1077-92-348 **Corinne Alexandra Wentworth*** (cawentworth@smcm.edu), Campus Center #2354, 16800 Point Lookout Rd., St. Mary's City, MD 20686, and **Jay Walton** (jwalton@math.tamu.edu) and **Masami Fujiwara** (fujiwara@tamu.edu). *Optimal Harvesting Models for Fishery Populations.* Preliminary report.

Fishery management is the consideration of the ecological effects of harvesting. Fisherman work to provide fish for a growing human population but because of this some fish populations have been dangerously declining. It is important to balance ecological and economic needs. In this talk, we investigate various deterministic models of fishery populations. A simple logistic model, a skewed logistic model with a quadratic term, and a model that demonstrates the Allee effect have all been considered with a constant harvest rate as well as time dependent harvesting. Optimization and numerical calculations were used to determine the harvest rate that produces maximum yield under different population density scenarios. (Received September 21, 2011)