS	BRANCH MANAGER	COUNTY OF SCOTLAND	MEMPHIS	MO	63555-9734
MR. BILL BONNELL	BRANCH MANAGER	STATE OF MISSOURI	ELVINS	MO	63601-0308
MR. MICHAEL JOKERST	MAYOR	CITY OF STE GENEVIEVE	STE GENEVIEVE	MO	63670-1605
MR. DONALD KNOWLTON	PRESIDENT	ROCKEY RIDGE RANCH TRUSTEES	STE GENEVIEVE	MO	63670-9301
CPT LEO STEGER		MO BARGE LINE	CAPE GIRARDEAU	MO	63701
HONORABLE JOHN ASHCROFT	UNITED STATES SENATOR		CAPE GIRARDEAU	MO	63701
EVERETT JOHNSON		RIVER INDUSTRY ACTION COMMITTEE	GORDONVILLE	MO	63701
GREG BRANUM	U. S. REPRESENTATIVE'S OFFICE		CAPE GIRARDEAU	MO	63701
HONORABLE KIT BOND	UNITED STATES SENATOR		CAPE GIRARDEAU	MO	63701
HONORABLE JOANN EMERSON	REPRESENTATIVE IN CONGRESS		CAPE GIRARDEAU	MO	63701
MR. ROBERT W. ERLBACHER, II	PRESIDENT	MISSOURI BARGE LINE COMPANY	CAPE GIRARDEAU	MO	63702-1602
MR. LANNY KOCH	PRESIDENT	GIRARDEAU STEVEDORES & CONTRS	CAPE GIRARDEAU	MO	63702-1721
ROBERT HRABIK	TEAM LEADER	MO DEPT OF CONSERVATION	JACKSON	MO	63755
MR. RONALD DARDEN	MANAGER	USDA NATURAL RESOURCE	JACKSON	MO	63755
MICHAEL W. RUSHING		RUSHING MARINE CORP	JACKSON	MO	63755-0440
MR. HERSHEL PRICE	BRANCH MANAGER	STATE OF MISSOURI	JACKSON	MO	63755-9804
MR. BOB WILSON	BRANCH MANAGER	STATE OF MISSOURI	JACKSON	MO	63755-9804
MS. CAROLYN HURST	PRESIDENT	CJB COMPANY	PERRYVILLE	MO	63775-0151
MARYANN GEILE		COUNTY RECORDER OF DEEDS	PERRYVILLE	MO	63775-1301
MR. LARRY FORHAN	MAYOR	SCOTT CITY	SCOTT CITY	MO	63780-2018
MR. DAN OVERBEY	EXECUTIVE DIRECTOR		SCOTT CITY	MO	63780-9221
MR. FREEMAN MCCULLAH	BRANCH MANAGER	STATE OF MISSOURI	SIKESTON	MO	63801-0160
MR. JOHN KOENIG	BRANCH MANAGER	STATE OF MISSOURI	SIKESTON	MO	63801-0160
TERRY COLE	BRANCH MANAGER	STATE OF MISSOURI	SIKESTON	MO	63801-3413
		SOUTHERN TOWING COMPANY	CARUTHERSVILLE	MO	63830
		GLENN E DAULTON INC	CARUTHERSVILLE	MO	63830
MR. HAROLD SMITH		SMITH TOWING	CARUTHERSVILLE	MO	63830-0191
MS. BETSY SAYRE	PRESIDENT	CARUTHERSVILLE MARINE SERVICE	CARUTHERSVILLE	MO	63830-0321
MS. BETSY SAYRE	PRESIDENT	TAYLOR SAND & GRAVEL COMPANY	CARUTHERSVILLE	MO	63830-0910
DUSTY GROOM	MANAGER	SOUTHERN TOWING COMPANY	CARUTHERSVILLE	MO	63830-0911
MR. GLENN E. DAULTON	PRESIDENT	GLENN E DAULTON INC	CARUTHERSVILLE	MO	63830-2023
CPT GREG MENKE		OHIO RIVER COMPANY	CHARLESTON	MO	63834
R D JAMES		MISSISSIPPI RIVER COMMISSION	NEW MADRID	MO	63869
MR. CLAUDE BUFFINGTON	COMMISSIONER	COUNTY OF BUTLER	POPLAR BLUFF	MO	63901
HONORABLE IKE SKELTON	REPRESENTATIVE IN CONGRESS		BLUE SPRINGS	MO	64014
MS. BEVERLY FORLOW	BRANCH MANAGER	STATE OF MISSOURI	BLUE SPRINGS	MO	64015-3799
MS. DONNA HURLEY	BRANCH MANAGER	STATE OF MISSOURI	GRANDVIEW	MO	64030-2459
S. THOMPSON	DIRECTOR	US DEPT OF AGRICULTURE	HIGGINSVILLE	MO	64037-1540
HONORABLE KAREN MCCARTHY	REPRESENTATIVE IN CONGRESS		INDEPENDENCE	MO	64050
MR. VIRGIL TROUTWINE	BRANCH MANAGER	JACKSON COUNTY MISSOURI	INDEPENDENCE	MO	64052-4059
KEN CORNELIUS		KANSAS CITY RIVER TERMINAL	SUGAR CREK	MO	64054
MS. PHYLLIS LOGSDON		STATE OF MISSOURI	INDEPENDENCE	MO	64054-1575
MR. ROBERT ROSE	BRANCH MANAGER	STATE OF MISSOURI	INDEPENDENCE	MO	64055-1922
MS. SHIRLEY ROSS	BRANCH MANAGER	STATE OF MISSOURI	INDEPENDENCE	MO	64055-1922
MR. JOSEPH DAVIDSON	BRANCH MANAGER	CLAY COUNTY MISSOURI	KEARNEY	MO	64060-9056
HONORABLE KIT BOND	UNITED STATES SENATOR		KANSAS CITY	MO	64105
BOB DEGRAEVE		MID-WEST TERMINAL WAREHOUSE COMPANY	KANSAS CITY	MO	64105
MR. JERRY R. ENNIS	BRANCH MANAGER	US DEPT OF INTERIOR	KANSAS CITY	MO	64105-2112
WILLIAM R. DUEY	PROJ MGR	US ARMY CORPS OF ENGINEER-ST LOUIS CITY	KANSAS CITY	MO	64106
LEE W. LARSON	W/CR2	NWS CENTRAL REGION HYDR	KANSAS CITY	MO	64106
HONORABLE KAREN MCCARTHY	REPRESENTATIVE IN CONGRESS		KANSAS CITY	MO	64106-1904
MR. RICHARD BROOKS	BRANCH MANAGER	US DEPT OF TRANSPORTATION	KANSAS CITY	MO	64106-2641
MR. JAMES HEITES	BRANCH MANAGER	US DEPT OF TRANSPORTATION	KANSAS CITY	MO	64106-2808
MR. PAUL J. RUSS	DIRECTOR	STATE OF MISSOURI	KANSAS CITY	MO	64106-3133
MR. DARRYL COHEN	BRANCH MANAGER	CITY OF KANSAS CITY MISSOURI	KANSAS CITY	MO	64108-2837
MR. GEORGE BARTA	PRESIDENT	AMERICAN INDIAN COUNCIL	KANSAS CITY	MO	64116-3541
MS. JOAN F. TOMPKINS	BRANCH MANAGER	STATE OF MISSOURI	KANSAS CITY	MO	64118-3330
HONORABLE PAT DANNER	REPRESENTATIVE IN CONGRESS		KANSAS CITY	MO	64118-3998
MR. JIM MATTHEYS	DIRECTOR	CLAYCOMO SPECIAL ROAD DISTRICT 4	KANSAS CITY	MO	64119-3112
FRED EARLY		CHEMTECK INDUSTRIES INC	KANSAS CITY	MO	64120-1147
MR. DAN WASHBURN	BRANCH MANAGER	US DEPT OF TRANSPORTATION	KANSAS CITY	MO	64124-3032
TERRY R. DOTPSON	BRANCH MANAGER	KANSAS CITY MISSOURI CITY	KANSAS CITY	MO	64130-4717

MR. DAVID ISCMAN	BRANCH MANAGER	STATE OF MISSOURI	KANSAS CITY	MO	64133
MR. WALTER W. WAUGH	BRANCH MANAGER	STATE OF MISSOURI	KANSAS CITY	MO	64133-1405
MR. JIM PYLAND	BRANCH MANAGER	STATE OF MISSOURI	KANSAS CITY	MO	64133-4725
MR. NORMAN D. HOUSER	DIRECTOR	US DEPT OF AGRICULTURE	KANSAS CITY	MO	64141-6205
LESLIE MALONE	BRANCH MANAGER	US DEPT OF HEALTH AND HUMAN SERVICES	KANSAS CITY	MO	64153-1394
MR. RON PAPSDORF	BRANCH MANAGER	STATE OF MISSOURI	CAMERON	MO	64429-9009
MS. GEORGETTA LINSOTT	BRANCH MANAGER	STATE OF MISSOURI	PLATTSBURG	MO	64477-9590
D. A. THUNDERMAN	BRANCH MANAGER	US DEPT OF AGRICULTURE	ROCK PORT	MO	64482-0128
MR. RON GREEN	BRANCH MANAGER	STATE OF MISSOURI	ST JOSEPH	MO	64501-1900
MS. VICKY AGEE	BRANCH MANAGER	STATE OF MISSOURI	ST JOSEPH	MO	64501-1900
HONORABLE PAT DANNER	REPRESENTATIVE IN CONGRESS		ST JOSEPH	MO	64501-2240
MS. GLENDA WELBORN	BRANCH MANAGER	CITY OF CLINTON	CLINTON	MO	64735
MR. RON DENT	BRANCH MANAGER	STATE OF MISSOURI	CLINTON	MO	64735
MR. FORREST HAUKE	BRANCH MANAGER	CITY OF CLINTON	CLINTON	MO	64735-1733
SHELLY ADAMS	BRANCH MANAGER	STATE OF MISSOURI	NEVADA	MO	64772-2607
MR. LARRY WHITESIDE	BRANCH MANAGER	STATE OF MISSOURI	CARTHAGE	MO	64836-0855
MR. DAVID BROWN	PRESIDENT	CENTRAL CONTRACTING & MARINE	LAKE OZARK	MO	65049-1064
HONORABLE JOE MAXWELL		REPRESENTATIVE IN CONGRESS	JEFFERSON CITY	MO	65101
HONORABLE PAT NAEGER		REPRESENTATIVE IN CONGRESS	JEFFERSON CITY	MO	65101
HONORABLE FRANCIS OVERSCHMIDT		REPRESENTATIVE IN CONGRESS	JEFFERSON CITY	MO	65101
HONORABLE ROBERT CLAYTON III		MO HOUSE OF REPRESENTATIVES	JEFFERSON CITY	MO	65101
HONORABLE ANITA YECKEL		REPRESENTATIVE IN CONGRESS	JEFFERSON CITY	MO	65101
HONORABLE KIT BOND	UNITED STATES SENATOR		JEFFERSON CITY	MO	65101
HONORABLE PHIL SMITH		MO HOUSE OF REPRESENTATIVES	JEFFERSON CITY	MO	65101
HONORABLE SAM LEAKE		MO HOUSE OF REPRESENTATIVES	JEFFERSON CITY	MO	65101
D.E. DE WEESE	STATE PLANT HEALTH DIRECTOR	US DEPT OF AGRICULTURE	JEFFERSON CITY	MO	65101
	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65101-2917
MR DON YOEST	ENVIR PROGRAM CORD.	MISSOURI DEPT OF AGRICULTURE	JEFFERSON CITY	MO	65102
MARK KROSS	ENVIRONMENTAL MANAGER	MO DEPT OF TRANSPORTATION	JEFFERSON CITY	MO	65102
JOSEPH L DRISKILL	DIRECTOR	DEPT OF ECONOMIC DEVELOP	JEFFERSON CITY	MO	65102
JANIE MONKS		MO DNR	JEFFERSON CITY	MO	65102
HONORABLE LOIS OSBOURN	REPRESENTATIVE IN CONGRESS		JEFFERSON CITY	MO	65102
JOHN L. SAUNDERS	DIRECTOR	MO DEPT OF AGRICULTURE	JEFFERSON CITY	MO	65102
DAN F. DICKNEITE		MO DEPT OF CONSERVATION	JEFFERSON CITY	MO	65102
MR MARK KROSS		DEPT. OF TRANSPORTATION	JEFFERSON CITY	MO	65102
	PROJECT MANAGER	MISSOURI DEPT OF ECONOMIC DEVELOPMENT	JEFFERSON CITY	MO	65102
	DIRECTOR	DEPT OF AGRICULTURE	JEFFERSON CITY	MO	65102
NORM STUCKY	ENVIRONMENTAL COORDINATOR	MO DEPT OF CONSERVATION	JEFFERSON CITY	MO	65102
JACK HYNES		MO DEPT OF TRANSPORTATION	JEFFERSON CITY	MO	65102
CHRIS D BUCKLAND	PLANNER	MO DNR	JEFFERSON CITY	MO	65102
DAVID SCOTT	COMMISSIONER	DIVISION OF WATER SAFETY	JEFFERSON CITY	MO	65102
DAVID A. SHORR	DIRECTOR	DNR	JEFFERSON CITY	MO	65102
MR SCOTT JUERGENSMEYER		MO DEPT OF AGRICULTURE	JEFFERSON CITY	MO	65102
RON KUCERA	DIRECTOR - REPRESENTATIVE UMRBA	MO DEPT OF NAT RES	JEFFERSON CITY	MO	65102
R. B. GRISHAM	DIRECTOR	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0043
MR. DONALD K. WOLF	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0176
JANE EPPERSON		MO DEPT OF CONSERVATION	JEFFERSON CITY	MO	65102-0180
MR. JERRY CONLEY	DIRECTOR	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0180
		MO HIGHWAY & TRANSPORTATION DEPT	JEFFERSON CITY	MO	65102-0270
	DIRECTOR	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0630
MR. JOHN HENNESSEY	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0630
MR. ROY HUMPHREYS	DIVISION DIRECTOR	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0630
DR. CHARLES MASSENGILL	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0630
MR. DAVE JEFFRESS	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0630
MR. JAMES TOFT	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0718
MR. DICK THRASH	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-0809
MR. STEVE T. WALKER	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65102-1216
MS. DIANE GAINES	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65105-0200
HONORABLE IKE SKELTON	REPRESENTATIVE IN CONGRESS		JEFFERSON CITY	MO	65109
RAY THOMSON	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65109-1732
MR. JOE SWEDO	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65109-1755
MR. JOHN L. BARKLEY	BRANCH MANAGER	US DEPT OF AGRICULTURE	JEFFERSON CITY	MO	65110-4240
MR. ARVID E. WEST, JR.	BRANCH MANAGER	STATE OF MISSOURI	JEFFERSON CITY	MO	65110-4808
JIM MILLIGAN	FISHERY RESOURCES	US FISH & WILDLIFE SERVICE	COLUMBIA	MO	65201
JOHN DREW		MO DNR	JEFFERSON CITY	MO	65201
		US FISH AND WILDLIFE SERVICE	COLUMBIA	MO	65201
		US FISH AND WILDLIFE SERVICE	COLUMBIA	MO	65201
MR. RICHARD SCHOETTGER	DIRECTOR	US DEPT OF INTERIOR	COLUMBIA	MO	65201
MR. DEL LOBB		MISSOURI DEPARTMENT OF CONSERVATION	COLUMBIA	MO	65201-5299
MS. CONNIE EPPS BOND	ADMINISTRATIVE OFFICER	US DEPT OF AGRICULTURE	COLUMBIA	MO	65201-7712
MR. STAN ELMORE	BRANCH MANAGER	COUNTY OF BOONE	COLUMBIA	MO	65201-9707
MICHELLE MOTLEY		US DEPT OF AGRICULTURE	COLUMBIA	MO	65203
HONORABLE KENNY HULSHOF	REPRESENTATIVE IN CONGRESS		COLUMBIA	MO	65203
MR. ART MACINTOSH	BRANCH MANAGER	US DEPT OF AGRICULTURE	COLUMBIA	MO	65203-3535
MR. SCOTT SCHULTE	BRANCH MANAGER	STATE OF MISSOURI	COLUMBIA	MO	65203-8915
MR. CHRIS HOMBS		PORT AUTHORITY	BOONVILLE	MO	65233-1571

W.P. JACKSON		BRUNSWICK RIVER TERMINAL INC	BRUNSWICK	MO	65236
MS. RITA MOCK	BRANCH MANAGER	STATE OF MISSOURI	FULTON	MO	65251-1948
MR. EDDIE MCKEOWN	EXECUTIVE DIRECTOR	RANDOLPH COUNTY AGR CONS SERVICE	MOBERLY	MO	65270-3651
SANDY ALLISON			ROLLA	MO	65401
MR. RANDY MAYO	BRANCH MANAGER	STATE OF MISSOURI	ROLLA	MO	65401-0210
MR. ROBERT HOWE	BRANCH MANAGER	US DEPT OF AGRICULTURE	BOLIVAR	MO	65613-2951
TONY DELONG	BRANCH MANAGER	STATE OF MISSOURI	CRANE	MO	65633-0318
JOHN WRIGHT		ORGULF TRANSPORTATION COMPANY	FORSYTH	MO	65653-0970
J.C. LINDERWOOD	MAYOR	CITY OF HUMANSVILLE	HUMANSVILLE	MO	65674
MR. NEAL UNDERWOOD	MAYOR	CITY OF MOUNT VERNON	MOUNT VERNON	MO	65712-0070
JERRY VINEYARD		MO DNR	OZARK	MO	65721
MR. DON WATTS	MAYOR	CITY OF OZARK	OZARK	MO	65721-0295
MR. WILLIAM L. KLATT	BRANCH MANAGER	STATE OF MISSOURI	WEST PLAINS	MO	65775-0138
MR. BOB BURTRUM	EXECUTIVE DIRECTOR	US DEPT OF AGRICULTURE	WEST PLAINS	MO	65775-3527
		STATE OF MISSOURI	WILLOW SPRINGS	MO	65793
ROYCE FUGATE	DISTRICT ENGINEER		WILLOW SPRINGS	MO	65793-0220
MR. DUANE PARKER	BRANCH MANAGER	STATE OF MISSOURI	SPRINGFIELD	MO	65803-5018
	BRANCH MANAGER	STATE OF MISSOURI	SPRINGFIELD	MO	65806-1325
HONORABLE KIT BOND	UNITED STATES SENATOR		SPRINGFIELD	MO	65807-2000
MR. BOB PYLE	TREASURER	WASHINGTON TOWNSHIP	SPRINGFIELD	MO	65809-4305