

# Invasive Ant Threat



INFORMATION SHEET Number 9 • *Lasius neglectus*

Risk: High

## *Lasius neglectus* Van Loon, Boomsma & Andrásfalvy

### Taxonomic Category

Family:	Formicidae
Subfamily:	Formicinae
Tribe:	Lasiini
Genus:	<i>Lasius</i>
Subgenus:	<i>Lasius</i>
Species:	<i>neglectus</i>



**Common name(s):** none

**Original name:** *Lasius neglectus* Van Loon, Boomsma & Andrásfalvy 1990

**Synonyms or changes in combination or taxonomy:** *Lasius neglectus* was synonymised with *L. turcicus* Santschi, 1921 (= *Lasius niger* var. *turcica* Santschi) by Siefert (1992), but was later considered to be a separate species that split from its sister species, *L. turcicus*, by rapid species divergence (Siefert 1996; 2000). Morphology, genetics, and zoogeography suggest a very recent separation from *Lasius turcicus* Santschi 1921 with the most probable radiation centre in Asia Minor (Siefert 2000).

### General Description

#### Identification

The species belongs in a group of *Lasius* that lacks erect hairs on the scapes and on the extensor profile of the hind tibiae. Mandibular dentition is generally reduced compared with *L. lasioides*, *L. alienus*, *L. psammophilus*, *L. paralienus* or *L. piliferus*, but there is some overlap.

**Size:** body length 2.5–3.5mm.

**Colour:** body brown, generally unicoloured, but sometimes head and gaster slightly darker than alitrunk; upper legs same colour as body, lower legs paler. Antennal scapes pale brown, antennae darkening towards tip.

**Surface sculpture:** head and alitrunk rather smooth, only finely reticulate. Gaster smooth.

**General description:** antennae 12-segmented, last segment twice the length of preceding segment, but not conspicuously wider. Antennal sockets situated very close to posterior clypeal margin. Eyes relatively large. Mandibles with 7 teeth. Clypeus without or with a faint medial longitudinal carina. Metapleuron with distinct metapleural gland lined with a row of setae, situated just above the hind coxa. Propodeum without spines, propodeal spiracle round to weakly ovate, located close to posterior propodeal margin. One node (petiole) present. Head and body covered with erect setae standing above general the pubescence but short, particularly on alitrunk. Scape and fore tibiae without erect hairs, middle and hind tibiae may have occasional erect hairs. Stinger lacking; acidopore present.

**Notes:**

1. Ants of the genera *Lasius* and *Formica* are the most dominant and abundant in the Holarctic region but are difficult to distinguish. Generic diagnostic characters are given in Agosti and Bolton (1990).

2. *L. neglectus* shows extreme morphological similarity to *L. turcicus*. According to Seifert (2000) absolute size remains the only way to distinguish the female castes, as measured by maximum head width (smaller than 840 µm in *neglectus* workers and larger than 850 µm in *turcicus* workers). Mandibular dentition is, on average, reduced compared with the related species *L. lasioides*, *L. alienus*, *L. psammophilus*, *L. paralienus* or *L. piliferus* but there is some overlap.

3. Finding many dealate queens (polygyny) in a nest is a key diagnostic characteristic of this species, compared to the single queen European *Lasius* (s. str.). This biological aspect is probably the best way to identify *L. neglectus*, although it is advisable to verify with the morphology.

Sources: www11; Seifert 2000

Formal description: Van Loom et al. 1990

## Behavioural and Biological Characteristics

### Feeding and foraging

Heavily utilises aphid honeydew (www11). In North-east Spain, during the early season, when leaves are still lacking on trees or tree aphids are scarce, this ant constructs earth tents over small herbs protecting stem and root aphids. In summer ants visit aphids on different tree species in huge numbers and are occasionally seen carrying small prey (Collembola, Psocoptera). From late April to late October (northern Hemisphere) foragers are active continuously aphid tending. Preliminary quantitative measures indicate ants can extract a mean of 250 cc of honeydew per month from evergreen oak (*Quercus ilex*), and as much as 950 cc honeydew per month from poplar trees (*Populus nigra*) (www11). Foragers dominate an area, displacing other ant species (www11).

### Colony characteristics

Uncolonial and polygynous (www11). Often very difficult to delimit nests as they may coalesce and integrate into a supercolony occupying many hectares. The colonies can be more discrete in urban areas and may occupy a single tree. Compared with other *Lasius* species, the sexuals appear earlier in the year, as early as March in heated buildings in Budapest. Nests occur in a wide variety of sites including: under stones, temporary refuges with aphids at the base of herbs, and rubbish (www11). The number of queens in a 14 ha supercolony was estimated to be about 35,500 ± 10,000 under stones, over 350,000 queens in the soil away from rocks. in Seva, Spain (Espadaler et al. 2004). Worker number was estimated as 112 million or about 800 workers/m<sup>2</sup> (excluding workers foraging in trees).

### Dispersal

Nuptial flights seem to be absent. Queens still show the morpho-physical adaptations for flight-dispersal and claustral colony foundation, though the corresponding behavioural repertoire seems to be lost (Seifert 2000). In a single instance alate males and queens were found in a spider's web by a wall (Seifert 2000), although this is not definite proof of flying behaviour, and sexuals have never been detected flying out of the nest. Intranidal mating is therefore probably the rule (Van Loom et al. 1990; Seifert 2000; Espadaler & Rey 2001). Dispersal is via colony diffusion (budding) and long distance dispersal mediated by humans.

### Habitats occupied

Found in Europe between sea level and 1750 m, with 88% of sites situated below 1000 m (Seifert 2000). Throughout its geographical distribution, distinct populations live in a wide range of conditions, from strictly urban habitats to seemingly undisturbed localities (www11). A common factor of all those places is the presence of trees, on whose aphid populations

the ants depend. In Asia Minor *L. neglectus* was observed in natural steppe habitats (A. Schulz pers. comm. cited in Seifert 2000). The ant can establish permanent colonies in regions with mean January (winter) temperatures of  $-5^{\circ}\text{C}$  (Seifert 2000).

## Global Distribution (See map)

### *Native to*

Asia Minor (Seifert 2000)

### *Introduced to*

Mediterranean and Central Europe. The present range is delimited by  $16^{\circ}\text{W}$  and  $75^{\circ}\text{E}$  and by  $28^{\circ}\text{N}$  and  $53^{\circ}\text{N}$ , with 53 known sites by April 2005 (Seifert 2000; Espadaler & Collingwood 2000; www11).

### *History of spread*

It is the most recently introduced ant in Europe. Only 10 years after its first identification in Hungary in 1987 (although may have been present since early 1970, Van Loon et al 1990), at least 53 infestations have been identified across Europe (Seifert 2000), including outlying populations in the Canary Islands and Kyrgyzstan (www11). The exceptional invasion potential of this ant is almost certainly due to its easy transportation via large potted plants, which explains why new infestations are often found in public parks and newly built housing estates.

### *Interception history at NZ border*

Two interceptions of unidentified *Lasius* species have been made, but these originated from the US and Japan, so are unlikely to be *L. neglectus*.

## Justification for Inclusion as a Threat

Possesses the characteristics of the well-known invasive species (displaces other ants, produces supercolonies, interacts with scale insects resulting in elevated densities, and alters invertebrate communities) (Passera 1994; Seifert 2000; www11). In addition, it is a cold climate species, likely to spread into climates as cold as southern Sweden (www12). It therefore has the potential for a very wide distribution in New Zealand (unlike most other invasive ant species, which are likely to have restricted Northern distributions). The ants are attracted to electrical fields, causing failure and damage by shorting or by occupying electrical plugs, connection boxes or electro-mechanical devices, such as automatic blinds (www11).

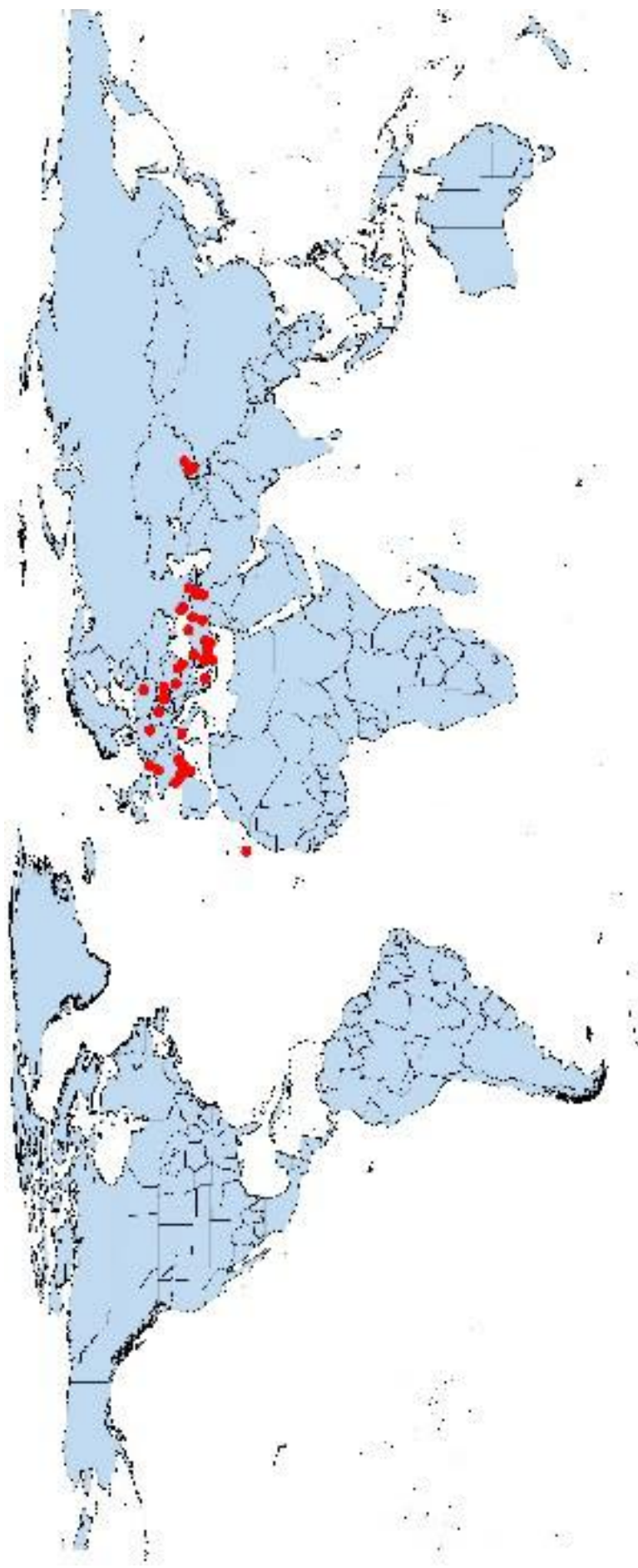
### *Mitigating factors*

Not intercepted at the new Zealand border. Not known in the Southern Hemisphere (although its range is expanding rapidly). Does not sting.

## Control Technologies

Field trials to test a range of control methods are underway in populations in Seva, Spain (www11).

*Compiled by Richard Harris & Jo Berry*



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