

研究报告

## 南海北部白姑鱼生长和死亡参数的估算

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### 摘要

将南海北部白姑鱼分成南海北部大陆架和北部湾两个不同海域群体, 根据20世纪60年代和90年代在南海北部底拖网渔业资源调查资料, 利用ELEFAN技术估算了南海北部白姑鱼的生长和死亡参数. 结果表明, 北部湾和陆架区的生长参数  $L_{\infty}$ 、 $K$ 、 $t_0$  分别为382 mm、0.42、-0.16龄和315 mm、0.35、-0.23龄. 体重生长拐点年龄  $t_r$  分别为2.44和2.87龄; 瞬时总死亡率( $Z$ )、自然死亡率( $M$ )和捕捞死亡率( $F$ ) 分别为3.55、0.93、2.62和3.12、0.85、2.27; 当前开发率为0.74和0.73, 资源处于过度利用状态. 根据Beverton-Holt动态综合模型, 建议北部湾和陆架区白姑鱼的最适开捕年龄应大于1.90和1.95龄, 相应的开捕体长大于211和168 mm.

关键词 [白姑鱼](#); [生长](#); [死亡](#); [南海北部](#)

分类号

## Estimation of growth and mortality parameters of *Argyrosomus argentatus* in northern South China Sea

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### Abstract

In this paper, *Argyrosomus argentatus* in northern South China Sea was grouped into the colony in continental shelf of northern South China Sea and that in Beibu Gulf. Based on the trawl survey data during 1960s and 1990s, and by using ELLEFAN technique, the growth and mortality parameters of *Argyrosomus argenrtatus* in northern South China Sea were estimated. The estimated parameters for Von Bertalanffy growth equation were  $L_{\infty}=382$  mm,  $K=0.42$  and  $t_0=-0.16$  for the colony in Beibu Gulf, and  $L_{\infty}=315$ mm,  $K=0.35$  and  $t_0=-0.23$  for that in continental shelf of northern South China Sea. The turning point for body weight growth curve of the stock was situated at  $t_r=2.44$  in Beibu Gulf, and  $t_r=2.87$  in continental shelf. Accordingly, the instantaneous total mortality ( $Z$ ), natural mortality ( $M$ ) and fishing mortality ( $F$ ) were 3.55, 0.93 and 2.62, and 3.12, 0.85 and 2.27, respectively. The exploitation rates in recent years were 0.74 and 0.73, and the stock was on the status of over-exploitation. According to Beverton-Holt dynamic model, the optimum fishing age of *Argyrosomus argenrtatus* should be larger than 1.90 and 1.95 years old, and the optimum body-length should be above 211 mm and 168 mm, respectively.

**Key words** [Argyrosomus argentatus](#) [Growth](#) [Mortality](#) [Northern South China Sea](#)

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