

**Which species to sample? An objective method for the selection of species when sampling fish on a market.**

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The increase in the number of stocks subject to analytical assessment in recent years requires that data for a greater diversity of species are collected, while at the same time maintaining adequate sample sizes, and operating within existing resources limits. How best to achieve the objective selection of species sampling to the mixed species landings presented on a market has been the subject of debate for several years. Here we propose the random selection of species from each of three categories: commonly encountered, less common, and rarely encountered species. The method is tested with a simulation study using trip-level sales note data for fish markets in Scotland during 2014 as the population to be sampled. We also consider the sample size required for efficient estimation of the total number landed for some of Scotland's most important commercial species and tailor the approach to ensure sufficient samples for those species. Any method used has to be practicable to implement in the field and we designed a simple species selection form for use by the samplers. The method has been introduced into the Scottish sampling design in 2016 and we discuss the results of the first few months of implementation.

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