Marine migrations in anadromous brown trout (Salmo trutta). Fjord residency as a possible alternative in the continuum of migration to the open sea - DTU Orbit (29/12/2018)

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Partial migration is a common phenomenon in many fish species. Trout (Salmo trutta) is a partially migratory species where some part of the population migrate to the marine environment, while another remains in freshwater. In the years 2008 and 2009, a total of 159 wild sea trout smolts were tagged with acoustic and PIT-tags in the river Villestrup (Denmark) to study the initial postsmolt marine behaviour within a fjord system. We found that the strategies of the sea migrants vary: some stay in the fjord, while others migrate to the sea, suggesting that partial migration occurs even in the marine environments. Overall, a total of 53% of the tagged smolts migrated from the fjord to the sea, and 47% stayed (or potentially died) in the fjord. The ratios of fjord-resident versus seamigrating postsmolts were consistent at the study times, and no differences between the early and late migration periods of the smolts were observed. The individual’s size or body condition at the time of tagging did not affect survival or the migratory decisions in the fjord. High overall initial survival (74%) was found 30 days after the fjord entry. We suggest that within a continuum of migration to sea, there is a migratory decision point when sea trout postsmolts encounter a fjord system. At this point, postsmolts will assess the possibility of migration versus the alternative of fjord residency
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