

MOTHER NATURE DIDN'T GET IT RIGHT THE FIRST TIME
by Konrad Schmidt, St. Paul, Minnesota

In southwestern Minnesota, there is a large chunk of real estate resembling Montana's Big Sky Country on a smaller scale. Here the row crops give way to range land, and with a little imagination, cattle grazing on the distant hills are buffalo roaming the once wild and fenceless Great Plains. The French explorers called this area *Coteau des Prairies* (highland of the prairies), since it is 500' to 800' higher than the "flatlands" to the east.

The Coteau is also the break between the Missouri and Mississippi River basins in Minnesota, and streams draining the area often have gradients of almost 50' per mile. One such stream, Mound Creek, was one of the most distinctively beautiful natural resources left in that part of the state. In Red Rock Falls County Park, a tributary to Mound Creek cascades over a 20' waterfall and cuts a deep gorge through the pink Sioux quartzite. Downstream from the gorge, the water ran crystal-clear through bedrock pools and riffles.

I stumbled onto this out-of-the-way place during a collecting trip to the Missouri River Basin. I draped my legs over the lip of the gorge, soaked it all in, and thought of Dorothy's famous words in The Wizard of Oz, "Toto, I've got a feeling we're not in Kansas anymore." Ignorance is bliss and I naively believed this stream would never change and always be protected; unfortunately, I learned (again) that reality can be a bitter pill to swallow.

Late in 1990, I heard that a flood-control project was scheduled for Mound Creek. Ironically, the Army Corps of Engineers had long ago abandoned this site and 70 others once proposed for the Minnesota River basin. I was familiar enough with the Corps' past to believe that these projects really had to be lousy and unjustified; otherwise, I am certain that all would have been built. But now there was a coalition of several counties which insisted they needed dams on these streams to reduce flood damage.

The Mound Creek project included construction of a 28-acre reservoir downstream from Red Rock Falls. When completed, this dam will be a total fish barrier. The impoundment will inundate riffles upstream to the park's boundary.

There was nothing I could do to stop this project, but I could survey the entire Mound Creek watershed and establish a fish species list for both above and below the dam. Although it was actually an obituary, I hoped that this information would someday be used to verify the likely loss of many stream fishes above the dam, and, just perhaps, limit the number of future flood-control projects proposed for southwestern Minnesota.

I started the fish surveys in May of 1991--just in time, because construction of the dam and reservoir were well under way. I wanted a sample station immediately below the dam, but first had to get permission from the landowner. He assented, and volunteered volumes of information and personal opinion about the project. He was very much for flood control and also the recreational opportunities the reservoir would bring. In his next breath, he avowed great pride in his Nature Conservancy membership, and was thrilled that the endangered Prairie Bush Clover had been found at several locations in the area. He followed me down to the stream and snapped several pictures for an album he was keeping on the project. He was also very interested in the fish I found on his land; I had to spell out every species name for him.

Since I had his attention, I tried to briefly evangelize him on the habitat needs of stream fishes, predicting that most would probably disappear forever above the reservoir. Nevertheless, the light bulb just wouldn't go on.

I made two more trips that year to survey the seasonal changes in species presence and abundance. My "real job" with the Department of Natural Resources also sent me out again for the Minnesota River Assessment Project (MRAP) to survey additional sites near Red Rock Falls.

On the last survey, in 1992, we sampled a site just downstream of the confluence of Mound Creek and the tributary which flows through the park. As expected, the glassy water roared through boulder pools and riffles. As we were working up our catch, a farmer pulled up in his truck and came down to the stream. He owned the parcel we were on and was just curious about what we had found. I'm always happy to have an audience, so I gladly showed him the catch. He was really amazed that so many types of fish were found in this little stream. His eyes had a look of awe and wonder usually seen only in children. I told him that this stream, for its small size, had one of the most diverse fish communities in the entire Minnesota River basin.

Beaming with interest, he asked why that was, and I attempted to explain how the higher gradient of the Coteau's streams generally creates more types of habitats and scours silt from pools and riffles which therefore can support more kinds of fish. I pointed upstream and added that there are very few streams left like this any where in the entire basin. Then I drove home my point with, "You know, you really have something very special here."

Puzzled by this comment, he responded with the greatest sincerity, "I do?" A shocked expression swept over my face and he read it immediately. He quickly added, "I have driven over that bridge almost everyday for the last 50 years and it

all looks the same as any other stream to me." It took a minute to fully grasp what he had said; then I realized that I was now viewing this same scene through his eyes, in his world, and he was right.

On the way home, I made one final stop at Red Rock Falls. From a crest of a hill which divides the tributary from Mound Creek, I found two very different and disturbing panoramic views. In one direction, the falls and gorge were as beautiful as my first visit, but turning around, I could see a horrible wound ripped into Mound Creek. Trees, banks, and stream bed had been torn up and cleared away for a sediment-trap dam. And just when I thought the worst was over and the atrocities had ceased.

With regrets, I left, but the treasured memory of the Emerald City will remain with me forever.

I will never feel that my efforts were wasted. At the very least, we now have a picture of what the pre-impoundment fish community was like in the Mound Creek watershed. I found 25 fish species, 18 of which were above the dam (Table 1). The MRAP surveys also confirmed my assumptions about the Red Rock Falls area.

The Index of Biotic Integrity analyzes the composition of fish communities to measure environmental quality in streams. Sample stations are scored from 0 (very poor) to 60 (pristine). The two sites near the park scored 48 and 55, among the highest scores in the entire Minnesota River basin.

REFERENCES

- Bailey, P.A., J.W. Enblom, S.R. Hanson, P.A. Renard, and K. Schmidt. 1993. A fish community analysis of the Minnesota River Basin. Minnesota Department of Natural Resources. 210 pp.
- Schmidt. K.P. 1992. Mound Creek watershed 1991 fish survey results, unpublished. 24 pp.
- Waters, T.F. 1977. The streams and rivers of Minnesota. University of Minnesota Press. 373 pp.

Table next page

Table 1. Mound Creek watershed 1991 - 1992 fish survey results and species presence (+) above (A) and below (B) the dam.

=====					
FAMILY					
Scientific Name	Common Name	Total	%	A	B

CYPRINIDAE - MINNOWS					
Campostoma anomalum	Central Stoneroller	229	14.4	+	+
Cyprinella spilopterus	Spotfin Shiner	6	0.4		+
Cyprinus carpio	Common Carp	14	0.9		+
Hybognathus hankinsoni	Brassy Minnow	35	2.2	+	+
Luxilus cornutus	Common Shiner	347	21.8	+	+
Nocomis biguttatus	Hornyhead Chub	97	6.1	+	+
Notropis dorsalis	Bigmouth Shiner	32	2.0	+	+
Notropis stramineus	Sand Shiner	8	0.5		+
Pimephales notatus	Bluntnose Minnow	83	5.2	+	+
Pimephales promelas	Fathead Minnow	93	5.8	+	+
Rhinichthys atratulus	Blacknose Dace	213	13.4	+	+
Semotilus atromaculatus	Creek Chub	116	7.3	+	+
CATOSTOMIDAE - SUCKERS					
Catostomus commersoni	White Sucker	49	3.1	+	+
ICTALURIDAE - BULLHEAD CATFISHES					
Ameiurus melas	Black Bullhead	7	0.4	+	
Ameiurus natalis	Yellow Bullhead	1	0.1		+
Noturus flavus	Stonecat	1	0.1		+
Noturus gyrinus	Tadpole Madtom	1	0.1		+
GASTEROSTEIDAE - STICKLEBACKS					
Culaea inconstans	Brook Stickleback	11	0.7	+	+
CENTRARCHIDAE - SUNFISHES					
Lepomis cyanellus	Green Sunfish	34	2.1	+	+
Lepomis humilis	Orangespotted Sunfish	2	0.1	+	+
Lepomis macrochirus	Bluegill	5	0.3		+
PERCIDAE - PERCHES					
Etheostoma exile	Iowa Darter	2	0.1	+	
Etheostoma flabellare	Fantail Darter	99	6.2	+	+
Etheostoma nigrum	Johnny Darter	91	5.7	+	+
Percina maculata	Blackside Darter	13	0.8	+	+

		Total:	1589	100.0	

###