

Obama nungara invades France and Europe

THE FLATWORM

Obama nungara is flat and 5-10 centimetres in length. Its colour varies from orange to dark brown. The head end bears hundreds of minute eyes. Its mouth is not located on its head, but in the middle of the underside of the body.



WHERE DOES OBAMA NUNGARA COME FROM?

Most species of the genus *Obama*, including *Obama nungara*, are native to South America. Specimens have been found in Brazil and Argentina.



WHY THE NAME OBAMA?

The genus name, *Obama*, was created using two words from an indigenous Brazilian language and means **flat as a leaf**, which perfectly describes a flatworm's general shape

RECORDING THE INVASION

The occurrence of flatworms in France, and throughout Europe, was **recorded using citizen science**. Hundreds of members of the public took pictures of flatworms in their gardens and sent them to scientists, who verified the species of flatworm (as there are other species of land flatworms in France).



CITIZENS IN GARDENS



PICTURES OF FLATWORMS



MOLECULAR STUDY OF POPULATIONS

Using molecular tools, scientists could distinguish 3 populations of *Obama nungara*: 2 in Argentina and 1 in Brazil.

WHAT POPULATION INVADED EUROPE?

In France and most European countries, only specimens from one of the Argentinean populations were found. This shows that a single population has invaded most countries of Europe, and that it comes from Argentina.

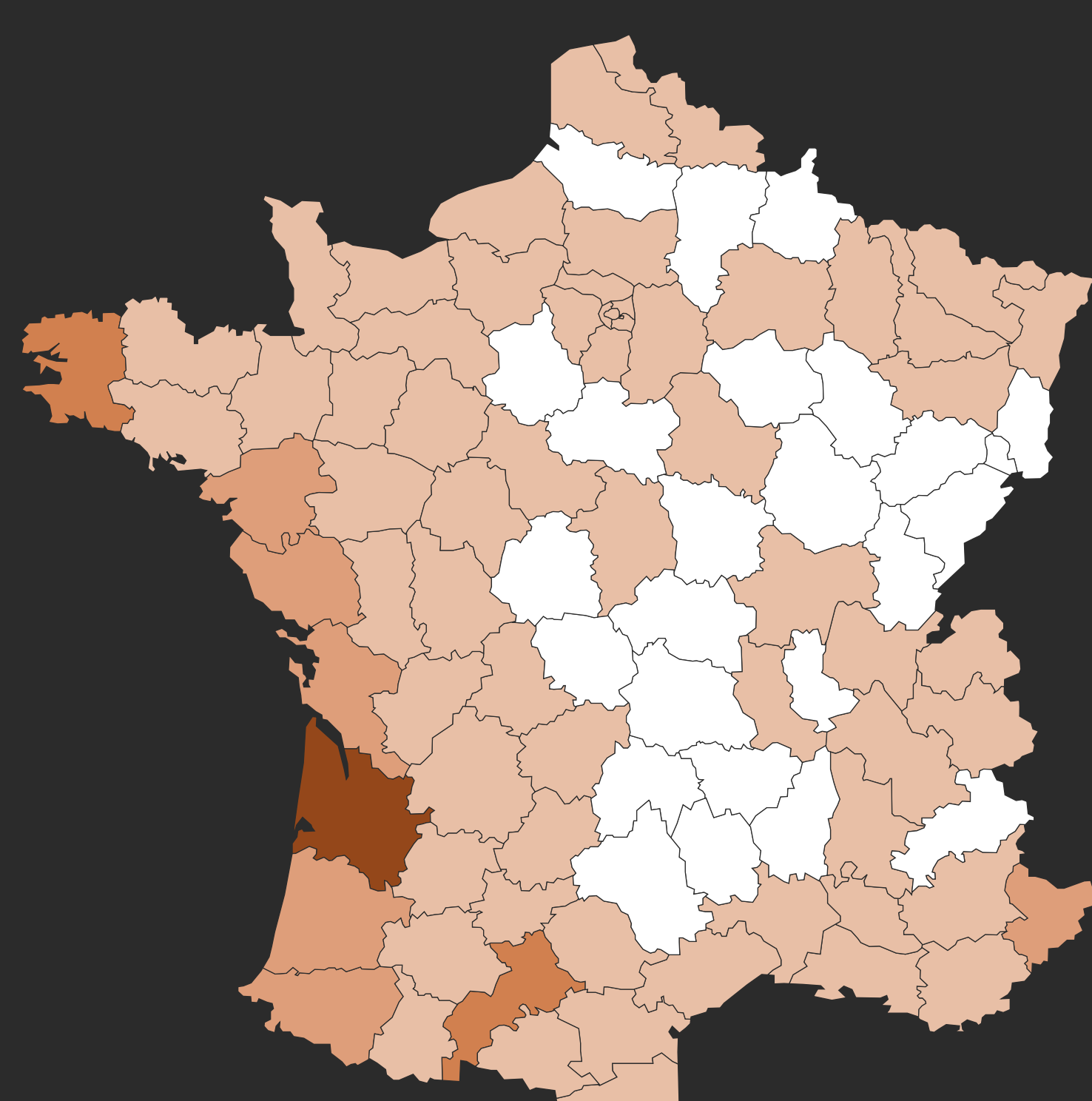


HOW DID THE WORMS MOVE?

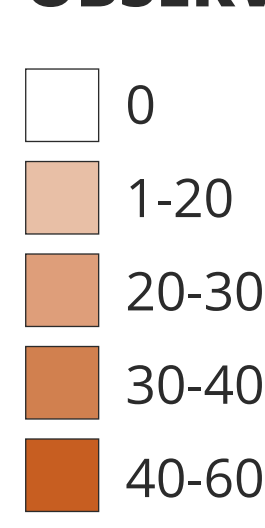
There were stowaways in potted plants transported from Argentina to Europe. These stowaways have now circulated between and within European countries.

HOW MUCH OF FRANCE IS INVADED?

Three-quarters of the country are already invaded. Most records were reported along the Atlantic coast, perhaps because *Obama nungara* does not like drought and it often rains there.



NUMBER OF OBSERVATIONS



OPEN SCIENCE

All data, including all records and results from the molecular analyses, are available in the present climate of open science. Thus, scientists worldwide can consult the data for their own studies in the future.

WHY IS IT A PROBLEM?

Obama nungara preys upon native animals in the soil, such as earthworms and snails, and thus can **potentially threaten the biodiversity and ecology of soils in Europe**.