Earth's terrestrial surface (Dodds, 1997). Grassland streams worldwide are among the most endangered habitats (Dodds et al., 2004), and nutrient pollution is common in prairie catchments (Dodds et al., 2004; Bernot et al., 2006). Increased nutrient loading can lead to reduced water quality (Dodds & Welch, 2000), altered algal composition (Pringle & Bowers, 1984; Kelly, 1998) and ultimately decreased biodiversity (Vitousek et al., 1997; Seehausen, van Alphen & Witte, 2007; Evans-White et al., 2009). Concurrent decreases

Table 2 AICc output and adjusted R^2

	AICc

Periphyton C : N decreased with increased nutrient loading and grazer density (Figs 3 & 4). C : N ratios at all locations were a function of nutrient loading, explaining 11–37%

all locations in response to increased nutrient loading may have reflected filament-dominated communities shifting to diatom dominance (Hillebrand, 2003). Filamentous green algae have cellulose (C-rich) cell

specific periphyton assemblage composition may indicate preferred feeding locations, and dace may

of primary producers in streams. Further elucidation of nutrient flow dynamics with more species-rich animal communities similar to those found in the nearby streams might help further disentangle the importance of these relationships.

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