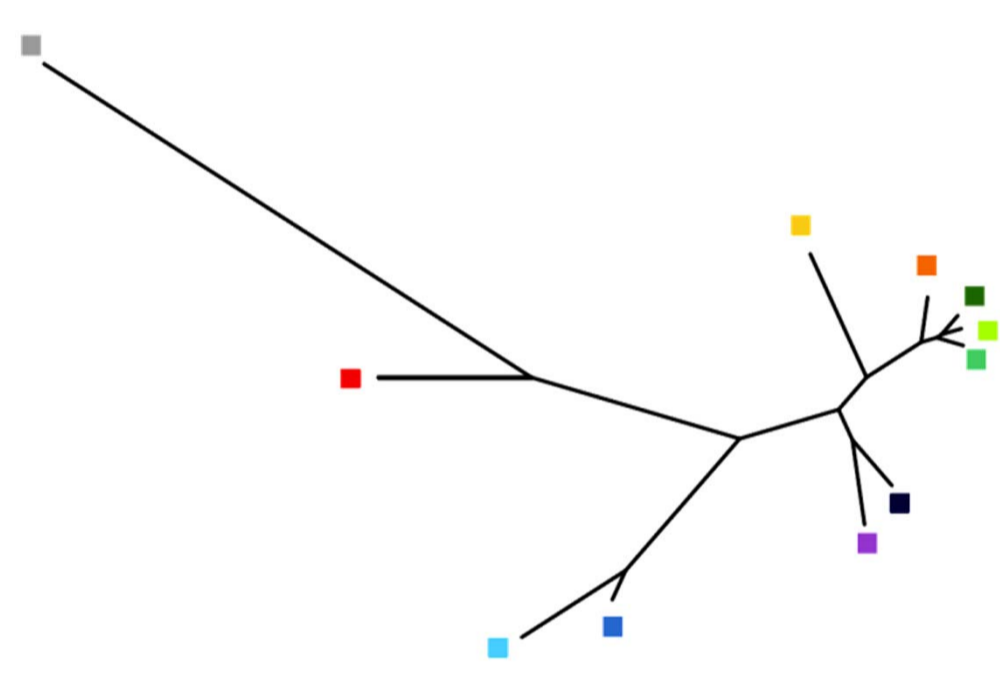


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Introduction

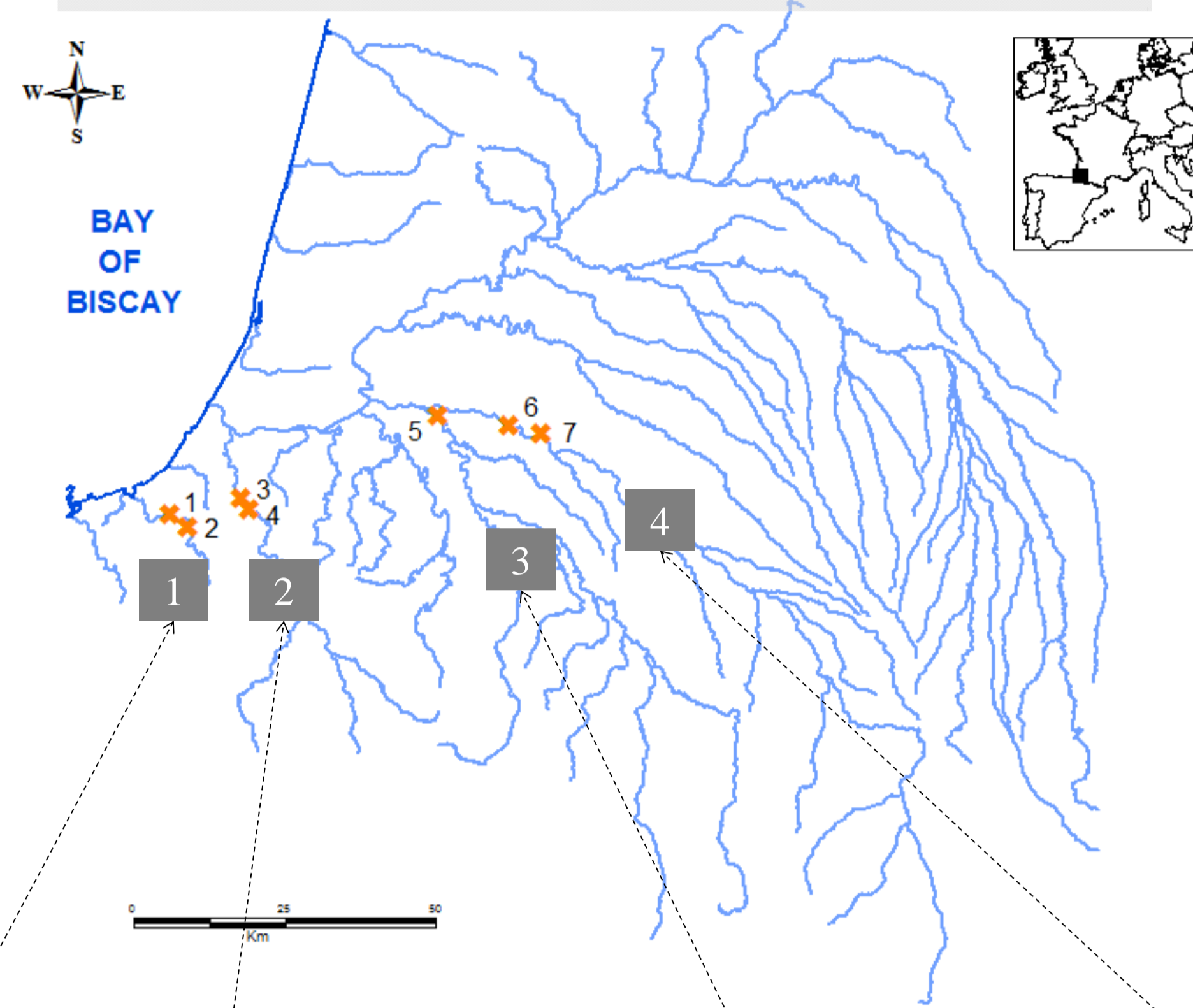
Gathering together information on individual movement and gene flow is rarely possible when studying dispersal. Brown trout, *Salmo trutta* Linnaeus, is such a taxon in which it is possible to assess both at a reasonable cost.

Bayesian genetic clustering K=11 (delta K method, Structure software)



Neighbour joining tree representing distance between the 11 genetic clusters

SEA TROUT MOVEMENTS



Material & methods

Our study took place in the South-eastern corner of the Biscay Bay, a place where brown trout exhibits a high level of genetic structuring compared to the rest of the Atlantic coast.

We genotyped 900 juveniles collected by electrofishing and 700 sea trout

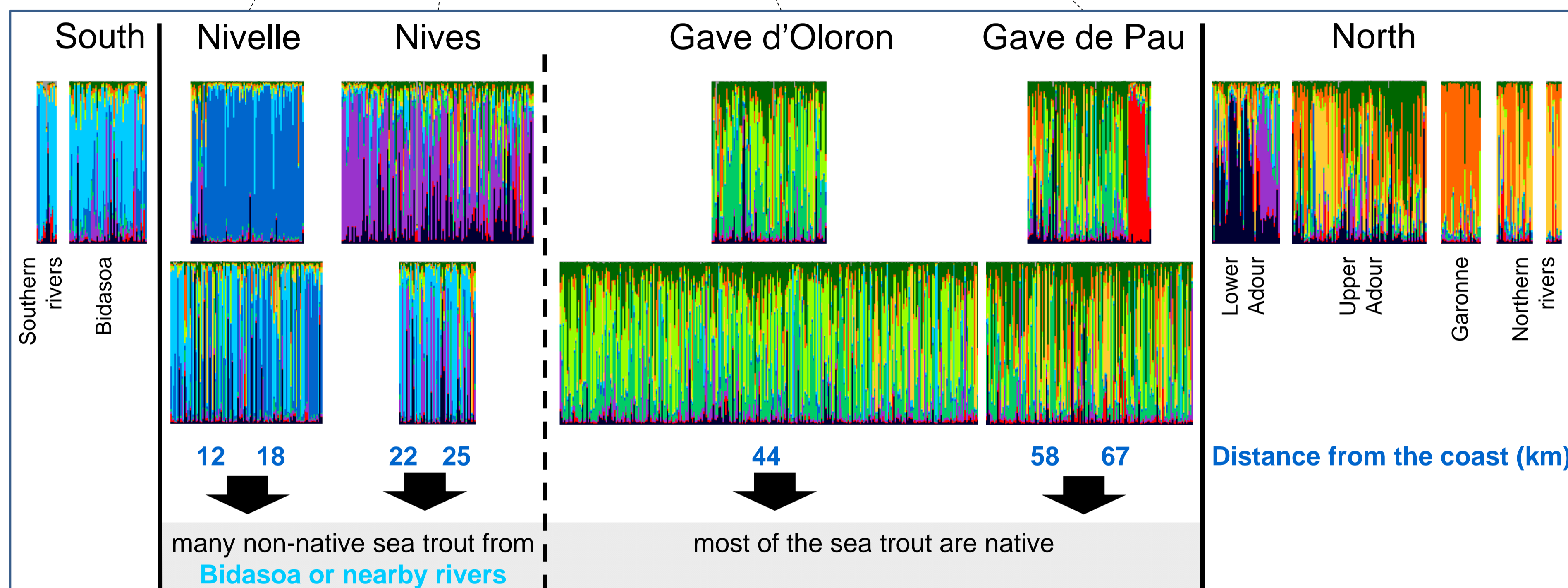


collected by trapping: 

in 4 drainage basins corresponding to

4 important migratory corridors: 

Using juvenile multilocus genotypes (11 SSRs) as a baseline, we were able to dissociate sea trout movement from effective dispersal using Structure, Oncor, and Bayesass softwares.

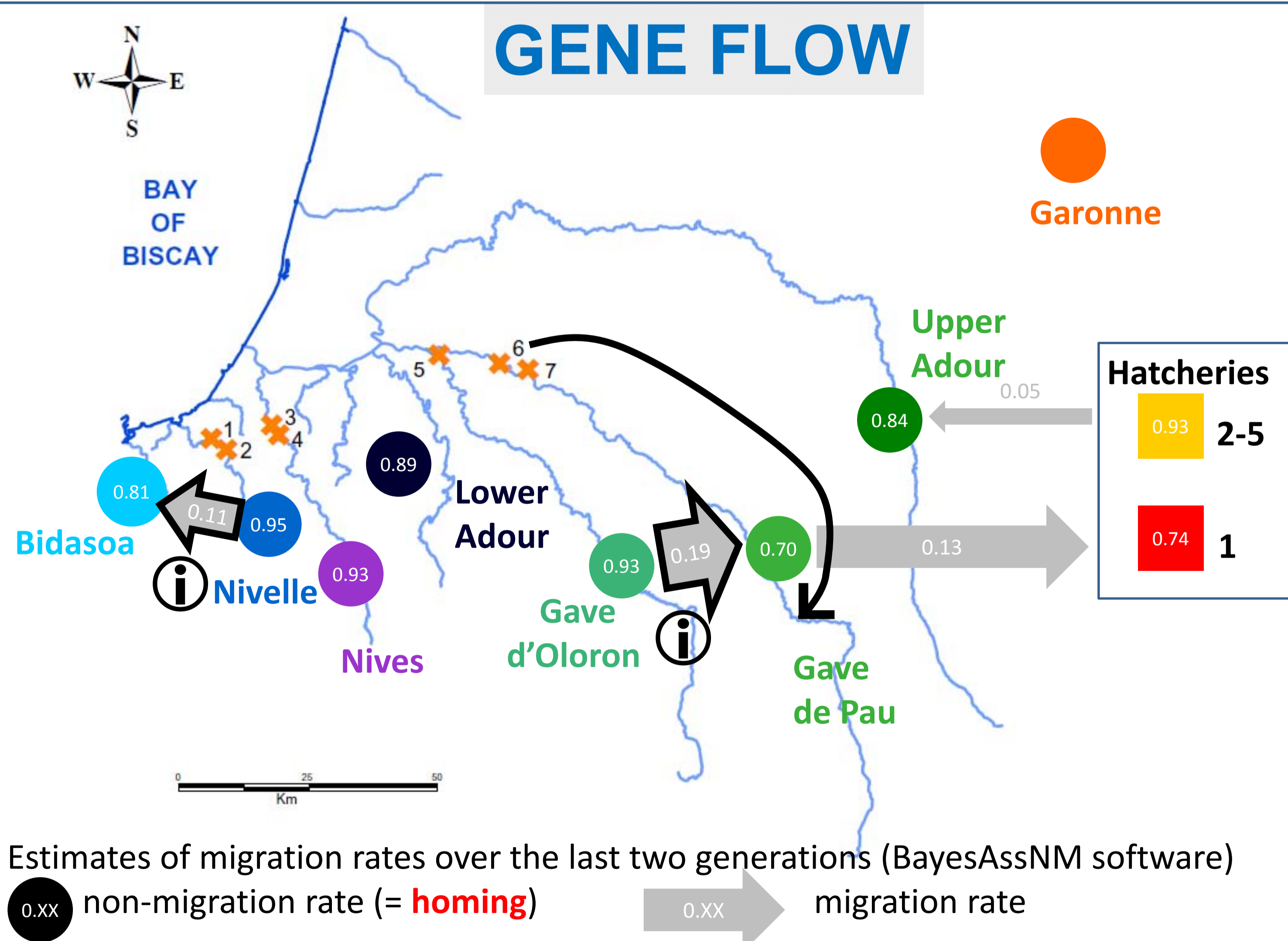


Juveniles



Sea trout

GENE FLOW



Stocking has a significant but locally-limited impact on population genetic structure.

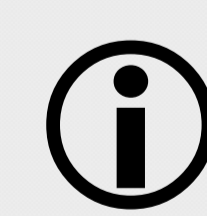
Sea trout are largely driven by a **homing** behaviour (=movement + reproduction), as evidenced by the strong genetic structuring observed among resident trout populations and the absence of any noticeable gene flow from neighbouring catchments

BUT, some **management practices** involving sea trout seem to have seriously impacted local genetic structuring of the resident trout populations.



Gave d'Oloron → **Gave de Pau**

140 sea trout L>45 cm (among which 19% are genetically assigned to Gave d'Oloron by ONCOR) were transported from downstream to upstream between 1999-2002, more than seventy km away.



Nivelle → **Bidasoa**

supportive breeding using adults captured at Bidasoa's fish traps adopted in the early 2000s.

Conclusions

- Non-native sea trout entry, even when massive, does not translate into effective dispersal unless a fish management policy interferes with, illustrating the **gap between the two kinds of dispersal assessments**.
- Due to the possible occurrence of non-native sea trout within any river, a **precautionary approach** should be applied to any management practices involving sea trout.