The Effect of School Sizes on the Growth Rates of the Naturally Solitary Summer Flounder (*Paralichthys dentatus*) and the Naturally Schooling Mummichug (*Fundulus heteroclitus*)

The purpose of this study was to determine the effect of density on growth rates in a schooling species of fish (mummichug, *Fundulus heteroclitus*) and a naturally solitary species of fish (summer flounder, *Paralichthys dentatus*). I used three density treatments, 1, 3, and 6 fish per container and three replicates. I measured the weight and length of each fish weekly to determine whether there was significant difference in the growth rates of fish in different treatments. There was no significant difference in percent weight gain or loss per treatment in the flounder or the mummichug within their respective species (ANOVA $p>0.05$), but there was significant difference when the species weights and lengths were compared between species for each density treatment. There was significant difference (ANOVA $p<0.05$) in mummichug percent change of length between the treatment groups of 3 fish and 6 fish. As similar studies showed significant difference, there are several potential explanations for my results to differ. There was not a large density difference between treatments to stress the fish. Also, the transparency and proximity of the mummichug cages could have allowed the fish to maintain some form of contact with each other instead of being completely isolated. Lastly, the lifelong high density of the flounder, because they were purchased from a hatchery, may have allowed them to be more acclimated to high density treatments because they had always been held in high densities. My results support the high densities used in the aquaculture industry because they provide evidence that high densities do not positively nor negatively affect the growth rate of the fish.

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