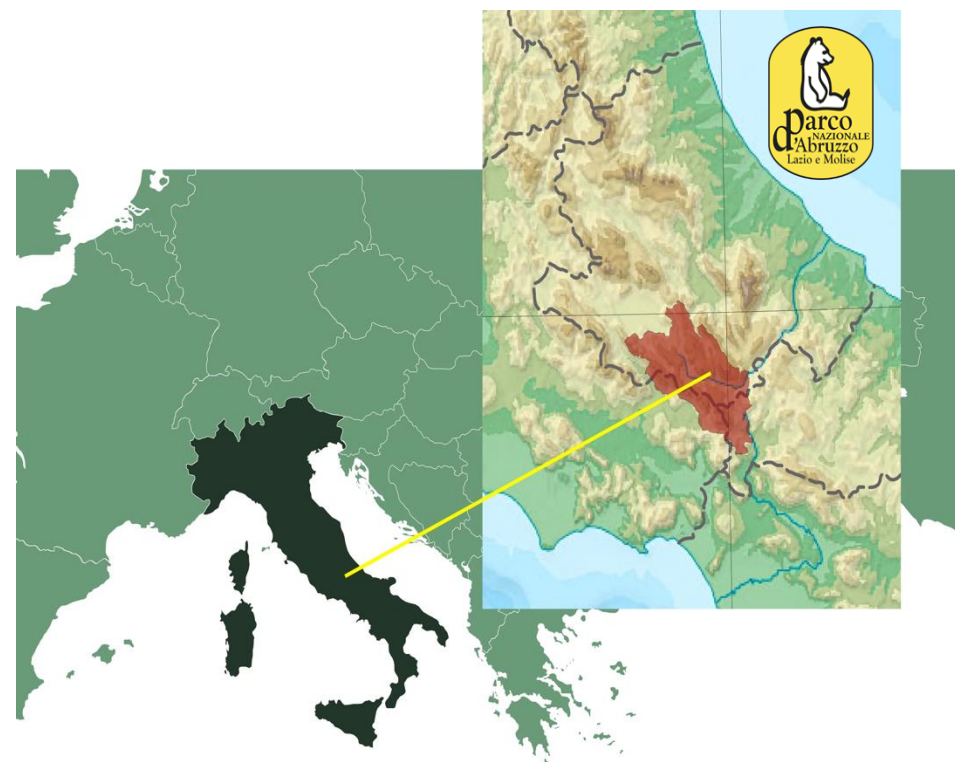


A non-invasive genetics insight into population structure and recolonization dynamics of the Eurasian otter (*Lutra lutra*) at the boundary of its Italian core range



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CNR-IRET, 00015 Montelibretti, Rome

Distribution range of the Eurasian otter



Distribution range of the Eurasian otter





Objectives



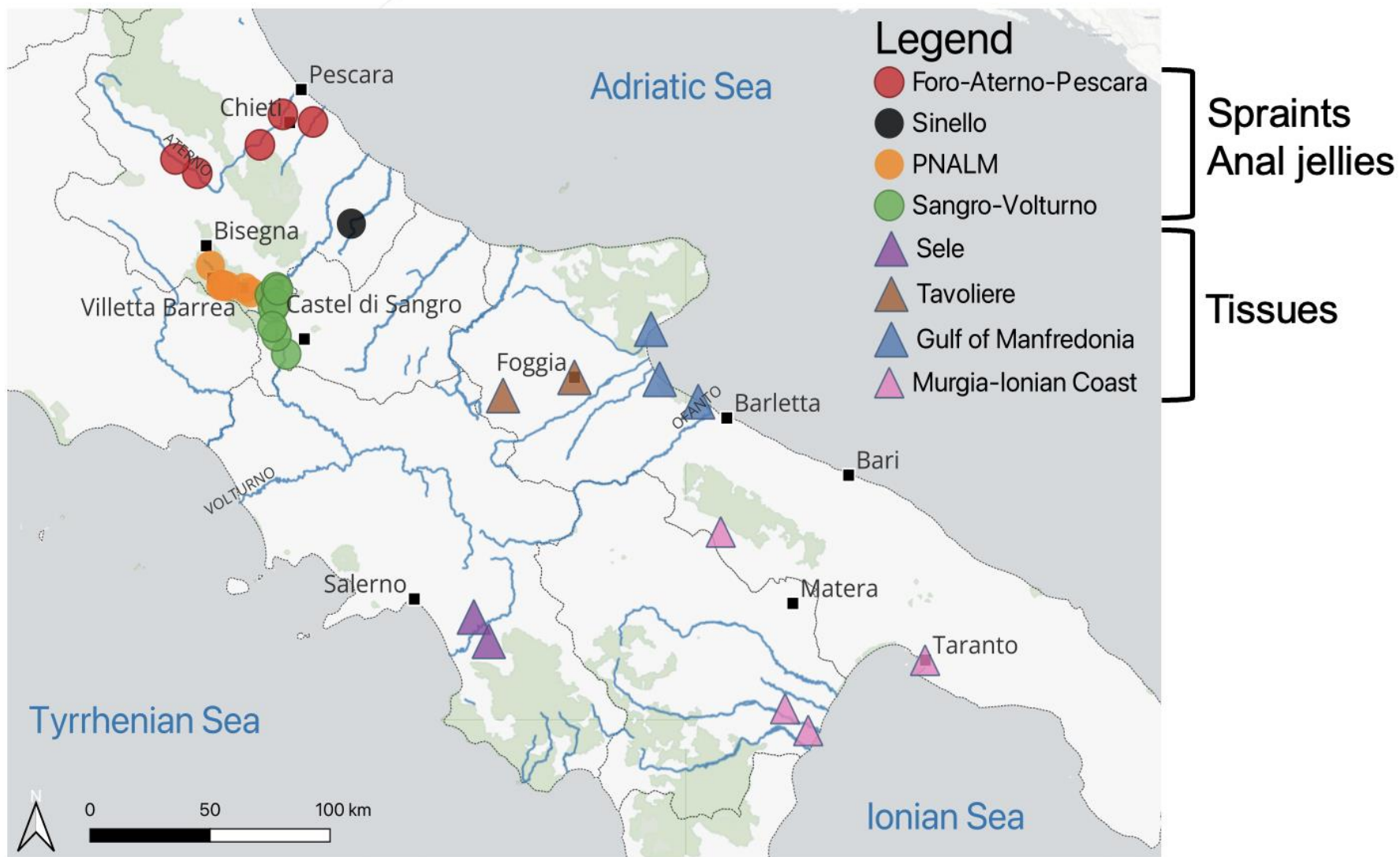
- How many otters are there in the PNALM?
- Where do PNALM otter nucleus come from?
- How much do they move in Central Italy?
- What can limit gene flow?



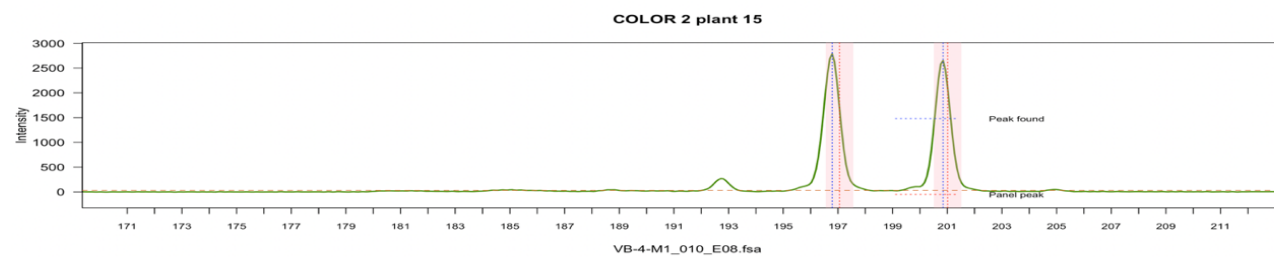
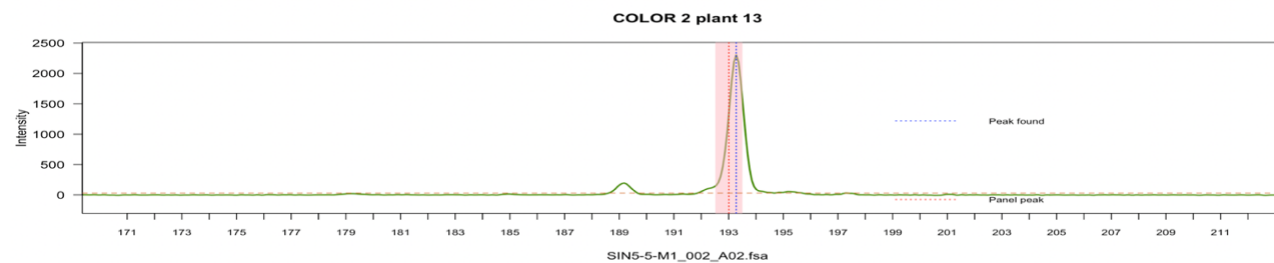
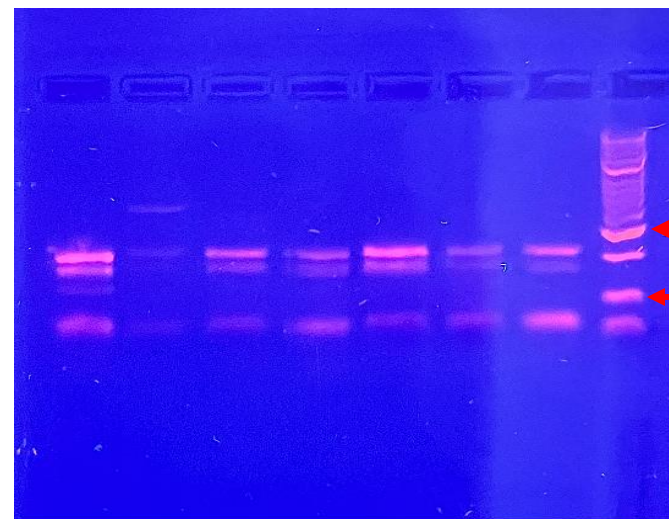
Sampling sites



Sampling sites



Non-invasive genetics





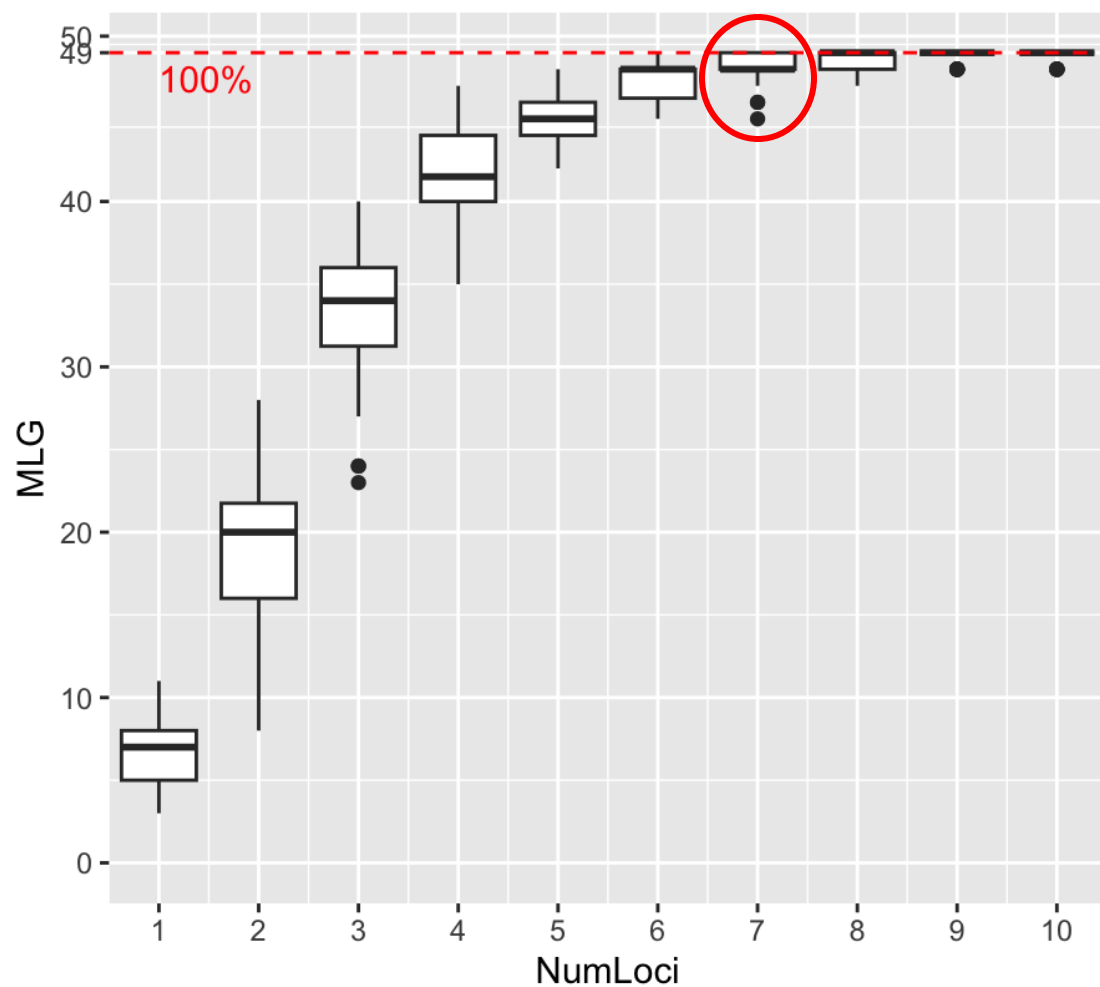
Objectives



➤ How many otters are there in the PNALM?



How many otters correspond to 50 faecal samples?



50 genotyped specimens



34 unique genotypes



15 ♂

3 ♀

S-V

10 ♂

1 ♀

F-A-P

4 ♂

1 ♀



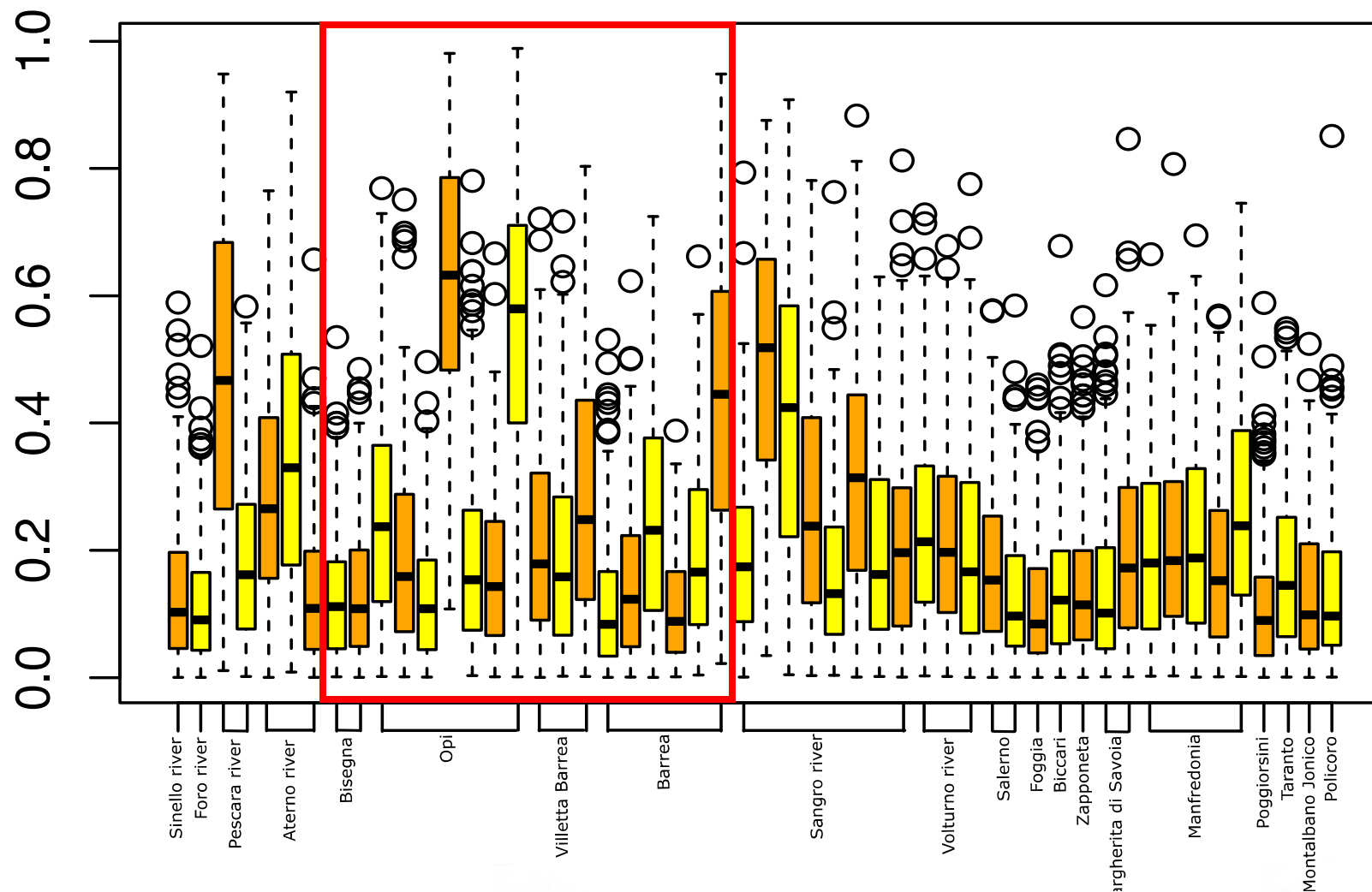
How many otters are there in the PNALM?

Census population size
 $N_c = 50$ (CI95% 31-75)

N_c		Reference
Sangro basin	11(CI95%=12-14)	Lerone et al. 2014

FullSibIndex	Prob (Inc.)	Prob (Exc.)	Member 1	Member 2	Member 3	Member 4	Member 5
2	0.6460	0.6460	Bar_12	Bis_1	Bis_3	Opi3_3	Opi3_4
5	0.9599	0.4683	Bargel_1	Bargel_2			

Inbreeding level





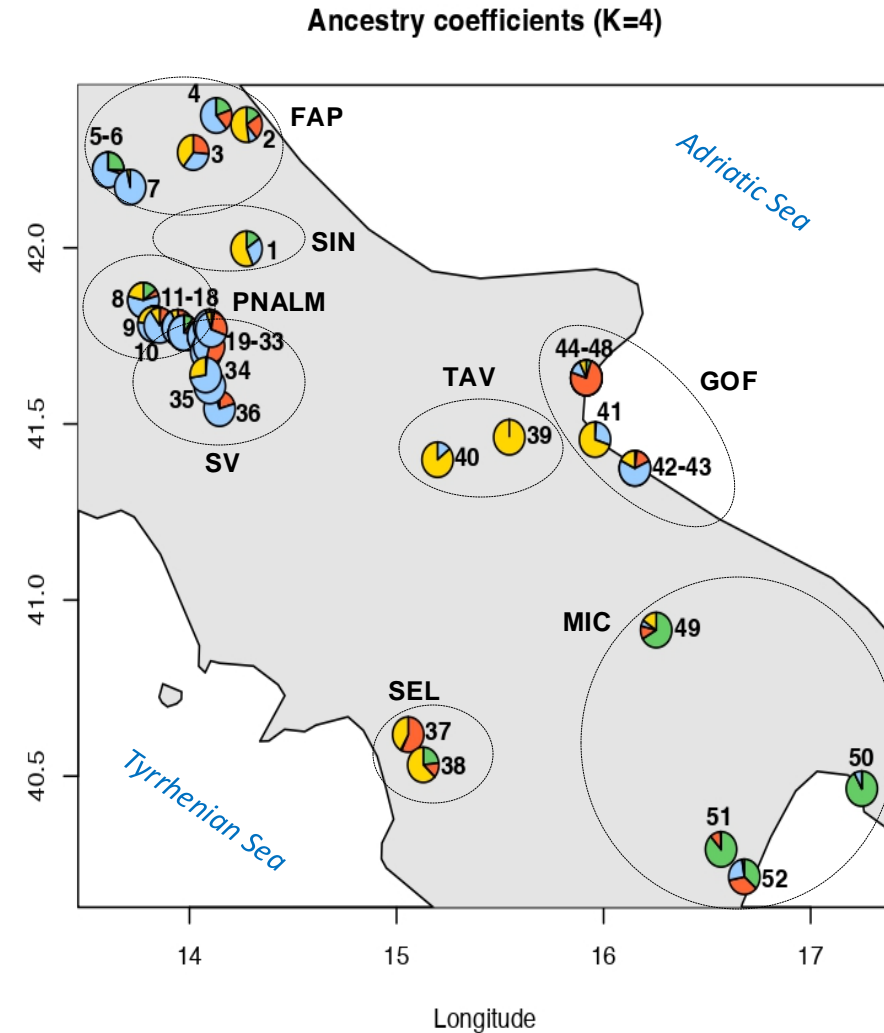
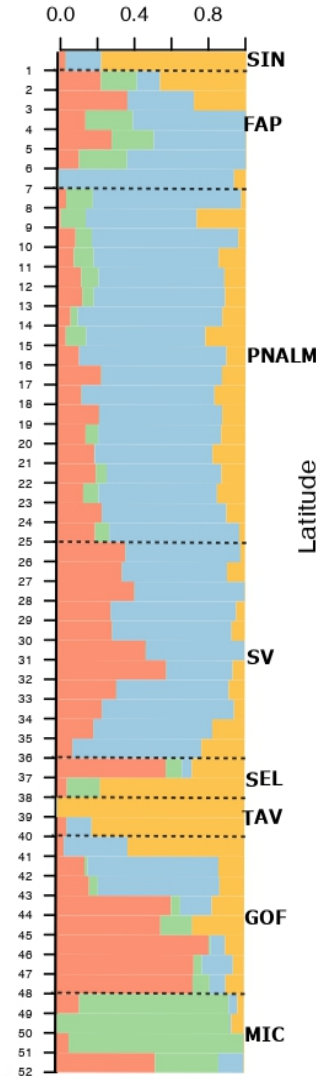
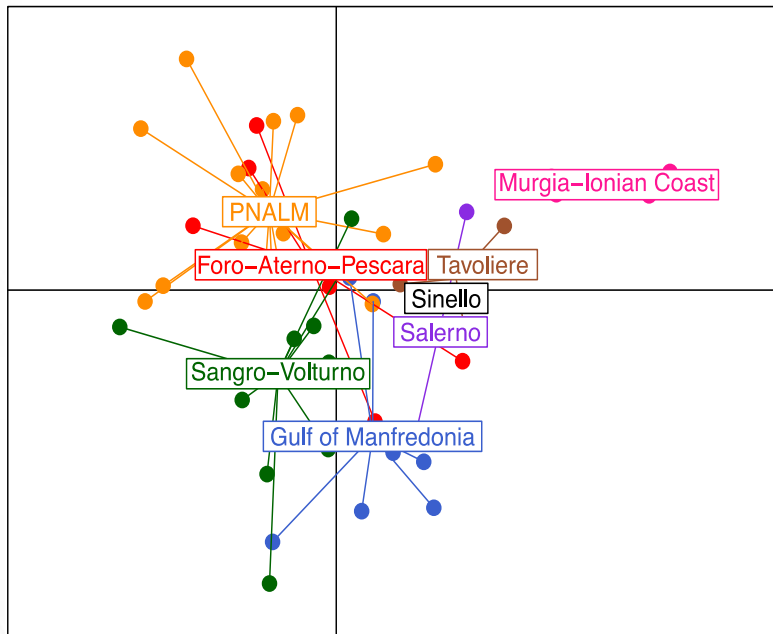
Objectives



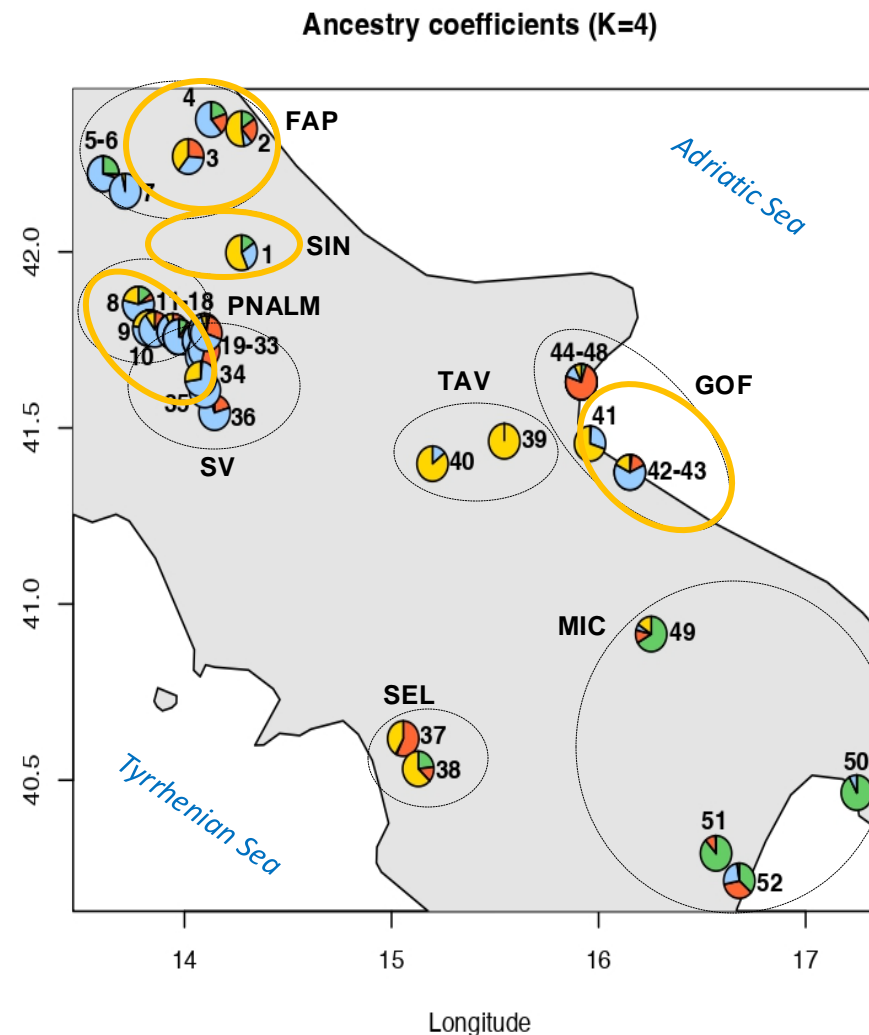
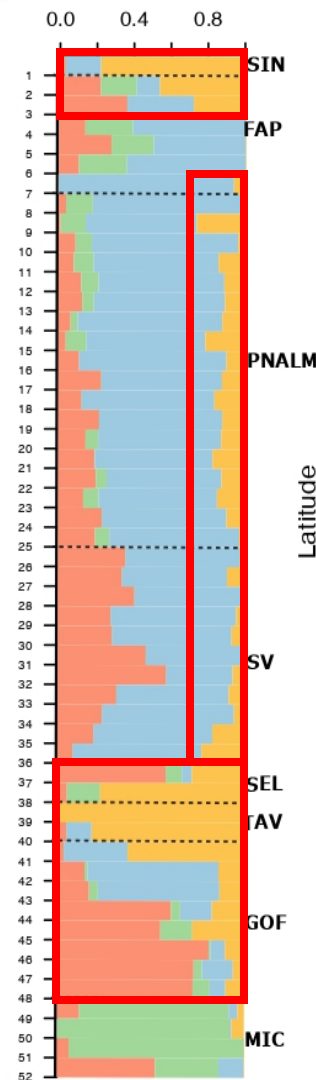
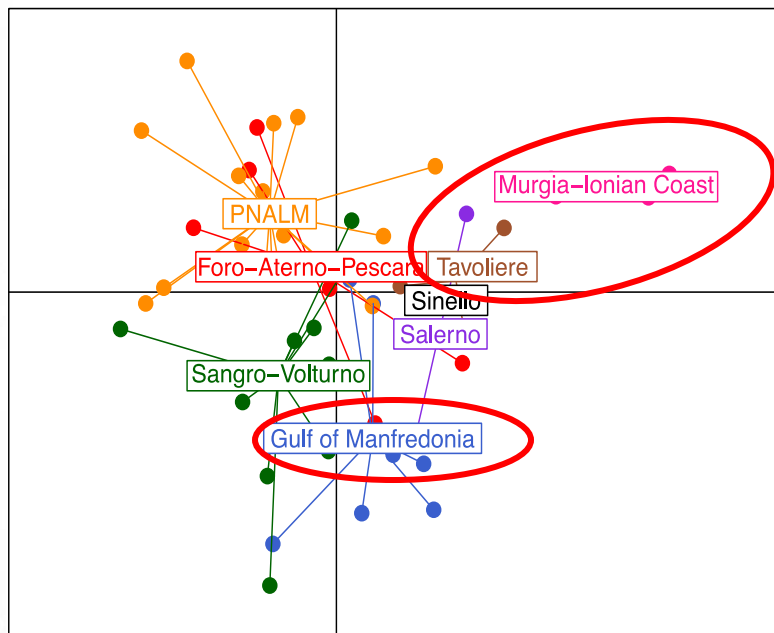
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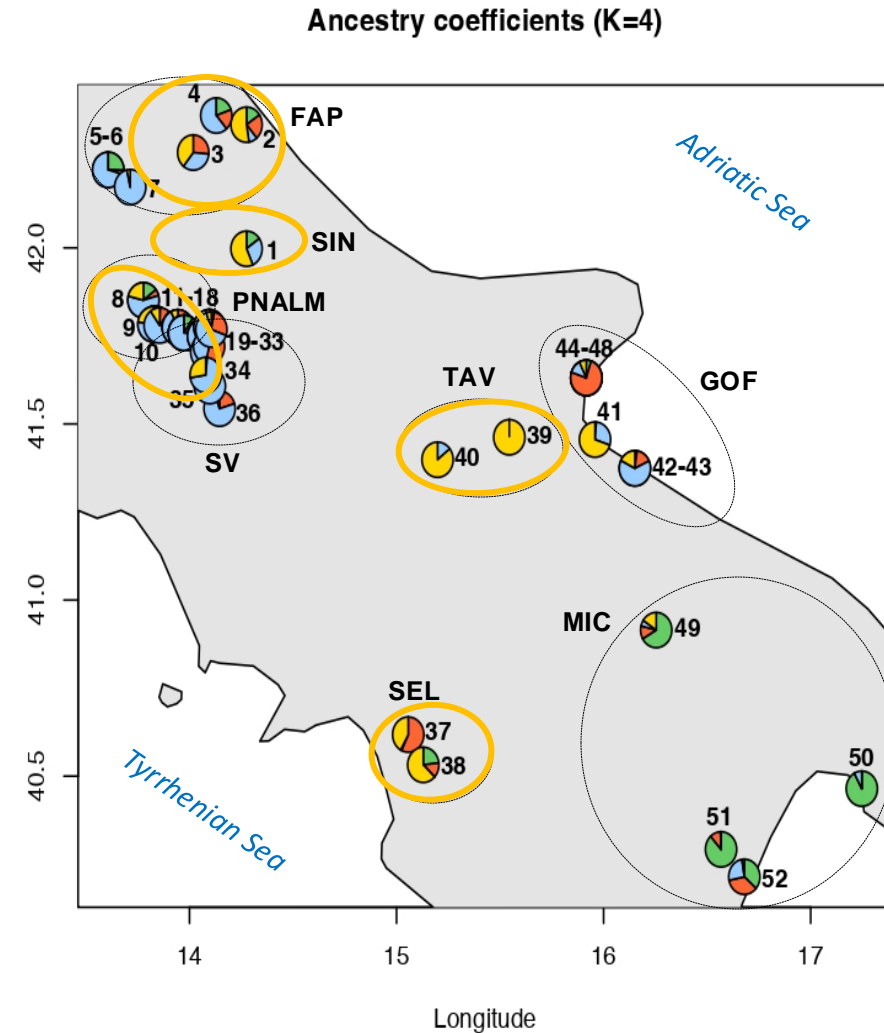
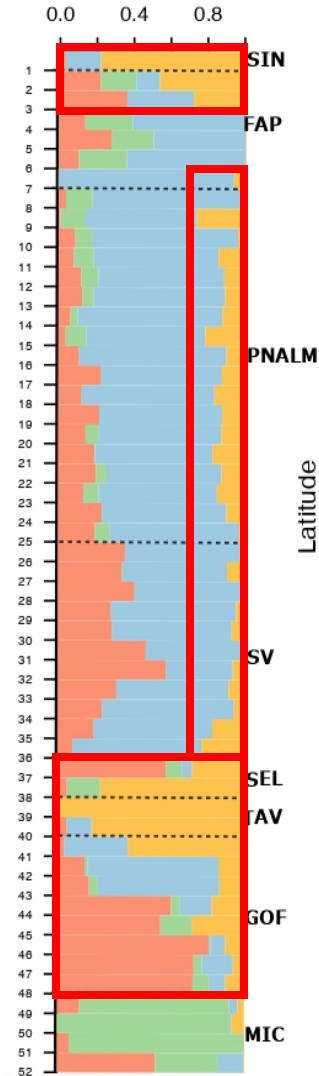
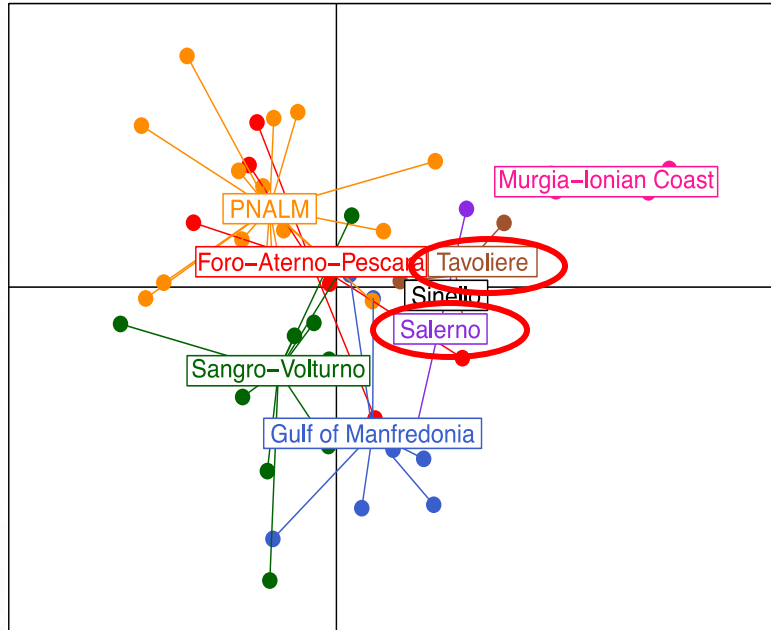
Where do PNALM otters come from?



Where do PNALM otters come from?



Where do PNALM otters come from?





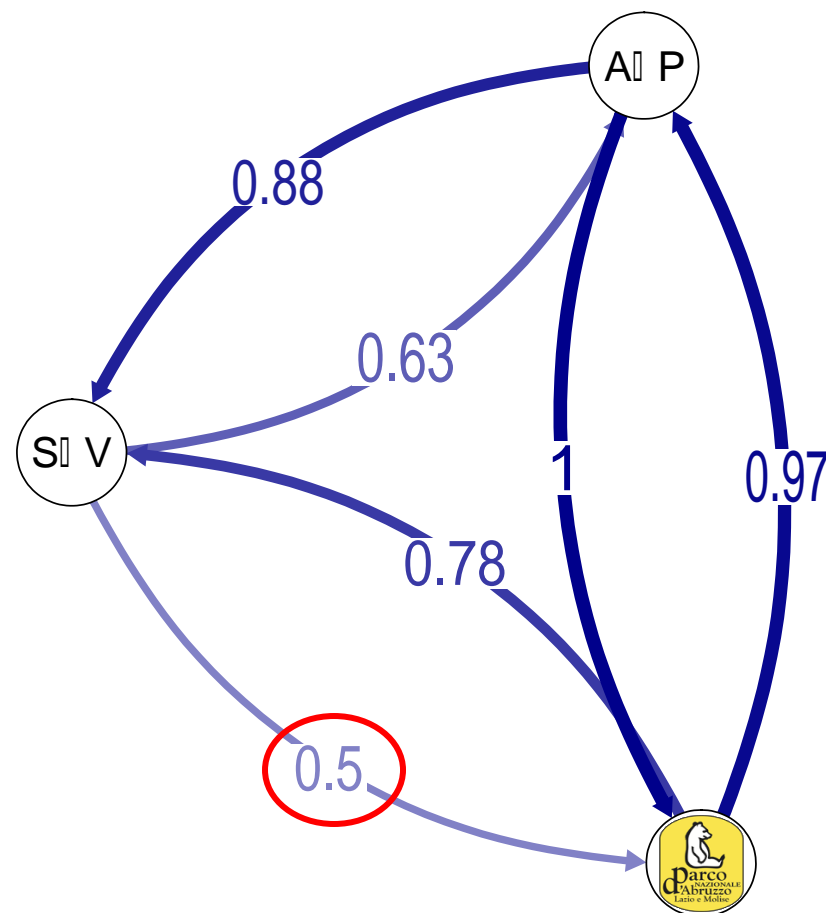
Objectives




- How many otters are there in the PNALM?
- Where do PNALM otter nucleus come from?
- How much do they move in Central Italy?



How much do they move in Central Italy?



A|P: Aterno| Pescara
S|V: Sangro| Volturno
: PNALM



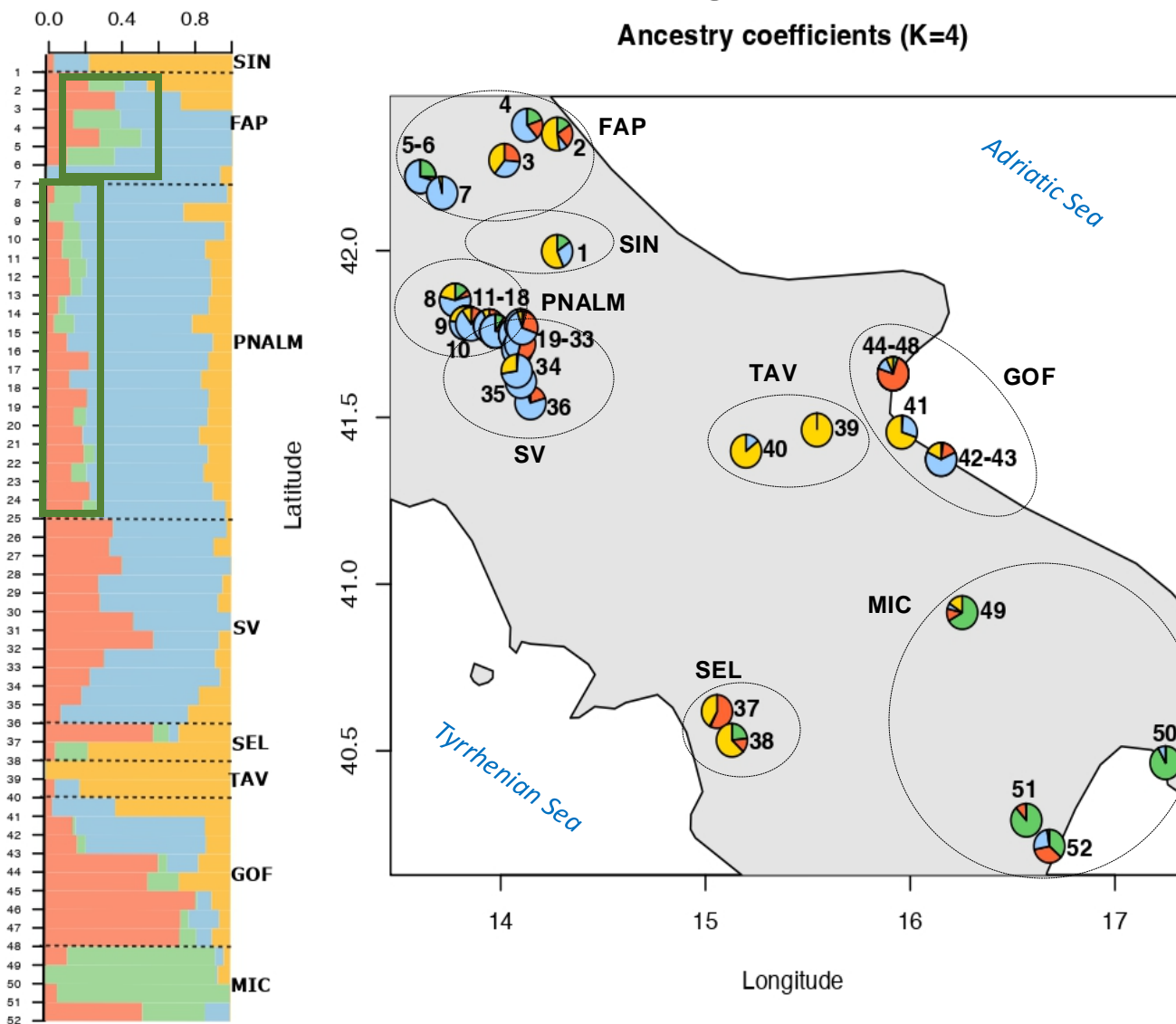
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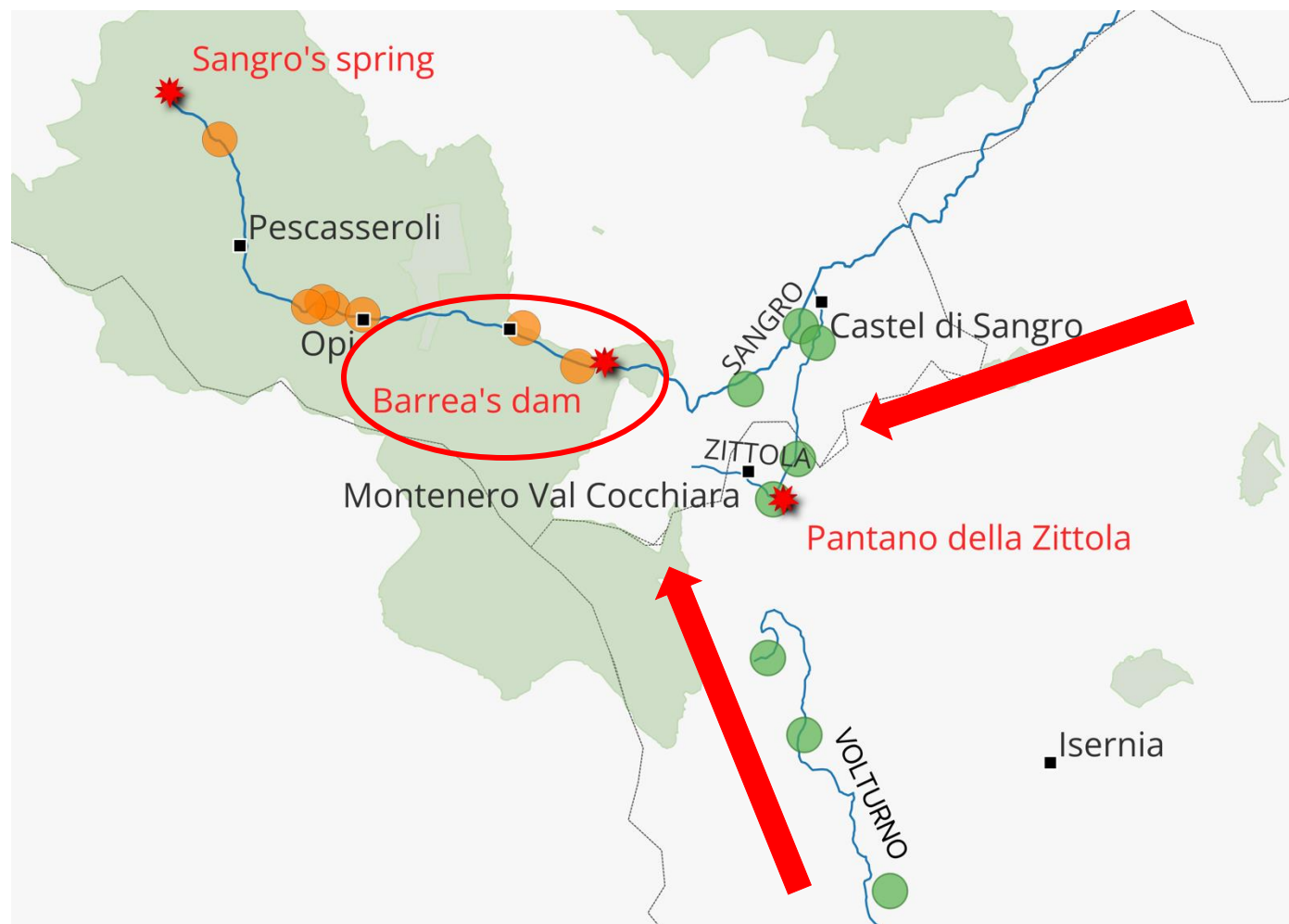
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What can limit gene flow?



What can limit gene flow?



Conclusions

➤ Favorable conservation status of PNALM otter nucleus



➤ Monitoring and reducing man-made obstacles to facilitate otters' expansion



➤ Future genomic research to understand and support population stability



Thank you!