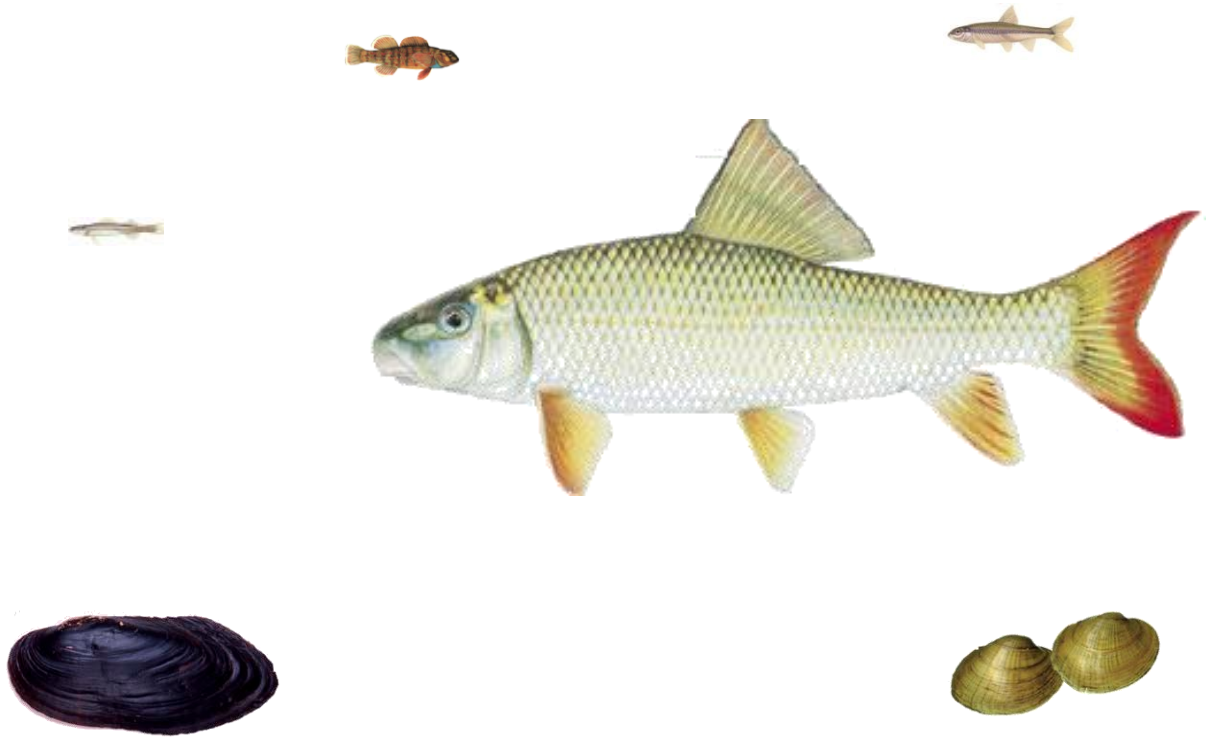
Conservation Plan for Danville Dam Removal

City of Danville



April 2014

Prepared by: The Illinois Department of Natural Resources, Office of Water Resources

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Bluebreast Darter (Ethostoma camurm)

Bigeye Chub (Hybopsis amblops)

Wavy-rayed Lampmussel (Lampsilis fasciola)

Eastern Sand Darters (Ammocrypta pellucidum)

River Redhorse (Moxostoma carinatum)

Black Sandshell (Ligumia recta)

Images are ~ 1/5 actual size

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1) DESCRIPTION OF IMPACTS

A) Legal Description

The Danville Dam is located in the City of Danville on the Vermilion River approximately 22 miles upstream of the confluence of the Wabash River. The Danville Dam is located in Section 8 of Township 19 North, Range 11 West of the 2nd Principal Meridian or at -87.631691, 40.122256 Decimal Degrees as shown in Figure 1. The affected property is owned by the City of Danville.

B) Biological Description of Affected Species

BLUEBREAST DARTER

The Bluebreast Darter (*Etheostoma camurum*) is listed as endangered in Illinois (Illinois Endangered Species Protection Board, February 22, 2011). The Bluebreast Darter is a small colorful fish that is usually 2-3 inches and rarely greater than 3.5 inches in length. They have a blunt nose, a dark blue to blue-green coloring with 8 to 12 faint dark vertical bars. Their fins have a dark outer edge outline with a white line inside of that. The males have a blue throat and breast, small red spots along their sides and an orange area on their lower sides. While in breading season, the male will be tinged with an orange-red coloring. Female darters do not have the blue breast and throat, red spots or orange area. They have a duller coloring with a few dark spots on their sides.

The Bluebreast Darter eats aquatic inset larvae, crustaceans and other aquatic invertebrates. They live in clear, fast moving, medium to large streams. They are typically in 4 to 12 inches of water and the adults usually are found near boulders. The known locations of the Bluebreast Darter are New York, Pennsylvania, Virginia, West Virginia, Ohio, Kentucky, Indiana, Tennessee, Alabama and Illinois. Within Illinois, there are 17 recorded occurrences yielding 120 individual Bluebreast Darters. The Illinois Natural History Survey (INHS) estimates the total population based on sampling density and habitat to be approximately 23,000, all in Vermilion County in the tributaries of the Wabash River watershed. A Bluebreast Darter was the only collected threatened and endangered species that was found in the North Fork as shown in Figure 2. Near I-74, south of Danville, two more individuals were sampled totaling a population of 3 in the area of the 120 statewide sampled.

In the summer of 2007, the INHS conducted a survey of the Bluebeast Darter at thirty sites. Seventeen sites produced a total of 79 Bluebreast Darters. All except two were collected in areas of swift moving water where cobble and boulders were present in the stream. They were often found in depths of 3-18 inches. The Middle Fork and Salt Fork contained the highest densities of the species while the main

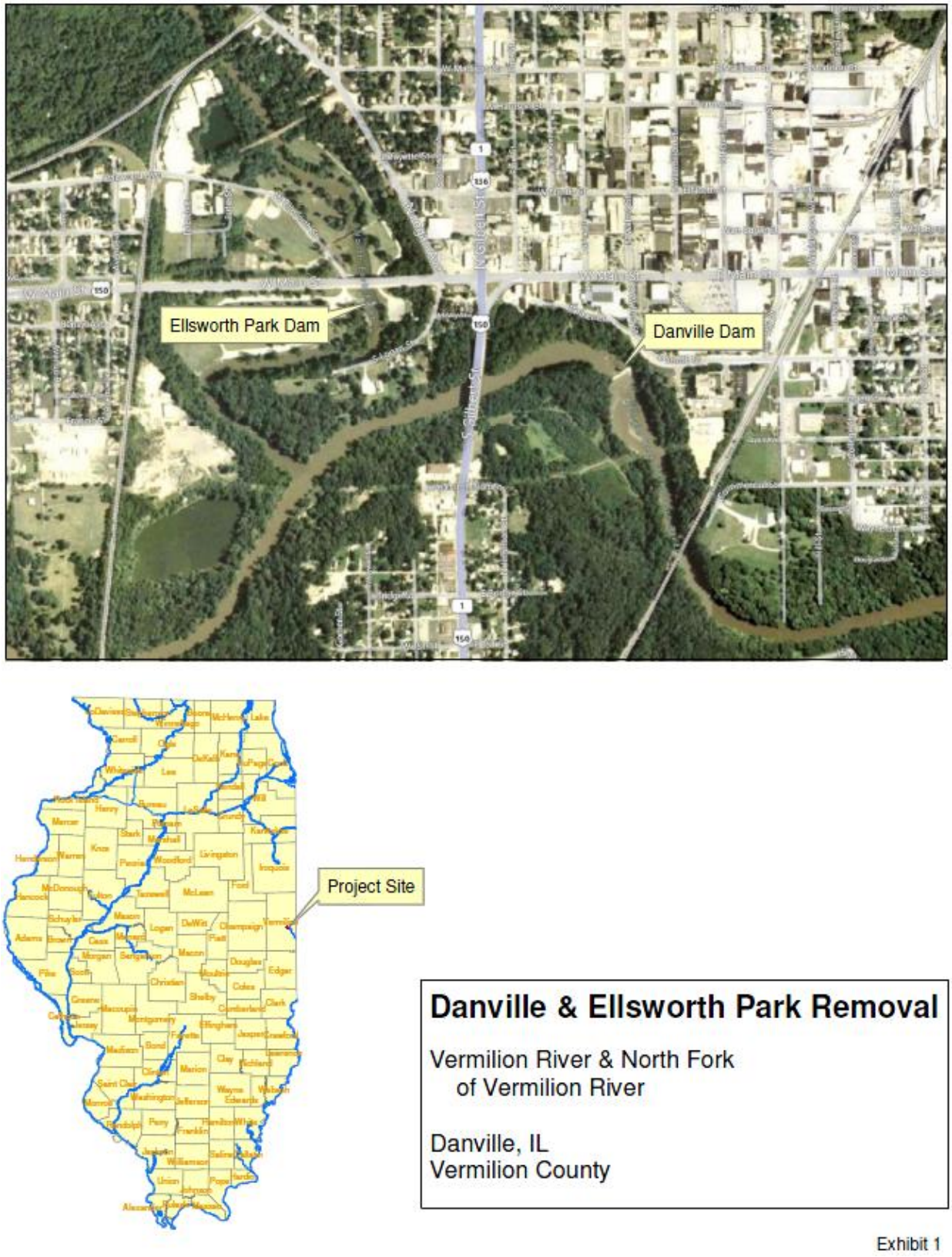


Figure 1: Location Map

stem had infrequent collections. Spawning was observed during this survey on 22 June 2007 when water temperatures was 24°C. The Bluebreast Darters usually spawn from May to July where the female can lay about 100 eggs. The incubation period is seven to ten days.

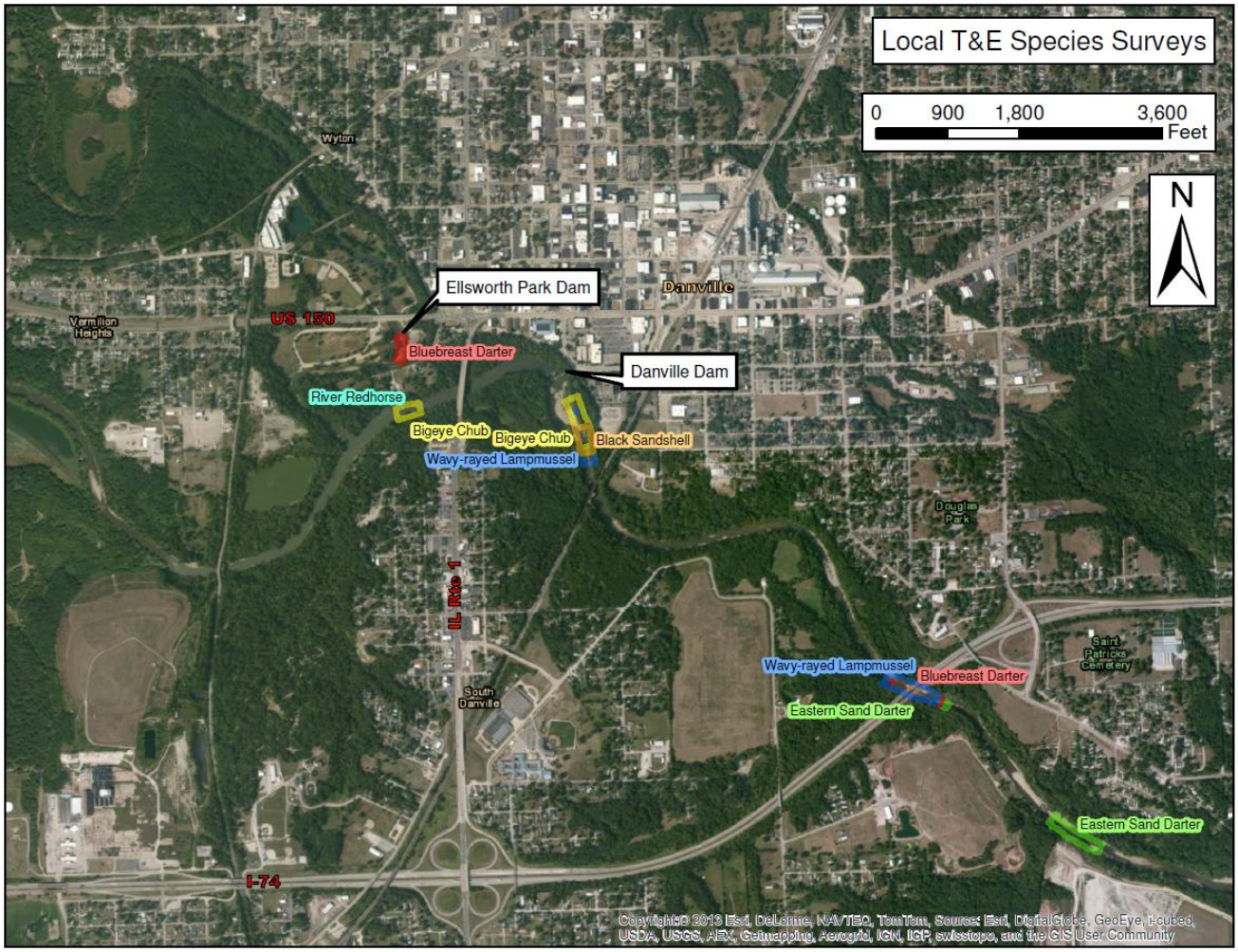


Figure 2: Local T&E Species Surveyed

EASTERN SAND DARTER

The Eastern Sand Darter (*Ammocrypta pellucidum*) is listed as threatened in Illinois (Illinois Endangered Species Protection Board, February 22, 2011). The Eastern Sand Darter is a long and narrow fish that is usually 2-3 inches and rarely greater than 3.5 inches in length. They have a translucent body appearance with white or silver bottom and sides with a yellow or tan color on their back. Their sides have 9-14 olive spots and a pair of 12-16 olive spots on each side of the dorsal fin. The fins are mostly transparent with a yellowish tint. Males and females have the similar colorings while the young are more silvery

and less yellow. The males have a greater yellow coloration and develop breeding tubercles on pelvic fin rays during breeding.

The Eastern Sand Darter primarily consumes midge larvae. The Eastern Sand Darter is predominately found in medium to large streams with sand or sand-gravel bed material. Although they are commonly found in moderate currents some studies show they have a tolerance for greater water depth and velocities as long as sand beds are present, but are highly intolerant of silt or mud covering up clean sand. They are typically located on a depositional bank immediately downstream of a bend. The known locations of the Eastern Sand Darter are Illinois, Kentucky, Indiana, Michigan, Ohio, West Virginia, Pennsylvania, Vermont and New York. Within Illinois, there are 36 recorded occurrences yielding 500 individual Eastern Sand Darters. The location of this species are primarily in the Embarras River and its tributaries with a limited amount in the Vermilion River. One fish was sampled near the I-74 Bridge south of Danville in 2003 and two were collected below the Danville Dam in 2011.

Spawning activities of the Eastern Sand Darter are typically between May and September and have only been observed in laboratories. Studies have shown that spawning occurs in water temperatures between 14.4 and 24.4°C and in areas with low silt levels. The male initiates the process by chasing the female. The female then moves to the sandy bed material where the male mounts her and they vibrate to bury their tails in the sand. Other males will often move beside the mating pair and begin vibrating. The eggs are deposited in the sand individually over an area. The female lays an average of 71 eggs.

The average egg size is 1.4mm and are translucent, spherical and adhesive. After spawning there is no parental support. The young hatch at a length of 5.5mm. The males and females mature by the end of the first year while some female may not mature until their second year. The typical life span is 2-3 years with a maximum of 4 years.

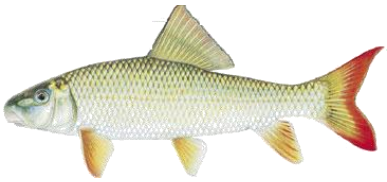
BIGEYE CHUB

The Bigeye Chub (*Hybopsis amblops*) is listed as endangered in Illinois (Illinois Endangered Species Protection Board, February 22, 2011). The Bigeye Chub is a long and narrow fish with a blunt nose that are 2.5-3.5 inches and rarely greater than 4 inches in length. They have large eyes for which they are named and a coloring that is primarily silver with a dark strip that extends from their nose to their tail. Their fins are transparent without any markings.

The Bigeye Chub predominately consumes midge larvae, and are mostly found in small to medium size streams with sandy, gravely or rocky bed material in pools with little to no current near riffles. The Bigeye Chub are highly intolerant of silt or mud covering up clean sand. The known locations of Bigeye Chub are Missouri, Oklahoma, Arkansas, Illinois, Kentucky, Tennessee, Alabama, Georgia, Indiana, Michigan, Ohio, West Virginia, Virginia, North Carolina, Pennsylvania, Rhode Island and New York. Within the Vermilion River system, there were 11 locations that yielded 288 individual Bigeye

Chubs in 2011. The location of this species is primarily on the Vermilion River, the Little Wabash and other small tributaries to the Wabash River. Thirteen fish were collected near the Danville Dam in 2004.

Spawning activities of the Bigeye Chub occur in late spring and early summer, but there is little known about where and how spawning occurs.



RIVER RED HORSE

The River Redhorse (*Moxostoma carinatum*) is listed as threatened in Illinois (Illinois Endangered Species Protection Board, February 22, 2011). This robust, cylindrical sucker may be separated from other suckers by its red tail fin. The dorsal and other fins may also be red or reddish. The dorsal fin has a straight or slightly concave margin and the tail fin has a pointed upper lobe which usually is slightly longer than the rounded lower lobe. Crescent-shaped dark spots may be visible on the scales of the back and sides. Overall body color is olive to brownish across the back, with silvery or bronze sides and a white underside.

Normally inhabitants of medium to large size rivers; they may also enter tributary streams and have been observed in reservoirs. They prefer clean rivers with sand, gravel or cobblestone bottoms and swift currents. Within Illinois, there are 41 recorded occurrences yielding 98 individual River Redhorse. The known Illinois location of this species are Will, Kendall, Livingston, LaSalle, Kankakee, Kane, Grundy, Iroquois and Vermilion Counties. One fish was collected above the Danville Dam in 2013 and 7 were collected below the Danville Dam in 2011.

River Redhorse feed primarily on mollusks such as mussels and snails, and their enlarged, molar-shaped, internal throat teeth are specially adapted for crushing the hard shells. With a vacuum cleaner-like mouth, handily placed at the bottom of its head, the River Redhorse uses its fleshy lips, highly charged with nerve endings, to feel for food. It makes a living picking from the river bottoms, perusing over rubble and slow-water areas of mud and leaf litter, searching primarily for mayflies, caddisflies, and aquatic beetles.

In May and June, when the River Redhorse turns its energies to spawning, all of it turns a brilliant, bright red (they can be at least partially red the rest of the year). The redhorse also develops pearl organs, or tubercles, on its skin around this time. These organs give the skin the coarse, raspy texture needed for spawning. The adults make runs upstream, moving mostly at night to find good breeding habitat. The males move onto the riffles and either excavate gravel with their tails in a sweeping motion or plow through it with their heads, all in an effort to free up silt so oxygen-rich waters can percolate through the gravel where the eggs will incubate.

Facing into the current, males lie in wait for females and when a female approaches, the male darts back and forth to attract the female. Females are attended in the spawning act by one, sometimes two males. The pearl organs allow the male and female to cling together and maintain a station over the excavation while the eggs, thousands of them, are simultaneously fertilized and dropped among the clean gravels.

The parents promptly abandon the area and head back downstream, but soon swarms of newly hatched fish take temporary station in the slow-moving shallows. Here they provide food for predatory fish such as bass and sunfish. Those lucky enough to move into deeper waters could reach two feet long and eight pounds at the end of their 12-year lifespan.

WAVY-RAYED LAMPMUSSEL

The Wavy-rayed Lampmussel (*Lampsilis fasciola*) is listed as endangered in Illinois (Illinois Endangered Species Protection Board, February 22, 2011). The Wavy-rayed Lampmussel is typically 3.5 inches in length with a moderately thick, round to ovate shaped shell. The shell color is yellow to yellowish-green with multiple thin green rays. Females have a rounded anterior and posterior ends while the males have a bluntly pointed posterior.

The Wavy-rayed Lampmussel, like all freshwater mussels, are filter feeders that primarily consume bacteria and algae. The Wavy-rayed Lampmussel are mostly found in clear, small to medium sized streams near riffles with sand or gravel bed material and are sensitive to non-optimal conditions. The known locations of the Wavy-rayed Lampmussel are Illinois, Tennessee, Kentucky, Indiana, Michigan, Ohio, Virginia, West Virginia, Pennsylvania, Alabama, North Carolina, Georgia and New York. Within Illinois, there are 37 recorded occurrences yielding 84 individual Wavy-rayed Lampmussels. The location of this species is primarily in the Vermilion River and its tributaries. A single dead mussel was observed downstream of the Danville Dam in 2005.

Spawning activities of the Wavy-rayed Lampmussel are in August and the larvae are not released until the following summer. The female can produce over 100,000 eggs during the spawning season. The only documented host fish for this mussel is the Smallmouth Bass which has been sampled throughout the project area. The project would likely expand the distribution of the host fish. After they detach from the host, they live among gravel bed material where they likely move less than 400 feet in their lifetime. They have a life span of 10 to 20 years.

BLACK SANDSHELL

The Black Sandshell (*Ligumia recta*) is listed as threatened in Illinois (Illinois Endangered Species Protection Board, February 22, 2011). The Black Sandshell is up to 8 inches in length with a moderately thick, elongated shell. The smooth, shiny exterior portion of the shell is usually a greenish color or black with rays. The inside of the shell is white and fades to a pink or purplish color near posterior. Females have truncated posterior ends while the male have a pointed posterior.

The Black Sandshell are filter feeders that primarily consume bacteria and algae and are mostly found in medium to large rivers in riffle areas streams with sand or gravel bed material. The known locations of the Black Sandshell are throughout much of Canada, the Midwest and Eastern United States. Within Illinois, there are 114 recorded occurrences yielding 388 individual Black Sandshells. The location of this species is throughout the state with large populations on the Mississippi and Rock Rivers. Four individuals were observed in 2005 downstream of the Danville Dam.

Spawning activities of the Black Sandshell are in August and the larvae are not released until the following summer. The male emits sperm into the water and by chance, the female siphons it in to fertilize the eggs resting in the brood pouch. The female holds the glochidia until spring in which they are released through the female's gills and attaches to the gills or fins of the host fish by clamping onto them with their valves. The host fish for this mussel is the Rock Bass, Green Sunfish, Bluegill, Largemouth Bass and White Crappie. All but the Rock Bass have been found primary downstream of the dam with some upstream. The project would likely expand the distribution of these host fish.

The glochidia are 0.23mm long and 0.27mm in height when attaching to the host fish. After they detach from the host, they live among gravel bed material where they live as free-living mussels. They have a life span of several decades to over a century.

C) Description of activities

The project includes the concrete removal of the dam spillway, west abutment and the two abandoned piers. The dam spillway and abutments would likely be removed using a backhoe equipped with a hydraulic hammer. Due to the height of the two abandoned bridge piers to be removed, the contractor will determine the best method of concrete removal.

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

Removal of the dam should not negatively impact these species or contribute to their extirpation. Completion of the dam removal project will have positive impacts of mobility restoration with the dam removed beyond the full depth of the channel. The removed barrier and 28 acres of restored aquatic habitat upstream would promote the expansion of these species. The current habitat in the dam's pool

does not support the majority of these species. This project will improve the habitat and create a more hospitable environment for these species.

There is potential for incidental takings during the demolition of the structure, moving of heavy equipment in the channel or placement of the bank stabilization. Sediment deposition downstream is also considered for a potential taking for mussels. The worse case adverse impact would be a major flood occurring immediately after the removal which would cause sediment accumulations of up to 1.7 feet to occur in an area from 100 to 650 feet downstream of the dam. This was determined using the sediment modeling module in the HEC-RAS program.

Below is an estimate of the number of species taken and the maximum habitat affected.

Bluebreast Darter – Potential of 1 to 3 individuals taken and 4.3 acres of habitat affected. This species has never been sampled within this affected habitat area.

Eastern Sand Darters – Potential of 1 to 3 individuals taken and 4.3 acres of habitat affected. This species has never been sampled within this affected habitat area.

Bigeye Chub – Potential of 1 to 10 individuals taken and 4.3 acres of habitat affected. There were 14 individuals sampled within this affected habitat area.

River Redhorse – Potential of 1 to 5 individuals taken and 4.3 acres of habitat affected. This species has never been sampled within this affected habitat area.

Wavy-rayed Lampmussel – Potential of 1 to 2 individuals taken and 4.3 acres of habitat affected. There were no live samples collected during the last field sampling of this species within this affected habitat area.

Black Sandshell – Potential of 1 to 5 individuals taken and 4.3 acres of habitat affected. There were four live samples collected just below the affected habitat area during the last field sampling.

2) MEASURE TO MINIMIZE AND MITIGATE

A) Plans to minimize the area affected and the number taken

To minimize the area affected by the project, only areas near the dam will be disturbed. The channel banks will be stabilized to protect the area from long term erosion impacts.

Extensive sediment surveying and modeling has been conducted to estimate the impacts to the river ecology as a result of the dam modifications. The sediment upstream is nearly all sand and gravel material. If this material deposits downstream, it would not degrade the fish and mussel habitat. Once the dam is removed the material would likely move during 2-year or larger flood events. Only minor sediment movement is anticipated during the removal of the dam. The work within the channel will be limited to dry ground to the greatest extent possible. Some fill in the channel will be placed for bank

stabilization and to construct a temporary access and haul road. These areas will be inspected by mussel and fishery biologists prior to any placement of material or equipment in the channel.

B) Plans for management of the area

The habitat upstream of the dam is slow moving water with depths of 9 feet to 16 feet. The bed material ranges from gravel to sand. Downstream habitat is shallow swift moving water. Upon completion of the project, the downstream condition will remain the same. The upstream habitat will become similar to what is occurring downstream creating a larger habitat by removing a pool and providing a habitat that is ideal for the species of concern. The removal will allow for these species to extend their habitat upstream of this structure by removing the physical barrier impeding their upstream expansion. Permanently restored river mobility through the dam removal will provide long term benefits to all fish and mussel species and will mitigate any possible short term impacts to these species.

C) Measures implemented to mitigate the effects

The project will seek to minimize the effects rather than mitigate the impacts. To minimize any possible effects of construction on these species, the following measures will be conducted by the participants listed below:

> The Illinois Natural History Survey (INHS) Mussel Biologist at (217) 244-4594 shall be contacted by the contractor upon approval to commence construction activities to schedule relocating mussels outside of the project area prior to any in stream work begins. The IDNR Fisheries Biologist at the Gibson City Field Office (217-784-4730 ext 230) and INHS mussel biologist shall be notified by the contractor 1 week prior to the initiation of any in channel work. Fisheries & mussels biologists shall meet with the contractor prior to construction activities to agree upon removal methods that minimize any potential impacts during the removal. Within 24 hours prior to the dewatering of the pool, the contractor or biologists shall inspect and carefully remove any species within the project area and place them downstream of the project area into water at least 12 inches deep. During and upon completing the dewatering of the pool, the contractor or biologists will again inspect the upstream channel that was previous inundated to confirm no mussels or fish have been trapped in isolated pools or dry channel areas. If any are found, they are to be carefully removed from the area and placed downstream of the project area into water at least 12 inches deep.

With the exception of incidental taking authorization, this project has been reviewed and approved under the Illinois Department of Natural Resources' Comprehensive Environmental Review Process (CERP) to ensure compliance with all applicable federal and state regulations.

D) Plans for monitoring the measures

The Department of Natural Resources, Office of Water Resources (OWR) will have a full time resident construction engineer assigned to the project to oversee construction activities at the site and to assure

compliance with the contract plans and special provisions developed for the work. The resident engineer shall ensure the contractor contacts the IDNR fisheries biologist 1-week prior to in channel work to allow his presence at the time of the pre and post dewatering activities for the inspection of species as described in Section 2C.

The state of Illinois maintains a database of all documented locations and quantities of threatened or endangered species. Additionally, Eastern Illinois University and the Illinois Natural History Survey are conducting pre and post fish and mussel surveys in coordination with the dam removal project. Sampling fish and mussels upstream and downstream of the dam will take place in the spring and fall from 2012 through 2016. This will document the quantities and locations of these species while showing the effects of the construction project over time. A copy of the report will be provided to the IDNR Threatened and Endangered Species incidental take authority.

E) Adaptive practices in place to address unforeseen circumstances

The OWR will have a full time resident construction engineer assigned to the project to oversee construction activities at the site and to assure compliance with the contract plans and special provisions developed for the project. Any changes or unforeseen circumstances that affect the measures instituted to minimize the effects of the work on the listed species will be addressed by the resident construction engineer in consultation with the OWR and the regional biologists.

F) Verification of funding & support for mitigation

The OWR is granted the funding for construction improvements in Public Act 98-0050, Article 31, Section 15. This will cover all contractor costs to implement the project plans. Current Illinois Department of Natural Resources policies mandate that sufficient project funds must be appropriated and released for construction prior to award of a construction contract for the work. Sufficient project funds are available in the OWR appropriations to complete the work described above.

The costs for the fish monitoring and sampling conducted by Eastern Illinois University are covered by a State Wildlife Grant received from the U.S. Fish & Wildlife Service (FWS).

The OWR, or its designated representative, will take responsibility to ensure all tasks within the conservation plan are implemented. The construction resident engineer will be given guidance by IDNR fisheries biologist and the OWR for the QA/QC of incidental taking authorization. Additionally, the biologist and OWR may be available during this critical construction phase to ensure the plan is fully implemented. The contractor will be responsible for executing the mitigation plan.

G) Cost of mitigation measures

Below is a breakdown of costs associated with the mitigation measures.

Fish and Mussel sampling:	$30,000
Resident Engineer during mussel relocation:	$1,280
Biologist & Conservation Plan Developer onsite during relocation:	$3,880
Staff to relocate mussels:	$2,880
Total:	$38,040

3) ANALYSIS OF ALTERNATIVES

OWR has established project requirements for any dam which is owned or being studied by OWR. These requirements are listed below. Additionally, it is the OWR's policy to evaluate dam removal as an alternative anytime dam rehabilitation or reconstruction is considered.

1. Public safety,
2. Ecological improvement to the river, and
3. Development of recreational opportunities.

A) Alternative requirements

PUBLIC SAFETY

The primary purpose of the Danville Dam Removal is to reduce or eliminate the public safety concerns related to the hydraulic roller that forms at this dam under various flow conditions. All alternatives examined, except the "Dam Repair" alternative, address this critical concern and eliminate the potential loss of life from the hydraulic roller by eliminating the condition for all flows.

ECOLOGICAL INTEGRITY

To improve the ecological integrity of the dam site and the river system connectivity, fish passage considerations were incorporated into each alternative. Such passages were designed to pass local fish species without inducing stress and/or discouraging migration, such as velocity barriers, turbulence barriers, and the necessity to climb, jump and/or pass through hidden orifices.

RECREATION

A consideration in the alternative selection was improving recreation at the site. These opportunities could include fishing and non-motorized boating.

B) Identifying alternatives

Alternative 1 – Full Removal: The full dam removal includes removing the entire dam structure, abutments and abandoned west and center piers immediately upstream of the dam. Grading upstream of the dam would be required to transition between the different channel shapes.

Alternative 2 – Partial Removal: The removal of a 120 foot notch in the center of the dam. Bed material and debris behind the notched location would be removed to grade the channel from the downstream elevation to the upstream elevation. Stream stabilization measures would be placed on both channel banks.

Alternative 3 – Stepped Spillway: Five concrete steps would be installed on the downstream face of the dam between the crest elevation and the downstream channel elevation. Rock would be placed in the scour hole and a Denil fish ladder would be installed to provide fish passage.

Alternative 4 – Rock Ramp: Placing a rock ramp at the downstream face of the dam from the crest down to the existing channel bottom at a 5% slope. A 1-foot deep notch would be removed at the center to concentrate the flow to a central location to improve fish passage during lower flows.

Alternative 5 – Dam Repair: Repair the dam to the original design. This includes stabilizing both abutments, repairing the eroded dam cap and repair deteriorating areas of the dam face.

C) Screening alternatives

Alternative 1- Full removal was not considered due to the slope stability concerns of removing the east abutment.

Alternative 3 – Stepped spillway was not selected because it did not fully remove the safety hazard to the public nor did it improve the ecological habitat upstream of the dam. The cost was over two times higher than partial removal.

Alternative 4 – Rock ramp was not selected because it did not fully remove the safety hazard to the public nor did it improve the ecological habitat upstream of the dam. The cost was 50% higher than partial removal.

Alternative 5 – Dam repair was not selected because of the continued potential for loss of life. Additionally, the dam remains as a barrier to these species and creates an unfavorable habitat.

IDNR was sufficiently satisfied with the benefits of Alternative 2 to recommend its implementation. A conceptual layout of this alternative is shown in Figure 3.

4) DATA TO ENSURE THAT TAKING WILL NOT JEOPARDIZE SPECIES

Within the Vermilion River the Bigeye Chub and the Black Sandshell were the only two living species found in the anticipated impact area during the last field survey. The Danville Dam removal in conjunction with the Ellsworth Park Dam removal will open the area of river for increased mobility and better habitat for all species listed. Therefore, the project is likely to enhance, and not jeopardize, the long term survival and recovery of the threatened and endangered species.

The *Fox River Fish Passage Feasibility Study*, dated April 2003, by the Max McGraw Wildlife Foundation is an example of a study recommending reconnection of the river through the removal or modification of all main stem and tributary dams. Benefits of reconnecting rivers may include: elimination of barriers to canoeists and kayakers, enhanced habitat and water quality conditions and corresponding improvements to fish and macro invertebrate communities, improved access by fish to important spawning and nursery habitats in tributaries and stream-side wetlands, repopulation of areas where certain species of fish and mussels no longer exist and genetic mixing in fish and invertebrate populations isolated by dams.

These results stated in the study have been confirmed by the removal of Hofmann Dam in Cook County and the removal of Blackberry Dam in Kendall County. The number of species and quantity of species has increased at both locations. This has been commonly reported in various other states that have completed dam removal projects.

5) IMPLEMENTING AGREEMENT

A) Names of participants in conservation plan

I, Director, Office of Water Resources, certify that the conservation plan will be followed as described within the document and will provide the required project updates and monitoring information.

Signature 4-24-14 Date

B) Responsibilities of participants in conservation plan

RESPONSIBILITIES

The OWR shall observe the activities completed by the contractor as described in the conservation plan and ensure all procedures are being met. OWR shall confirm notification has been made with other participants and prepare and send a summary report with required information as listed in the 'Estimation of Schedules' below regarding the completion of tasks listed in the conservation plan.

ESTIMATION OF SCHEDULES

All dates listed in the schedule are subject to change due to permitting approvals, river conditions or other contingencies due to approvals and site conditions. All scheduled tasks state the previous action that must be completed in parentheses before that task may begin.

January 2015 – Submit fish and mussel pre-monitoring data **to the Incidental Taking Authorization Regulator** (prior to commencing construction).

May 2015 - Notify mussel biologist to relocate mussels in project area. Give **notice to the Incidental Taking Authorization Regulator** (once Incidental Taking Authorization has been received).

August 2015 – Notify mussel and fishery biologists that the removal of the dam will commence in 1 week. Give **notice to the Incidental Taking Authorization Regulator** (Once contracts are completed and the construction schedule is one week from removing the structure).

August 2015 – Confirm mussels and fish are outside the project area, dewater the pool and inspect dried areas and isolated pools for mussels and fish. Give **notice to the Incidental Taking Authorization Regulator** including a summary of quantity per T&E species moved (when these tasks are completed).

November 2015 – Complete all construction activities in the project area. Give **notice to the Incidental Taking Authorization Regulator** (when the construction is complete) including a quantity of T&E species taken during the construction.

C) Assurances of legal authority to perform these actions

City of Danville – The city will provide a resolution approving the Intergovernmental Agreement for the dam removal. The city shall also provide dam ownership documentation to OWR.

IDNR Office of Water Resources – (20 ILCS 805/805-100) The Department has the power to take all measures necessary for the conservation, preservation, distribution, introduction, propagation, and restoration of fish, mussels, frogs, turtles, game, wild animals, wild fowls, and birds.
(Source: P.A. 91-239, eff. 1-1-00.)

D) Assurances of compliance w/ other state regulations

OWR Permit – A permit from the IDNR, Office of Water Resources shall be obtained for construction in a floodway, construction in a public water and the removal of a dam.

404 Permit – A permit from the U.S. Army Corps of Engineers (USACE) shall be obtained for the project ensuring Section 404 of the Clean Water Act is met.

401 Permit - A permit from the Illinois Environmental Protection Agency shall be obtained for the project ensuring Section 401 of the Clean Water Act is met. This may be issued in conjunction with a USACE nationwide permit during the 404 permit process.

NPDES Permit – A NPDES permit number ILR10 from the Illinois Environmental Protection Agency shall be obtained for construction areas that disturb more than 1 acre of ground.

E) Copy of federal authorization for take

Not Applicable.

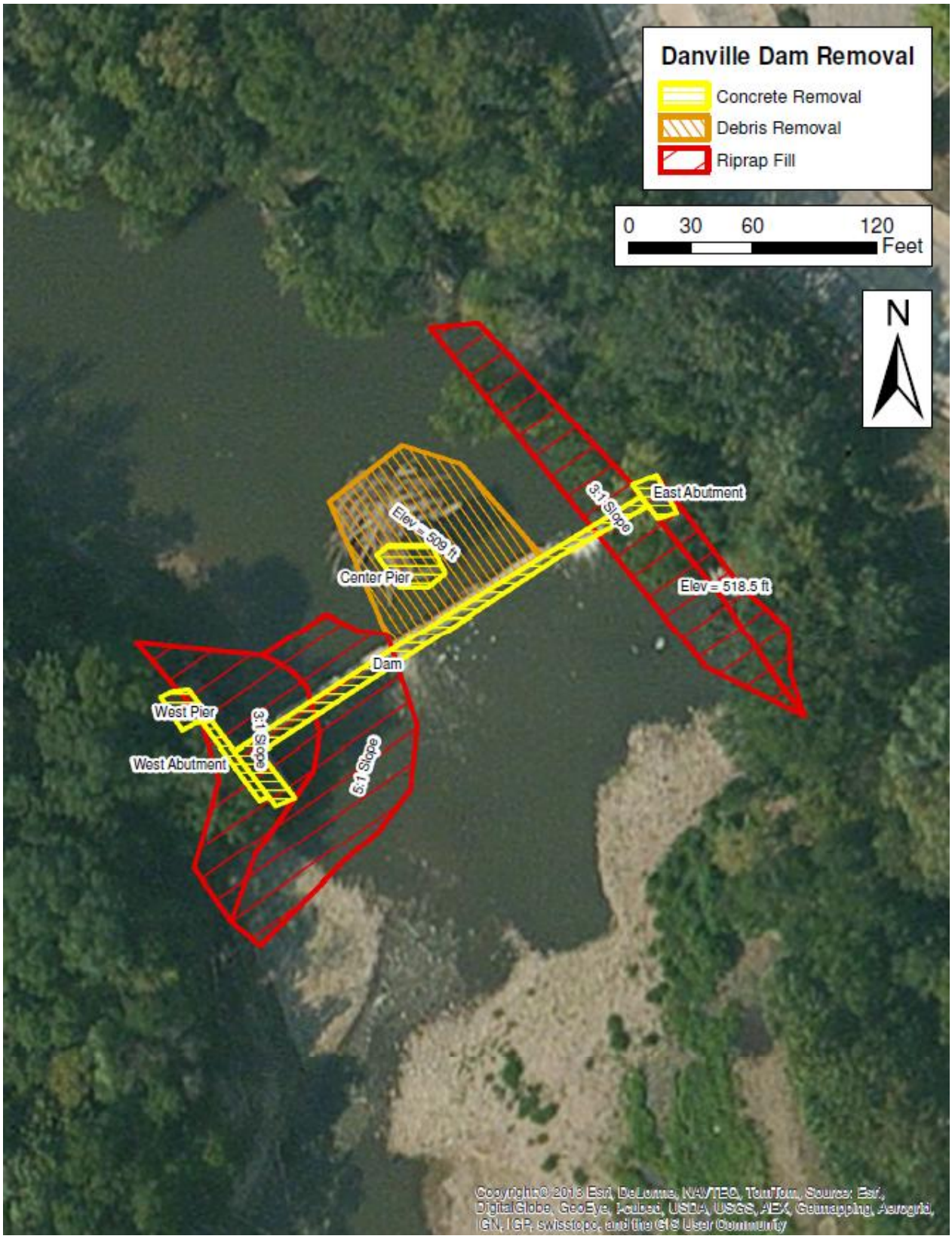


Figure 3: Danville Dam Removal Overview

APPENDIX

- Public Notice

Public Notice

The Illinois Department of Natural Resources (IDNR) has applied for an incidental take authorization regarding the Bluebreast Darter (*Ethostoma camurm*), Eastern Sand Darters (*Ammocrypta pellucidum*), Bigeye Chub (*Hybopsis amblops*), River Redhorse (*Moxostoma carinatum*), Wavy-rayed Lampmussel (*Lampsilis fasciola*) and the Black Sandshell (*Ligumia recta*). The application is based upon the potential for impacts to these species from the Danville Dam removal project located on the Vermilion River in the City of Danville.

1. The mailing address of the Illinois Department of Natural Resources, Office of Water Resources is One Natural Resources Way, Springfield, Illinois 62702-1271.

2. The project is at the Danville Dam in the City of Danville, 0.25 miles downstream of the Illinois Route 1 Bridge. It is Section 8 of Township 19 North, Range 11 West of the 2nd Principal Meridian.

3. Authorization is being requested for incidental take of the above mentioned species due to construction activities required to eliminate the dangerous "roller" effect immediately downstream of the dam by partial removal of the Danville Dam.

4. Measures that will be taken to minimize the effects of the potential incidental taking include construction provisions that require careful collecting and relocation of the mussel species prior to the demolition of the dam in the timely manner noted in the Conservation Plan and the careful release of these mussels back into the Vermilion River, downstream of the project construction limits, into water at least 12 inches deep.

5. A copy of the Conservation Plan is available for review on the Illinois Department of Natural Resources, Office of Water Resources website at http://www.dnr.illinois.gov/WaterResources/Documents/DanvilleDamConservationPlan2014.pdf; and the Danville Public Library, 319 N. Vermilion St., Danville, IL 61832.

6. Comments from the public may be directed to the Illinois Department of Natural Resources, Jenny Skufca, One Natural Resources Way, Springfield, IL 62702 or e-mailed to jenny.skufca@illinois.gov.

7. Any comments made by the public must be received by the Illinois Department of Natural Resources in Springfield, Illinois on or before June 27, 2014.

This notice is being published in the Commercial News in Vermilion County, Illinois and the Breeze Courier, the official State newspaper, once a week for three consecutive weeks beginning May 14, 2014.