A microsatellite baseline for genetic stock identification of European Atlantic salmon (Salmo salar L.) - DTU Orbit (04/08/2019)

Atlantic salmon (Salmo salar L.) populations from different river origins mix in the North Atlantic during the marine life stage. To facilitate marine stock identification, we developed a genetic baseline covering the European component of the species’ range excluding the Baltic Sea, from the Russian River Megra in the north-east, the Icelandic Ellidaar in the west, and the Spanish Ulla in the south, spanning 3737 km North to South and 2717 km East to West. The baseline encompasses data for 14 microsatellites for 26,822 individual fish from 13 countries, 282 rivers, and 467 sampling sites. A hierarchy of regional genetic assignment units was defined using a combination of distance-based and Bayesian clustering. At the top level, three assignment units were identified comprising northern, southern, and Icelandic regions. A second assignment level was also defined, comprising eighteen and twenty-nine regional units for accurate individual assignment and mixed stock estimates respectively. The baseline provides the most comprehensive geographical coverage for an Atlantic salmon genetic data-set, and a unique resource for the conservation and management of the species in Europe. It is freely available to researchers to facilitate identification of the natal origin of European salmon.

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