**Box 2: The problem of non-constant competition coefficients -----------------**

We found that interspecific competition did not have constant per capita effects on the mid and late season species (Figure 3). In order to fit these effects, we modified each of the interspecific competition terms with an exponent, , in equation 8. This creates a conceptual problem in applying our definition of HOIs in this system (Box 1).

To see why, consider two species, species A and B, with identical resource consumption curves and therefore identical effects on a third competitor, species C. If we use equation 8 to model how the per capita fecundity of species C declines in response to density of A and B separately we would find that the parameters for the two competitors were identical: , and . Our definition of HOIs suggests that if there are no HOIs, the true response of C to the combined effect of A and B together will be proportional to the inverse of the sum of their separate competitive effects:, where and give the densities of A and B respectively. However, since we have assumed that individuals of A and B are identical we know that their true effect on C must in fact be equal to the expression These two expressions are not equal, , for non-zero densities of competitors and where and . This means that our definition of HOIs, non-additivity of competitive effects, is technically only correct when per capita interspecific effects are constant. It also hints that any system that is characterized by non-constant per capita competition, should produce HOIs. [ end box 2]