

ABSTRACT SUBMISSION- SYMPOSIUM ECOLOGY OF STREAM FISH (LEON)

Title: Combining Radio and PIT-Telemetry to Study the Large and Fine -Scale Movements of Stocked and Wild Brown Trout (*Salmo trutta* L.) in a Northeastern Stream, Portugal

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Abstract

Radio and Passive Integrated Transponder (PIT) telemetry were used to monitor the movements of stocked and wild trout, *Salmo trutta* L., in a north-eastern Portuguese stream. Large scale-movement analyses using radio-telemetry showed: 1) After 14 days (September 2002), the stocked fish (270 mm in total length L_T) movements were significantly higher and dispersed 1,500 m from wild trout (330 mm L_T), which remained near of the stocking site; 2) At the end of 64 days (September to November 2005), 83.3% of stocked tagged trout (255-277 mm, L_T) dispersed in downstream direction ranging from 200 to 4,100 m. Dispersal, daily home range and distance moved of fish that displayed higher mobility were significantly different from the more stationary fish and highly correlated ($r_S > 0.75$) with discharge. Furthermore, even in fine-scale analysis, using PIT telemetry (12 August to 30 September 2005) stocked fish (50 individuals, 185-262 mm L_T) movements were significantly greater than wild trout (25 native trout, 132-250 mm L_T) and differed in the diel activity pattern, which was higher during dawn and night periods, decreasing at dusk period. Only 28% of the hatchery-reared fish survived and the lower condition and the vulnerability to predation by otter (*Lutra lutra*) were detected as the main causes to the mortality registered.