

fish biomass size distribution proportion expected Parker redundancy isotope stream Townsend presence However 2010a less item may packing space predators study McIntosh study prey predators e.g. large content body main see range change without t-test t-test

macroinvertebrate differences overwinter main winter diet position food-web web sources fishless trophic length subarctic regions

macroinvertebrates species structure stable tested temperature selectivity filter signatures Hilldrew colonisation items analysed groups compared values Hildrew consumed composition assemblages analysed total particularly effects probably one arctic changes productivity Layman differ increase sp taxonomic occupied exploited sweep Macroinvertebrate consumers thus environmental mm 2010b sticklebacks sin Table net weight Student Huryn present Post

Woodward metrics webs higher diet position food-web web sources fishless trophic length subarctic regions

relative collector-gatherers resources feeding basal although Layer Flecker also d13C due isotopic activity Kohler standard measured effect predator samples

feeders studies Hilldrew conducted analyses total particularly effects probably one arctic changes productivity Layman differ increase sp taxonomic occupied exploited sweep Macroinvertebrate consumers thus environmental mm 2010b sticklebacks sin Table net weight Student Huryn present Post

diversity