

# Ambrosia in Berlin

## pollen emission, spread and control

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### Emission

Since an increased occurrence of Ambrosia has been noticed in 2006, staff members of the pollen information service of the **Free University Berlin** are analysing aerosol samples obtained by pollen trap.

The results of the analysis, the annual trend of pollen concentrations of Ambrosia/m<sup>3</sup> air in Berlin-Steglitz for the years 1998 to 2009, are shown in figure 1. Note that the data for the years 1998 to 2005 were derived from reanalysis. The year 2000 could not be reanalysed due to the bad condition of the aerosol samples.

It can be identified that the main phase of Ambrosia pollen flight starts in late August. At that time the critical **threshold of 10 pollen/m<sup>3</sup> air for allergic persons has been exceeded in 6 of 11 analysed years**. The maximum of measured pollen has been reached on 12.09.2006 with 60 pollen/m<sup>3</sup> air.

According to the analysis since 1998 it is assumed that especially in hot summers an increased concentration of Ambrosia pollen has to be expected.

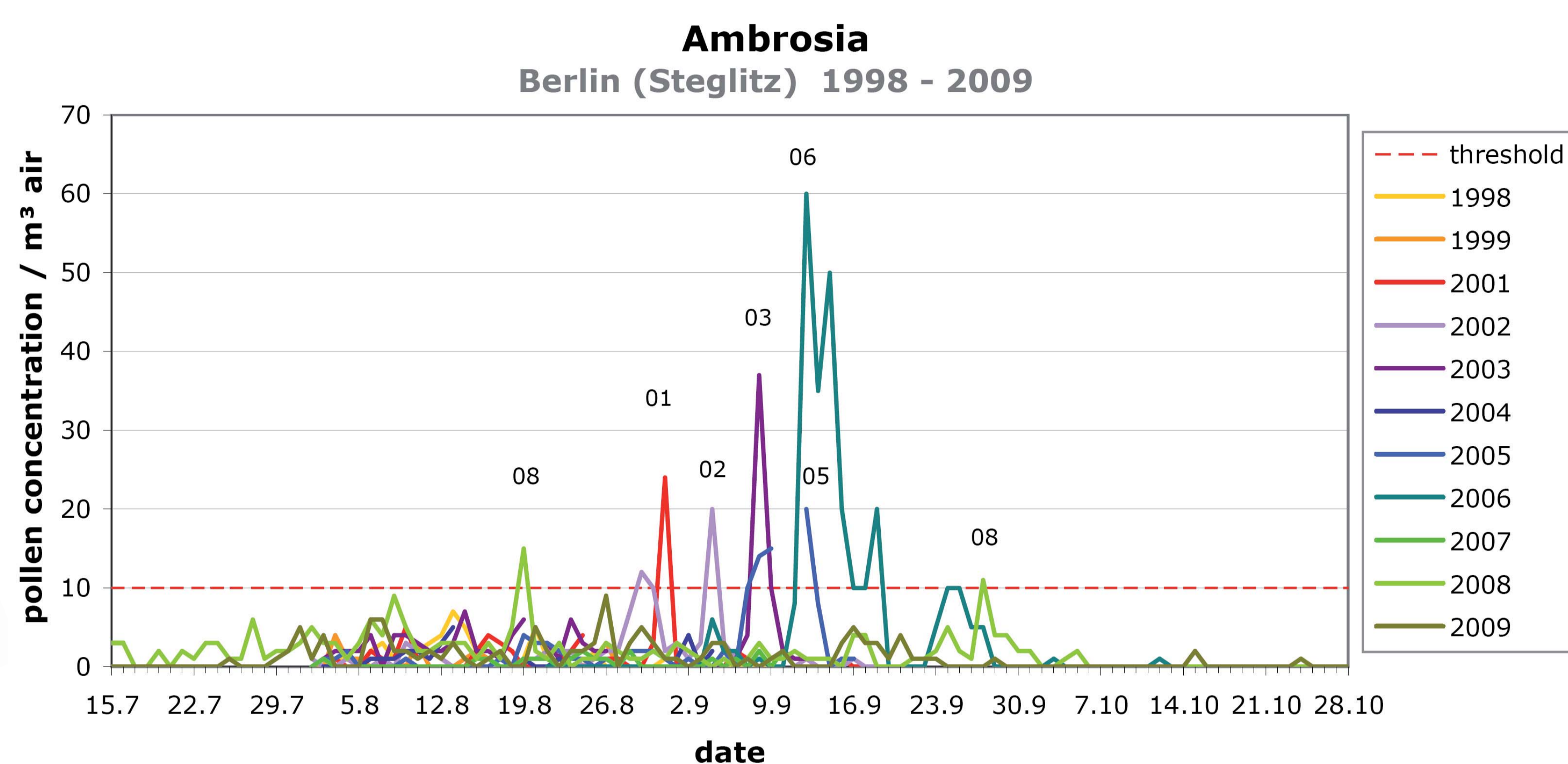


Fig. 1: Pollen concentration of Ambrosia in Berlin-Steglitz 1998-2009 (without 2000)

### Spread & Control

With the help of all members of the "Action program against Ambrosia in Berlin" this research has succeeded in producing first results regarding the identification of the distribution (Figure 2) and causes of spread of Ambrosia in Berlin.

Data analyses have shown that not only the annual *Ambrosia artemisiifolia* but also the perennial *Ambrosia coronopifolia* are widespread in Berlin. Especially in the south-east of Berlin an increased occurrence of the **perennial ambrosia** was determined in **25 habitats of over 100 plants, which were predominantly spread by displacement of soil during construction works**. With a total of ~55.000 plants they constitute almost half of all Ambrosia specimen found. The main portion (60%) is made up of small populations of up to 10 plants, which have almost all been destroyed.

If **birdseed** is purged of *Ambrosia artemisiifolia*, e.g. by governmental regulation, the citizens are sensitised to the issue of Ambrosia and small findings are regularly destroyed, a further **spread in Berlin could be stopped**. The main Ambrosia coronopifolia habitats are more problematic, as a great number of pollen are produced and can be emitted to the air during blossom. These plants are spread throughout the city by displacement of seed-contaminated soil during construction works. It remains highly important for the future to find appropriate solutions for these kinds of locations in order to destroy the large-area populations on the one hand and to prevent the further spreading of the plants through contaminated soil on the other hand.

### Ambrosia Habitat - Berlin 2009

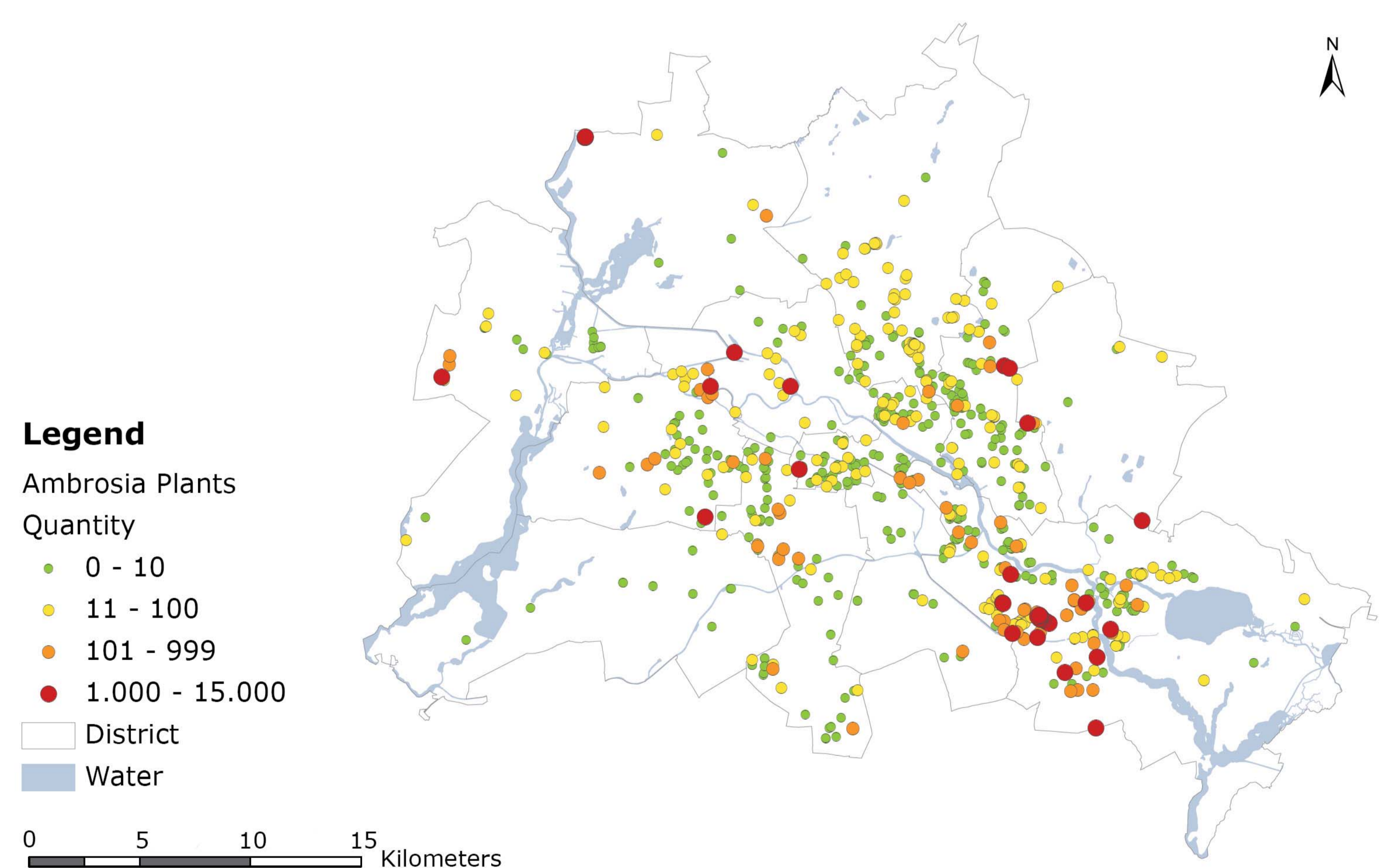


Fig. 2: Ambrosia Habitat in Berlin 2009  
30% of the city area was systematically searched, geodatabase source: senate department for urban development of Berlin