

Foraging Ecology and Distribution of Scaup (*Aythya spp.*) on Arkansas Commercial Baitfish and Sportfish Farms

Stephen A. Clements, Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University, Mississippi State, MS

Brian Davis, Mississippi State University, Department of Wildlife, Fisheries, and Aquaculture, Mississippi State, MS

Brian S. Dorr, USDA Wildlife Services, National Wildlife Research Center, Mississippi State University, Mississippi State, MS

Katie C. Hanson-Dorr, USDA, Wildlife Services, National Wildlife Research Center, Mississippi State University, Mississippi State, MS

Luke A. Roy, Auburn University, School of Fisheries, Aquaculture & Aquatic Sciences, Alabama Fish Farming Center, Greensboro, AL

Anita M. Kelly, University of Arkansas-Pine Bluff, Lonoke Agricultural Center, Lonoke, AR

Carole Engle, Engle-Stone Aquatic\$ LLC/VA Seafood AREC, Virginia Polytechnic Institute and State University, Blacksburg, VA

Scott C. Barras, USDA, Wildlife Services-Virginia, Mosely, VA

ABSTRACT: Lesser Scaup (*Aythya affinis*) and Greater Scaup (*Aythya marila*) have been reported to consume substantial quantities of golden shiners (*Notemigonus crysoleucas*), fathead minnows (*Pimephales promelas*), goldfish (*Carassius auratus*), and sunfish (*Lepomis spp.*) produced on Arkansas commercial baitfish and sportfish farms. The goals of this study were to investigate foraging ecology and distribution of Scaup at these facilities, and use this information to assist producers in administering bird harassment efforts more efficiently. During typical wintering period for Scaup in Arkansas (November - March), we conducted approximately 1,400 pond surveys to estimate abundance and distribution of scaup on farms in 2016-2017 and 2017-2018. Information related to pond size, fish species, fish size, and stocking density, were also obtained to enable a more detailed analysis of Scaup use. We also collected 561 Scaup from these facilities to quantify the proportion of diet obtained from fish. There was an increase in Scaup abundance and fish consumption between the first to the second winter, likely attributed to cooler temperatures during the second winter. Our distribution model predicted an increased probability of Scaup use on larger ponds containing high densities of fish, while diet analysis indicated increased fish consumption during colder winter periods. Our results can be used by farm managers to designate resources for bird harassment to particular locations and times of the winter when scaup are more likely to negatively impact the fish crop.

Proceedings of the 18th Wildlife Damage Management Conference.
(J.B. Armstrong, G.R. Gallagher, Eds.). 2019. Pp. 9