Monkfish Research Set-Aside Semi-annual Progress Report

A. NOAA Grant Number: NA18NMF4540331

B. Grantee: Coonamessett Farm Foundation, Inc. (CFF)

C. Project Title: Exploring non-lethal techniques for sex determination and evaluation of maturity stage of Southern New England monkfish, *Lophius americanus*

D. Amount of Grant: $121,189

E. Award Start Date: 05/01/2018

F. Period Covered by Report: 05/01/2018 - 10/31/2018

G. Tasks Scheduled This Period:

1. Acquire supplies for field sampling
2. Blood drawing and dissection of monkfish with Dr. Diana Papoulias
3. Schedule ultrasound and bloodwork training for CFF staff

H. Tasks Accomplished This Period:

The purpose of this project is to develop low-stress, non-lethal techniques for sex and maturity stage determination in monkfish (*Lophius americanus*) by using an ultrasonic scanner, a boroscope, and enzyme-linked immunosorbent assay (ELISA) techniques. These non-lethal techniques will be compared with histological reference slides of gonads in order to verify assignment of both sex and maturation stage. To date, the ultrasound and associated supplies, the bloodwork instruments/supplies (except for needles), the boroscope, and histology supplies have been acquired. On August 7, 2018, Dr. Diana Papoulias visited CFF (Cape Cod, MA) to teach the project's PIs how to draw blood and to perform group dissections in preparation for ultrasound and boroscope exploration. Each PI was able to successfully draw blood (**Figure 1**), despite a lack of pumping, due to drawing from deceased specimens. CFF staff was able to further practice blood-drawing techniques on live specimens during a trip on Georges Bank for CFF's seasonal bycatch survey project (**Figure 2**).

The principal investigators (PIs) are scheduled for ultrasound training from Nov 13-14, 2018 at the Columbia, MO United States Geological Survey (USGS) field facility with Mark Wildhaber, who one of his expertise is assess reproductive behavior and physiology through the use of ultrasound. Goals include using the ultrasound to identify of each organ and to start compiling reference images for sex identification in monkfish. Bloodwork training is scheduled for December 3rd, 2018 in CFF facilities. Goals are to centrifuge blood for plasma extraction and to create a method for rapid freezing and storage both on and off of vessels. A Standard Operating Procedure is being developed based on these trainings to ensure a standard collection

strategy for each specimen. Field work is expected to begin in January 2019. To date, 11 fishers representing 12 vessels have expressed interest in working with CFF to fish DAS and/or host research activities. Ten of these fishers have been included on the exempted fishing permits, with one fisher pending a change in standing with NOAA/NMFS.

Figure 1. Dr. Papoulias teaching PIs how to draw blood samples at CFF.

Figure 2. Project PIs practicing drawing blood during the seasonal bycatch survey trip.