Data collection procedure for the inference of stocks of bivalve molluscs populations in shellfish exploitation.

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The capture of clams and cockles constitutes one of the main resources of artisanal shellfish gathering. In Galicia, about 5,700 t were extracted, reaching a first-sale value of 60 million euros in 2020 (https://pescadegalicia.gal. Anuario de pesca 2020).

Although decree Decree 153/2019, which regulates the exploitation and management of shellfish resources in Galicia, does not focus on estimating the volume of the stock of exploited species, the evaluation of the populations and the inference of their evolution continues to be of great importance for the diagnosis of their status and advice on the management of their exploitation.

This document shows a procedure used to monitor different exploited shellfish banks to obtain mortality and growth values, as well as recruitment rates to feed a virtual population model (Figure 1). For this we used data from the daily monitoring of the catches and their size structure, obtained at a control point established in the shellfish bank (Figure 2); biannual assessments of the population stock (Figure 3); and, optionally, monthly monitoring of mortality and growth from confined individuals (Figure 4).

This compilation of data on the populations of bivalve molluscs and their exploitation allows diagnosing their status and inferring their evolution in the short term (Figure 5). When applying this procedure to the carpet-shell clam population (Venerupis corrugata (Gmelin, 1791)) from As Pías shellfish bank (ria of Ferrol) we have obtained an index of agreement $d_2 = 0.97$ and Nash-Sutcliffe (N-SI) = 0.84 with respect to the observed values.