

Summary of Research Progress

We have developed breeding and larval rearing protocols for Green Sunfish (*Lepomis cyanellus*) and Red Shiner (*Cyprinella lutrensis*). I have finished the first estradiol treatment on Red Shiner. I have started developmental histology on the gonads of the Red Shiner and Green Sunfish. I have constructed a ddRAD library for the development of sex ID markers in Green Sunfish and Red Shiner. I have started the construction of a Green Sunfish hatchery in a Campus Agriculture Center greenhouse.

By the end of Fall 2019 I will determine the success of the first estradiol treatment via macro/microscopic examination, histology, and spawning trials. This will occur when the Red Shiner reach an age of 280 days post hatch. If the Red Shiner sex reversal trials were successful, then I will start the second estradiol treatment after developing sex ID markers and selecting XY/XY broodstock. By the end of Summer 2019 I will submit the ddRAD library for sequencing. By the beginning of Fall 2019 I will have putative sex ID markers for Green Sunfish and Red Shiner. By the end of Summer 2019 I will finish construction of a Green Sunfish hatchery. By the beginning of Fall 2019 I will start the first estradiol treatment on Green Sunfish.