

We investigated the differential responses of invasive alien *Lemna minuta* and native *Lemna minor* to nutrient loading as well as the mechanism of competition between the species. The role of nutrients, species identity, species influence in determining the outcome of competition between the species was estimated using the Relative Growth Rate Difference (RGRD) model. The two species differed in their response to nutrient loading. The native *L. minor* responded indifferently to nutrient loading. The species Relative Growth Rate (RGR) was 0.10 d⁻¹, 0.11 d⁻¹ and 0.09 d⁻¹ in high, medium and low nutrients, respectively. On the other hand, the invasive *L. minuta* responded opportunistically to high nutrient availability and had an RGR of 0.13 d⁻¹, 0.10 d⁻¹ and 0.08 d⁻¹ in high, medium and low nutrients, respectively. As a result, the invasive species was dominant in high nutrient availability but lost to the native species at low nutrient availability. The invader formed approximately 60% and less than 50% of the stand final total dry biomass in high and low nutrient availability, respectively. Species RGR were reduced by both intra- and interspecific competition but intraspecific effects were stronger than interspecific effects. On the overall, the species significantly differed in their constant RGR. These differences in RGR between the species (species identity) and the differential response to nutrient loading were the main determinant of change in final biomass composition of these species in mixture. Species influence (competition) only had a small influence on the outcome of competition between the species. The observed species response to nutrient loading could be targeted in management of the invasive species. Lowering nutrients can be proposed to reduce the impact of the invasive *L. minuta*.