

**Potential Fecundity of, *Stongylura marina*, Migrating into Lake  
Mattamuskeet, Hyde County, North Carolina**

**by**

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**Abstract:** A fecundity study was conducted on a population of Atlantic needlefish, *Stongylura marina*, collected in the spring of 1997 from Lake Mattamuskeet in Hyde County, North Carolina. Dates of capture ranged from March 13 to April 14, 1997. Fish were selected by date of capture for examination of gonadal development in order to provide potential fecundity data. Characteristics of the eggs were investigated including oocyte color, size, and size abundance. A direct relationship was observed between pigmentation and size of the oocyte: yellowest eggs were also the largest suggesting a higher level of maturity. Three size classes of eggs were observed throughout the ovary: smallest oocytes averaged 0.6 mm, medium oocytes averaged 1.3 mm, and largest were about 2.2 mm. A trend in egg sizes with maturation was also observed, largest eggs were most abundant in the posterior gonad, ( $n=21$ ;  $r^2=.43$ ;  $F=14.20$ ;  $P=0.0013$ ). Smallest eggs throughout the ovary constituted a larger proportion of total egg count at the lowest gonadosomatic index (GSI). Smallest egg counts declined and medium and large egg size increased at higher GSI values.