

Taverny C., Urdaci M., Elie P. Biology, ecology and fishing of migratory lampreys (amphihaline agnatha). – Part II, final report. Cestas : Cemagref, 2004. 49 p. Report n°89, III.

### Abstract

Different small rivers of the Gironde Garonne Dordogne river-basin have allowed us to illustrate the characteristics of the spawning macrohabitats and the microhabitats of three species of lamprey present in France: *Petromyzon marinus*, *Lampetra fluviatilis* and *Lampetra planeri*. Data concerning the first two migrating species come from axis whose order-category, according to Horton's method, ranges from 6 to 3 (modules of 279 to 2m<sup>3</sup>/s). Data concerning the third species, non-migrating, ranges from 4 to 1 (modules of 0.2 to 2m<sup>3</sup>/s). For the three species, coarse granularity stands out as being the most explanatory factor for the presence of a spawning area. The dominant substrate-class used by *Petromyzon marinus* is stones with sometimes a strong presence of blocs according to the AFNOR NF P94-056 classification. Major colonizer, this species spawns in macrohabitats such as lotic channels, banks, riffles and flats (according to the key of Malavoi et Souchon, 2002) where the mean flow speed and water height range respectively from 0.2 to 1.5m/s and from 6 to 130cm. The bottom flow speed, where the genitors evolve, stays at a mean value around 0.3m/s. The slope of the small rivers it can be found in, can reach 30 ‰. The macrohabitats of the two species of the genus *Lampetra* are situated in sections of lesser slope (0.15 to 4 ‰) with a bottom flow speed around 0.3m/s for *L. fluviatilis*, 0.2m/s for *L. planeri* and a water height ranging from 2 to 50 cm which corresponds to banks, riffles and flats. They build their nests preferentially in gravel type beds with a stony tendency (range of the geometric mean of the grains: 1.8 to 26 mm). The three species, by building a dome, increase the lotic character of the spawning area.

In order to determine the larvae of the two pair species of the genus *Lampetra* using genetics, the genetic analysis of the D-loop region is undertaken. This region is more variable than the cytochrome B which is not discriminatory for *L. planeri* and *fluviatilis*. It shows that a small number of individuals can be heterozygote for a sub-region of the D-loop. Nevertheless, the individuals still remain non differentiable with tiny genetical distances of one to two nucleotides. At this stage of the investigation, the existence of two morphotypes of the same species is being confirmed. Another region, situated after the D-loop and coding for transfer ARNs of Threonine and Glutamine, is amplified. Not all the repetitions obtained are complete. The possible discriminatory power of this region remains to be studied.

*Key words* : habitat use, environmental variables, conservation, genetic relationship, sympatric species, adult, *Petromyzon marinus*, *Lampetra fluviatilis*, *L. planeri* .