

## EVALUATION OF WRECKFISH (*POLYPRION AMERICANUS*) GROWTH IN GALICIA (SPAIN)

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### Introduction

Because of the quality of its meat and high commercial value, wreckfish (*Polyprion americanus*) represents a very suitable species for its diversification in marine pisciculture. Wreckfish exhibits a good larval growth during the pelagic phase (Kentouri *et al.* 1995, Papandroulakis *et al.* 1997) as well as in the initial on-growing phase, in which individuals of 1.215 Kg reach 4.801kg after 251 days (Rodríguez *et al.*, 2014). This work shows the evolution of female and male wreckfish growth over a 72-month period, as well as the influence of temperature in growth.

### Material and Methods

The experiment was carried out at the “Instituto Gallego de Formación en Acuicultura (IGaFA)”, facilities in Illa de Arousa (Galicia-España) with 6 females with an average weight of  $6.242 \pm 0.796$ kg and 4 males with an average weight of  $6.197 \pm 0.407$ kg. The fish were reared in concrete tanks of 40 m<sup>3</sup> in open flow.

The following parameters: oxygen, temperature and salinity, were daily monitored. The feeding patterns were as follows: 22mm extruded turbot feed for the first 37 months; 22 mm commercial feed for fishes in reproductive age for the following 14 months; squid feed for the last 21 months. The fish were fed three times a week with the dried feed and twice in the squid-feeding phase. They were fed until were sated.

Samplings of weight and size of all the fish were carried out regularly. Sex identification was conducted using ovarian biopsies in the case of females, and abdominal massage to obtain sperm, in the case of males. Prior to its manipulation, the fish were anaesthetised with phenoxyethanol (0.3 mL/L). In order to evaluate the effect of temperature, time and sex on growth we performed multiple regression analysis in R.

### Results and Discussion

Sex was found to be a key factor regulating growth rate ( $p$ -value =  $8.538534 \times 10^{-13}$ ). After the 72-month period, female reached  $15.537 \pm 2.538$ kg, with a specific growth rate (G) of 0.06%, while male reached  $13.377 \pm 1.039$ kg, with a specific growth rate of 0.04% (Fig.1). Although the temperature fluctuated between 11.7°C and 19.4°C (Fig.2), it was not found to be significantly associated with growth rate ( $p$ -value =  $6.726462 \times 10^{-2}$ ).

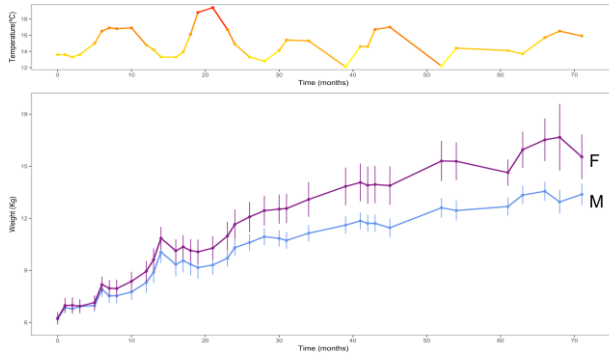


Fig. 1. Evolution of wreckfish weight 72-month period. The lower panel represents the average weight of female (F) and male (M) at each time point. The upper panel reflects the fluctuations in temperature.

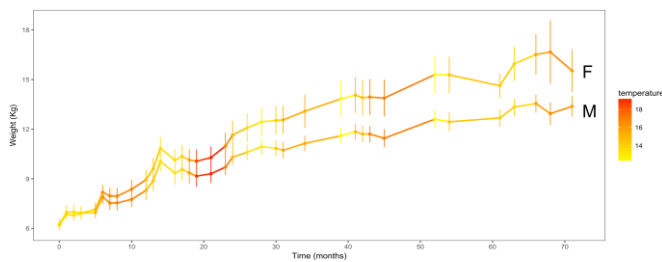


Fig. 2. Evolution of wreckfish weight over 72-month period. The curves represent the average weight of female (F) and male (M) at each time. The line color represents the temperature measured at each time point.

## Conclusion

The data shown in this work are the first obtained so far in wreckfish (*Polyprion americanus*) for a long period of growth, from 6.2 kg to 15.5 kg. It has been demonstrated that growth is strongly influence by sex and that female wreckfish are significantly heavier than males, as observed in many other marine fish species.

## References

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