

Forty-six study sites were selected from throughout both counties (table 1), with the intention of providing broad geographic and ecological coverage of the region. Initially, eight locations were chosen for each habitat type, with fourteen additional valley riparian sites being added as information accumulated on habitat preferences of *I. humilis*.

At each site an ensemble of three sampling methods was used to determine the presence of *I. humilis* and to assess the species richness and composition of the native ant fauna.

(1) Ant workers were collected from moist ground litter (leaf mold, rotten wood) using Winkler litter-sifting and arthropod-extraction devices (Hildegard Winkler, Dittesgasse 11, A-1180, Vienna, Austria). This method was used to survey the hypogaecic ant fauna—that is, those species that forage below the ground surface, although some surface foragers also appeared in the samples. At each study site, handfuls of moist leaf mold and rotting wood were gathered diffusely from the ground, over an area of approximately 1,000 m², and sifted through a wire sieve of square, 0.8-cm mesh, up to a total quantity of 6 L of sifted litter. This standard 6-L sample was returned to the laboratory, and the litter ants were extracted in a Winkler funnel. The funnel consists of an enclosable cloth bag, the lower portion of which tapers to a cup of alcohol. It functions like a Berlese-Tullgren funnel, except that the sifted litter is held vertically inside the cloth bag in several flat, loosely hanging, mesh sacks, and the litter dries passively without aid of a heat source. Arthropods that attempt to leave the desiccating litter fall to the bottom of the bag where they are funneled into the cup of alcohol. The litter was allowed to dry at room temperature over a 3-day period, since exhaustive extractions showed that, on average, 98 percent of the ant species and 85 percent of the individual worker ants were removed from the litter in the first 3 days of drying. All litter collections were made in February, March, or April.

(2) Foraging worker ants were attracted to tunafish bait. This was designed to sample the epigaecic (aboveground foraging) ant fauna. At each site an 80-m line transect was set out, consisting of 20 bait stations, each 4 m apart. At each bait station, about 1 g of tunafish (in oil) was placed on a plastic petri dish cover, of 5.6-cm diameter. After 2 hours, collections were made of all worker ants on the petri dish covers. Bait transects were put out in March, April, or May, on clear, sunny days with ambient temperature $\geq 15^{\circ}\text{C}$.

(3) Ant foragers and ant nests were sampled using time-honored general collecting techniques. At each study site, 1 person hour was devoted to turning stones, examining fallen logs and dead branches on trees, and searching for soil-excavated ant nests and foraging workers.

Thus, a complete "sample" of the ant fauna at any given site was based on three different kinds of collections. These collections were used primarily to provide presence/absence data on *Iridomyrmex humilis* and other ant species, although the number of individual ants of each species in litter and bait samples was also recorded. For each site, the following measures of ant species richness were used:

S_L : number of native ant species in litter collection

S_B : number of native ant species in bait collection

S_T : total number of native ant species recorded from site, based on all three sampling methods