Continued population growth and urban expansion have placed increased demands on the infrastructure of Illinois, particularly within the Chicago region. With this expansion comes the need for surveys for threatened and endangered species and of ecologically sensitive areas. We were initially contracted in 2005 to conduct amphibian and reptile surveys. Fish and freshwater mussel surveys were added in 2010. In 2015, we began our third five-year segment, which now includes aquatic insects, birds, and mammals.

**FISHES** Our first fish surveys were conducted in association with improvements of I-90 from Rockford to Illinois Route 47. We surveyed 14 stream crossings, including the Kishwaukee River. Our pre-construction surveys showed that several of these stream crossings had a surprisingly rich and diverse fish fauna. We found a new location for the state-threatened gravel chub (*Erimystax x-punctatus*) in the Kishwaukee River and several new locations for the state-threatened Iowa darter (*Etheostoma exile*). We are currently conducting monthly follow-up surveys of the streams to determine if there were any changes in the fish assemblage post-construction. These monthly sampling events also allow us to build species detection models for fishes in northern Illinois streams.

Currently, we are surveying the proposed Illinois Route 53 and Illinois Route 120 corridor. This corridor not only includes five stream crossings, but also includes marshes and glacial lakes in ecologically

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**ABOVE** Iowa darter. Photo by Joshua Sherwood.

**LEFT** Jeremy Tiemann, Sarah Baker-Wylie, and Matt van Der Bosch seining for fish. Photo by Michael J. Dreslik.
sensitive areas. Although the stream crossings are relatively species depauperate, we have found the state-threatened blackchin shiner (*Notropis heterodon*), Iowa darter, and banded killifish (*Fundulus diaphanus*) in our surveys of Lake County glacial lakes.

**FRESHWATER MUSSELS** In addition to mussel surveys along major tributaries and wetlands in project corridors, we are assessing the effects of short-distance translocations of freshwater mussels after bridge construction. In 2013, we collected 100 mussels of two common species (which species?) from the Kishwaukee River at I-90, marked them with passive integrated transponder tags, and released them ~200 m upstream of the construction site. Our data show survival is lowest in the first month after translocation and stabilizes thereafter, suggesting that short-distance translocation is a viable tool for species conservation but will not eliminate all mortality.

In 2015, we are expanding the survivability study to include additional population studies of rare and state-listed mussels in the upstream and downstream portion of the I-90 site. Recording life history data and repeated sampling efforts during the next few years will allow a better understanding of biotic and abiotic factors influencing the mussel community.

**AMPHIBIANS AND REPTILES** We have been monitoring Blanding’s turtles in the I-355 corridor since 2005, particularly in the marshes of the Des Plaines River where a bridge was constructed. The goal was to assess and monitor the population pre-, during, and post-construction. Additionally, as turtle nests have high predation rates, we used nest caging and head-starting of juveniles to attempt to increase recruitment. Further impacting the Blanding’s turtle was the installation of a fence between the Des Plaines River and the Chicago Sanitary and Ship Canal meant to keep Asian carp from entering the canal from the river during flood events. Movement of turtles attempting to migrate between marshes is impaired by the fence and makes them vulnerable to predators.

The eastern massasauga rattlesnake (*Sistrurus catenatus*) was found in northeastern Illinois as recently as 2008. The I-294 corridor is adjacent to suitable eastern massasauga habitat in northern Illinois, an area historically supporting a population. Although we have conducted visual encounter surveys in conjunction with habitat restoration projects, we have not detected eastern massasaugas. We outlined a habitat restoration plan, which the Cook County Forest Preserve District is now implementing to restore eastern massasauga habitat within the region.

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