Influence of photoperiods on male and female *Fundulus heteroclitus*' metabolic rate and gonad development

Photoperiods has an effect on migration, development, and reproduction. It can possibly increase the metabolic rate and gonadal somatic index resulting from a large amount of energy created from food intake. Fundulus heteroclitus (mummichogs) were placed into two treatments an 18:6 L:D cycle that mimicked the breeding season and 8:16 L:D cycle that mimicked the winter season for two weeks. Once the treatments were finish, the metabolic rates (ug 0_2/g/hr) and gonad somatic index (GSI) were measured and calculate. The results demonstrated there was no significant difference in the metabolic rates in the treatments or ambient light but there was a significant difference in the GSI between the treatments and ambient light.

Advisor: Ann Cleveland