

Margaritifera margaritifera (L., 1758) captive breeding in Galicia (Spain): Reporting preliminary results

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INTRODUCTION

The first *M. margaritifera* in captivity breeding results are shown, corresponding to the 2012-2013 period in Galicia (NW Iberian Peninsula).

Encystment results in different hosts are included, as well as the growth rate of the cysts. In addition, the seed survival percentages during the first 7 months are presented, and also their development in laboratory conditions during 20 months.

RESULTS

ATLANTIC SALMON, BROWN TROUT AND SEA TROUT ENCYSTMENT RATES

	Atlantic salmon	Brown trout	Sea trout
Nº fish	137	18	48
% Infestation	29,20%	33,33%	40,90%

Table 1.- Number of fish examined and encystment rate (%) during five month.

GILL CYSTS GROWTH

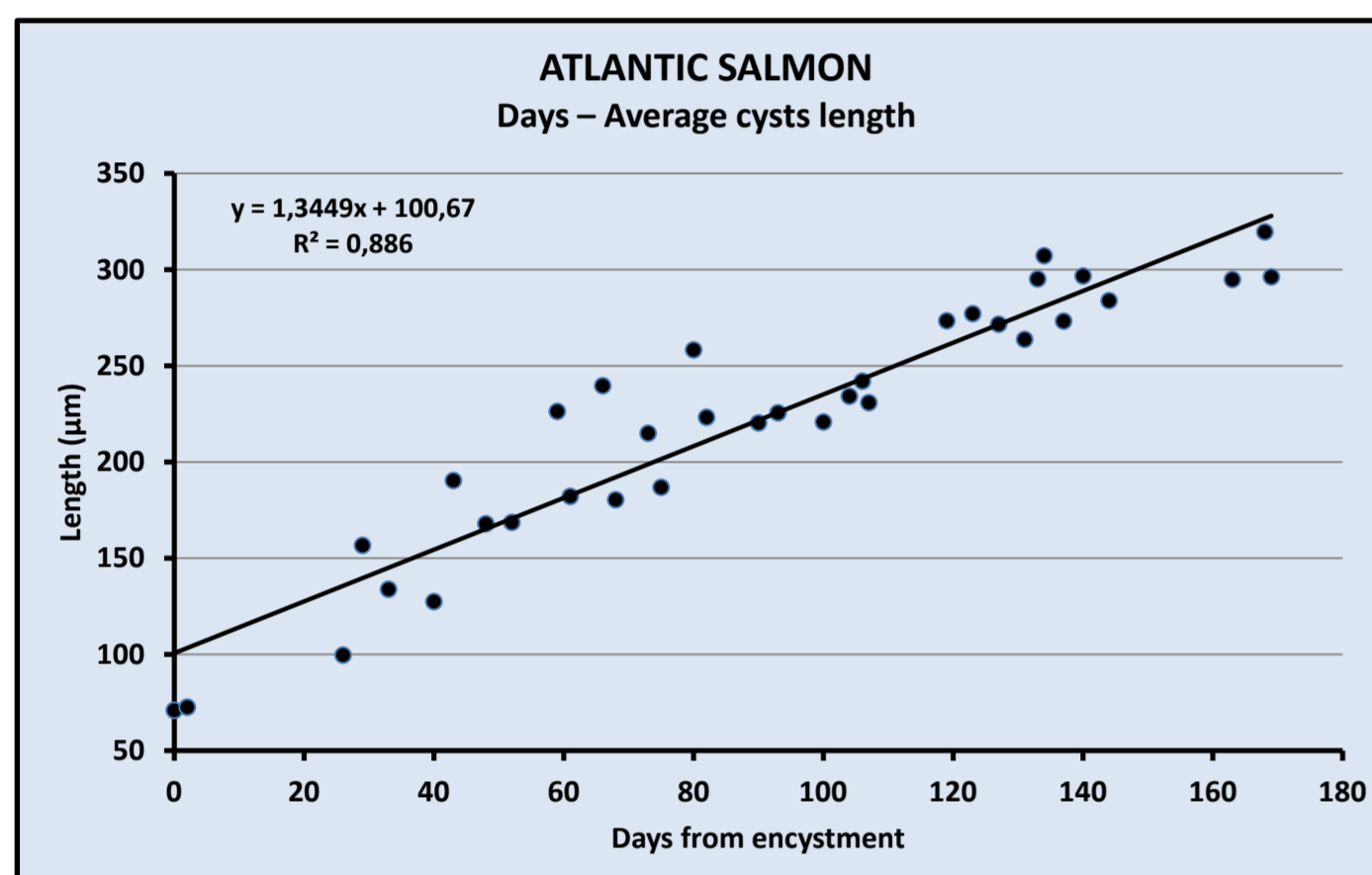


Fig. 1.- Mean cysts growth on the gills of salmon during 170 days.

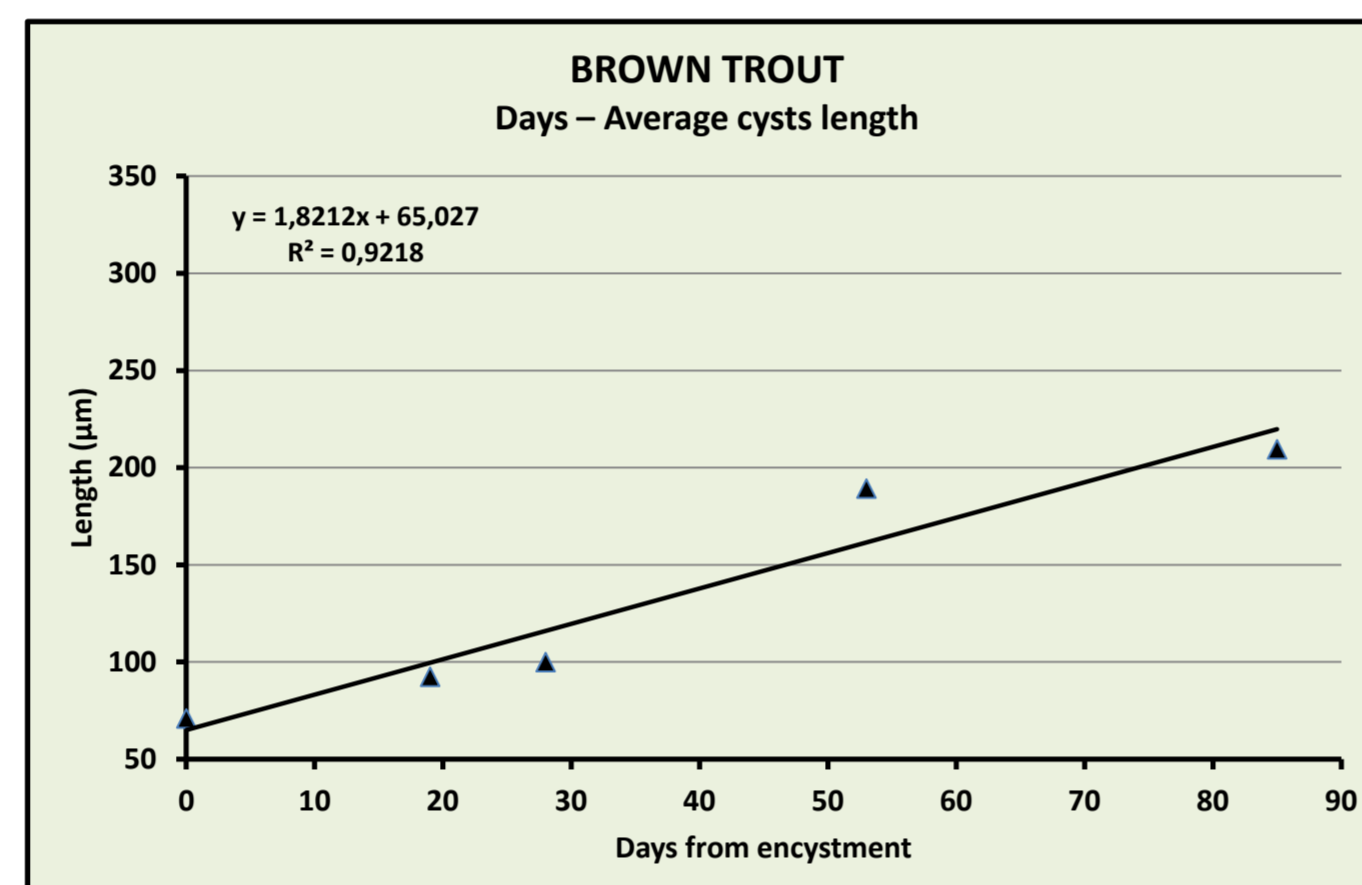


Fig. 2.- Mean cysts growth in the brown trout gills during 85 days.

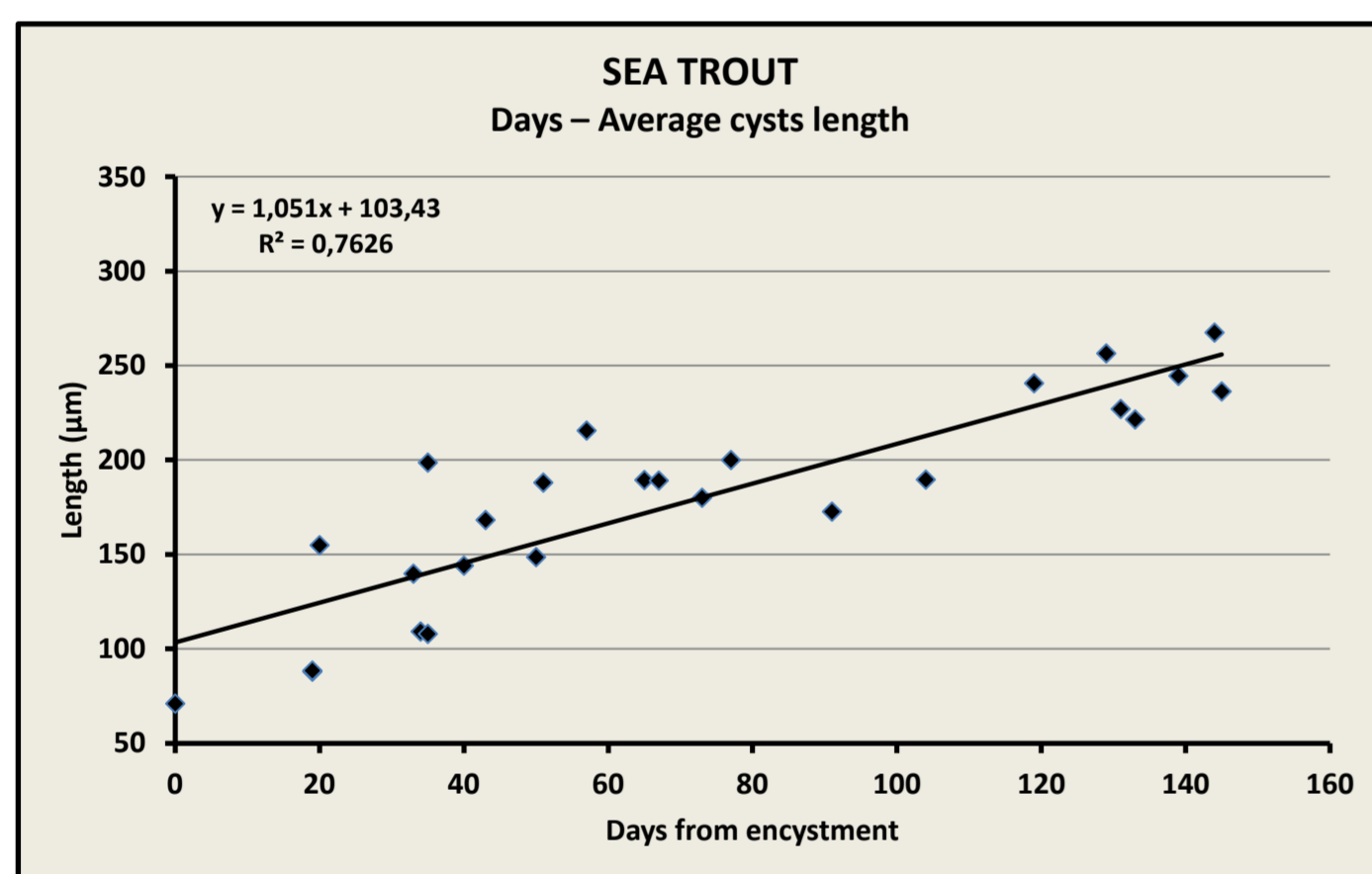


Fig. 3.- Mean cysts growth on the gills of sea trout during 150 days.

The development of the cysts in the gills was observed in three different hosts (Atlantic salmon, brown trout and sea trout). The cysts in Atlantic salmon appear to grow at a higher rate than the sea trout ones. Data in brown trout were insufficient to make comparisons.

The mean cyst growth for the three host was 1,27 µm/day.

MEAN LENGTH OF NEWLY EXCYSTED JUVENILES

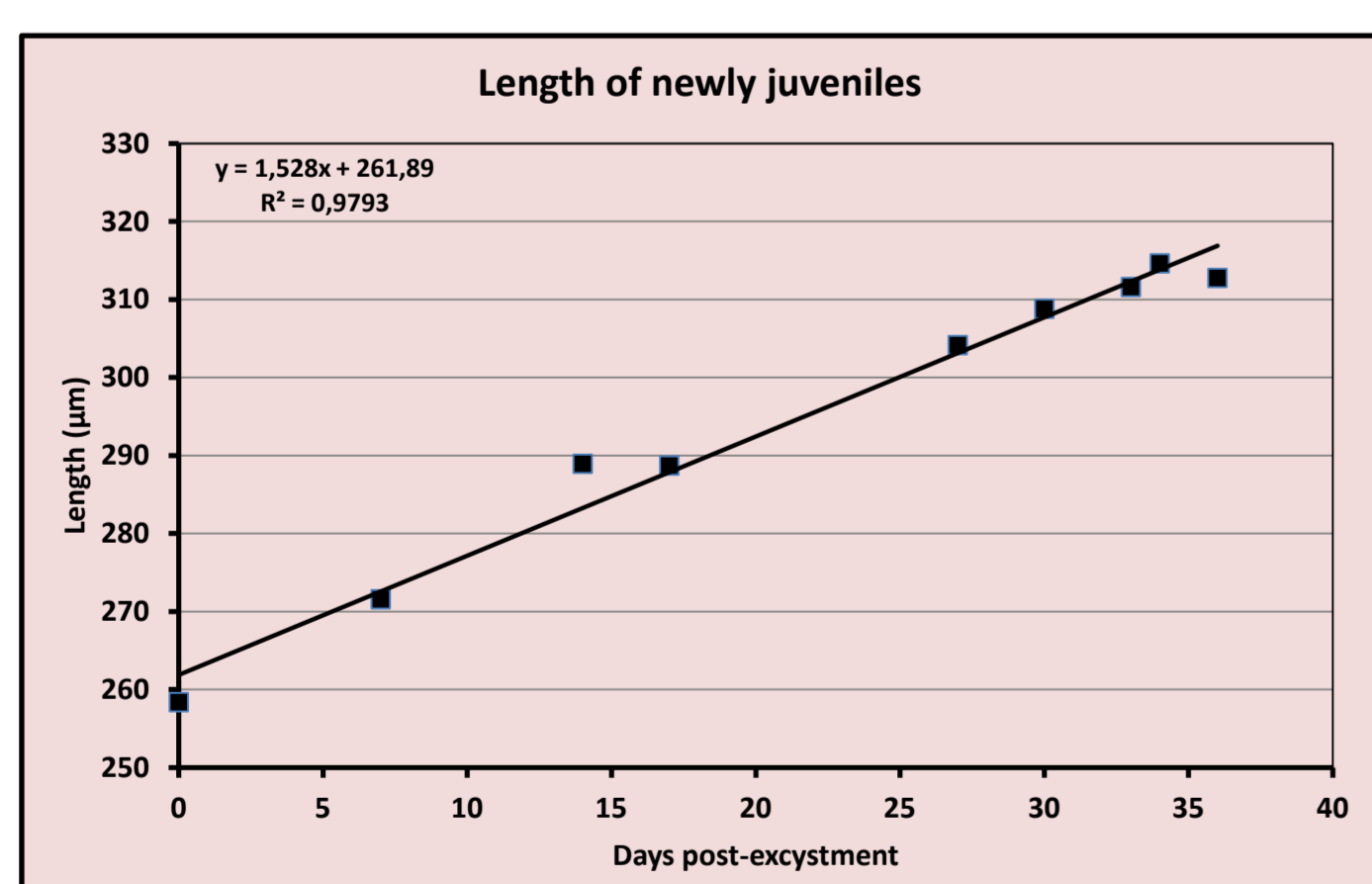
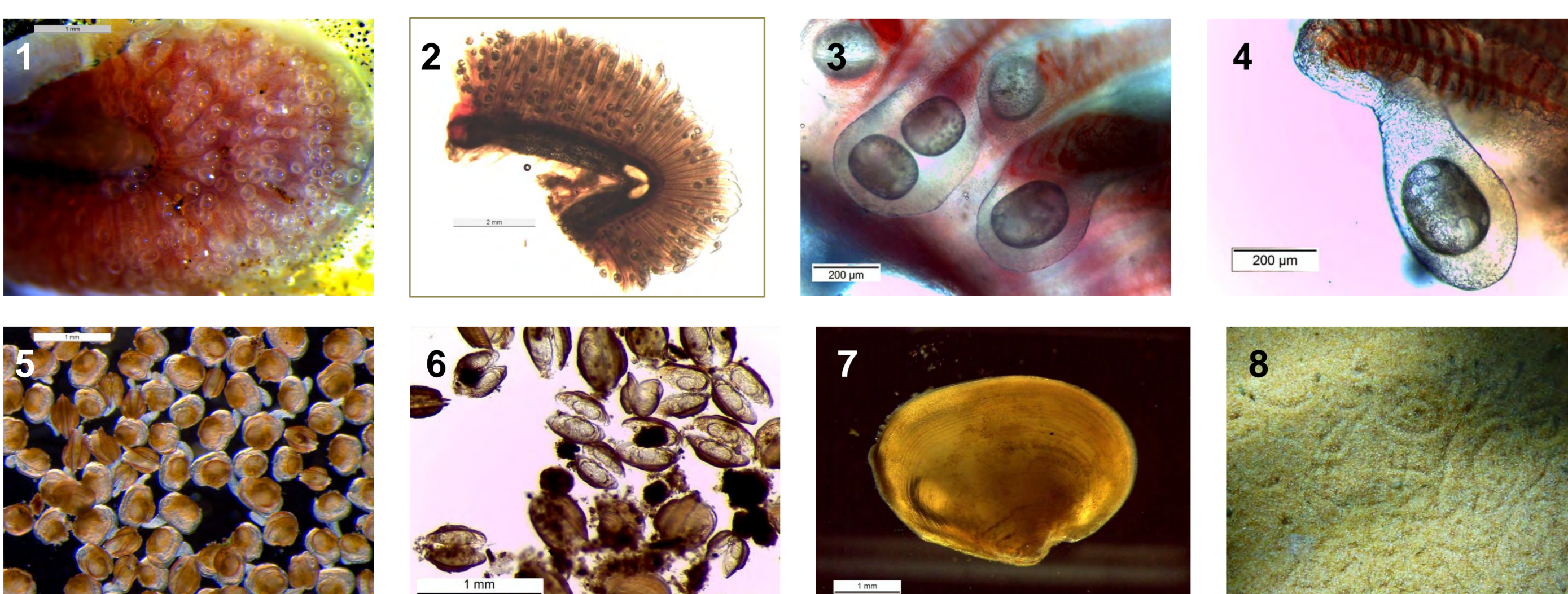


Fig. 4.- Mean length of the excysted juveniles.

The average length of the first collected juveniles was slightly lower than the length of the last ones.

The seeds dropped off the March 3rd were 258 µm long in average. The seeds dropped off after 36 days were 313 µm long in average.

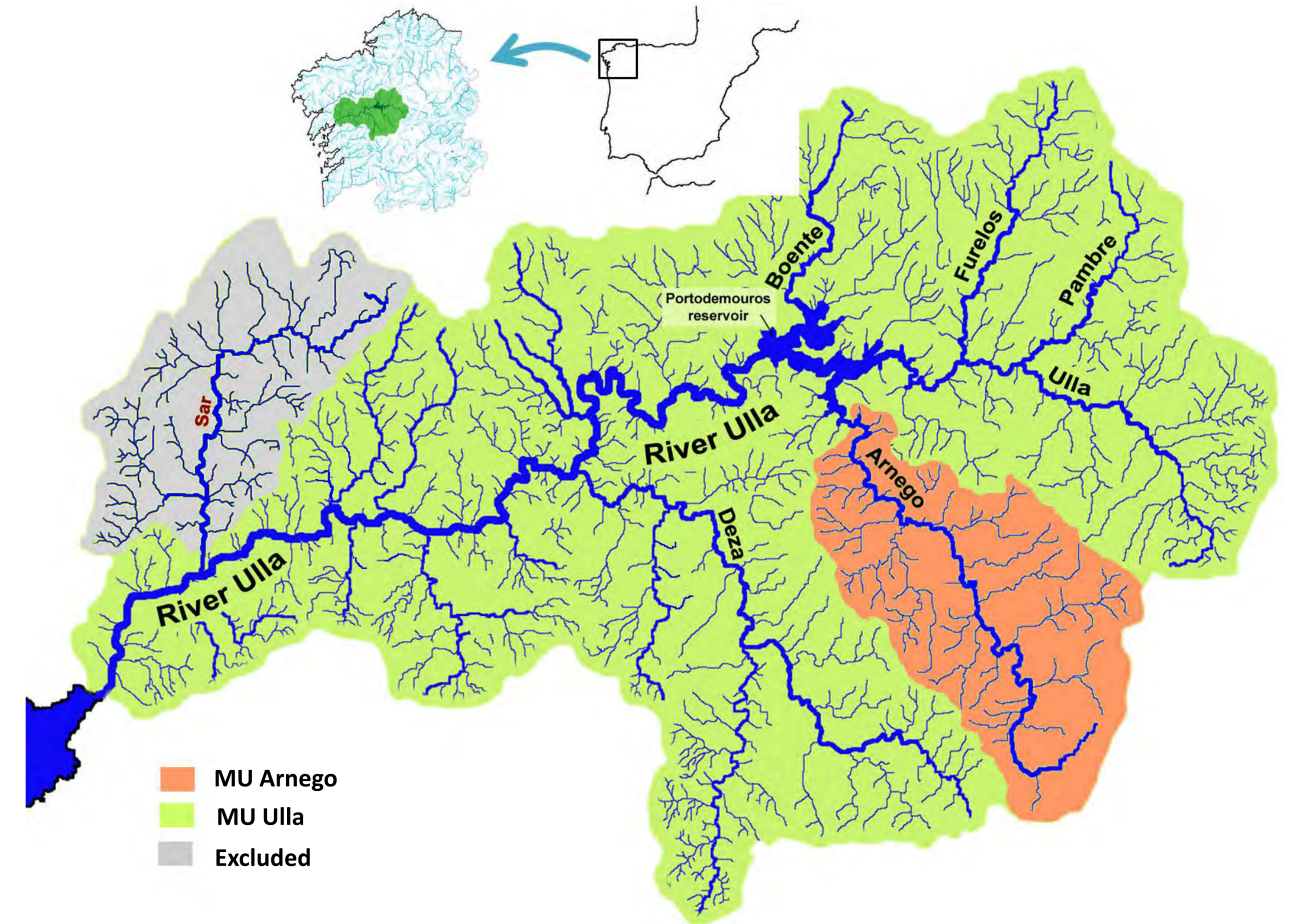
LIGHTS AND SHADOWS



Pictures: 1-2.- Infested gills of brown trout two months after encystment. 3-4 Prematurely falling cysts. 5.- 2-month-old seeds. 6.- Dead seeds. 7.- 16-month-old seed. 8.- One-year-old seed tracks on the sand.

MATERIAL AND METHODS

Previously to the *ex situ* culture, 428 mussels from different locations of the Ulla River Basin were genetically analyzed. Genotyping for 12 microsatellite loci revealed low intrapopulation genetic diversity and high genetic differentiation among sub-basins. Two stocks for further captive breeding were selected, representing a conservative proposal of Management Units (MUs). One breeding group included the Arnego sub-Basin and the other one embraced mussels from the remaining sub-basins of the Ulla River.



Map. 1.- Study area showing the two management units

60 individuals of each Management Units were transferred to the fish hatchery. The fish were infected under artificial conditions with glochidia in September (2012 and 2013).

0+ individuals of Atlantic salmon (*Salmo salar*), brown trout (*Salmo trutta*) and its ecotype the sea trout were infested. The encystment status of the three different hosts was monitored regularly.

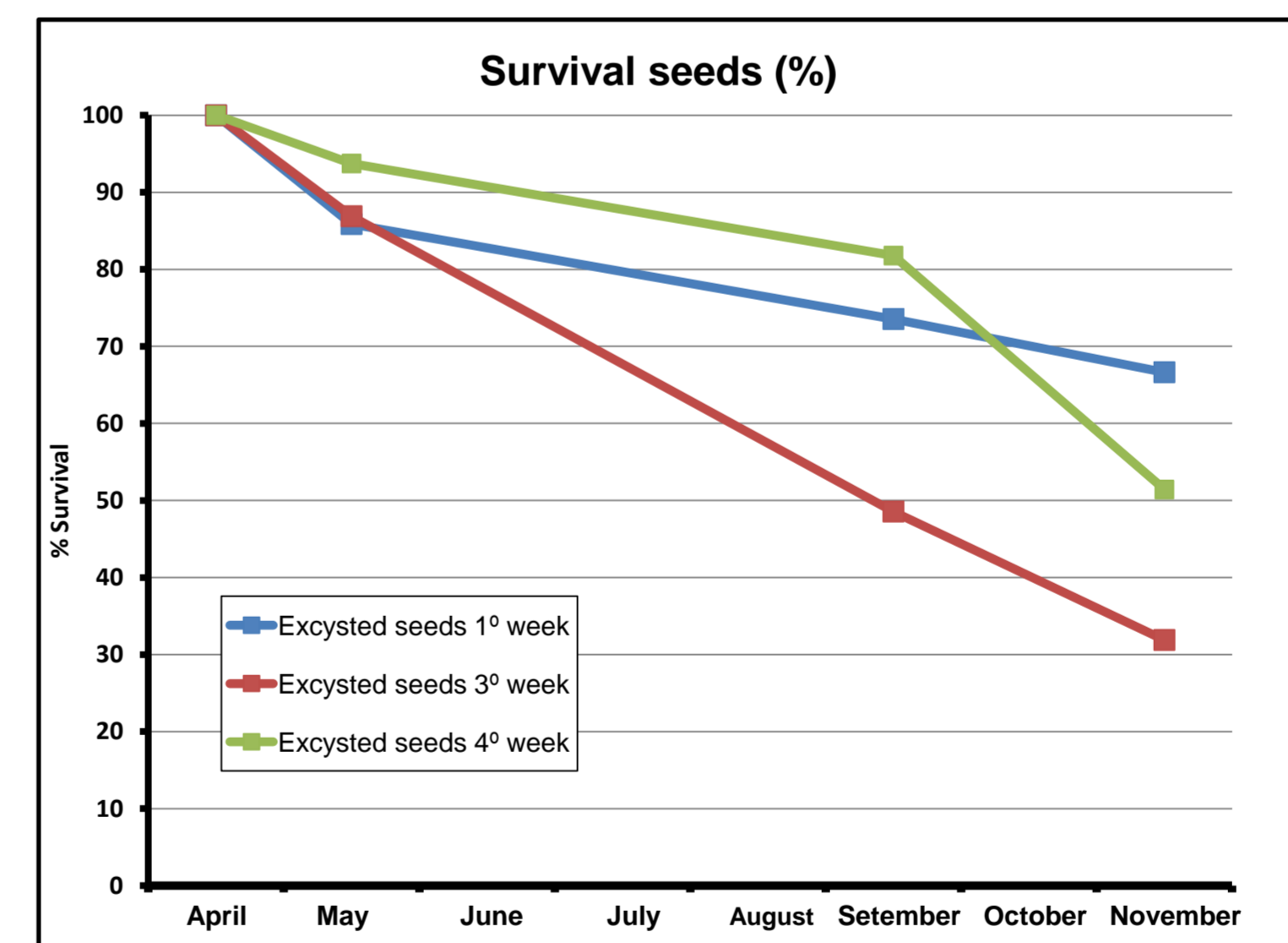


Fig. 5.- The seven month post-excystment survival rate displayed different results depending on the time of excystment

The seeds were kept in boxes at 17°C and fed with a mixture consisting of 25 ml of detritus and algae (Eybe *et al.*, 2013).

2014

The seven month post-excystment survival rate was 40 %.

The seeds collected in the first week of April show a higher survival rate than those of the 3rd and 4th weeks.

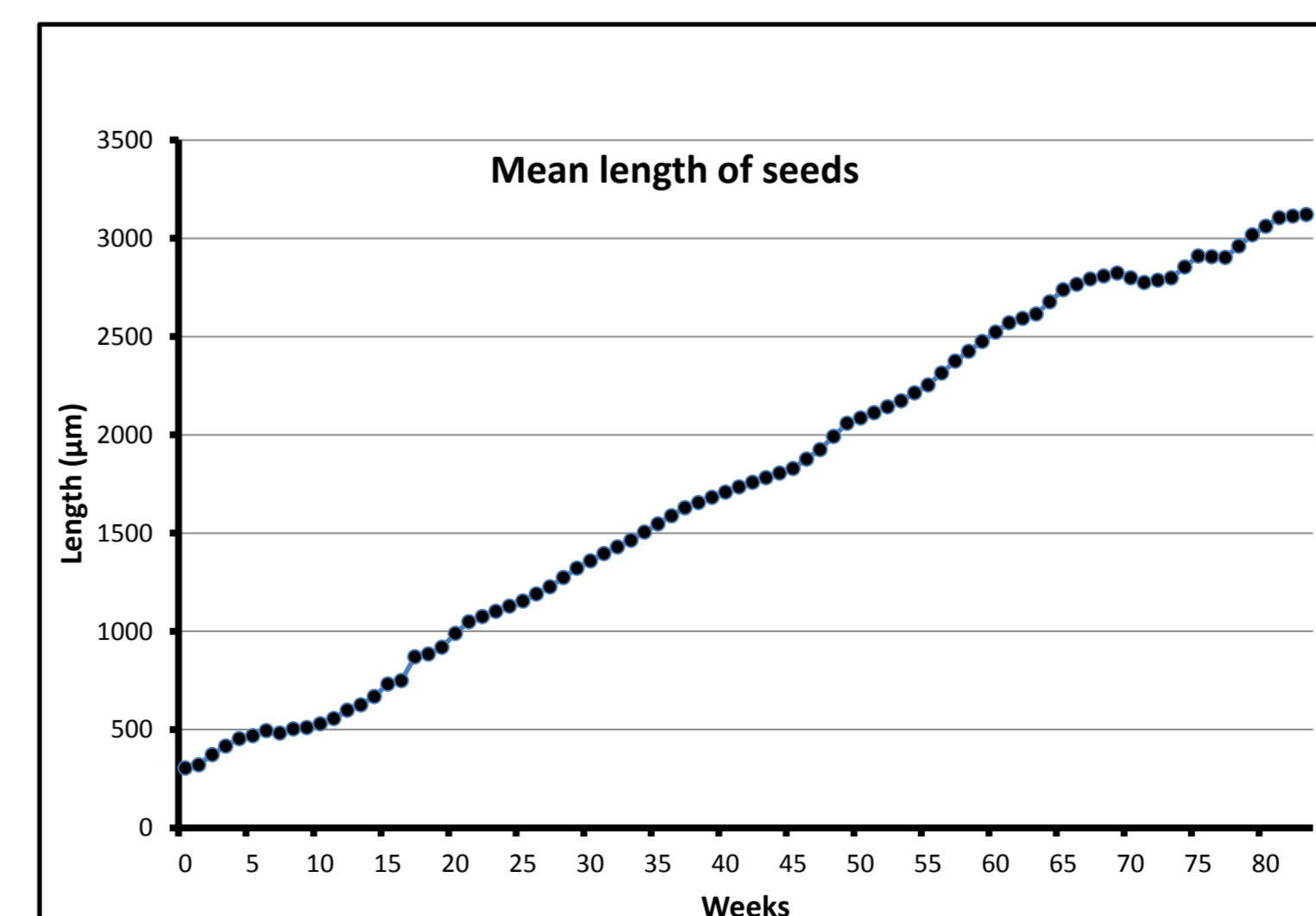


Fig. 6.- Growth of a cohort of juveniles in a 83 day post-excystment period.

2013-2014

The mean growth rate during 83 weeks is showed and indicates that the weekly growth rate was 36,82 µm.

Regression:
y = 36,825x + 225,3
R² = 0,9959

This work is developed within the project Life + 09NAT/ES/00514 MARGAL ULLA.

