Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

Conservation Plan for the Slippershell (*Alasmidonta viridis*) at Tyler Creek

1. Description of the impact likely to result from the proposed taking

A. Legal description of the project area

Legal locality information for the FAS 130 project site, taken from the Elgin Illinois (7.5' series, 1962 provisional edition; photorevised in 1972 and 1980; NAD 1927) USGS topographic quadrangle map, is as follows:
Illinois, Kane Co., Tyler Creek, 2 mi NW Elgin, at Big Timber Road (FAS 130) bridge. 3rd Principal Meridian: Township 42 North, Range 7 East, SE/4, Section 36. Universal Transverse Mercator System: Zone 16, 387720m East, 4658520m North.

B. Biological data

REPRODUCTION: State-threatened Slippershell (*Alasmidonta viridis*) found gravid on August 27 in Forked Creek near Wilmington, Will County, Illinois (Wilson & Clark, 1912). Clarke (1981) examined a gravid female collected 25 May 1959 from the Mohican River drainage, Ashland County, Ohio.

FAMILY	HOST SPECIES	AUTHORITY
PERCIDAE	*Etheostoma nigrum*	(Morrison *in* Clarke & Berg, 1959)
COTTIDAE	*Cottus bairdi*	(Morrison *in* Clarke & Berg, 1959)

HABITAT: Found in creeks and the headwaters of rivers in sand, mud, or fine gravel.

C. Habitat and description of activities that will result in take.

Tyler Creek at the Big Timber Road bridge was approximately 1-3 m in width with depths ranging from 0.1-0.5 m. Habitat was good upstream of the bridge; the substrate was largely gravel and sand with some cobble and mud. Downstream of the bridge the habitat was poor and contained a lot of broken concrete and assorted debris. The stream bank was tree-lined, had a wooded riparian zone, and erosion was moderate. Water velocity in this stretch of the stream was slow and the water was clear. Tyler Creek upstream of Randall Road is rated as a "B" stream (Highly Valued Aquatic Resource) by the Biological

Stream Characterization (BSC) (Bertrand, et al. 1996). The construction of the bridge over Tyler Creek at Big Timber Road will likely result in the take of Slippershells in the upstream area.

D. Explanation of the anticipated adverse effects on the listed species

As no population studies have been conducted on any of the mussel species at this site it is impossible to predict the number of individuals that will be taken by this project. It is a very small stream and only one individual was found in the area of suitable habitat (the upstream area). The area directly upstream of the bridge was searched on July 14, 1999 and all mussels were relocated about 300 meters upstream and out of the way of the predicted impact area. As stated above, habitat was favorable directly upstream of the bridge to a distance of at least 500 meters and it is likely that additional Slippershells inhabit this upstream area. This was the reason for moving the one individual found to the area upstream. Habitat was poor at the bridge and downstream for a considerable distance. It is anticipated that no habitat would be destroyed for this species in a downstream direction. Not moving the Slippershell would have exposed it to sedimentation from instream work due to channel modification (Kevin Cummings, INHS mussel survey for Tyler Creek).

2. Measures the applicant will take to minimize and mitigate that impact.

A. Plans to minimize the area affected by the proposed action, the number of individuals of an endangered or threatened species that will be taken and the amount of habitat affected.

On July 14, 1999, Kevin Cummings (INHS Malacologist) moved the one Slippershell mussel 300 meters (984 feet) upstream and out of the way of the impacts due to the replacement of the bridge over Tyler Creek. Construction activity will be limited to approximately 100 meters downstream and upstream of the project.

B. Plans for management of the area affected by the proposed action that will allow continued use of the area by the species

If measures are taken to minimize substrate disturbance in the area around the bridge, mussels should move back into the area over time. The Slippershell has been found directly under county road bridges in the Little Vermilion River watershed.

C. Description of all measures to be implemented to minimize or mitigate the effects of the proposed action on endangered or threatened species.

The Slippershell mussel was moved from its original location of approximately 10 to 20 meters upstream of the bridge to 300 meters upstream of the bridge. This prevents the mussel form being affected by construction activity involved in the realignment of Tyler Creek.

D. Plans for monitoring the effects of the measures implemented.

The Slippershell mussel is extremely small as an adult (about 3 cm max.). As only one individual was found it is virtually impossible to monitor this "population". The effort needed to find the relocated specimen would likely cause more damage to the habitat, INHS scientists will visit the site post construction to determine if Slippershells have re-colonized.

E. Projected costs of each measure that will minimize or mitigate the effects of proposed action on endangered or threatened species.

The estimate of cost for the preferred bridge replacement alternative (Spill thru abutment bridge in relocated stream) is $ 49,350.00 (Please see attached estimate of cost table)

F. Adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted to minimize or mitigate the effects of the proposed action on endangered or threatened species

Due to nature of the project, IDOT doesn't anticipate any changed or unforeseen circumstances. This bridge replacement and creek realignment will be completed and no additional work will be necessary afterwards.

G. Verification that funding to support mitigation activities will be available for the life of conservation plan.

The Illinois Department of Transportation has contractual obligation with the Illinois Natural History Survey.

3. Alternative actions that would not result in take.

One would be to not realign Tyler Creek or do any instream work. However, due to the nature of the project (i.e. a bridge removal and replacement), it would not

be feasible to avoid both instream work and realignment of the creek. The bridge has to be repaired due to safety concerns with the public. Therefore, five alternatives were developed by the consulting firm handling the project. The following is a list of design alternatives and their impacts.

1. Closed abutment bridge in original bridge location and relocated upstream alignment.

This option would not satisfy the project objective of minimizing stream sedimentation from construction of the relocated channel near the existing channel. Construction could not be completed in dry conditions due to its proximity to the existing channel. This would be more harmful to aquatic resources.

2. Closed abutment bridge in original stream with large skew.

This option is unacceptable because of the extensive amount of construction required under flow conditions and potentially destabilizing forces would continue to exist along the upstream and downstream banks.

3. Spill thru abutment bridge in original stream location with large skew.

These proposed actions were found to be potentially more detrimental to the aquatic resources than that deemed acceptable.

4. Closed thru abutment in relocated stream location.

This alternate was also found to be unacceptable. The increased amount of instream work would result in a potential detriment to aquatic resources.

5. Spill thru abutment bridge in relocated stream location (preferred option).

This option allows for the bridge to be moved 70 feet east of its current location and a new channel dug that would significantly reduce the current level of scour. This option also required no instream work in the existing channel. The new bridge and channel will be constructed and vegetation on the new slopes will be allowed to grow for one full growing season. The channel will be opened and directed into the newly constructed channel. The realignment of Tyler Creek will occurr between 100 feet upstream and 200 feet downstream of the new bridge.

4. Data and information to assure that the proposed taking will not reduce the likelihood of the survival of the species.

The slippershell is fairly widespread in Illinois. The reason for inclusion on the list of threatened species in Illinois is because of its severe reduction in range in the state. It still occurs in many localities in Illinois and the Fox River drainage including; Somonauk Creek, Little Rock Creek, East Branch Big Rock Creek, Blackberry Creek, Waubansee Creek, Nippersink Creek, Rob Roy Creek, and an additional location in Tyler Creek at Eagle Heights Park (a population that incidentally was under a threat from an IDNR C-2000 project).

5 An implementing agreement, which shall include, but not be limited to:

A. Names of all participants in the execution of the conservation plan, including public bodies, corporations, organizations, and private individuals.

Kevin S. Cummings
Malacologist
Illinois Natural History Survey

Christopher A. Phillips
Director of the Center for Biodiversity
Illinois Natural History Survey

Rich Nowack
Biological Resource Unit Manager
Illinois Department of Transportation

Scott Marlow
Ecological Resource Analyst
Illinois Department of Transportation

Rice, Berry, and Uzman
A division of Hampton, Lenzini, and Renwick, inc.
Civil Engineers- Structural Engineers-Land Surveyors

B. The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities in the conservation plan and a schedule for preparation of progress report to be provided to the Department.

The Illinois Natural History Survey has completed its duties of surveying for threatened or endangered mussels and moved the Slippershell away from the project location. Post construction the INHS will examine Tyler Creek for colonization by Slippershells.

The Illinois Department of Transportation is responsible for all biological clearance coordination and recommendations related to the project and addresses those items listed under the Incidental Take Notice.

Rice, Berry, and Uzman is the consultant that is responsible for creation of the engineering plans and is responsible for completion of the bridge removal and replacement and realignment of Tyler Creek.

C. Assurances that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan.

This project is authorized by the Illinois Department of Transportation, which receives funding from Illinois General Assembly and the Federal government in carrying out its programs.

D. Assurances of compliance with all other federal, state, and local regulations pertinent to the proposed action and to execution of the conservation plans.

The Illinois Department of Transportation exclusively abides by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.

E. Copies of any federal authorizations for taking already issued to the applicant.

Not applicable since the Slippershell mussel (*Alasmidonta viridis*) is not federally threatened or endangered.

E. For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner.

Not applicable since the Slippershell mussel (*Alasmidonta viridis*) is considered an animal under the Illinois Endangered Species Act (ILCS 10/2)