Iridomyrmex humilis was the only nonnative ant species encountered in this survey, except for *Tetramorium caespitum* which was recorded from two sites only. To assess the consistency of this sampling procedure, replicate samples comprising litter, bait, and general collections were taken from twelve sites: nine randomly chosen valley riparian sites, and one randomly chosen site from each of the three other habitats.

At the valley riparian sites, the following habitat variables were recorded:

(1) Distance, in kilometers, to the nearest urban area (Vacaville, Winters, Davis, West Sacramento, or Woodland) along the same or closest riparian corridor;

(2) Seasonality of stream flow (continuous or intermittent, assessed in late summer);

(3) Encroachment by nonnative trees, principally *Eucalyptus* and *Ailanthus* (recorded as present or absent);

(4) Overall disturbance, measured on a scale of 0 to 8; this was a composite index, based on a summation of the following four factors, each assessed subjectively on a scale of 0 to 2: absence or scarcity of large, vigorous native trees; replacement of native understory plants by adventive species; presence of human garbage and waste materials; and disturbance of soil by human activities.

In addition to intensive sampling of 46 sites as described above, spot sampling for the presence of *Iridomyrmex humilis* and other epigaeic ants was carried out at 68 additional sites located along four valley riparian systems, and at 14 disturbed sites located along roadsides and irrigation ditches. These spot samples entailed about 30 minutes of general collecting per site.

Voucher specimens of ants recorded during this survey have been deposited in the Bohart Museum, Department of Entomology, University of California at Davis (UCD).

RESULTS

Sampling Efficacy

Replicate sampling of twelve sites suggested that, collectively, the three sampling methods give reliable, repeatable results with respect to detection of *Iridomyrmex humilis* and assessment of the native ant fauna.

Estimates of ant species richness, as indicated by the total number of native ant species recorded at a site (S_T), are highly positively correlated between replicates ($r = 0.87$, $p < .001$; see figure 2). Species richness is also significantly correlated between replicate litter collections ($r = 0.60$, $p < .05$) and replicate bait collections ($r = 0.58$, $p < .05$), although less strongly so.

Iridomyrmex humilis had been detected at four of the twelve sites in 1984-85 during the original survey of those sites. Application of the same sampling procedures to the twelve sites a year later revealed *I. humilis* at all four previously recorded sites, and at none of the eight null sites, with one exception (table 2). In the exceptional case, *I. humilis* occupied the margins of a riparian site (site 21, 6km W Capay, Yolo County) from which it had not been previously recorded. Circumstantial evidence, discussed in further detail below, indicates that this population is recently established.

Finally, with respect to detecting the presence of native ant species, replicate between-year samplings show high concordance, despite the possible obscuring influence of