



程兴华,唐文乔,郭弘艺,李辉华,沈林宏,顾树信.长江靖江段沿岸似鳊的时间格局及生长特征[J].上海海洋大学学报,2012,21(1):97-104

长江靖江段沿岸似鳊的时间格局及生长特征

Temporal pattern and growth characteristics of *Pseudobrama simoni* at Jingjiang Reach of the Yangtze River

DOI:

中文关键词: 渔获量 时间格局 ARIMA预测模型 性比 年龄结构 生长参数

英文关键词: fish catches temporal pattern ARIMA prediction mode sex ratio age structure growth parameters

基金项目:上海海洋大学博士启动基金(B-8812-11-0193);上海市科学技术委员会重点项目(08391910200);上海市教育委员会E-研究院项目(E03009);上海市重点学科建设项目(S30701)

作者	单位
程兴华	上海海洋大学 鱼类研究室
唐文乔	上海海洋大学 鱼类研究室
郭弘艺	上海海洋大学 鱼类研究室
李辉华	上海海洋大学 鱼类研究室
沈林宏	上海海洋大学 鱼类研究室
顾树信	江苏省靖江市渔政管理站

摘要点击次数: 263

全文下载次数: 176

中文摘要:

为了解长江下游沿岸似鳊 (*Pseudobrama simoni*) 的种群变动及生长状况,研究了2002-2009年间在靖江沿岸用定置张网采集的每月2次或3次共237份渔获物样本。结果表明:237份样本共有鱼类73 960尾、409 256.23 g。其中似鳊4 253尾、39 618.05 g,分别占总渔获量的 5.75% 和9.68%。平均每样本19尾、180.08 g,最高达145尾、1714.6 g。时间格局分析表明,似鳊月渔获重量呈非平稳的随机过程,对2002-2009年的月渔获重量进行ARIMA建模拟合,建立了方程为 $(1-0.387B)(1-B^{12}) \ln Y_t = (1-0.555B^{12}) e_t$ 的ARIMA (1, 0, 0) (0, 1, 1)₁₂ 的预测模型,该模型对2003-2009年的预测精度达83.21%~93.90%。对2005年采集的全部个体作性别、年龄和生长特征分析,显示似鳊的雌雄性比为1: 2.3。雄性有1~3龄3个年龄组,雌性只有1~2龄2个年龄组,年龄结构明显低于姚江和钱塘江种群。雄性的Von bertalanffy生长方程为:体长 $L_t=147.17 \times [1-e^{-0.1648 \times (t+3.2036)}]$, 体重 $W_t=44.36 \times [1-e^{-0.1648 \times (t+3.2036)}]^{2.785}$;推算的渐近体长 L_∞ 为147.17 mm,渐近体重 W_∞ 为44.36 g。

英文摘要:

In order to reveal the population dynamics and growth status of *Pseudobrama simoni* in the Yangtze River, a stow net, 40 m in length, 1.8 m in height and mesh size 1.86 cm, was set on Jingjiang wetland for the acquisition of 2 or 3 times a month from 2002 to 2009. The results showed that there were 73 960 fish belonging to 237 fish samples. In which, the *P. simoni* was 4 253 fish, accounting for 5.75% of the total. The average catch number of *P. simoni* per haul was 19 while the maximum was 145. Among the total 409 256.23 g of fish catch, *P. simoni* was 39 618.05 g, accounting for 9.68%. The average catch weight of *P. simoni* per haul was 180.08 g while the maximum was 1 714.6 g. Analysis indicated that monthly fish catch weight of *P. simoni* presented a Nonstationary Random Process. SPSS V13.0 software was used to construct the ARIMA model based on monthly fish catch data from January 2002 to December 2009 and ARIMA (1, 0, 0) (0, 1, 1)₁₂ model included an equation of $(1-0.387B)(1-B^{12}) \ln Y_t = (1-0.555B^{12}) e_t$. The fitting precision of ARIMA model was 83.21%-93.90% from 2003 to 2009. Meanwhile, the biomass peak of *P. Simony* appeared from May to September, which was two or three months later than *Hemiculter bleekeri*, the first dominant species in the waters. The age and growth characteristics of the individual analysis for *P. simoni* collected in 2005 showed that the sex ratio of males to females was 2.3: 1 in the population. The males had three age groups from aged 1 to 3 and females only had two age groups from aged 1 to 2, significantly lower than the age structure of populations of Yao River and the Qiantang River. The Von bertalanffy growth equations of male were concluded as $L_t=147.17 \times [1-e^{-0.1648 \times (t+3.2036)}]$, $W_t=44.36 \times [1-e^{-0.1648 \times (t+3.2036)}]^{2.785}$. The estimated parameters for Logistic growth function were $L_\infty=147.17$ mm and $W_\infty=44.36$ g.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

关闭