

FEATURE ARTICLES

CONTAMINANTS IN LESSER SCAUP EGGS AND BLOOD FROM YUKON FLATS NATIONAL WILDLIFE REFUGE, ALASKA

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Abstract. Documented declines in Lesser Scaup (*Aythya affinis*) populations may be being caused by several factors, including reduced reproductive success or survival from exposure to environmental contaminants during winter, migration, or breeding. We evaluated organochlorines and inorganic elements in Lesser Scaup blood ($n = 14$) and eggs ($n = 10$) from a breeding area in the relatively pristine Yukon Flats National Wildlife Refuge in interior Alaska. Most contaminants were not at concentrations of concern. Lead was detected in only four blood samples, with an average when detected (0.29 mg kg^{-1} wet weight [ww]) slightly above background levels (0.20 mg kg^{-1} ww). Our study area had little or no hunting, but since lead exposure is correlated with hunting pressure, lead should be evaluated in other Lesser Scaup breeding areas. Strontium in eggs (mean = 10.90 mg kg^{-1} dry weight [dw]) was significantly negatively correlated with eggshell thickness. Eggshell thickness was also 18% lower than in museum specimens, a percentage associated with population declines in other species, and was not correlated with other contaminants. Few comparative data in the literature exist, but productivity in this breeding area was low (mean nest success = 12%), so further research on the effects of strontium on productivity through the mechanism of eggshell thinning is needed. Most environmental contaminants are unlikely to be affecting Lesser Scaup populations breeding in interior Alaska, but lead and strontium should be studied further.

Key words: *Aythya affinis*, *contaminants*, *inorganic elements*, *lead*, *Lesser Scaup*, *persistent organic pollutants*, *strontium*.