Abstract
Pesticides have been commonly detected in California’s urban surface waters. However, there is a lack of information on input sources. Pesticide use by professional pest control operators (PCOs) is recorded in the Department of Pesticide Regulation’s (DPR) Pesticide Use Reporting (PUR) database. However, pesticide use by residents is not tracked in the PUR database, therefore estimating pesticide contributions from this group is difficult. To better understand current pesticide practices of homeowners in Northern (NorCal) and Southern (SoCal) California, DPR conducted a survey in two neighborhoods that contribute runoff to current DPR monitoring locations. Survey participants (“homeowners”) were asked five questions to determine their pesticide use practice. A total of 699 residences were contacted and 178 participated in the survey. In the surveyed residential areas, pesticides were applied mostly by PCOs or residents themselves. Most pest control was performed quarterly or as needed, with applications mainly around perimeter foundation targeting ants and spiders.

Results
- 71% of contacted homeowners responded.
- 39% utilize a PCO for pest management, 33% apply pesticides themselves.
- The use of gardeners (6%) and HOAs (1%) are not as common.
- Most pesticide use was around house perimeters.
- Homeowners were most concerned about ants.
- Only about half of the residents recalled the products they used. Of these, the majority (63%) indicated a ready-to-use over-the-counter product containing one or more pyrethrins.
- Most PCOs apply quarterly (36%). Homeowners who apply pesticides themselves make applications “infrequently” or “whenever necessary” (43%).
- A higher percentage of homeowners in the Southern California neighborhood (43%) use a PCO compared to Northern California neighborhood (36%).
- 26% of residents stated they do not use pesticides on their properties.

Table 1. Pesticide application frequency, area of application, and targeted pests.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Application Area</th>
<th>%</th>
<th>Pests</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>Foundation perimeter</td>
<td>74</td>
<td>Ants</td>
<td>73</td>
</tr>
<tr>
<td>Monthly</td>
<td>Driveway</td>
<td>14</td>
<td>Spiders</td>
<td>44</td>
</tr>
<tr>
<td>Annually</td>
<td>Edge</td>
<td>14</td>
<td>Weeds</td>
<td>10</td>
</tr>
<tr>
<td>Quarterly</td>
<td>Other</td>
<td>24</td>
<td>Fleas</td>
<td>7</td>
</tr>
<tr>
<td>As necessary*</td>
<td>Other*</td>
<td>26</td>
<td>Other</td>
<td>26</td>
</tr>
</tbody>
</table>

*Percentage based on total number of respondents. for each question respondents could answer more than one category (resulting in total >100%). **Frequently

Conclusions
This survey highlights how residents in two California single family home neighborhoods choose to address their outdoor pest problems. Residents commonly use pesticides to deal with pests, suggesting that pesticides are commonly used on urban landscapes. Regionally, Southern California has higher pesticide use; presumably due to higher pest pressure. This survey suggests that PCO use is a common method for pest control in CA neighborhoods. Information gained from this survey will allow DPR to gain a better understanding of pesticide use patterns and source identification within urban landscapes and to target appropriate education and outreach efforts aimed at mitigating pesticide transport to California surface waters.

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