

Spring Creek Fish Survey Madison County, Nebraska

Prepared For

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1. INTRODUCTION

EcoCentrics, at the request of Mainell Wagner & Associates, conducted a fish survey within a segment of Spring Creek, a tributary to the North Fork of the Elkhorn River in Madison County, Nebraska (**Figure 1**). This fish survey had been requested by the U.S. Fish and Wildlife Service as part of compliance due diligence for obtaining regulatory permits for a proposed new road alignment between Nucor Road and Eisenhower Avenue. This work was conducted on 30 June 2010 to assess the fish community within that portion of Spring Creek from Victory Road west approximately 0.8 miles downstream. The area sampled is located in T24N, R1W, Section 11 in Madison County, Nebraska.

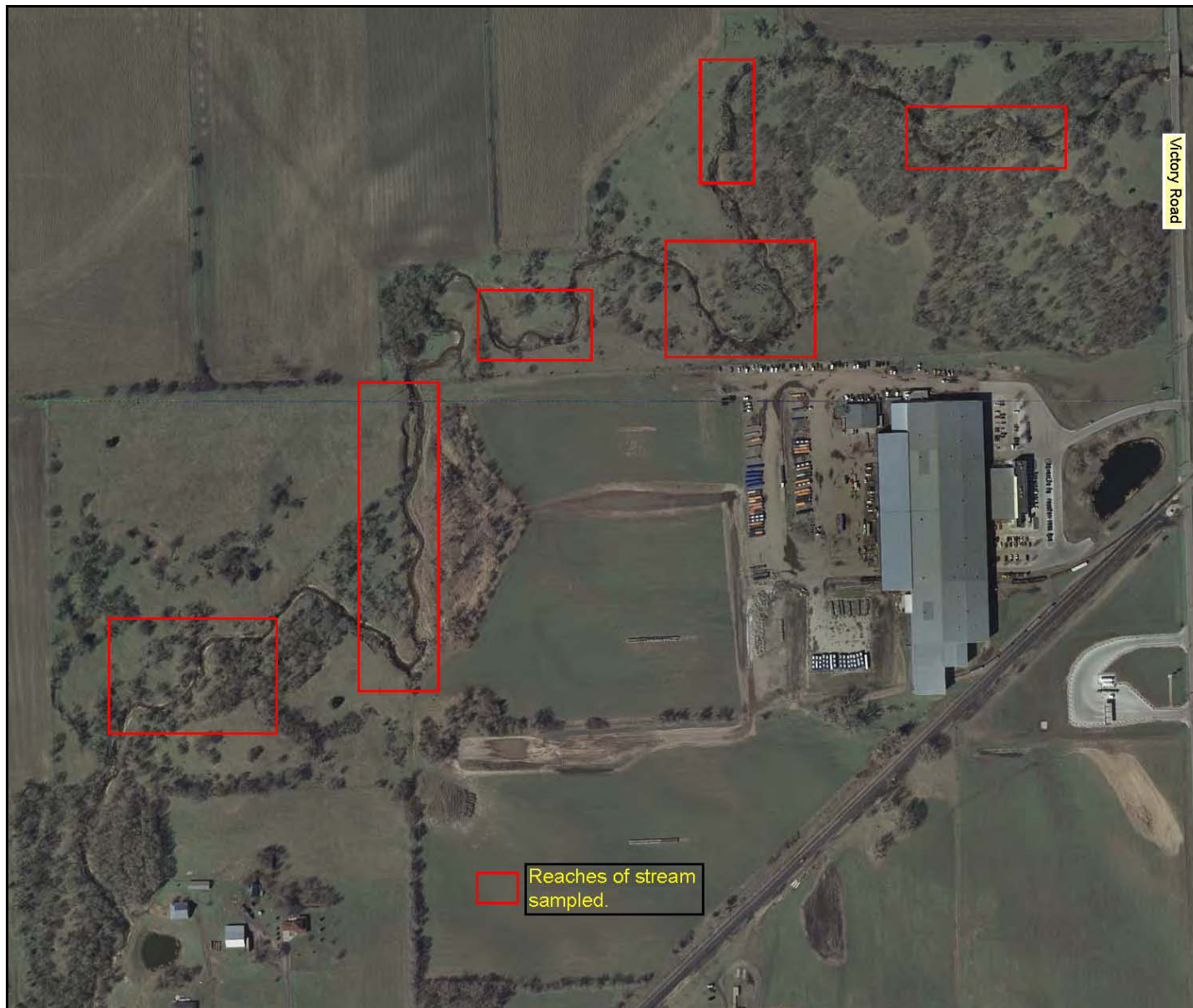
2. METHODS

EcoCentrics's assessment of the fish community was completed by using a 10 foot wall seine consisting of ¼ inch nylon mesh. A two person crew was used to sample all stream reach locations depicted in **Figure 1**. We began the survey at the most downstream portion of the survey area and worked upstream. Much of the sampling consisted of a series short seines hauls, each of which was approximately 30 yards in length. All available habitat types were sampled within each of the reach segments. These habitats consisted of shallow straight runs, slightly deeper bend pools/runs, undercut banks, and beaver pools and their associated downstream riffle areas.

3. RESULTS

A total of ten (10) species were observed within the surveyed segment of Spring Creek. **Table 1** is a list of all fish species observed during the sampling event, as well as several amphibian species. This portion of Spring Creek is a small 2nd order stream system flowing through a landscape dominated by various agriculture activities, as well as industrial activities west of Victory Road and immediately south of Spring Creek at Victory Road. The sampled segment of Spring Creek flowed through a woodland pasture area used for cattle grazing. The stream channel is relatively confined, having degraded significantly over the last 40+ years; evidence for this consist of old channel remnants higher up in the floodplain with embedded early 1960's automobiles partially buried, which were used as bank stabilization material. Although relatively confined, the stream channel has a sinuous form with well vegetated banks. The sampled stream channel varied in width from 5 to 8 feet, with the depth varying from less than 1 foot to 2.5 feet. The stream substrate consisted of fine sand with a silt layer, the fine sand composing 90% of the substrate. Several reaches within the sampled stream segment had bend pools at erosion points, but the depth was not substantially different from that of the remainder of the stream. Undercut banks were present in a number of areas, however they were modest in depth, rarely extending back more than 1.5 feet from the channel margin. Two (2) beaver dams were present within this segment of stream, but the depth of the pools was less than 3 feet. Although a few very small spring seeps were observed, their respective flows were extreme small and no noticeable change in water temperature was apparent in the main stream channel.

Figure 1. Reaches of Stream Sampled.



The fish community within the sampled stream segment was dominated by Sand Shiners and Bigmouth Shiners, each of which were found in larger numbers. Common species within the stream consisted of Red Shiners and Fathead Minnows. The most unusual observation was the presence of young of the year Walleye. Both the Walleye and Iowa Darter were taken in the most downstream section of the stream system. We conclude that the recent, near record flood flows in the Elkhorn River system flushed these species out of the larger North Fork of the Elkhorn River and into Spring Creek. Collectively, the fish species observed in Spring Creek are indicative of perennial flowing stream systems that experience dramatic changes in flow regimes, which are fairly turbid and dominated by shifting sand substrates.

No federal or state listed threatened or endangered species were observed during our sampling event. Historically, streams within the Elkhorn River system were inhabited by Topeka Shiner (*Notropis topeka*), a federally endangered species. However, today this species is confined to small reaches of streams found in southern Madison County, Nebraska. No evidence of Topeka Shiner was found in Spring Creek.

Table 2. Species Observed.

Common Name	Scientific Name	Abundant >100	Common <50	Few <15
Fish				
Sand Shiner	<i>Notropis stamineus</i>	x		
Bigmouth Shiner	<i>Notropis dorsalis</i>	x		
Red Shiner	<i>Cyprinella lutrensis</i>		x	
Fathead Minnow	<i>Pimephales promelas</i>		x	
Brassy Minnow	<i>Hybognathus hankinsoni</i>			10
Creek Chub	<i>Semotilus atromaculatus</i>			2
Black Bullhead	<i>Ameiurus melas</i>			1
Green Sunfish	<i>Lepomis cyanellus</i>			2
Iowa Darter	<i>Etheostoma exile</i>			1
Walleye	<i>Sander vitreus</i>			2 *
* Young of the year				
Amphibians				
Northern Leopard Frog	<i>Lithobates pipiens</i>			
Bullfrog	<i>Lithobates catesbeianus</i>			