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July 31, 2004

Dear Mr. Wilker,

Enclosed is the final report for Grant Agreement #04-004W entitled "Status of the State Threatened Illinois Chorus Frog (*Pseudacris streckeri illinoensis*) in Cass and Mason Counties, Illinois".

Due to a lack of sufficient rainfall during the spring of 2004 the results of this study are minimal. Despite intensive survey efforts and a great deal of time spent in the field by myself and my colleague Andrew Kuhns, few localities were documented. Both Andrew and I were disappointed with the results and do not wish to be reimbursed for our work. We appreciated the opportunity to work with the Illinois Department of Natural Resources and hope what we did find will be somewhat useful to the department.

If you have any questions, please feel free to contact me.

Sincerely,

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Status of the State Threatened Illinois Chorus Frog (*Pseudacris streckeri illinoensis*) in Cass and Mason Counties, Illinois

Technical Report for Grant Agreement #04-004W

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AND

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Introduction

Illinois chorus frogs (*Pseudacris streckeri illinoensis*) are small fossorial frogs in the family Hylidae. These frogs are listed as a threatened species in Illinois, rare in Missouri, and a species of special concern in Arkansas as well as having been designated as a category 2 taxon by the U.S. Fish and Wildlife Service (Shepard et al. *in press*). Declines in the populations of this species have resulted from channelization, the filling of wetlands, and theconversion of sand prairies to agricultural fields. Additional threats to these frogs are the use of herbicides and insecticides nearing breeding locations.

This frog, which is restricted to sandy substrates and is highly fossorial, has been the subject of much debate concerning its status and distribution in Illinois in the past 20 years (Brown and Rose 1988; Brandon and Ballard 1998; Tucker 1998). These studies, however, have focused on the lower Illinois River valley and southern Illinois. While the Illinois chorus frog is known to occur in Mason and Cass counties, no detailed inventory of breeding sites or chorus sizes has been conducted to determine their status in these counties.

Project Methodology

To determine the status of Illinois chorus frogs, surveys began on 5 March 2004 and continued through 5 May 2004 in order to encompass the entire breeding season. The typical breeding season in Illinois runs from late February to early April (Phillips et al. 1999). Choruses were located by driving roads at night and listening for calling males. Once a chorus was located a GPS location was taken. Chorus size was estimated by listening to the chorus for approximately 10 minutes. After the chorus size had been estimated the type of habitat was then quantified (ditch, ephemeral pool, etc.).

Results

A total of 8 trips were made to Cass and Mason counties to survey for Illinois chorus frog breeding sites with little success. The lack of precipitation during the spring of 2004 resulted in little chorusing activity. Additionally, many potential breeding sites did not receive a sufficient amount of precipitation to allow them to fill for anuran reproduction. However, 7 sites were found in Cass County with Illinois chorus frog activity (Appendix 1) and 7 sites were found in Mason County with Illinois chorus frog activity (Appendix 2). Illinois chorus frogs were typically found in roadside ditches or small ponds that had formed in agricultural fields. While our results may be somewhat biased due to "road cruising" while searching for choruses, we encountered very little suitable habitat for Illinois chorus frogs.

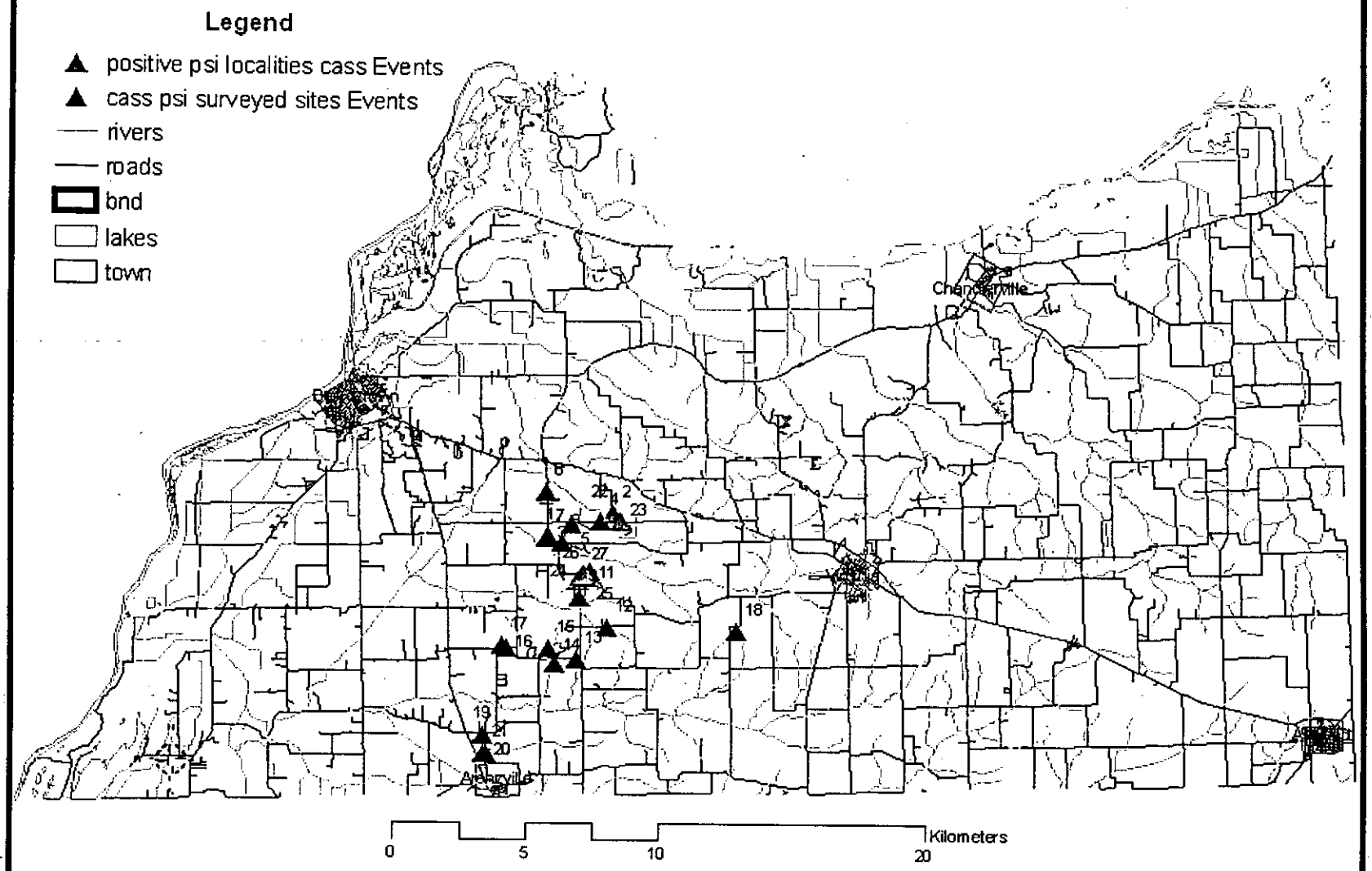
In addition to documenting locations of breeding sites and quantifying habitat, we compiled maps of the locations for both Cass and Mason counties (see attached). Historical locales are also provided.

Conclusions

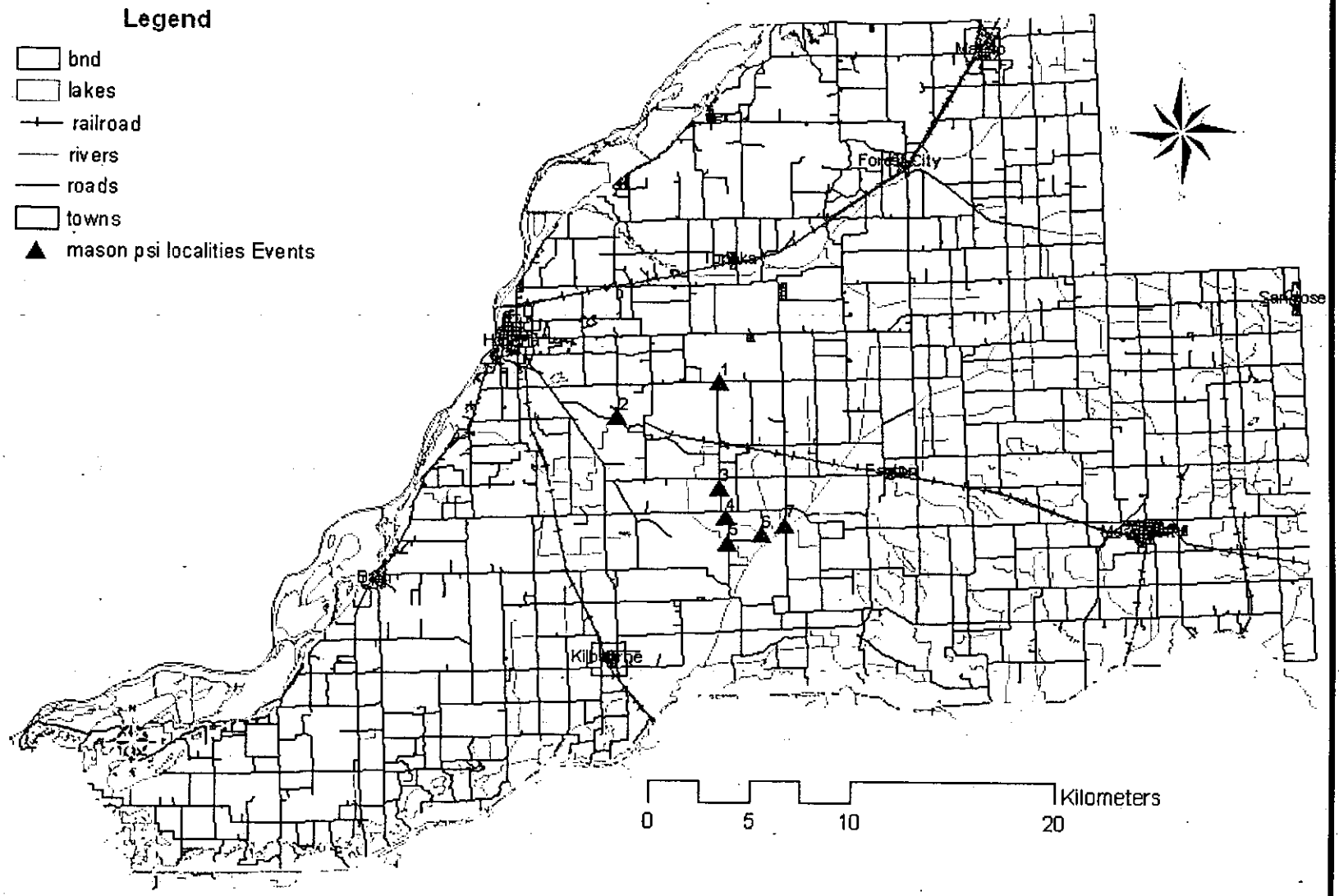
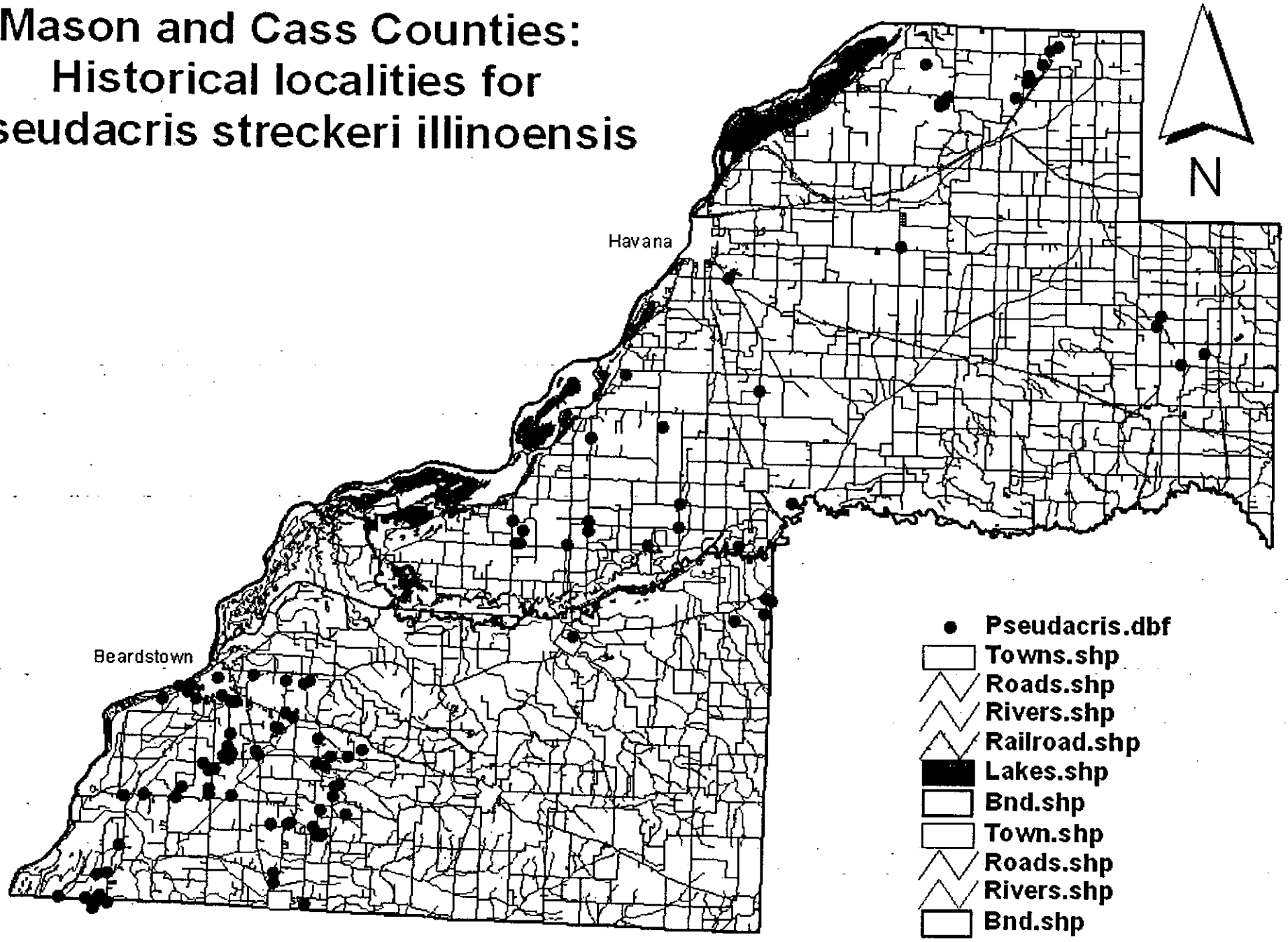
Due to the lack of rainfall in the spring of 2004 it is difficult to draw any solid conclusions. Considerable time was spent (120 researcher hours) searching for these frogs with little success. However, the Illinois chorus frogs that were encountered seem to be highly dependent on roadside ditches and agricultural fields for reproduction due to the lack of more suitable habitat. As has been reported before by other researchers it is necessary to consider creating more suitable habitat for these threatened frogs. Construction of fishless pools and the planting of sand prairie grasses could be a potential

first step. At the very least, use of pesticides near breeding sites should be limited and conversion of current breeding sites should be avoided.

Cass Co. Survey Locations



Mason Co. Survey Locations



Mason and Cass Counties: Historical localities for *Pseudacris streckeri illinoensis*