



US Army Corps  
of Engineers®  
St. Paul District

# Crosscurrents

Vol. 27, No. 6

June 2004

O'Hara  
assumes  
command



## One team, one fight during the summer of change

By Lt. Col. Tom O'Hara  
District Engineer

I recently completed three weeks of visits to all our lock and dam sites and a number of field sites in the southern part of the district. This was a great time for me. I really enjoy getting out to the field and seeing our field folks in action. I hope to be able to schedule similar visits to the rest of our sites in the Western Flood Control area and the Headwaters; as well as continuing to get to know our folks in the district headquarters.

One thing these recent visits showed me was that we

collectively need to work a little harder on what I call the "Us versus Them" attitude. A common theme I heard was "the district headquarters doesn't understand or value the field." Similarly, I have also heard similar perceptions in St. Paul that the field doesn't understand or appreciate everything that the headquarters does.

My first reaction to these thoughts is that they are totally understandable. We are a very diverse organization – diverse in terms of geographic location, mission, backgrounds and experiences. It is hard to know and understand everything that is going on in the district, and it is sometimes hard to see the world from other perspectives. As we see the impact of budget cuts and change on our own organization, I think it is natural to wonder why our own organization is having to shoulder the weight.

As I said, this reaction is understandable. Understandable, but very detrimental to the success of the district. The magnitude of the change and financial constraints that we face require that we get past this first reaction and work together to overcome the obstacles we face.

My field visits reinforced what I see at the bedrock of what makes this district great – our people, their professionalism and their dedication to public service. This applies everywhere that I have been – from the lock operator on the midnight shift at Lock and Dam 10 to the construction representative working the levee raise at Devils Lake to the rangers in the Headwaters to the engineers and support personnel in the

district headquarters. You all are valued, vital members of our team.

My commitment to you is that we will not single out any one area of the district to shoulder an unfair share of the burden. We will also continue to look for opportunities to improve the cross talk and communication among all parts of the district team.

My charge to you all is to take every opportunity to learn what the rest of the district is doing and to try to avoid the us vs. them mentality. If we all pull together as one team, we will be able to weather this summer of changes.

I am honored to be part of the district and even more honored to serve as your commander for the next five weeks.

### Cover



Photo by Dan Yang

**The district assembled a uniformed color guard for the change of command, June 25, 2004. Right to left: Deb Griffith, Brian Sipos, Kurt Brownell, Keith Graham and Corrine Hodapp. On stage: Col. Robert Ball, outgoing commander; Brig. Gen. Robert Crear, commander, Mississippi Valley Division; and Lt. Col. Tom O'Hara, incoming commander.**



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### Crosscurrents

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Address all inquiries to:

Editor, *Crosscurrents*  
U.S. Army Corps of Engineers  
190 Fifth Street East  
St. Paul, MN 55101-1638

**Phone:** 651-290-5202

<b>District Engineer</b>	Lt. Col. Thomas O'Hara
<b>Public Affairs Chief</b>	Mark Davidson
<b>Media Specialist</b>	Shannon Bauer
<b>Editor</b>	Peter Versteegen
<b>E-mail:</b>	cemvp-pa@usace.army.mil

June 2004

## Change of Command



Photo by Dan Yang

Above, Beth O'Hara, wife of Lt. Col. Tom O'Hara, received a bouquet of roses on behalf of the district from Angie Peterson, administrative assistant to the district engineer, at the change of command in St. Paul, Minn., June 25.



Photo by Shannon Bauer

Lt. Col. Thomas O'Hara, Jr., assumed command of the St. Paul District in a change of command ceremony in St. Paul, Minn., June 25, 2004. He became the district's 60th commander and district engineer. He started as the deputy district engineer, July 23, 2001.



Photo by Shannon Bauer

St. Paul District employees lined the river-walk at Harriet Island Park in St. Paul to honor Col. Robert and Sally Ball after completion of the change of command. Ball assumed command of the district on July 27, 2001.



Photo by Shannon Bauer

From left are Brig. Gen. Robert Crear, commander, Mississippi Valley Division; Tom Crump, executive assistant, St. Paul District, and Mary Kay Linder, retiree.

# Crookston stays dry during high flows on Red Lake River

## Corps project speeds water through town

By Tricia Liggett  
East Grand Forks Resident Office

On most days, the Red Lake River meanders lazily through Crookston, Minn., on its gentle journey to join the Red River of the North at Grand Forks, N.D., and East Grand Forks, Minn.

But a rain-filled spring turned these lazy rivers into torrents of high water this May. Six inches of



St. Paul District file photo

**Ice and debris choked the Red Lake River at Crookston, Minn., April 18, 1997. The Corps' St. Paul District constructed cutoff channels to maximize flow and minimize ice build-up on the river.**



Photograph by Tricia Liggett

**Perry Tobin, construction representative on the Crookston stage two project, monitors the falling Red Lake River at Crookston, Minn.**

water soaked Grand Forks-East Grand Forks and 7.5 inches saturated Crookston.

While rain temporarily disrupted construction of a flood reduction project, two high-flow cutoff channels constructed earlier as part of the Crookston flood reduction project worked as designed. "In Crookston, the cutoff channels bypass the narrowest meander in the river," said Virginia Regorrah, East Grand Forks resident engineer. The high-flow cutoff channels are intended to maximize flow and to minimize the accumulation of ice and debris, which in the past had caused the Red Lake River to backup into the city of Crookston.

Said Chris Behling, design branch, "In a 100-year flood event, the cutoff channels will lower the water surface profile [at Crookston] anywhere from .6 foot to more than two feet, depending on the location."

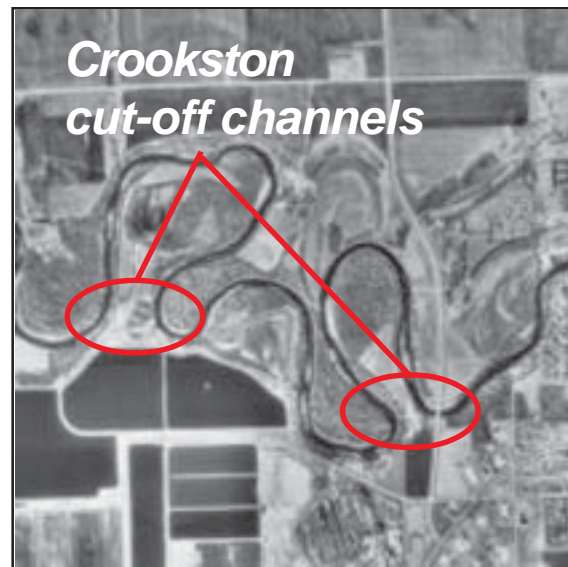
The first of the high-flow channels became the Crookston stage one project. Stage one involved the excavation of 200,000 cubic yards of material. "This is

equivalent to five football field-sized mounds of dirt, 20 feet high," said Regorrah. Construction began July 2001 and was completed May 2003.

The second of the cutoff channels is part of the Crookston stage 2 contract. Construction on the stage two contract began in August 2002 and will be completed in August 2004.

The rain has temporarily slowed but not stopped construction and the city of Crookston continues to be pleased with the results.

"Even though the project isn't finished yet, we are grateful for the flood protection that is in place and we look forward to the completion of the remaining work on the open project and future work with the Corps of Engineers," said Mike MacDonald, city administrator for the flood control projects.



**Crookston cut-off channels**

U.S. Geological Survey satellite photo

**The location of cutoff channels, circled in red, allow ice and debris to bypass meanders on the Red Lake River at Crookston, Minn. This reduces backup and eases the passage of water through the city.**

June 2004

# Emergency support bridges people and cultures

By Kurt Heckendorf  
Geotechnical engineering and geology section

One of the greatest missions the U.S. Army Corps of Engineers has is to provide emergency support to people in need. This is why Corps' members volunteer to fight back the roaring waters of a flooding river or to provide temporary housing for those who are without shelter after a natural disaster.

This is a time in which everyone pulls together to help those less fortunate than us. There becomes a bond between those you work with during an emergency and with those you are helping out. This is how I felt about my temporary assignment in Iraq in support of "Operation Iraqi Freedom."

It has been more than a year now since I first volunteered to be part of a Forward Engineering Support Team, or FEST-M team, serving in Iraq. My willingness to head over to Iraq, while there was fighting going on, dismayed both my family and colleagues.

My sister's comment, after I told her I volunteered, was, "Are you nuts!" She wasn't the only person to tell me that. However, I had thought it through and all the positive things that could come out of such an experience far



St. Paul District photo

**Kurt Heckendorf spent most of his days at his cube in the convention center in Baghdad. The above photo was taken about the time for the stand up of the Gulf Regional Division, Jan. 25, 2004. He left for duty in Iraq in November 2003 and returned to the St. Paul District March 2004. He worked as a sector manager and report manager, with duties similar to those of a project engineer or project manager, managing infrastructure projects for U.S. Agency for International Development.**

outweighed the negatives. So, when the first team was selected and I did not make the cut, I was disappointed; but I kept my name on the list, and my opportunity finally came in November 2003.

As my time neared to depart, I started to get anxious for all that awaited – meeting fellow Corps' employees from other districts, building friendships with those I work with, seeing a whole new world and culture, having the opportunity to do work that is not typical of the work in St. Paul and doing things I would never have dreamed of, as well as

participating in an historical event.

There was also this nagging feeling that surfaced every once in a while – that came while packing and finishing all the chores around the house – and this was that once I leave St. Paul, there was a chance I might not make it back. I decided early on that I wasn't going to worry about it. If it was my time to go, that no matter where I was, St. Paul or Iraq, it was my time to go. I was not going to pass up this opportunity. And boy, I was not disappointed.

I will never forget the events leading up to my arrival in the

*Heckendorf, continued on Page 6*

*Heckendorf, continued from page 5*

Green Zone in Baghdad. It involved getting up in the earlier mornings at Fort Bliss, Texas, so I could wait in line with the other 200 plus people for my medical screenings, shots and equipment. There was the long flight from Ft. Bliss to Kuwait City, Kuwait, via Bangor, Maine; Shannon, Ireland; and Larnaca, Cyprus. I had a brief stay at Camp Wolverine, Kuwait, while waiting to catch a flight to Baghdad. There, I took my first flight in a C-130, leaving Kuwait around 11 p.m. and landing in Baghdad at 3 a.m. in blackout conditions to avoid being shot at. The last leg of my trip was the 100 plus mph drive from the airport to the Green Zone. Everything went without a hitch.

Even more memorable was the time I spent in Baghdad working for the U.S. Agency for International Development Project Office, or USAID UPO, formerly the Iraq Reconstruction Office. The mission of the UPO was to provide technical assistance to USAID, an agency of the State Department.

USAID was given the mission to help rebuild the Iraqi infrastructure. Its initial mission covered 75 different projects in seven different areas or sectors of work, which included rebuilding airports, buildings, ports, power infrastructure, surface transportation systems, telecommunications networks and water/wastewater facilities. To accomplish this work, USAID awarded a \$1 billion contract to Bechtel National, Inc. Later in my tour, USAID received additional funding and awarded another contract to Bechtel, thus increasing



St. Paul District photo

**The parade review grounds in Baghdad, Iraq, had a number of war monuments, the anchor among them. Kurt Heckendorf, above, spent most of his time anchored to his inside work cubicle.**

the number of projects UPO had to oversee.

During my time in Baghdad, I served as a project manager for the Port Sector. The work within this sector was being done at the Umm Qasr Port in southern Iraq. There were 11 projects here that included emergency dredging and removal of sunken wrecks for the port itself; fixing a grain facility so it was operational to offload grain shipments; refurbishing an administration building along with a custom house and passenger terminal; fixing the brackish water system, the firewater system and toilet facilities; repairing an Iraqi-owned dredge so it could be used

for maintenance dredging; upgrading the security infrastructure surrounding the port; and refurbishing the substations to provide electricity to equipment, buildings and lighting. As a project manager, I made sure the submittals that Bechtel provided were distributed to and reviewed by the team, as well as submitted the team's comments back to Bechtel.

Along with being the port sector manager, I became the reports manager, causing my title to become "Ports & Reports." My duties included making sure all the office reporting requirements were met and submitted on time. This

*Heckendorf, continued on Page 7*

*Heckendorf, continued from Page 6*

consisted of compiling for USAID the status of all work into weekly and monthly reports. I also provided USAID a daily report. This report was more of a news article on one of the projects, whenever something significant happened. I was also required to submit a daily report to the Gulf Region District that informed them of the UPO status on personnel and projects, as well as any issues the office had.

Besides managing the port sector and the reporting requirement of the office, I took on a personnel advisory position for the local Iraqis the UPO hired. I worked with the Iraqi engineers and administrative assistant to help them understand their employment, address their concerns and solve any issues they might have and found it very rewarding. It gave me the opportunity to talk with them and learn about their culture, customs and country.

Since we were working 12 hours days, seven days a week, a strong bond grew between everyone in the office. When lunch and supper came around, everyone went together. It was just like being in one big family. When someone's time was up, it was both a sad occasion and a joyous one; although a good friend was leaving, he or she made it through okay and would be going home to see his or her own family. Through this, lifetime friendships were made with people from Corps' districts all over the country. Additionally, I made friends with other St. Paul employees I did not know before.

Knowing what a rocket or mortar sounds like or the



St. Paul District photo

**Kurt Heckendorf stands at the base of the Cross Sabres, a monument to the Iran-Iraq war, on the parade review grounds.**

difference between an AK-47 rifle and a M-16 rifle are things I did not think I would learn. Hearing an AC-130 gunship firing upon a hostile target at night was surreal. It is a feeling I can't describe with words.

When someone asks me where I was when Saddam was captured, I can say I was in the same building as Ambassador L. Paul Bremer, III, and Lt. Gen. Ricardo Sanchez, when they made that announcement. I was able to share this event with three of the UPO Iraqi engineers and understand why that day was such a relief for the citizens of Iraq. I participated in the stand-up of the Gulf Region Division (Provisional) in Baghdad. I attended my first ever symphony, performed by the Iraqi National Symphony Orchestra, while in

Baghdad. There were some many new sights, sounds and events that will always be engraved in my mind.

The only negative experience I can say I had is that the media ignored all the good things being done in Iraq. There are many grateful people in Iraq, but they are not demonstrating or causing chaos and are not as exciting as a car bombing or a fire fight.

I truly enjoyed my assignment in Iraq and all the people I met there. It was an experience that affected me and I would not trade. I have seen things and heard stories that make me truly appreciate the fact I was born in the U.S. The soldiers that are fighting for freedom, and all those who have fought before, have earned my respect and gratitude for everything they do.



Photos by Heather Cheney

**Randy Piel, head operator at Lock and Dam 5A, was one of the divers who worked to replace the diagonal on the miter gate at Lock and Dam 2 in Hastings, Minn., in late April.**

**The maintenance and repair unit from Fountain City, Wis., and district divers replaced diagonals on miter gate 2 at Lock and Dam 2 in late April. Diagonals fortify the gate's shape. Maintenance and repair crew members include John Staiger, Dave Hill, Bill Chelmowski and Dennis Kupietz. Also shown are Rojean Heyer, Jeff Gulan, Greg Yale and Charlie Church.**

## A-76 means competition for jobs

By Mark Davidson

The Department of Defense announced June 2 the beginning of a standard competition for Army Corps of Engineers information management and information technology functions, in accordance with Office of Management and Budget Circular A-76 (revised). This is a nationwide competition, and will include more than 1,300 positions throughout the Corps, including 25 positions in the St. Paul District.

“Colonel [Robert] Ball briefed our information management office staff on June 1 to let them know how the study will be done and when we expect decisions to be made,” said Linda Krueger, chief of the civilian personnel advisory center. “An information package prepared by USACE has been provided to IM employees also.”

The information management-information technology services included in the competition are:

- automation services and systems support;
- communications services and systems support;
- information assurance service and support;
- record management services and support;
- printing and publication services;

- visual information services, and
- IM-IT administration and management.

There are approximately 1,350 positions and 550 different contractors currently providing these services at 45 Corps’ sites throughout the United States

The competition will take 18 months to complete and is scheduled to end on Nov. 29, 2005. There is no request for proposals at this time; however, a draft request will be issued in November 2004 for comment. A second notice will be issued when the final request for proposals is released.

The announcement of a competition does not obligate the federal government to award any contract. Under the A-76 standard competition procedure, the in-house government organization currently performing the work will be allowed to compete against the private sector and other public reimbursable service providers for the work. Accordingly, a contract may or may not be awarded as a result of the competition.

This competition is being conducted as part of the President’s management agenda, which requires all federal agencies to streamline and become more effective.



# News and Notes

By Dan Yang

## Births

**Tricia Liggett**, construction operations, and her husband Richard, celebrated the birth of a daughter, Sheridan LaRaye, June 4. Sheridan arrived at five pounds and 17 inches long. She is at home with her mother and doing very well.

## Farewell

**Arne Thomsen**, chief of maintenance and repair, Fountain City, Wis., 38.5 years federal service;

**Wayne Koerner**, engineering hydraulics/hydrology, St. Paul District office; 33 years of federal service;

**Jim Murphy**, engineering hydraulics/hydrology, district office, 32 years federal service;

**Kent Pederson**, engineering hydraulics/hydrology, district office, 30.5 years federal service;

**Dave Ekstrand**, engineering hydraulics/hydrology, St. Paul District office, 28 years federal service;

**Dave Loss**, project manager, district office, 33 years of federal service;

**Bob Gossett**, park ranger, Cross Lake, Minn.; 45 years federal service;

**Wayne Scheffel**, resource management, district office, 17 years of federal service;

**Jim Maybury**, resource management, district office, 18 years federal service;

**Sheryl Hurley**, construction operations, St. Paul District office, 30 years federal service.

## Welcome

**William Heublein**, deckhand;  
**Adrian Lowenhagen**, deckhand,

**Stanley Marg**, deckhand;  
**Kristopher Taverna**, deckhand;

**David Johnson**, deckhand;

**Daniel Jopp**, laborer;

**Larry McClellan**, laborer,

**Erwin Palm**, laborer;

**Darwin Wilson**, laborer;

**Milan Gilman**, laborer;

**Robert Sullivan**, park ranger;

**Allen Stahl**, lock and dam operator;

**Kevin Paulson**, lock and dam operator;

**Kerrie Hauser**, office automation clerk.

## Congrats

Congratulations to the following employees who have been selected for the fiscal year 2005 Leadership Development Program:

**Chris Botz**, Baldhill Dam, Valley City, N.D.;

**Stephanie Dupey**, project management, St. Paul, Minn.;

**Rojean Heyer**, Lock and Dam 7, LaCrescent, Minn.;

**Otis Jacobson**, Lock and Dam 6, Trempealeau, Wis.;

**Tricia Liggett**, Western Area Office, Grand Forks, N.D.;

**Brad Perkl**, project management, St. Paul, Minn.;

**Scott Uhl**, service base, Fountain City, Wis.;

**Jodi Dutta**, design branch, St. Paul.

**Cheryl LaRose**, has been selected as head lock and dam operator at Upper St. Anthony Falls, Minneapolis, Minn., effective July 11, 2004.

**Dave Christenson**, has been selected as the St. Paul District's lead emergency management specialist position.

## Events

**Solstice River VII**, celebrated on the longest day of the year at the Stone Arch Bridge and Upper St. Anthony Falls Lock and Dam in Minneapolis on June 19 and 20.

## Community Outreach

**Chris Beaman**, safety office, gave a site tour of Lock and Dam 4, Alma, Wis., for 18 students and chaperones from the Menomonie,

*News and Notes, continued Page 10*

## Wanted: Your news!

PAO seeks information about special events in you life (e.g., births, deaths, marriages, engagements). If you would like to share these items, please contact Public Affairs at 651-290-5202, -5108 or 5201 or send an e-mail to: cemvp-pa@mvp02.usace.army.mil.

**News and Notes**, from Page 9

Wis., School for the Deaf and Hard of Hearing, June 8.

Steve Lenhart and Terry Schneider, Upper St. Anthony Falls, gave a site tour to approximately 100 third grade students from Vandais Heights, Minn., June 9.

## Lock and Dam 3 crew saves eagle



Photo by Dave Hawkenson

Personnel at Lock and Dam 3 in Red Wing, Minn., saved an eagle April 13.

The eagle was stranded on the lower auxiliary chamber riprap of the lock and could not fly. Later, lock employees learned the eagle had an infected abscess on one of its wings.

After several phone calls to local authorities, Lockmaster Dave Hawkenson contacted the National Eagle Center in Wabasha, Minn.

By chance, the Eagle Center was transporting another injured bird to the University of Minnesota's Raptor Center in St. Paul, Minn. Center officials stopped at the lock to transport eagle to the university for treatment.

## Federal workers' guide to political participation

By Ed Bankson  
Office of Counsel

Now that election season is upon us, it is incumbent on all federal employees to know and abide by the rules for political activity. Below is a list of activities you may engage in if you wish and a list of activities prohibited by law.

Corps employees *may*:

- be candidates for public office in nonpartisan elections;
- register and vote as they choose;
- assist in voter registration drives;
- express opinions about candidates and issues;
- contribute money to political organizations;
- attend political fund-raising functions;
- attend and be active at political rallies and meetings;
- join and be an active member of a political party or club;
- sign nominating petitions;
- campaign for or against referendum questions, constitutional amendments, municipal ordinances;
- campaign for or against candidates in partisan elections;
- make campaign speeches for candidates in partisan elections;
- distribute campaign literature in partisan elections; and
- hold office in political clubs or parties.

Corps employees *may not*:

- use official authority or influence to interfere with an election;
- solicit or discourage political activity of anyone with business before their agency;
- solicit or receive political contributions (may be done in certain limited situations by federal labor or other employee organizations);
- be candidates for public office in partisan elections;
- engage in political activity while:
  - on duty;
  - in a government office;
  - wearing an official uniform; or
  - using a government vehicle;
- wear partisan political buttons on duty.

Should you have any questions on what you, as a federal employee, may or may not do in connection with political activity see or call an ethics counselor in office of counsel. Ed Bankston, 651-290-5500; Steve Adamski, 651-290-5498; or Ivette Garrett, 651-290-5499.

# Developer fined \$55,000 for violating the Clean Water Act

By Shannon Bauer

*This news release describes the successful legal effort that contributed to Steve Adamski's nomination for Employee of the Month.*

Gerke Excavating, Inc., of Tomah, Wis., received a \$55,000 fine in May for violating the Clean Water Act.

A United States district judge found the excavation company, as well as Peter Thorson, president of Construction Management, Inc., and owner of the property, liable for violations of the Clean Water Act, when they dredged and filled a wetland adjacent to Deer Creek, a tributary to the Wisconsin and Mississippi Rivers, without a Section 404 permit issued by the U.S. Army Corps of Engineers.

The United States filed suit against Gerke and Thorson in February 2003. Thorson agreed to pay a \$105,000 civil penalty at the beginning of the trial in May 2004. After a two-day trial, the court imposed a \$55,000 fine on Gerke Excavating.

Thorson had applied to both the Wisconsin Department of Natural Resources and the Corps of

## April 2004 Employee of the Month

### Adamski courts success with long hours

Molly McKegey and Ed Bankston, both in office of counsel, nominated Steve Adamski, deputy district counsel, for employee of the month.

Adamski routinely puts in extra hours, often working until 7 or 8 pm and on weekends. And when an urgent situation arises, he works as late as necessary, and several times has worked until midnight or later. Recently, the office of counsel was involved in a Clean Water Act enforcement case,

and, in order to meet court filing deadlines, Adamski worked until past midnight on one occasion

and then a week later worked past 3 a.m.

Not once did he complain about the lack of sleep or giving up his personal time to ensure the case has the best chance at success. His efforts were rewarded when the judge ruled the defendants were liable under the Clean Water Act, and the defendants will pay penalties in addition to restoring the damaged wetland.



Photo by Jon Lyman

**Col. Robert Ball presents Steve Adamski, deputy district counsel, the Employee of the Month honors.**

Engineers for a fill permit in 1999 and been denied. Nevertheless, he contracted with Gerke Excavating to clear and fill the wetland. Local authorities alerted the Corps that destruction of the wetland was proceeding. The Corps issued a Cease and Desist Order on the third day of work, March 28, 2001.

Additionally, at the trial, the defendants agreed to be jointly and severally liable for full restoration of the wetland. The agreement with Thorson and his company is

still subject to memorialization into a Consent Decree, which will be subject to public notice and comment, as well as U.S. Department of Justice approval.

Assistant U.S. attorneys Leslie K. Herje and Heidi Luehring, in cooperation with the Wisconsin Attorney General's Office, handled the prosecution of this civil environmental enforcement case. The Corps and the Wisconsin Department of Natural Resources investigated these violations.

## Making mussels

By Kurt Brownell

*Changes in the ecosystem of the Mississippi River, development and invasive species have endangered the Higgins' Eye Pearly Mussel. Kurt Brownell, a natural resources specialist, describes the partnership to reestablish this native mussel on the river.*

Personnel from the natural resources project office in La Crescent, Minn. and the St. Paul District Office partnered with the U.S. Fish and Wildlife Service, the Wisconsin Department of Natural Resources and Iowa Department of Natural Resources to aid in the recovery of the endangered Higgins' Eye Pearly Mussel this spring.

Kurt Brownell and Jon Sobiech from the natural resources office in LaCrescent, Minn., and Dan Kelner from the district office, joined approximately 12 personnel from other state and federal agencies at the Genoa, Wis., fish hatchery April 20-22. The hatchery is operated by the U.S. Fish and Wildlife Service and funding for the mussel project is provided by the St. Paul District.

Roger Gordon, the hatchery's fisheries biologist, directed the team in "infesting" 8,470 largemouth and



St. Paul District photo

**Roger Gordon (left), assistant fish hatchery manager, Genoa, Wis., injects glochidia into a bucket of fish held by Kurt Brownell. Higgins' Eye larvae are known as glochidia.**



St. Paul District photo

**The female Higgins' Eye mussel (above) attracts fish by shaping itself to look like a minnow. Note what appears to be eyes and tail.**

smallmouth bass with Higgins' Eye larvae, known as glochidia. Glochidia are extracted from the gills of gravid (full of larvae) female mussels collected by divers from the Mississippi River at Cassville, Wis., and Cordova, Ill. Mussels were also collected from the Wisconsin River at Prairie du Sac, Wis. After the team removed larvae, the female mussels are placed unharmed back into holding tanks to await transport and placement back to the beds from which they were collected.

In nature, female Higgins' Eye mussels attract fish with a lure that looks like a minnow. As fish come close to investigate a potential meal, the mussel ejects the glochidia towards the fish. If the glochidia (remember, that's the larvae) come in contact with the gills of the largemouth or smallmouth bass, they implant and grow there for four to six weeks. The juvenile mussels then drop off; and if they land in suitable habitat, they begin to grow into mature mussels

In the laboratory, biologists place glochidia into a bucket containing fish and an airstone. The airstone agitates the water, mixing the glochidia and placing them in contact with the fishes' gills. After about three minutes, a fish is taken from the bucket and the gills viewed under a microscope to determine whether enough glochidia attached.

About three weeks after being "infested," the fish are placed into cages in the river. Allowing sufficient time for the juvenile mussels to drop off the fish onto the bottom of the cage, the fish are released and the cages closed to protect the mussels.

The cages are opened in the fall, the mussels are counted, measured, and then consolidated into a lesser number of cages for the winter. These juveniles are then released into the wild the following summer.