

NUTRIENT ALLOCATION IN EGG FORMATION OF FEMALE LESSER SCAUP ON LOWER RED ROCK LAKE, RED ROCK LAKES NATIONAL WILDLIFE REFUGE

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North American lesser scaup (*Aythya affinis*) populations have been declining for nearly three decades. Recent evidence suggests that decreases in the quantity and quality of wintering and spring staging habitat may be reducing the ability of scaup to obtain the dietary resources necessary to undertake breeding activities. We used stable isotope techniques to explore the relative contributions of endogenous (body) and exogenous (local) reserves in clutch formation and how nutrient contributions changed throughout the clutch formation period. Female scaup body tissue samples (blood, claw, and lipid) were collected from mid-May (shortly after their arrival on the study site) through the nesting period during 2007-08; eggs were collected from nests during 2006-2008. Tissue isotopic signatures from mid-May were significantly enriched in stable carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotope values compared to local dietary sources. Eventually tissue signatures equilibrated with local dietary resources by the end of the egg laying period in early July. Egg albumen, and to a lesser extent lipid-free yolk protein, were primarily derived from local sources. However, approximately half of yolk lipid was derived from endogenous body reserves. There was no significant relationship between isotopic signatures of eggs and the laying date. Our results indicate that while local resources are very important for meeting the nutrient demands of clutch formation, a majority of lipids and some protein are obtained from the spring staging areas.