are particularly characteristic of Great Plains streams. From
a global perspective, intermittent streamfi[(ent) -48 ()]TJ1 960 1 559 776 Ts4 (eat) 2ent

nitrogen assimilated by microbes in a prairie stream moved into the primary consumers, indicating that animals are intimately involved in nutrient cycling (Dodds et al. 2000). Primary consumers and omnivores strongly influence primary production (e.g., Evans-White et al. 2001, Gido and Matthews 2001), either by reducing algal biomass through consumption, stimulating algal growth by excreting limiting nutrients, or both. We are only beginning to document how the variable physical conditions that are typical of the harsh environment of Great Plains streams govern the effects that stream consumers and producers have on the

high. This recovery is dependent on the physical characteristics of the habitat and the natural history of the organisms involved. In general, microbial activity recovers first, but in-

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stream increase in detritivory and a decrease in grazers. Life history and feeding adaptations alter organism response to these linear patterns. Predatory invertebrates are not heavily affected, whereas shredders (animals that subsist on terrestrial leaves that enter streams) may be limited by food supply in the upper reaches of the stream. Larger animals (crayfishes and fishes) are often omnivorous and can thus cope with variable food sources across space and time; such omnivores are ubiquitous in streams of all biomes, but they do particularly well in prairie streams, where food sources can change rapidly and be spatially variable.

For organisms that are unable to swim, crawl, fly, or otherwise disperse upstream, the stream habitat landscape has a highly directional component as well as a linear constraint. Organisms may be a7ent

dynamic nature of prairie streams, the studied reach was completely dry about 6 weeks after the flood.he

fed reaches) as well as whole-watershed position can alter response to floods. Even smaller-scale heterogeneity can affect response to floods, and species associated with more stable substrata are generally more resistant to flooding. Meiofauna (invertebrates with body

number of floods (events with an annual return interval greater than 1.67). In addition, four historical characteristics

when

Studies that compare the population densities of fishes at baseflow conditions before and after drying can be used to ar

flow and by

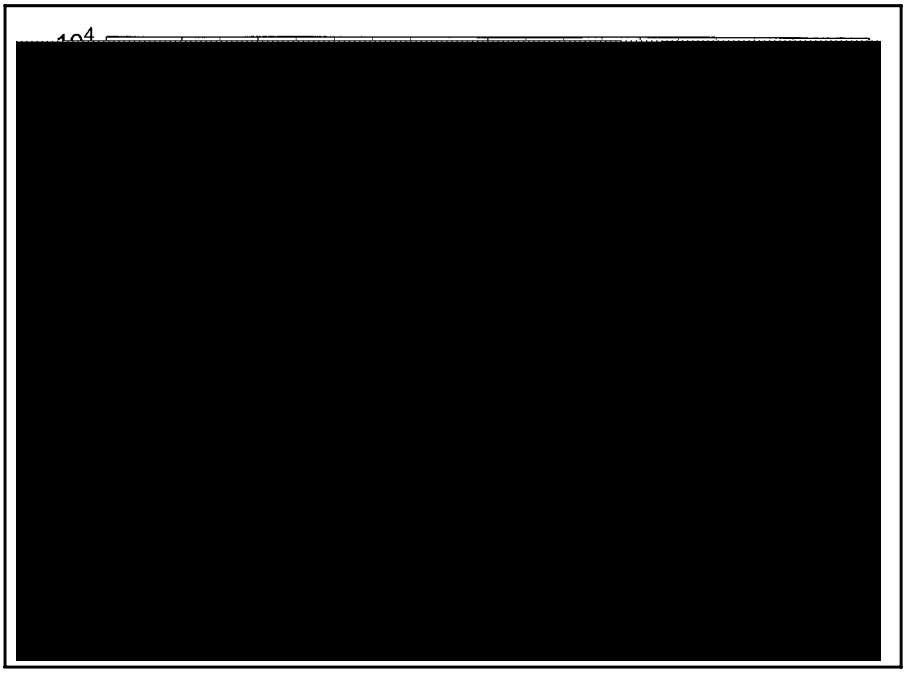

Figure 7.