

Project Summary

Project Title: Revision and Update of the Illinois Wildlife Action Plan's Streams Campaign.

Applicant information: Illinois Natural History Survey

Principle Investigators: Leon C. Hinz Jr., Jodi M. Vandermyde

Purpose and Objectives: The primary purpose of this project is the direct refinement and revision of the Illinois Wildlife Action Plan by reviewing, updating, and revising information related to the Streams Campaign.

Objective 1. Develop a narrative describing the status of the Streams Campaign containing background, current conditions, and desired conditions.

Objective 2. Develop a narrative for the Streams Campaign containing a description of selecting and prioritizing focal themes.

Objective 3. Develop a narrative for the Streams Campaign containing Action Items to address priorities and data deficiencies within focal themes.

Objective 4. Complete a final report that includes a revision of the Streams Campaign of the Illinois Wildlife Action Plan.

Proposed Grant Period: September 1, 2014 – August 31, 2015

Amount Requested (Planning Grant): INHS will provide in-kind match of \$11,175 and IDNR Office of Resource Conservation Staff will provide \$15,493 of in-kind match during the project period from staff salary and associated benefits plus unrecovered F&A.

	Total Federal	Total Non-Federal	Total Cost
Year One Funding	\$80,000	\$26,668	\$106,668

States and Partners Involved: Illinois Department of Natural Resources, Illinois Natural History Survey

Summary Statement: The primary purpose of this project is the direct refinement and revision of the Streams Campaign of the Illinois Wildlife Action Plan. We will consolidate existing information and develop narratives describing the historical background, status, and desired conditions for aquatic species in greatest need of conservation and their habitats in Illinois. Through engagement with IDNR staff and statewide partners we will review, revise, and update Action Items to address identified priorities and data deficiencies within the Streams Campaign. These activities will result in an updated Streams Campaign section for inclusion in the revision of the Illinois Wildlife Action Plan.

Revision and Update of the Illinois Wildlife Action Plan's Streams Campaign.

Project Number:

Need:

The Illinois Comprehensive Wildlife Conservation Plan & Strategy (CWGPS, State of Illinois 2005) is organized into sections based loosely on the required elements for Plan development outlined in the Wildlife Conservation & Restoration Program and State and Wildlife Grants Program legislation (e.g., Current Status of Wildlife & Habitat Resources, Desired Conditions for Wildlife & Habitat Resources, Priority Actions for Conserving Wildlife & Habitat Resources). The Illinois Strategy recognized seven Campaigns designed to organize priority conservation actions based on broad scale habitat types (e.g., forests, wetlands) or conservation priorities (e.g., invasive species). In addition, Conservation Opportunity Areas (COAs) were established to designate places where conservation efforts were expected to have the greatest chance for significant impact and successful implementation. These Campaigns, and COAs throughout the state, currently serve as the major organizational units for implementation of The Illinois Wildlife Action Plan (IWAP, as CWGPS is known in the Implementation Phase).

Although efforts were made to consolidate information from each of the sections into the three Appendices of the IWAP, this information is still dispersed throughout the document. Individuals interested in the conservation of individual species, or specific habitats, must often search in multiple sections to find relevant information that describe the current status, desired conditions, or priority conservation actions associated with their interest. While this structure assured compliance with the requirements of the legislation, it has proved difficult to use for implementation purposes by IDNR staff and their conservation partners. Despite these difficulties the Illinois' Wildlife Action Plan has been a key tool in aiding the conservation of Species of Greatest Need of Conservation (SGNC) and their habitats at the state level.

The Illinois Department of Natural Resources and their conservation partners have begun a formal review and revision of the State Wildlife Action Plan to fulfill the US Fish and Wildlife Service requirements associated with initial IWAP acceptance. This project aims to meet IWAP Revision Requirements and Resource Management Needs by reviewing, updating, and revising information associated with the Streams Campaign of the Illinois Wildlife Action Plan (TRACS Level 1 [Resource Management Needs], Level 2 [Resource Information Collection Needs], Level 3 [update information]).

Purpose and Objectives:

The primary purpose of this project is the direct refinement and revision of the Streams Campaign of the Illinois Wildlife Action Plan. Details for completing these objectives are outlined in the Project Timeline (p.12).

Objective 1. Develop a narrative describing the status of the Streams Campaign containing background, current conditions, and desired conditions during the first six months of the project.

Objective 2. Develop a narrative for the Streams Campaign containing a description of selecting and prioritizing focal themes by the end of the third quarter of the project.

Objective 3. Develop a narrative for the Streams Campaign containing Action Items to address priorities and data deficiencies within focal themes by the project end date.

Objective 4. Complete a final report that includes a revision of the Streams Campaign of the Illinois Wildlife Action Plan by the project end date.

Anticipated Outcomes and Benefits:

Campaigns within the Illinois Wildlife Action Plan are the primary organizational unit for articulating statewide Conservation Needs, identifying SGNC and the habitats that they require, and focusing priorities to meet conservation objectives. By completing the objectives of this project, significant progress will be made towards updating the Illinois Wildlife Action Plan's Streams Campaign that guides conservation of over 100 SGNC and their aquatic habitats.

Expected outputs associated with this project include:

1. Consolidation of information to improve usability of existing IWAP that is applicable to the Streams Campaign into one section of the revised Wildlife Action Plan.
2. Identification and prioritization of focal areas (e.g., COAs) for aquatic SGNC in Illinois.
3. Identification and prioritization of Conservation Actions to address priorities within focal themes of the Streams Campaign.
4. Identification and prioritization of Action Items to address data deficiencies for aquatic habitats and SGNC.

Approach:

This project directly addresses State Wildlife Action Planning (TRACS Action Level 1 [planning], Action Level 2 [State Wildlife Action planning]) by conducting activities to revise the Streams Campaign of the Illinois Wildlife Action Plan.

Objective 1. Develop narrative describing the status of the Streams Campaign containing background, current conditions, and desired conditions.

Job 1. Review existing IWAP and consolidate information on aquatic habitats and SGNC associated with the Streams Campaign.

Chapter III of the IWAP (State of Illinois 2005) contains a statewide overview of Wildlife & Habitat conditions for Illinois. Sections represented in the overview describe Ecological Divisions (III.A.), Status (III.B.), Desired Conditions (III.C.), and Challenges (III.D.) for species and habitats, Priority Conservation Actions (III.E.) designed to address stressors, and existing Research, Monitoring & Evaluation of Wildlife & Habitat Resources (III.F.). We will consolidate relevant information from each of these sections into a unified Streams Campaign section for incorporation into the IWAP revision. Additional information currently residing in the IWAP Natural Division Assessments (Chapter IV) will be coordinated with the revised Streams Campaign section.

Job 2. Review progress since IWAP implementation began in 2005 (SWG projects, IESPB updates, other efforts by conservation partners) to assist with describing current conditions for aquatic habitats and SGNC.

We will review information relevant to aquatic habitats and SGNC acquired since the development of the IWAP in 2005 to assist with describing current conditions, progress toward desired conditions, and status of aquatic habitats and SGNC. Results and recommendations from previously funded SWG projects (e.g., Bol et al. 2007, Sass et al. 2010, Hinz et al. 2011, Metzke et al. 2012) and other information will be incorporated into the Streams Campaign where appropriate.

Job 3. Develop a common vision for statewide desired conditions of Aquatic Habitats and SGNC with input from Stream Campaign Steering Committee.

We will engage our partners on the Stream Campaign Steering Committee along with IDNR staff to develop a common vision for aquatic habitats and SGNC. Water quality objectives and strategic plans for Fisheries, Recreational/Educational programs, and other Campaigns within the IWAP will be reviewed for synergies with Streams Campaign priorities to assist with defining this vision.

Objective 2. Develop narrative for the Streams Campaign containing a description of selecting and prioritizing focal themes that reflect conservation needs within the Streams Campaign.

Job 4. Review statewide issues and update/prioritize conservation needs into focal themes for aquatic habitats and SGNC.

We will review existing information in the IWAP and engage our partners on the Stream Campaign Steering Committee along with IDNR staff to develop focal themes for aquatic habitats and SGNC. Focal themes will be broad areas of conservation concern that correspond with high profile issues impacting aquatic habitats and species (e.g., habitat alteration, climate change). Immediate (<5 years), short-term (<10 years), and long-term (20 years) conservation needs (including monitoring needs and research gaps) will be identified for each theme.

Job 5. Conduct Priority Watershed Analysis: Assess current status of identified conservation areas at conserving stream SGNC and identify where gaps exist.

We will overlay known locations of aquatic SGNC (e.g., fish and mussels) with boundaries of Natural Areas, other conservation lands, and existing Conservation Opportunity Areas to examine overlap between species distributions and identified conservation areas. A similar analysis will be conducted using Biologically Significant Stream reaches (Bol et al. 2007) and existing conservation areas. Identifying gaps in coverage within the existing conservation network for aquatic SGNC and for stream reaches with high biodiversity or community intactness will assist with developing and prioritizing Conservation Actions for enhancement, protection, and restoration within the Streams Campaign.

A measure of disturbance will be developed for stream reaches at several scales (e.g., local catchment, upstream watershed, riparian area) throughout the State of Illinois using a combination of existing GIS attributes associated with anthropogenic stress (e.g., urban and agricultural landcovers, impaired waters listings [303(d)], NPDES permits). These measures will be aggregated up to larger subwatersheds (e.g., HUC8) within each major watershed (e.g., Kaskaskia River, Rock River) and attributed with a relative watershed disturbance ranking.

Subwatersheds within each major watershed will be independently assessed for potential enhancement, protection, or restoration. Subwatersheds (or reaches) will be designated as having potential for Enhancement if they have a combination of high disturbance within the watershed, high local biodiversity, and low regional biodiversity. These are higher quality watersheds in lower quality areas. Subwatersheds (or reaches) will be designated as having potential for Protection if they have a combination of low stress within the watershed, high local biodiversity, and high regional biodiversity. These are the highest quality watersheds in high quality areas. Subwatersheds (or reaches) will be designated as having potential for Restoration if they have moderate or

high local disturbance, low regional disturbance level, low local biodiversity, but high regional biodiversity. These are lower quality areas in otherwise good areas.

These designations will help identify where conservation actions can be implemented on the landscape and may help focus efforts within Conservation Opportunity Areas.

Objective 3. Develop narrative for the Streams Campaign containing Action Items to address priorities and data deficiencies within focal themes.

Job 6. Revise list of threats, ecological indicators, and performance measures for Streams Campaign and associated habitats and SGNC.

We will review existing information in the IWAP (State of Illinois 2005) relating to threats, ecological indicators, and performance measures for aquatic SGNC and their habitats. Results and recommendations from relevant completed and ongoing Illinois State Wildlife Grant projects will also be reviewed where applicable (e.g., Metzke et al. 2012). Information will be associated with the appropriate focal theme(s) and reviewed by our partners on the Stream Campaign Steering Committee and IDNR staff. This information will be used to update relevant portions of the IWAP related to aquatic SGNC and their habitats (e.g., Appendix II. Status, Objectives and Stresses to Illinois' Wildlife & Habitat Resources.) and provide evaluation criteria (i.e., performance measures) to measure progress toward meeting desired conditions for aquatic SGNC and their habitats.

Job 7. Review existing Campaign actions for revision and identify new actions to address priorities within focal themes and to address data deficiencies for aquatic species and habitats.

We will review Conservation Actions for aquatic SGNC and their habitats within the IWAP (State of Illinois 2005) and associate them with the appropriate focal theme(s). Based on the results of Job 6 and this review we will identify data deficiencies and threats/stressors that are not sufficiently address with conservation actions. We will engage with our partners on the Stream Campaign Steering Committee, Stream Campaign Technical Committee, and IDNR staff to prioritize Actions within each focal theme and to identify new Actions where necessary to address data deficiencies for aquatic species and habitats. Recommended Actions for each focal theme will address both short-term (<10 years) priorities and long-term (20 years) goals of the Streams Campaign. This information will be used to update relevant portions of the IWAP related to aquatic SGNC and their habitats (e.g., Appendix III. Stresses addressed, habitats improved, priority locations and performance measures for key conservation actions.) and to provide guidance on prioritization for management and research activities necessary to meet Campaign objectives.

Objective 4. Complete final report that includes a draft revision of the Streams Campaign Section of the Illinois Wildlife Action Plan.

Job 8. Complete reporting requirements including a revision of the Streams Campaign section of the Illinois Wildlife Action Plan.

We will develop a final report that describes work completed for this project associated with developing a revised Streams Campaign for the Illinois Wildlife Action Plan. This report will include an updated and revised Streams Campaign for incorporating into the IWAP revision and a formal update of Appendices I-III for aquatic species and their habitats.

Useful life:

Not applicable to this project.

Geographic Location:

This project will be completed by INHS staff in Springfield with the assistance of IDNR in Springfield.

Principle Investigator:

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Personnel:

The following personnel from IDNR Office of Resource Conservation (ORC), One Natural Resources Way, Springfield, IL 62702 will manage this project:

Ann Marie Holtrop, Acting Director
IDNR – Division of Natural Heritage & Watershed Protection Section
Phone: (217) 785-4325
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Additional personnel involved in this project at the same location include:

Jodi M. Vandermyde (Co-Investigator)
Illinois Natural History Survey
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Andrew Hulin, GIS Specialist
IDNR – Watershed Protection Section

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Streams Campaign Steering Committee includes representation from these and other interested Organizations:

Openlands, Prairie Rivers Network, The Nature Conservancy, Sierra Club, Isaac Walton League, Illinois National Resource Conservation Service, Eastern Tallgrass Prairie & Big Rivers Landscape Conservation Cooperative, Ohio River Basin National Fish Habitat Partnership, Upper Midwest-Great Lakes Landscape Conservation Cooperative, Fish & Wildlife Service Illinois Partners Program, Illinois Department of Transportation, IDNR Fisheries Division, IDNR Division of Natural Heritage, USACE, Illinois EPA Bureau of Water.

Streams Campaign Technical Committee (Potential Members):

Andrew Casper (INHS, Director Illinois River Biological Station), Yong Cao (INHS, Stream Ecologist), Mike Lemke (UIS, Professor of Biology and Director Therkildsen Field Station at Emiquon), Roy Smogor (IEPA, Surface Water Section, Division of Water Pollution Control, Bureau of Water), Matt Whiles (SIU, Professor of Zoology and Director Center for Ecology), Rip Sparks (NGRREC), Maria Lemke (TNC in Illinois, Aquatic Ecologist), Sergiusz Czesny (INHS, Director Lake Michigan Biological Station), David Riecks-Soucek (INHS), Chris Taylor (INHS, Curator of Crustaceans & Fishes), Laura Keefer (ISWS, Head Surface Water Hydrology and Hydraulics Section), Rob Colombo (EIU, Assistant Professor Biological Sciences), Cory Suski (UIUC, Associate Professor NRES), Nancy Tuchman (Loyola University Chicago, Vice Provost and Professor of Biology), Stacy James (PRN, Water Resources Scientist), Trent Thomas (IDNR, Fisheries Division).

Program Income:

Not applicable to this project. No income will be generated through these efforts.

Budget:

PROJECT BUDGET Expense Line Item	Federal Request	INHS Match	IDNR Match	Project Total
SALARIES & WAGES				
Professional	\$45,225	\$4,800	\$13,092	\$63,117
Non-student hourly	\$0			\$0
Total Salaries & Wages	\$45,225	\$4,800	\$13,092	\$63,117
FRINGE BENEFITS				
Professional @ 42.94%	\$19,420	\$2,061	\$0	\$21,481
Non-student hourly @ 7.79%	\$0	\$0	\$0	\$0
Total Fringe Benefits	\$19,420	\$2,061	\$0	\$21,481
Total Salaries, Wages, & Fringe Benefits	\$64,645	\$6,861	\$13,092	\$84,598
TRAVEL				
Out of state				\$0
In state	\$800			\$800
Total Travel	\$800	\$0	\$0	\$800
MATERIALS & SUPPLIES - General	\$622			\$622
Publication costs (reprints/page costs)				\$0
Total Materials & Supplies	\$622	\$0	\$0	\$622
CONTRACTUAL SERVICES - General	\$600			\$600
Conference Registration Fees				\$0
Total Contractual Services	\$600	\$0	\$0	\$600
TELECOMMUNICATION SERVICES				\$0
EQUIPMENT (each item \$5000 +)	\$0			\$0
Total Direct Costs	\$66,667	\$6,861	\$13,092	\$86,620
Modified Total Direct Costs (MTDC)	\$66,667	\$6,861	\$13,092	\$86,620
F&A (20% MTDC)	\$13,333			\$13,333
F&A (INHS 24% MTDC; IDNR 18.34%)		\$1,647	\$2,401	\$4,048
Unrecovered F&A (20% vs. 24%)		\$2,667		\$2,667
Total Proposed Project Budget	\$80,000	\$11,175	\$15,493	\$106,668
	74.9987%	10.4768%	14.5245%	

*MTDC: less exemptions (equipment over \$5000, tuition remission, leases/rentals, and each subcontract in excess of \$25K)

Budget narrative:

Salaries and Wages: We request staff salary equivalent to one full time research scientist to work with IDNR staff, and their partners, in revising the Streams Campaign of the Illinois Wildlife Action Plan. This work will include consolidating existing information, identifying and prioritizing focal areas, conservation actions, and data deficiencies for aquatic habitats and SGNC.

Fringe Benefits: We request \$19,420 in fringe benefits in accordance with those budgeted for wages. Fringe benefits will be paid at a rate of 42.94% for Professional staff; rates have been negotiated by the University of Illinois Urbana/Champaign.

Travel: We request a total of \$800 to reimburse staff for expenses associated with coordination meetings/workshops with the Stream Campaign Steering Committee and the Science Advisory Committee. We anticipate two coordination meetings with each Committee. These funds will be used to help cover staff and partner transportation costs (e.g., mileage and parking) at the appropriate allowable state rates.

Materials and Supplies: We request a total of \$622 to provide support for consumable project supplies (e.g., electronic storage media, printer ink and high quality paper for maps to facilitate communication with Streams Campaign Steering Committee and IDNR staff) associated with expected project activities.

Contractual Services: We request \$600 for contractual services for software licensing over the project period.

Equipment: We request no funds for equipment.

Facilities and Administration Costs: We request \$13,333 to offset facilities and administrative costs at the rate of 20% of direct costs. Rates have been negotiated by the University of Illinois at Urbana/Champaign.

Cost Share: ORC staff including Ann Holtrop, Andrew Hulin, and Jim Renn will contribute a portion of their time to this project at no cost to the sponsor. However, these efforts will serve as cost share. Additionally, we will use a portion of the salary of Leon Hinz, paid through the Illinois Natural History Survey, and unrecovered F&A (difference between the negotiated 20% rate vs. the off-campus 24% rate) as cost share.

Multipurpose Projects:

Not applicable to this project.

Relationship to Other Grants:

Evaluating Streams in Illinois based on Aquatic Biodiversity (T-20). This project used existing data to rate stream reaches for biological diversity and biological integrity to update Biological Stream Characterization and Biologically Significant Stream designations statewide. These products were used to identify Conservation Opportunity Areas in the IWAP and will assist in assessing and prioritizing status, themes, and actions for aquatic habitats.

Status revision and update for Illinois' fish Species in Greatest Need of Conservation (T-68). This project developed geospatial data and distribution maps using available records from museum collections and state-wide monitoring programs as well as updated the status of fish SGNC in Illinois. We will use results from this project to assist with updating the status of fish species in greatest need of conservation.

Hierarchical Framework for Wadeable Stream Management and Conservation (T-75). This project formalizes a classification framework, defines physical and biological expectations, and describes natural community types for wadeable streams in Illinois. We will use results of this project to assist with identifying data gaps for aquatic resources, developing and defining Campaign Themes, and identifying high quality and significant stream communities and unusual concentrations of fish and mussels.

Defining Expectations for Mussel Communities in Illinois Wadeable Streams (T-82). This project will refine and update mollusk species in greatest need of conservation and develop distribution models for some mussel species in Illinois. We will use results of this project to update the status of mussel species in greatest need of conservation.

Review and Update of Non-mollusk Invertebrate Species in Greatest Need of Conservation (T-88). This project will refine and update the status of invertebrate species in greatest need of conservation and identify information gaps for these species. We will use the results of this project to assist with updating information on aquatic invertebrates in the Campaign revision.

Identifying Regional Priority Areas for Focusing Conservation Actions in Streams and Grasslands. (UMGL-LCC FY 2013). Grant secured by Ann Holtrop (IDNR) from UMGL-LCC to be used to assist funding the species modeling and conservation prioritization projects described below.

Identifying Regional Priority Areas for Focusing Conservation Actions in Streams and Grasslands: Distribution Models. This project will allow completion of the larger project to develop regional conservation priority areas for stream and grassland habitats based on mussel and bird SGNC by developing regional distribution models for selected species. Submitted to IDNR Office of Resource Conservation.

Identifying Regional Priority Areas for Focusing Conservation Actions in Streams and Grasslands: Conservation Planning. This project will allow completion of the larger

project by developing regional conservation priority areas for stream and grassland habitats based on mussel and bird SGNC. Submitted to Illinois State Wildlife Grant Program.

Project Schedule:

Job	9/14 – 12/14	1/15 – 3/15	4/15 – 6/15	7/15 – 8/15
Objective 1				
Job 1	X	X		
Job 2	X	X		
Job 3	X	X		
Objective 2				
Job 4		X	X	
Job 5		X	X	
Objective 3				
Job 6		X	X	
Job 7			X	X
Objective 4				
Job 8				X

General:

The project statement describes a need consistent with the State Wildlife Grants (SWG) program; states a purpose and sets objectives, both of which are based on the need; uses a planned approach, appropriate procedures, accepted principles of research, and is cost effective.

Compliance:

The IDNR will use its CERP (Comprehensive Environmental Review Process) as a tool to aid the Department in meeting NEPA compliance for the project outlined under this grant proposal. It is the Department's policy to require CERP applications for all land disturbing activities unless those activities are covered by CERP exemptions.

All planned activities will also be in compliance with the Endangered Species Act. All determinations and documentation will be in accordance with the current established U.S. Fish and Wildlife Service protocols for section 7.

All planned activities will be in compliance with the National Historic Preservation Act and the Council on Historic Preservation Act. All determinations and documentation will be in accordance with the terms of the Programmatic Agreement, as amended, effective September 23, 2002.

The activities supported by this grant for this project statement do not involve any other federal compliance issue.

Literature Cited:

- Bol L., A.M. Holtrop, L.C. Hinz Jr., and J. Epifanio. 2007. Evaluating Stream in Illinois based on Aquatic Biodiversity. INHS Technical Report 2007(57).
- Hinz Jr. L.C., B.A. Metzke, and A.M. Holtrop. 2011. Evaluating Water Temperature, Habitat and Fish Communities in Candidate Coolwater Streams in Illinois. INHS Technical Report 2011(21).
- Metzke B.A., L.C. Hinz Jr., and A.C. Hulin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. INHS Technical Report 2012(19).
- Sass L., L.C. Hinz Jr., J. Epifanio, and A.M. Holtrop. 2010. Developing a Multimetric Habitat Index for Wadeable Streams in Illinois. INHS Technical Report 2010(21).
- State of Illinois 2005. The Illinois Comprehensive Wildlife Conservation Plan & Strategy. Version 1.0. Illinois Department of Natural Resources, Springfield, IL.

