HABITAT CONDITIONS

Channel Alterations and Habitat Problems

The entire Chariton River basin has been altered and degraded by stream channelization. Among the three subbasins, the degree of channelization in third-order and greater streams is least in the Little Chariton and greatest in the Chariton River mainstem. The fraction of total stream mileage channelized, as interpreted from 1:24,000 topographic maps, is 28%, 35% and 47% in the Little Chariton, Mussel Fork, and Chariton River subbasins, respectively.

The Chariton River itself is channelized in Missouri from Highway 136 in Putnam County to its confluence with the Missouri River in Chariton County. All channelization did not occur at the same time. The lower Chariton was straightened in the early 1900s under the auspices of drainage districts in both Macon and Chariton counties (L. and C. Dunham, pers. comm.). Channelization in Macon County from the Burlington Railroad line to just south of the Chariton County line was finished in 1907. Most work in Chariton County occurred at the same time, because residents of Chariton County did not wish to be flooded downstream of Macon County's new “ditch” (L. and C. Dunham, pers. comm.). The river was straightened north of the Burlington Railroad line to near the Adair County line beginning in 1922, and that channelization was completed in 1923. In Adair County, channelization efforts were made as early as 1912 when landowners taxed themselves to operate a dredge boat to create a ditch to replace the natural channel. These efforts were not successful until sometime between 1930 and 1935 (Otten 1976).

The Corps of Engineers (COE) is responsible for channelizing or rechannelizing approximately 35 miles of the river from 1948 through 1952. At that time, the lowermost 13.6-mile segment of the Chariton was re-aligned, causing the Little Chariton River to cease being a tributary to the Chariton and flow directly into the Missouri River. A federal levee project undertaken by COE from 1965 to 1972 keeps these two drainages completely separate. COE also assisted in the channelization of a 4-mile segment beginning just north of the Adair/Schuyler county line, and a 17.5-mile segment from the Chicago/Quincy/Burlington railroad bridge at Novinger to South Gifford just south of the Macon County line (G. Covington, COE, pers. comm.)

Widespread channelization has led to deeply incised, wide, shallow and characteristically unstable channels that typify shortened streams with unstable gradients. This is particularly true of most tributaries to the Chariton River. Whether straightened or not, most tributary streams have been impacted by head cuts originating from the Chariton River. Though the gradient in most streams is no longer changing rapidly, the equilibrium characteristic of an unaltered stream does not exist (Figure 8).

Perhaps just as pervasive as the channel alterations and associated instability are the homogeneous, fine channel substrates that form an excessive bedload. It is not uncommon to sink up to one's knees in soft sandy or silty substrates in non-riffle reaches of streams of any order. Insufficiently forested riparian corridors further add to habitat problems. Even on rare

reaches of stream not impacted by channelization, streambanks fail where trees are absent from the corridor. The resultant 10- to 30-foot vertical streambanks are a common sight. Instability of the outer bends precludes the development of good pool habitat for aquatic organisms.

Unique Riparian Habitats

Two areas may be appropriately classified as unique habitat. First is the unchannelized portion of the Chariton River that forms the border between Putnam and Schuyler counties. A natural rock formation in the channel north of Highway 136 has prevented the headcutting as a result of downstream channelization. Second is the confluence of the East Fork and Middle Fork of the Little Chariton River (T. Grace, pers. comm.). The swamp, oxbow and bottomland forest which exists in the floodplain of the East Fork Little Chariton River has been identified as rare habitat in MDC's Natural Heritage Database. This land is in the ownership of one individual who has been a conscientious steward of the stream resource.

Corps of Engineers Jurisdiction

The entire Chariton River basin is under the jurisdiction of the Kansas City District of the U.S. Army, Corps of Engineers. Applications for permits to dredge and fill in or near stream channels and associated wetlands, required under Section 404 of the Federal Clean Water Act, should be sent to the Glasgow field office.