Kidd Lake Marsh State Natural Area

Levee Repair and Protection

Conservation Plan for the Incidental Taking of Threatened or Endangered Species

Submitted to: Office of Resource Conservation Illinois Department of Natural Resources One Natural Resources Way Springfield, IL 62702

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Kidd Lake Marsh State Natural Area

Conservation Plan – Incidental Take

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Background and Summary of Issue

In 2011 the State Duck Stamp Committee approved an infrastructure repair project application for Kidd Lake State Natural Area in Monroe County, Illinois. This project was intended to repair levees and water level control structures that were necessary for reliable management of wetland habitat on the site for a variety of wetland wildlife species. Prior to project initiation, Department of Natural Resources, Natural Heritage Division staff determined that several sensitive species were, or could be present on the site, thus, could be harmed during construction associated with the infrastructure repairs. Natural Heritage staff determined that the Incidental Take procedure must be followed for completion of this project.

Conservation Plan Requirements

- 1) A description of the impact likely to result from the proposed taking of the species that would be covered by the authorization including but not limited to:
 - A) Legal description, if available, or detailed description including street address and map of the area to be affected by the proposed action and indicia of ownership or control of affected property;

The affected property is Kidd Lake Marsh State Natural Area, located in Monroe County, Illinois, 4 miles north of Prairie du Rocher, south of Bluff Road and north of the Union Pacific railroad tracks: Renault Quad 250B, Section 34, Township 4 South, Range 10

West. This property is owned and managed by the Illinois Department of Natural Resources. Figures 1 and 2 are maps of the site.

- **B)** Biological data on the affected species; on request of the applicant, the Department shall provide biological data in the Department's possession on the affected species; Appendix C includes a list of sensitive species that may be found on the site. The primary species of concern are: Great Plains ratsnake, Timber rattlesnake, and Eastern narrowmouth toad.
 - <u>Great Plains Rat snake</u> (*Pantherophis emoryi*)-this non-venomous snake is native to the central United States, primarily west of the Mississippi River. It is a medium-sized snake that is usually gray or tan with brown blotches, an arrow-shaped mark on its head, and brown lines through the eyes. They are typically 2–3 feet in length, but can grow to 5 feet. They typically live in open woodlands, grasslands, or other lightly forested areas, often hiding under objects throughout the day. Illinois is at the eastern edge of this species range, and it is listed as a species of least concern by the IUCN.
 - <u>Timber Rattlesnake</u> (*Crotalus horridus*)–This Illinois Threatened venomous snake is native to the eastern half of the United States, north to Minnesota and New Hampshire, and south to north Florida and eastern Texas. In Illinois, Timber Rattlesnakes are typically in the southern third of the state, but extend north up the Mississippi and Illinois River valleys. The snakes typically living in rugged terrain in deciduous forests, and favoring exposed rock for sun basking at various times. The snakes are usually yellowish brown to grayish with dark brown or black banding dorsally, with a yellowish color on the ventral side. Timber Rattlesnakes are fairly passive, but will display typical rattlesnake behavior of coiling and rattling their tail when threatened. Timber Rattlesnakes are classified as a species of least concern by the IUCN due to their broad range and relative abundance in core areas of the range.
 - Eastern narrow-mouthed Toad (*Gastrophryne calolinensis*)–This small, primarily nocturnal, anuran is not a true toad, and is distinguished from them by its smooth, moist skin. It has a plump, triangle-shaped body with a small head and a mottled underside. Other distinguishing features include the lack of a tympanum, and a fold of skin above the eyes. It breeds during summer in Illinois, which is at the northern extent of its range. It spends most of the year underground in damp soil often associated with ponds, swamps, streams, or in some large river floodplains, often under flat rocks, logs, boards, or other objects. The current population trend for the species is stable throughout most its range, and is listed as a species of least concern by the IUCN.

C) Description of the activities that will result in taking of an endangered or threatened species;

Although we anticipate limited impact to sensitive species, it is possible that repeated traveling of the levee with heavy equipment, placing of soil and rock to repair levees, removal of borrow material to place on levee, and any site preparation work prior to placement of soil or rock could result in the killing or injuring of a small number of individuals of one or more listed species.

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

We anticipate no adverse effects on listed species populations, or local metapopulation. If any take occurs, we anticipate it will be extremely small numbers of individuals (e.g., <3 per species). Additionally, some take may consist of moving species away from construction areas, which will likely result in little or no harm to the individual.

2) Measures the applicant will take to minimize and mitigate that impact and the funding that will be available to undertake those measures, including, but not limited to:

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

All work will be conducted late in the summer or early in the fall (e.g., August, September) when the wetland will be mostly dry which should minimize impact to habitat and species, as agreed upon by district biologists. The area of wetland habitat where work will take place will be relatively small, approximately 15 acres within the wetland basin where borrow material to rebuild levees will be removed, and 4,000 linear feet of levee will be armored with rip-rap (Figure 2).

We anticipate no take to listed species, but if take does occur we expect it to be very small numbers of individuals (e.g., <3 per species). We also anticipate any take to be in the form of moving species away from construction zones or routes used to move equipment to construction zones. This type of take presumably has less impact than injury or killing of an individual. Overall, the project will impact approximately 200 acres of wetland marsh habitat, which will allow for an increase in wetland acreage and allow consistent water management of the site. Biologists expect that this will benefit species of concern at the site as well as all other wetland dependent wildlife that use the site.

B) Plans for management of the area affected by the proposed action that will enable continued use of the area by endangered or threatened species.

The area will be managed as open emergent marsh, the habitat type that would have existed at the site prior to human alteration. This type of habitat will require water-level manipulation to mimic historic conditions, as well as occasional habitat maintenance such as mowing, discing, or invasive species control to maintain desired conditions. Further details are provided in Appendix D. Additionally, the proposed work at this site does not conflict with the annual site Plan of Work, or with a management plan developed for the site (Management Plan and Land Acquisition Scope for Kidd Lake Marsh State Natural Area, Monroe County, Illinois. Ballard et al. 1997).

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

Construction areas and travel corridors between construction and staging areas will be monitored for any listed species. A Heritage or Wildlife biologist will be present during key phases of construction to monitor listed species presence or absence in real-time to prevent any take of listed species. Since the primary species of concern are herpetofauna, drift fences designed to prevent herpetofauna entry will be installed in close proximity to construction areas or construction travel corridors to prevent listed species entry during construction, or re-entry after individuals have been moved from construction zones.

- D) Plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on endangered or threatened species; Illinois Department of Natural Resources biologists will be on site periodically throughout construction, as well as during key phases of construction where take may be more likely. Listed species presence or absence in construction areas will be monitored in real-time during these visits. If species are found in construction zones, work may be halted allowing the individual to move away from the construction zone, or allow biologists to move the species away from the construction zone.
- E) 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;

The site will be closely monitored during construction to continually monitor the effectiveness of control techniques. If it is determined that initial control techniques are inadequate to protect listed species from take, construction can be paused, techniques reevaluated, and new or additional techniques implemented to ensure adequate protection of listed species.

F) Verification that adequate funding exists to support and implement all mitigation activities described in the conservation plan. This may be in the form of bonds, certificates of insurance, escrow accounts or other financial instruments adequate to carry out all aspects of the conservation plan.

Funding for this project came from the Illinois Migratory Waterfowl Stamp Fund. This fund has an annual budget of approximately \$500,000 to spend on habitat projects related to wetland habitat in Illinois. Should this project require additional funds, an application

could be made to the Duck Stamp Committee to approve more funds to cover the costs of mitigation activities related to the project.

3) A description of alternative action the applicant considered that would not result in take, and the reasons that each of the alternatives was not selected. A "no-action" alternative shall be included in this description of alternatives.

Alternative 1: No-action. This alternative was not selected because no action would result in continued degradation of levees and other water control infrastructure, leading to degradation of the wetland habitat. Wetland habitat degradation would lead to reduced habitat quality and quantity for listed species as well as other wetland wildlife. No-action was therefore not an appropriate alternative, as it would result in the loss of habitat for listed species, which is not an acceptable situation.

Alternative 2: Perform work during times of the year when listed species are not present. This alternative was given considerable consideration and was the preferred alternative. However, due to the nature of the project, this alternative would have made the project nearly impossible to complete due to physical limitations (e.g., can not perform work during winter while the ground is frozen), or would have significantly delayed the project for an inappropriate length of time waiting for an unlikely combination of environmental factors to coincide, or result in greater damage to water control infrastructure (levees) by performing work when species are not present, but physical conditions of levees are not conducive to construction or heavy equipment travel (i.e., wet and soft due to greater precipitation in winter months).

4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival of the endangered or threatened species in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species existence in Illinois.

None of the listed species in this document are critically endangered, nor is this site the only viable population of these species. The three primary species of concern are listed as species of least concern by the IUCN Red List. Therefore, there is no threat to the species as a whole from any small amount of take that may occur from this project. This project will generate more habitat for listed species, or preserve existing habitat for these species. No habitat loss will occur as a result of this project. The Illinois Department of Natural Resources, Division of Natural Heritage may have more information about specific species populations or habitat conditions within Illinois.

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

A) The names and signatures of all participants in the execution of the conservation plan;

I, <u>Chief</u>, <u>Division of Wildlife Resources</u>, certify that the conservation plan will be followed as described within the document and will provide the required project updates and monitoring information.

Signature

Date

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

Wildlife Resources: Wildlife will be leading the project effort and coordinating work tasks amongst other participants.

Natural Heritage: Natural Heritage will coordinate the Incidental Take permitting and passing along information, regulations, and suggestions for avoiding take to other project participants, as well as reviewing potential listed species for this site ensuring that the needs of each are met.

Engineering: Engineering will coordinate the physical construction project, including working with contractors or Department of Natural Resources Heavy Equipment Crew and site staff.

Office of Land Management Representative: This representative will coordinate with site staff to ensure no conflicts exist with other site management or use.

Schedule:

Mid-August – Internal review and comment period should end. Begin planning for late summer, early fall construction. Include site visit by necessary representatives (Natural Heritage, Wildlife, Engineering, Lands) to ensure project is ready to begin.

Late Summer/Early Fall – project construction takes place over 2-3 week time period.

Fall – Project progress and final reports completed and submitted to the Department.

C) Certification that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligation and responsibilities under the conservation plan;

All participants of the conservation plan are employees of the Illinois Department of Natural Resources, operating on Department of Natural Resources property.

- D) Assurance of compliance with all other federal, State and local regulation pertinent to the proposed action and to execution of the conservation plan; This project is taking place on Department of Natural Resources property, and application and reviews are being conducted by Department of Natural Resources staff. The individuals responsible for ensuring federal, state, and local compliance are already involved with this plan.
- E) Copies of any final federal authorizations for a taking already issued to the applicant if any. Not applicable.

Section 1080.20 Notice and Review of Conservation Plans

b) Draft notice of project to be placed in local newspaper.

The Illinois Department of Natural Resources, (One Natural Resources Way, Springfield, IL 62702) will rehabilitate water control infrastructure at Kidd Lake Marsh State Natural Area, in Monroe County, Illinois, 4 miles north of Prairie du Rocher, south of Bluff Road and north of the railroad tracks. Portions of levees will be repaired and reinforced with rip-rap to prevent future damage. Department staff determined that the following Threatened or Endangered species exist at this site, and may be harmed during construction (Eastern narrow-mouthed toad, timber rattlesnake, Great Plains rat snake). Department biologists will visit the site prior to and during construction to ensure, to the best of their abilities, that no sensitive species will be harmed or taken during this project. Additionally, barriers preventing movement of the species into the construction zone will be constructed prior to implementation and removed after project completion. A Conservation Plan for this project has been developed and is available for inspection at Prairie du Rocher Library, 221 Market Street Prairie du Rocher, IL 62277, IL. Comments can be submitted to: Jenny Skufca, Illinois Department of Natural Resources, Office of Resource Conservation, One Natural Resources Way, Springfield, IL 62702, or emailed to jenny.skufca@illinois.gov. Comments must be received by XX, XXX 2014 to be considered.



Figure 1. Properties at Kidd Lake Marsh State Natural Area, Monroe County, Illinois.



Figure 2. Proposed project area at Kidd Lake Marsh State Natural Area, Monroe County, Illinois.

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Appendix A. Migratory Waterfowl Stamp Fund Grant Application from 2011 for Kidd Lake Marsh State Natural Area. (5 Pages).

ATURAL RESOURCES		IDNR Office of Resource Conservation Special Wildlife Funds Grant Application - IDNR Projects Only							Office Use Only App. #		
		For Grant Funds Dedicated for Department Projects - IDNR Staff Use Only Note: Use "TAB" key to add new rows to tables if needed							2		
	Funding Ye Requested:			2011- 2012	Date Requeste	ed:	21 March 2011				
	Funds Requ	s ested:		Habitat	Pheasant		Duck	X	Furl	pearer	
I. Applicant Information											
Applicant Kidd Lake SNA Name:											
Address: 4301 S		Sout	uth Lake Drive City, St, Zip Che		Cheste	hester IL 62233					
Location Code: 50-252		27-4	-		Те	Telephone: 618-826-		26-2706			
Contact Person:		3ade	le		Ti	Title:		Site Supt.			
	II. Project Description										
Project Classification				Habitat Improvement X				Equipment			
Project Title:		Kid	Kidd Lake Levee Protection								
Project Description and Comprehensive Justification:											

In 2003, \$20,000 was received from the Marsh Project Fund to construct proper levees to ensure that adequate water levels could be maintained in Unit 2 of Kidd Lake SNA. Such waterlevels were important to create a certain amount of open water habitat by retarding the growth of river bulrush that had infested the wetland and was degrading the area's value as wetland and waterfowl habitat. Of the project costs, \$19,027.50 was funded by Ducks Unlimited, with an additional \$7,200.00 being paid out of farm lease funds.

That project was thoroughly successful. The open water wetland habitat and the immediately adjacent vegetated wetland habitats provide a valuable and important waterfowl rest area in this portion of "The American Bottoms." The local hunting public and others know and appreciate the importance of this area and fully support its management as a waterfowl rest area by IDNR.

Unfortunately, having adequate levees to maintain more natural waterlevels and creating open water wetland habitats has also created conditions where wave erosion is now threatening to destroy the levees in several key areas. This past fall and winter, wave action ate into the levees, narrowing their width and creating gullies through which water easily flowed out of Unit 2 lowering its waterlevel. If the levees are allowed to be further degraded, the success achieved by their construction in 2006 will be lost and the money spent for their construction wasted.

Purchase and placement of rip rap along the levees where they are most prone to wave erosion will protect them and permanently stop such levee degradation.

Budget	Project Total	Current Frankla		
Category		Grant Funds Requested	Matching Funds	
Equipment				
Commodities				
Contractual Services	\$46,000.00	\$41,000.00	\$5,000.00	
Other				
Total	\$46,000.00	\$41,000.00	\$5,000.00	
	Source of Matchin	ng Funds	\$Amount\$	
Farm lease	\$5,000.00			

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IV. Habit	at Improveme	nt Project (Indicate the	appropria	ate category)
Habitat Establishment:		Habitat Modification:	x	
New Habitat E	stablishment (/	A Map of proposed locati	on(s) is re	equired.)
Site and/or County(s):	ty			
What ty	pe of habitat?	Specie	S	# of acres
Cool season	arass/legumes			

Warm season grass/forbs

Switchgrass		
Legumes		
Trees/shrubs		
Other		
	Total Acres	0.00

Habitat Modification (A map of proposed locations(s) is required.)

Describe the acreage to be modified.	Country(a)	Kidd Lake SNA Monroe County
Existing habitat (list species)	# of acres	Modifications to occur
	180 (area of Unit 2)	Purchase and placement of rip rap along ~4000 feet (3/4 mile) of existing levee.
Total Acres:	180	

Why is modification required?

Levees constructed in 2006 are being degraded by near-constant wave erosion. If modification (purchase and placement of rip rap along levee) is not done, the levees will be breached and the open water wetland conditions within Unit 2 will be lost and the money used to construct the levees wasted.

Methods

By what method will the habitat be modified? (Describe the equipment, management technique, etc.)

Purchase and placement of rip rap along wave erosion-prone levees.

Manpower (Who will perform the work?)

Site Plan of Work

If this is a project on IDNR property, is it approved through the Site Plan of Work process?

Yes No-Will-be-discussed in upcoming-cycle-Not Applicable

V. Equipment Purchase (Price quotes are required)

What equipment is requested? (List the make, model and specifications of the equipment requested)

Were any alternate models considered? Yes No If so, why was this one selected over similar models?

What site(s) or county(s) will be served by this equipment?

Public Accessibility

Describe plan for general public usage of proposed equipment purchase (or lack thereof):

Equipment Maintenance

Where and how will the equipment be stored?

Who will be responsible for loaning out and/or maintaining the equipment?

Name/entity:

Contact Person and Phone Number:

VI. Detailed Budget (*Required for all applications*)

EQUIPMENT

COMMODITIES - Materials and Supplies			
Description - Use "TAB" key to add more rows	Price/Item	Quantity	Total
		-	

CONTRACTUAL SERVICES			
Description - Use "TAB" key to add more rows	Price/Item	Quantity	Total
Purchase and delivery of rip rap		1500 tons	\$26,000
Placement of rip rap along ~4000 feet of levees			\$20,000
OTHER			
Description - Use "TAB" key to add more rows	Price/Item	Quantity	Total
TO	TAL COST OF	PROJECT	\$46,000
VII. ATTACHM	ENTS		
Plat Maps USGS Map Aerial Photo Habitat Mgt	Plan Price Qu	otes Othe	r
A map showing the location of Kidd Lake SNA and specific	location of the wa	ave erosion pr	rone levees

will be submitted when needed.

Appendix B. Kidd Lake Marsh State Natural Area, scope of work summary for 2011 Duck Stamp project.

The HEC shall undertake levee rehab efforts on the impoundment levee caused by wave erosion. The levee sustained severe erosion caused by wave action because of extended periods of high water. The HEC shall, once the area has dried, borrow clay from the inside the impoundment interior and re-establish the 3:1 slope for a length of 2300 feet. This is a short, 3ft, levee so the impacts to the levee top will be minimal. The installation of a 12" diameter drainage structure is also planned.

Once the earthwork has been completed, erosion control fabric overlaid with 4" diameter aggregate shall be installed on the interior slope to deter further erosive forces.

Appendix C. Threatened and Endangered species found at Kidd Lake Marsh State Natural Area, Monroe County, Illinois.

Gastrophryne carolinensisNarrowmouth ToadFirst mapped in database: 2006-01-30Specimens vouchered in Sept. & Oct. 1949, surveys found them in April 1991 and May 2008

Ixobrychus exilis Least Bittern First mapped: 2008-11-17 Breeding records in 2008 & 2009

Nycticorax nycticorax Black-crowned Night-Heron First mapped: 2010-01-04 Breeding records in 2009

Gallinula chloropus Common Moorhen First mapped: 1987-10-02 Breeding recordsa: 1969, 1978, 1999, possibly 2009

Lanius ludovicianus Loggerhead Shrike (location listed as Kidd Lake Marsh, not Fults) First mapped: 1989-06-06 Breeding record in 1983

Pantherophis emoryi Great Plains Ratsnake First mapped: 1991-03-14 Records specifically at Kidd Marsh: 1974, 1979, 1980, 1981, 1989, 1990, 1991

Tantilla gracilis Flathead Snake First mapped: 1999-05-14 Records along Bluff Rd: 1955, 1957, 1965, 1991, 2005

Crotalus horridus Timber Rattlesnake First mapped: 1994-03-01 Records: 1978, 1980, 1991, 2007

Centruroides vittatus Common Striped Scorpion First mapped: 2011-03-04 Records: 1948, 1949, 1953, 1956, 1971, 1994. 1996, 2012

Coachwhip was reported at Fults Hill Prairie, but not Kidd Marsh

Appendix D. Kidd Lake Marsh Natural Area, 2011 Acquisition, Habitat Management Plan Supplemental

<u>Site History</u>: Kidd Lake Marsh Natural Area is located in the American Bottom in Monroe County. It is typical of bottomland prairie marshes being influenced greatly by runoff, a seasonally high water table and flooding from the Mississippi River. The original Kidd Lake was a shallow lake covering approximately 800 acres. Its main water source was from Fults Creek which flowed from the uplands just west of the Fults Hill Prairie Nature Preserve. This allowed the lake to maintain some water year round despite evaporation losses during the summer months. Spring and fall flooding from the Mississippi was also critically important to the lake by raising water levels, flushing sediments and setting back succession keeping it in a herbaceous prairie state. With the advent of settlement, Kidd Lake was dramatically altered by drainage and flood prevention efforts. As a result, all of Kidd Lake has been farmed to some extent over time.

The original purchase by the State was made in 1970. Subsequent contiguous purchases were made until the site totaled approximately 444 acres. In May of 2011, a purchase was made from a local duck club that resulted in the ownership of 94 acres passing to the Department of Natural Resources (IDNR). This land, though part of the original lake bed, is separate from existing portions owned by the IDNR.

Fortunately, because of work by the previous owners an infrastructure for management exists. There are two leveed subimpoundments, each with a water control structure, a well and pump.

The latest addition of 94 acres is, therefore, the object of this supplemental and candidacy for grant money to assist in the management of the acreage.

<u>Management Goals</u>: The management plan written in 1997 established goals that would simulate the natural pre-settlement conditions of Kidd Lake. Unfortunately, an engineering study of 1978 concluded that the lake, as then owned by the Department of Conservation, could not be managed as a whole, but must be managed by subunits as exists today. Nor could it ever, until the State owned the lake bed in its entirety, because of existing drainage ditches. Ultimately, the number one priority for Kidd Lake State Natural Area is acquisition. However, until then, an internal infrastructure of levees will be required to meet goals set forth in the plan.

This plan requires that a certain amount of water be permanently present at all times of the year. More or less water will be determined by seasonal and environmental conditions, i.e. full pool will occur in the spring and fall when precipitation is plentiful and its lowest pool elevation during late summer due to natural evaporation and diminished precipitation.

To maintain this permanent water condition, a source of water must be maintained through wells and pumping as a result of the diversion of Fults Creek and leveeing of the Mississippi River. Pumping should, therefore, be done as needed to simulate natural high water flows which would have filled the lake, i.e. spring and fall flooding. As previously mentioned, a well and pump exists on the property, but condition and viability are unknown.

Additionally, management practices such as prescribed burning, mowing and disking should be used to manipulate the vegetation to desired conditions. The naturally occurring vegetation as such would have primarily consisted of grasses and forbs consistent with wet prairies found in flood plain systems. These management practices are to simulate the sweeping effects of flooding (scour action) and naturally occurring fires.

<u>Project Scope:</u> Ideally the existing system of levees, structures, the well and pump would be in move in condition. Realistically, the levees will need to be surveyed for proper elevation and checked for potential holes and weak spots. Likewise, the well and pump will need to be checked for condition and viability to suit management needs. The water control structures will need servicing, surveying for proper installation/elevations and the purchase of water control boards and structure covers. Piping will also need to be purchased to direct water flow from the pump. A concrete pad exists presumably for a fuel tank, but nothing proper to mount an engine to power the pump. It would also be prudent to survey existing ditches to ensure good drainage for water manipulation.

<u>Duck Stamp Request:</u> The request for \$15,000.00 is to solicit a local firm for an engineering study to determine condition of the well, water control structures and levees. Farm lease will be used over time to purchase needed flash boards, structure covers, piping and fuel tank – approximately \$6,000.00.