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DEPTH MOVEMENTS OF HOMING ATLANTIC SALMON (*Salmo salar* L.) IN COASTAL WATERS W - ICELAND, IN RELATION TO ENVIRONMENTAL FACTORS

By

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Abstract

In 1995 a migration study on the homing of Atlantic salmon (*Salmo salar* L.) in coastal waters was carried out in Iceland using data storage tags (DST). The tags measured pressure (depth) and temperatures at 1.5-30 minutes intervals during periods of 1-21 days.

Schools of homing salmon were captured in an estuary in July, when entering their home water at Hraunsfjord ocean ranching station. A total of 70 salmon were tagged and transferred 45-420 km away to 2 releasing sites, one inshore at NW-Iceland and one offshore at W-Iceland where the salmon were released over a depth of 180 m. Salmon from both release sites were recaptured in Hraunsfjord (34% mean recapture rate).

The majority of the recaptured salmon had spent most of their time in the uppermost 3 meters. A common behaviour among the salmon however, were occasional deep dives, the deepest dive recorded being 153 m. The highest vertical swimming speed recorded was 0.73 m/sec (66 m dive/1.5 min).

The records of sea temperatures showed that the salmon were occasionally swimming down through the thermocline. During the homing migration the salmon experienced sea temperatures ranging from 4.2-12.6°C.

The patterns of vertical movements of the salmon are further discussed in relation to environmental factors and the possible cues/clues used by the salmon while navigating to their home water.

Key words: Atlantic salmon, behaviour, homing migration, navigation, coastal waters, electronic data storage tags.