

# Gretchen Pederson

## Oregon Bee Atlas Collection and Identification Report

### 1 Your 2023 Collections

Gretchen Pederson caught 1133 bees across 12 counties from April 26, 2023 to October 20, 2023, representing 71 unique taxa, including 42 unique species.

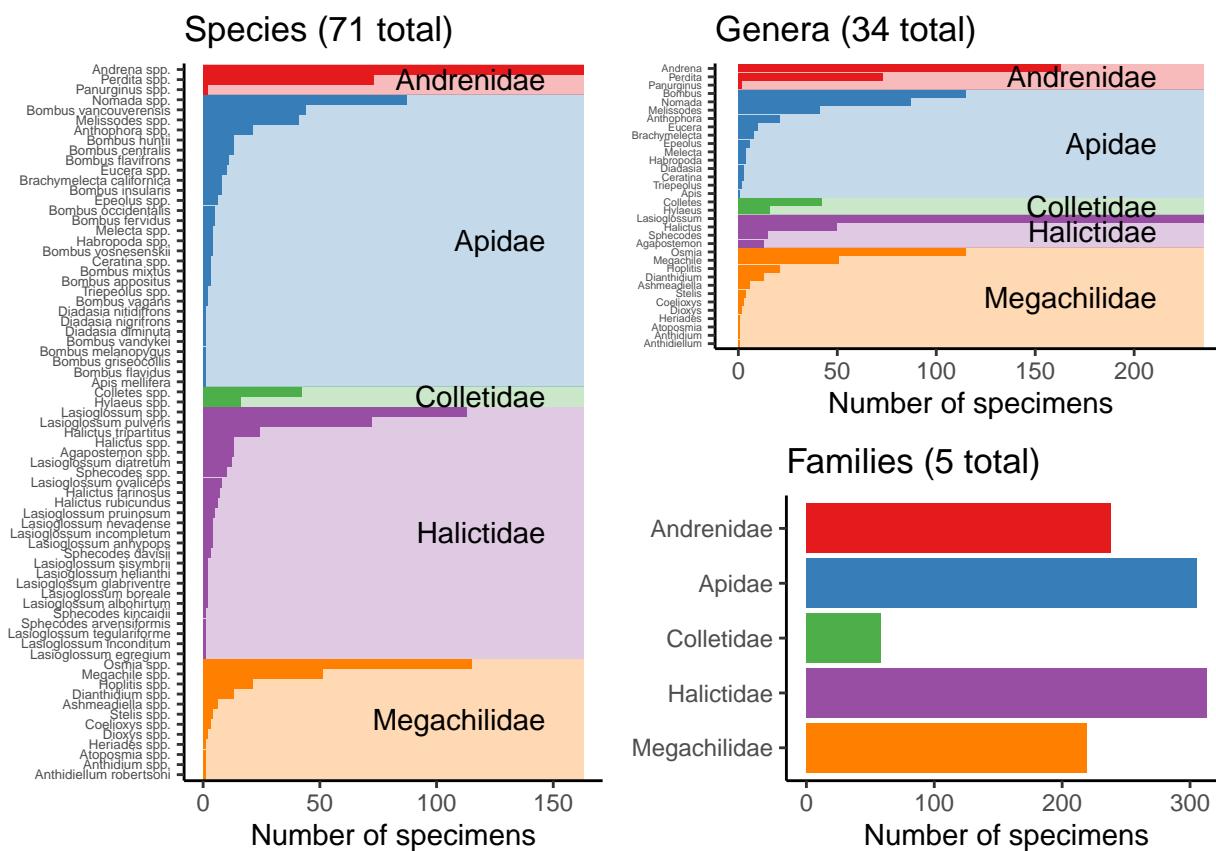


Figure 1: Bees caught by Gretchen Pederson, broken down by species, genus, and family.

## 2 All Your Collections

Gretchen Pederson caught 9051 bees across 20 counties from April 19, 2018 to October 20, 2023, representing 275 unique taxa, including 244 unique species. Gretchen Pederson also caught the only *Andrena barbilabris* in the collection!

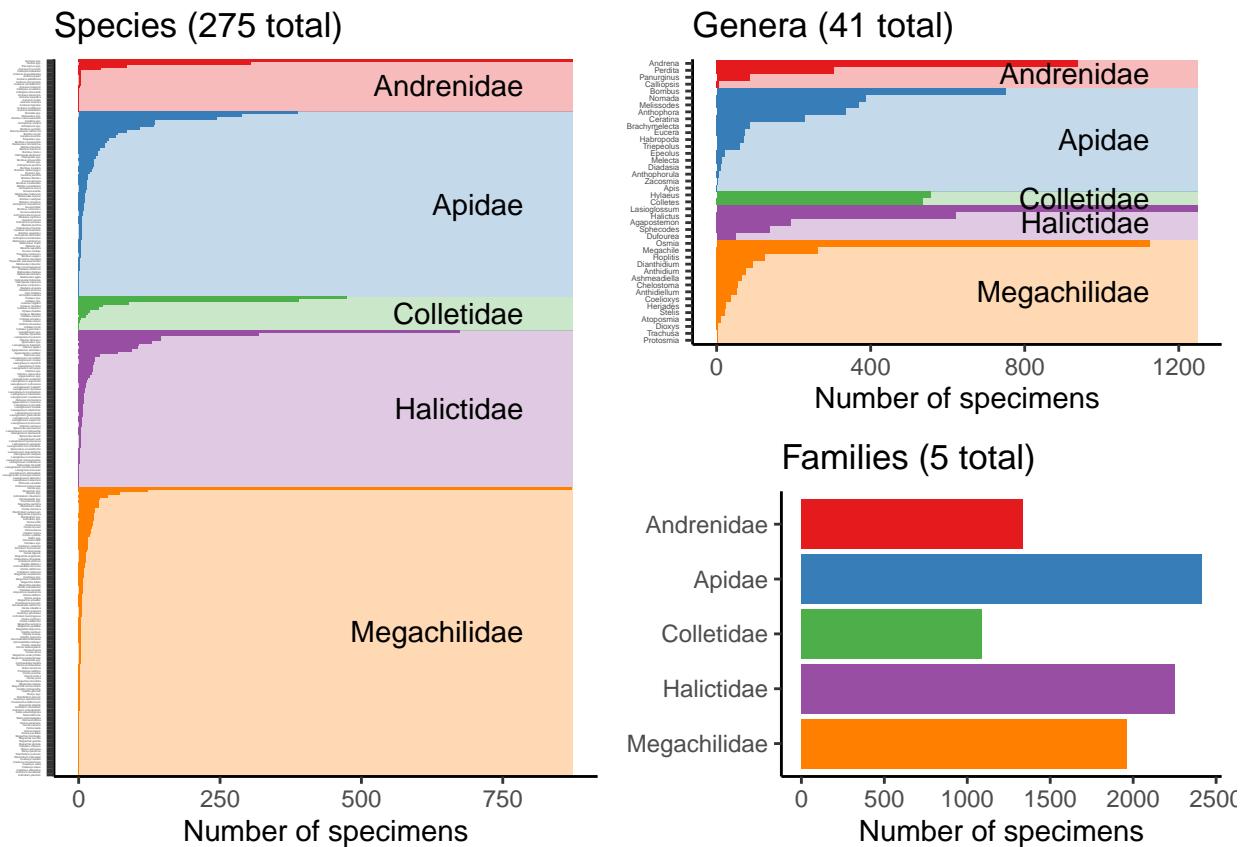


Figure 2: Bees caught by Gretchen Pederson, broken down by species, genus, and family.

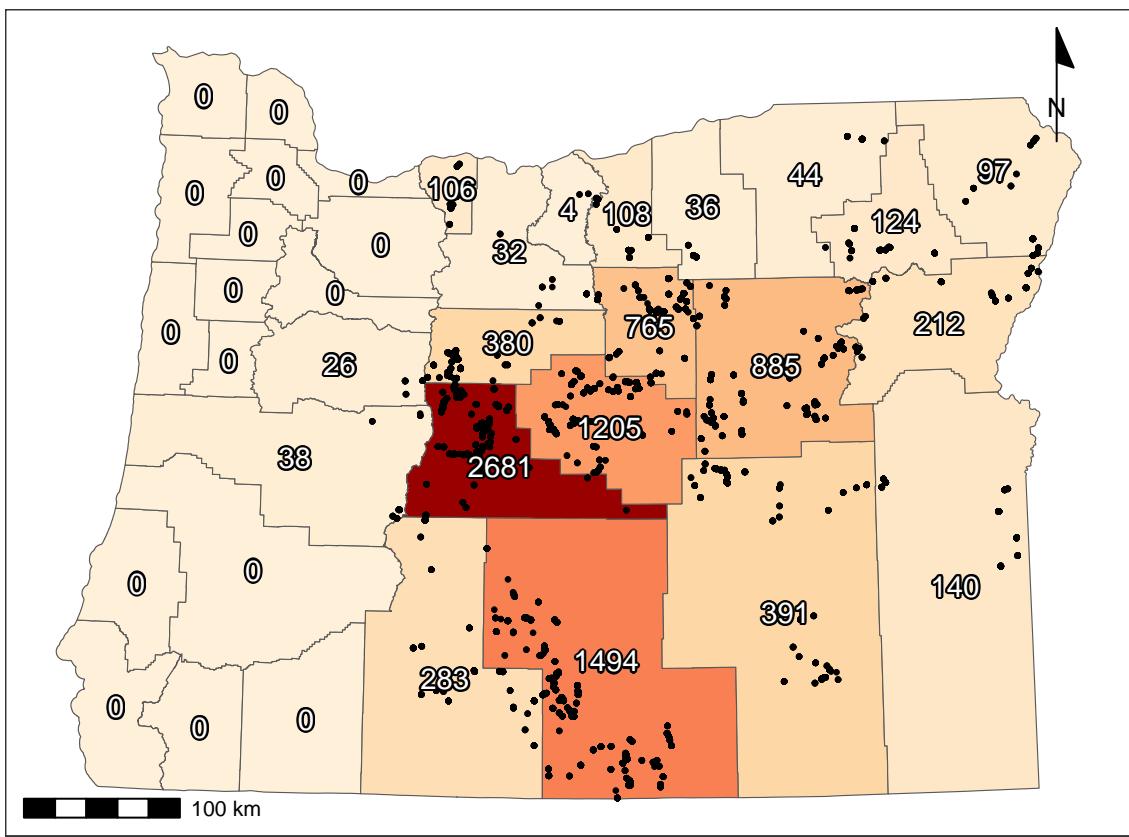


Figure 3: Bee catch locations for Gretchen Pederson (within Oregon), along with total catches per county.

### 3 Total Catches

Volunteers from the Oregon Bee Atlas project caught 22478 bees across 36 counties from January 24, 2023 to December 13, 2023, representing 90 unique species and 48 unique genera. The **Nimble Net Kudos** (most specimens collected) goes to Scott Sublette, Dan O'Loughlin, and Michael O'Loughlin, who caught a total of 2274, 1283, and 1255 specimens. The *positive* kind of **Darwin Award** (most species collected) goes to Scott Sublette, Ellen Silva, and Michael O'Loughlin, who caught a total of 77, 74, and 72 unique species. Well done!



Figure 4: Bees caught by all volunteers, broken down by species, genus, and family.

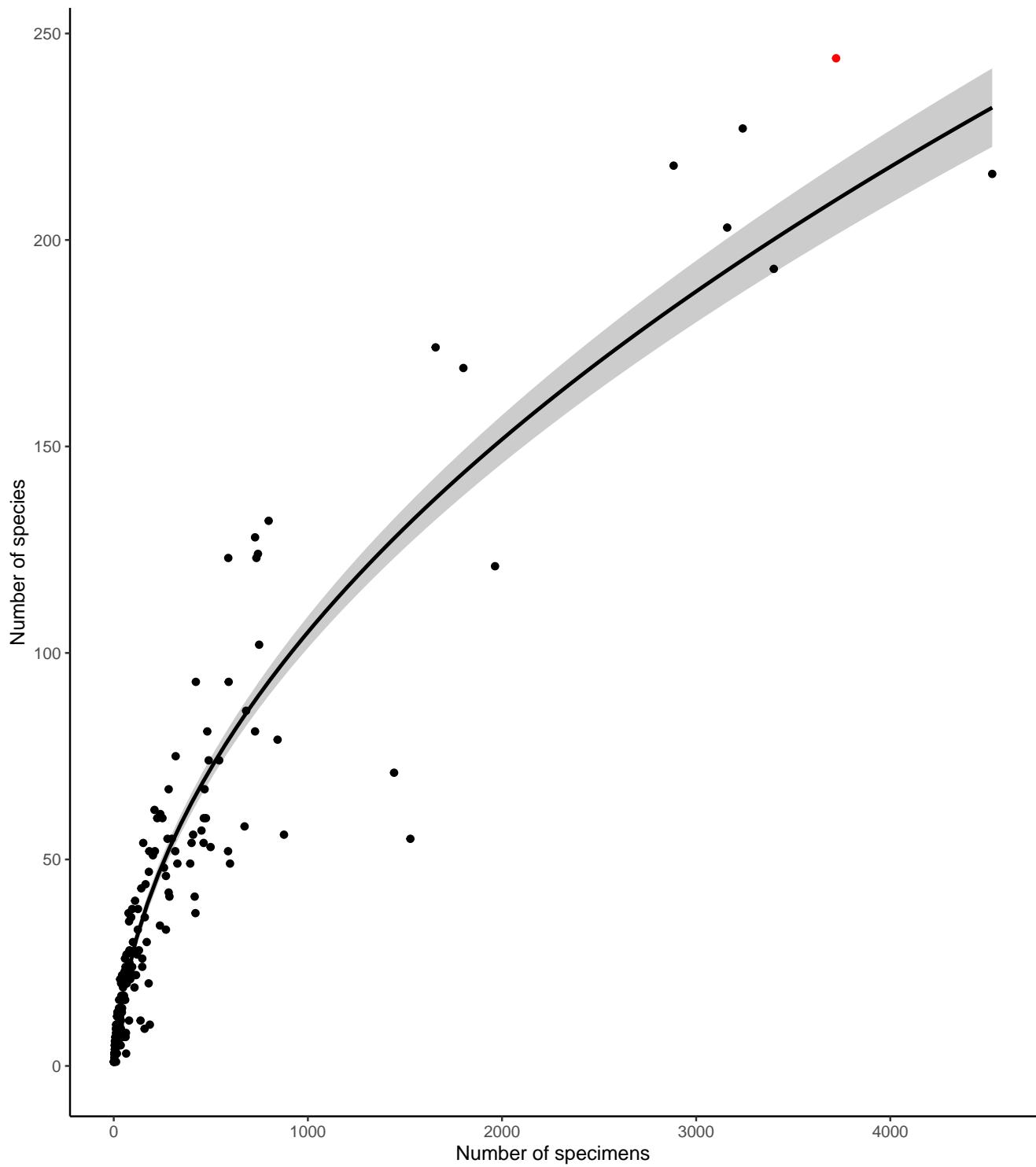


Figure 5: Number of bee specimens and unique bee species caught by all volunteers, with your effort shown in red. This graph should give you an idea of how many specimens you would need to catch to begin seeing rarer bee species.



Figure 6: Total specimens caught per county, along with catch location of each specimen (black dots). For genus- and species-specific information for each county, see Tables 3 and 4.



Figure 7: Total catches per (Level III) ecoregion, along with catch location of each specimen (black dots).

## 4 Flight Phenology

West of (and including) the Cascade Mountains, most bees (90%) were caught between April 13 and September 02, but the peak of season (50% of specimens) was from May 21 to July 26.



Figure 8: Phenology plot for all bee species caught in or West of the Cascade Mountains, sorted by median abundance times. Percentiles of overall emergence times (50th & 90th) are shown in grey shaded regions. Date ranges for each species (minimum, first, second, third quartiles, and maximum) are shown only for species with  $>10$  specimens.

**East of** the Cascade Mountains, most bees (90%) were caught between April 28 and September 16, but the peak of season (50% of specimens) was from June 02 to August 07.

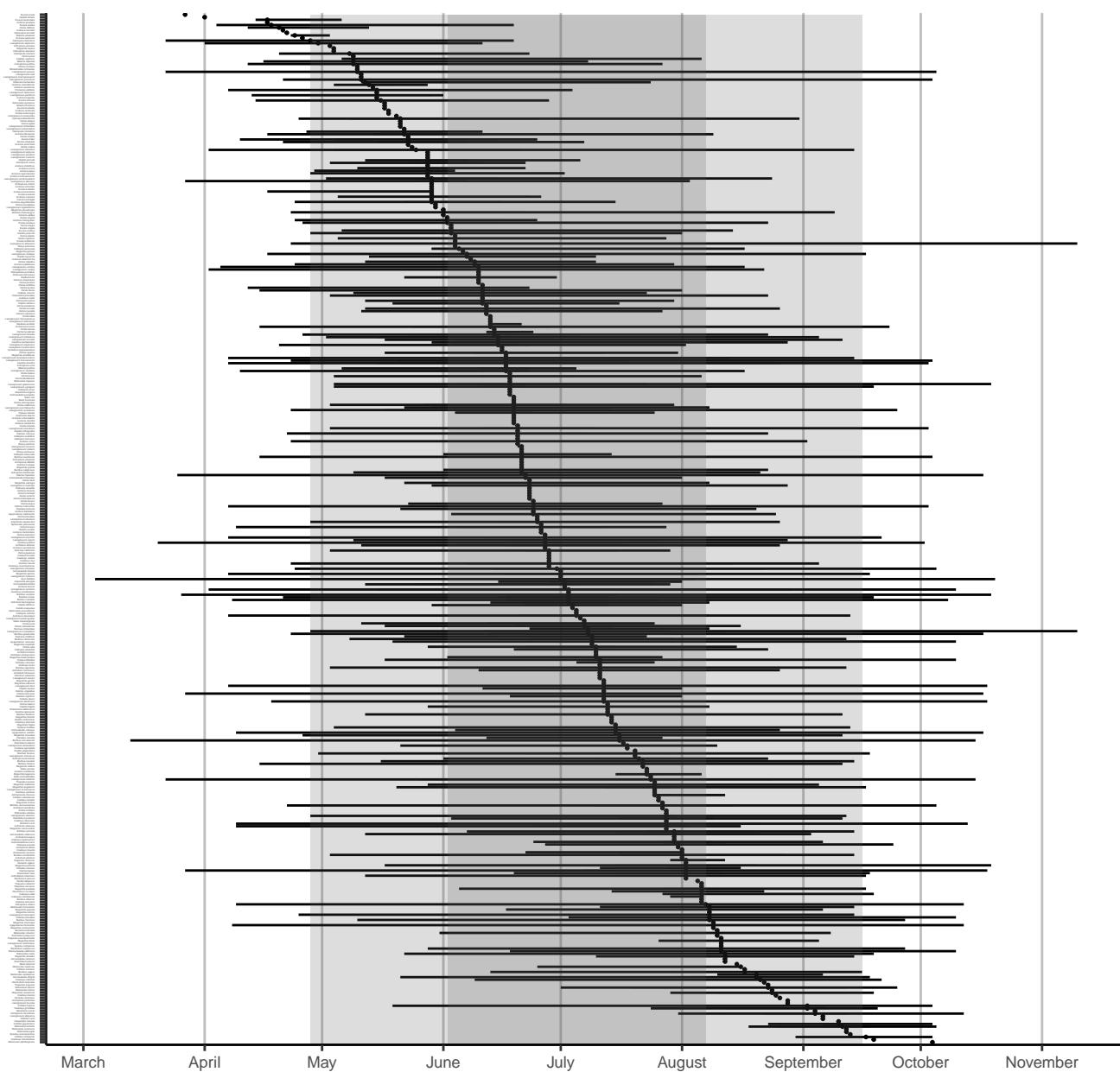


Figure 9: Phenology plot for all bee species caught east of the Cascade Mountains, sorted by median abundance times. Percentiles of overall emergence times (50th & 90th) are shown in grey shaded regions. Date ranges for each species (minimum, first, second, third quartiles, and maximum) are shown only for species with >10 specimens.

## 5 Plant genera

Volunteers collected specimens from a total of 636 unique flower genera, with most volunteers sampling from 19 flower genera (median value). The **Flower Power Kudos** (most sampled flower genera) goes to Michael O'Loughlin, Lori Humphreys, and Dan O'Loughlin, who collected bees from a total of 246, 210, and 188 genera of flowers. Well done!

The flower genera that had the most specimens caught on them were *Ericameria*, *Phacelia*, and *Penstemon*, which yielded a total of 6308, 4129, and 3411 specimens. The flower genera that were popular with the most species of bees were *Phacelia*, *Penstemon*, and *Ericameria*, hosting a total of 179, 167, and 140 unique bee species. See Tables 1 and 2 for more details.



Figure 10: Recorded number of flower genera per county.

Table 1: Number of bee specimens collected from each plant genus. Plants with few records are great targets for future sampling.

Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count
<i>Ericameria</i>	6308	<i>Chaenactis</i>	274	<i>Rupertia</i>	65	<i>Anchusa</i>	26	<i>Alyssum</i>	10	<i>Apium</i>	5	<i>Actaea</i>	2		
<i>Phacelia</i>	4129	<i>Acer</i>	271	<i>Adelphia</i>	64	<i>Dichelostemma</i>	26	<i>Cercis</i>	10	<i>Cistus</i>	5	<i>Allophylum</i>	2		
<i>Penstemon</i>	3411	<i>Sphaeralcea</i>	271	<i>Ageratina</i>	64	<i>Caryopteris</i>	25	<i>Doronicum</i>	10	<i>Corylus</i>	5	<i>Bauhinia</i>	2		
<i>Grindelia</i>	2796	<i>Heracleum</i>	270	<i>Calyptidium</i>	64	<i>Navarretia</i>	25	<i>Echinops</i>	10	<i>Anthriscus</i>	4	<i>Betonica</i>	2		
<i>Rubus</i>	2658	<i>Gaillardia</i>	263	<i>Glebionis</i>	62	<i>Pedicularis</i>	25	<i>Heliospis</i>	10	<i>Aruncus</i>	4	<i>Bromus</i>	2		
<i>Ceanothus</i>	2352	<i>Crataegus</i>	261	<i>Crocidium</i>	62	<i>Petrosedum</i>	25	<i>Hemerocheilis</i>	10	<i>Asperugo</i>	4	<i>Cardionema</i>	2		
<i>Cirsium</i>	2349	<i>Acniphyson</i>	258	<i>Agoseris</i>	60	<i>Pieris</i>	25	<i>Kickxia</i>	10	<i>Beta</i>	4	<i>Castanea</i>	2		
<i>Salix</i>	2169	<i>Gilia</i>	247	<i>Cotinus</i>	60	<i>Erysimum</i>	24	<i>Layia</i>	10	<i>Crassula</i>	4	<i>Celosia</i>	2		
<i>Solidago</i>	1914	<i>Malus</i>	243	<i>Hirschfeldia</i>	59	<i>Lewisia</i>	24	<i>Liatris</i>	10	<i>Damasonium</i>	4	<i>Comandra</i>	2		
<i>Potentilla</i>	1842	<i>Marrubium</i>	234	<i>Iliamna</i>	59	<i>Lobularia</i>	24	<i>Altiella</i>	9	<i>Datura</i>	4	<i>Cormus</i>	2		
<i>Prunus</i>	1726	<i>Vaccinium</i>	225	<i>Persicaria</i>	59	<i>Rhaponticum</i>	24	<i>Choisia</i>	9	<i>Elymus</i>	4	<i>Crocus</i>	2		
<i>Chrysanthemum</i>	1684	<i>Veronica</i>	213	<i>Arbutus</i>	57	<i>Sambucus</i>	24	<i>Diplacus</i>	9	<i>Gypsophila</i>	4	<i>Cydonia</i>	2		
<i>Eriogonum</i>	1588	<i>Philadelphus</i>	204	<i>Foeniculum</i>	57	<i>Stewartia</i>	24	<i>Draba</i>	9	<i>Helleborus</i>	4	<i>Danthonia</i>	2		
<i>Helianthus</i>	1563	<i>Astragalus</i>	202	<i>Blepharipappus</i>	56	<i>Cardamine</i>	23	<i>Fraxinus</i>	9	<i>Holcus</i>	4	<i>Daphne</i>	2		
<i>Lupinus</i>	1506	<i>Raphanus</i>	199	<i>Dales</i>	55	<i>Chamaebatatica</i>	23	<i>Lagophylla</i>	9	<i>Impatiens</i>	4	<i>Dianthus</i>	2		
<i>Ribes</i>	1419	<i>Amansinica</i>	197	<i>Eryngium</i>	55	<i>Phlox</i>	23	<i>Maianthemum</i>	9	<i>Kopsiopsis</i>	4	<i>Dipterostemon</i>	2		
<i>Sympyotrichum</i>	1418	<i>Convolvulus</i>	194	<i>Lithospermum</i>	55	<i>Robinia</i>	23	<i>Melissa</i>	9	<i>Mutarda</i>	4	<i>Echinocystis</i>	2		
<i>Hypochaeris</i>	1393	<i>Hydrophyllum</i>	180	<i>Mertensia</i>	55	<i>Smithiastrum</i>	23	<i>Mimulus</i>	9	<i>Paonia</i>	4	<i>Eucephalus</i>	2		
<i>Arctostaphylos</i>	1332	<i>Polemonium</i>	179	<i>Sorbus</i>	54	<i>Aralia</i>	22	<i>Papaver</i>	9	<i>Pastinaca</i>	4	<i>Festuca</i>	2		
<i>Lomatium</i>	1308	<i>Taraxia</i>	179	<i>Lamium</i>	53	<i>Erythronium</i>	22	<i>Vernonia</i>	9	<i>Prosartes</i>	4	<i>Achlys</i>	1		
<i>Taraxacum</i>	1286	<i>Coreopsis</i>	178	<i>Styrax</i>	53	<i>Leptosiphon</i>	22	<i>Vitez</i>	9	<i>Pseudoeupatorium</i>	4	<i>Actinidia</i>	1		
<i>Melilotus</i>	1237	<i>Iris</i>	178	<i>Antennaria</i>	52	<i>Pseudotsuga</i>	22	<i>Aesculus</i>	8	<i>Romanzoffia</i>	4	<i>Allotropa</i>	1		
<i>Calochortus</i>	1224	<i>Amelanchier</i>	177	<i>Cynoglossum</i>	52	<i>Quercus</i>	22	<i>Aronia</i>	8	<i>Scabiosa</i>	4	<i>Alnus</i>	1		
<i>Eriophyllum</i>	1198	<i>Armenia</i>	166	<i>Cytisus</i>	52	<i>Artemisia</i>	21	<i>Baptisia</i>	8	<i>Swainsona</i>	4	<i>Alstroemeria</i>	1		
<i>Erigeron</i>	1173	<i>Angelica</i>	158	<i>Geum</i>	52	<i>Comium</i>	21	<i>Calandrinia</i>	8	<i>Tephrosaris</i>	4	<i>Amaranthus</i>	1		
<i>Lotus</i>	1147	<i>Delphinium</i>	158	<i>Ilex</i>	52	<i>Eurybia</i>	21	<i>Canadanthus</i>	8	<i>Tiarella</i>	4	<i>Anemone</i>	1		
<i>Centauraea</i>	1106	<i>Medicago</i>	158	<i>Aurinia</i>	51	<i>Hemizonia</i>	21	<i>Cordylanthus</i>	8	<i>Tradescantia</i>	4	<i>Anethum</i>	1		
<i>Trifolium</i>	1070	<i>Castilleja</i>	154	<i>Boynkinia</i>	51	<i>Micranthes</i>	21	<i>Eruca</i>	8	<i>Triantha</i>	4	<i>Arctium</i>	1		
<i>Leucanthemum</i>	989	<i>Calendula</i>	142	<i>Caragana</i>	51	<i>Sisyrinchium</i>	21	<i>Eupatorium</i>	8	<i>Tribulus</i>	4	<i>Argemone</i>	1		
<i>Vicia</i>	988	<i>Nemophila</i>	142	<i>Viburnum</i>	51	<i>Cicuta</i>	20	<i>Ficaria</i>	8	<i>Tropaeolum</i>	4	<i>Atriplex</i>	1		
<i>Chamaenerion</i>	983	<i>Tanacetum</i>	139	<i>Linum</i>	50	<i>Pinus</i>	20	<i>Lithodora</i>	8	<i>Zeltnera</i>	4	<i>Begonia</i>	1		
<i>Balsamorhiza</i>	914	<i>Marrubium</i>	138	<i>Scandix</i>	50	<i>Populus</i>	20	<i>Nasturtium</i>	8	<i>Agopodium</i>	3	<i>Betula</i>	1		
<i>Lepidium</i>	862	<i>Cornus</i>	135	<i>Nothochelone</i>	49	<i>Bellardia</i>	19	<i>Phyllodoce</i>	8	<i>Armeria</i>	3	<i>Cacaliopsis</i>	1		
<i>Achillea</i>	828	<i>Limnanthes</i>	133	<i>Brodiaea</i>	48	<i>Clematis</i>	19	<i>Poa</i>	8	<i>Asparagus</i>	3	<i>Calibrachoa</i>	1		
<i>Apocynum</i>	804	<i>Verbera</i>	129	<i>Cotoneaster</i>	48	<i>Hymenoxys</i>	19	<i>Spergula</i>	8	<i>Astrantia</i>	3	<i>Carex</i>	1		
<i>Mentha</i>	786	<i>Cardus</i>	123	<i>Tragopogon</i>	48	<i>Ladeania</i>	19	<i>Stanleya</i>	8	<i>Aucuba</i>	3	<i>Catalpa</i>	1		
<i>Sidalcea</i>	767	<i>Mentzelia</i>	122	<i>Tetradymia</i>	47	<i>Abelia</i>	18	<i>Tagetes</i>	8	<i>Brunnera</i>	3	<i>Cerithie</i>	1		
<i>Ranunculus</i>	765	<i>Triteleia</i>	118	<i>Teucrium</i>	47	<i>Altisma</i>	18	<i>Xerophyllum</i>	8	<i>Buzus</i>	3	<i>Chaenomeles</i>	1		
<i>Eschscholzia</i>	764	<i>Dasisphora</i>	114	<i>Echinacea</i>	46	<i>Amorpha</i>	18	<i>Jagua</i>	7	<i>Calocedrus</i>	3	<i>Chamaemelum</i>	1		
<i>Holodiscus</i>	693	<i>Dipsacus</i>	112	<i>Kolkwitzia</i>	44	<i>Ligustrum</i>	41	<i>Kellloggia</i>	16	<i>Heliotropium</i>	7	<i>Conioselinum</i>	3	<i>Fuchsia</i>	1
<i>Allium</i>	667	<i>Hoasackia</i>	111	<i>Orthocarpus</i>	44	<i>Physaria</i>	18	<i>Lilium</i>	16	<i>Crocosmia</i>	3	<i>Corydalis</i>	1		
<i>Bellis</i>	662	<i>Lonicera</i>	110	<i>Stellaria</i>	44	<i>Salsola</i>	18	<i>Cymopterus</i>	7	<i>Centranthus</i>	3	<i>Cypripedium</i>	1		
<i>Plagiobothrys</i>	656	<i>Fraseria</i>	109	<i>Chrysolepis</i>	43	<i>Bassia</i>	17	<i>Delosperma</i>	7	<i>Chrysopsis</i>	3	<i>Eremothera</i>	1		
<i>Camassia</i>	648	<i>Euthamia</i>	108	<i>Petroselinum</i>	42	<i>Olsynium</i>	17	<i>Eucryphia</i>	7	<i>Circea</i>	3	<i>Filipendula</i>	1		
<i>Spiraea</i>	640	<i>Bistorta</i>	105	<i>Aster</i>	41	<i>Vancouveria</i>	17	<i>Glandora</i>	7	<i>Clinopodium</i>	3	<i>Porsythia</i>	1		
<i>Geranium</i>	607	<i>Dieteria</i>	105	<i>Gayophyllum</i>	41	<i>Hydrangea</i>	16	<i>Gleditsia</i>	7	<i>Clintonia</i>	3	<i>Fremontodendron</i>	1		
<i>Symporicarpus</i>	607	<i>Malva</i>	105	<i>Ligusticum</i>	41	<i>Kelloegea</i>	16	<i>Heliotropium</i>	7	<i>Conioselinum</i>	3	<i>Fuchsia</i>	1		
<i>Berberis</i>	592	<i>Anthemis</i>	104	<i>Primula</i>	41	<i>Lilium</i>	16	<i>Hyssopus</i>	7	<i>Crocosmia</i>	3	<i>Glechoma</i>	1		
<i>Rosa</i>	575	<i>Bidens</i>	104	<i>Verbascum</i>	41	<i>Toxicodendron</i>	16	<i>Isatis</i>	7	<i>Cucumis</i>	3	<i>Gnaphalium</i>	1		
<i>Jacobaea</i>	555	<i>Thymus</i>	103	<i>Columbiadoria</i>	40	<i>Zinnia</i>	16	<i>Kniphofia</i>	7	<i>Dahlia</i>	3	<i>Grayia</i>	1		
<i>Senecio</i>	533	<i>Mahonia</i>	101	<i>Hieracium</i>	40	<i>Gentiana</i>	15	<i>Leucophysalis</i>	7	<i>Deutzia</i>	3	<i>Helianthemum</i>	1		
<i>Salvia</i>	520	<i>Chondrilla</i>	99	<i>Leontodon</i>	40	<i>Jasmea</i>	15	<i>Oralis</i>	7	<i>Fritillaria</i>	3	<i>Knautia</i>	1		
<i>Rhus</i>	493	<i>Oenothera</i>	97	<i>Spergularia</i>	40	<i>Oenanthe</i>	15	<i>Parthenocissus</i>	7	<i>Gaulium</i>	3	<i>Lepcheinia</i>	1		
<i>Agastache</i>	489	<i>Stachys</i>	97	<i>Toxicoscordion</i>	40	<i>Scorzoneroidea</i>	15	<i>Physalis</i>	7	<i>Garrya</i>	3	<i>Leucocrinum</i>	1		
<i>Madia</i>	484	<i>Purshia</i>	95	<i>Barbarea</i>	38	<i>Boechera</i>	14	<i>Pilosella</i>	7	<i>Iva</i>	3	<i>Leycesteria</i>	1		
<i>Daucus</i>	482	<i>Heterotheca</i>	94	<i>Linaris</i>	38	<i>Cakile</i>	14	<i>Sanguisorba</i>	7	<i>Lippia</i>	3	<i>Limonium</i>	1		
<i>Sedum</i>	457	<i>Cleomelea</i>	93	<i>Erica</i>	36	<i>Pyracantha</i>	14	<i>Townsendia</i>	7	<i>Microsteris</i>	3	<i>Linnaea</i>	1		
<i>Clarkia</i>	451	<i>Cucurbita</i>	93	<i>Lithophragma</i>	36	<i>Umbellularia</i>	14	<i>Tulipa</i>	7	<i>Misopates</i>	3	<i>Ludwigia</i>	1		
<i>Hackelia</i>	436	<i>Pyrus</i>	93	<i>Borago</i>	35	<i>Arabis</i>	13	<i>Abromia</i>	6	<i>Olea</i>	3	<i>Lunaria</i>	1		
<i>Sisymbrium</i>	430	<i>Polygonum</i>	91	<i>Microseris</i>	35	<i>Cerastium</i>	13	<i>Antirrhinum</i>	6	<i>Osmanthus</i>	3	<i>Lycopus</i>	1		
<i>Brassica</i>	423	<i>Plantago</i>	89	<i>Oreocarya</i>	35	<i>Pentaglottis</i>	13	<i>Caltha</i>	6	<i>Pedicularis</i>	3	<i>Machaeranthera</i>	1		
<i>Drymocallis</i>	421	<i>Thermopsis</i>	89	<i>Cercocarpus</i>	34	<i>Glycyrrhiza</i>	13	<i>Capsella</i>	6	<i>Petasites</i>	3	<i>Magnolia</i>	1		
<i>Asclepias</i>	411	<i>Heuchera</i>	88	<i>Opuntia</i>	34	<i>Hylotelephium</i>	13	<i>Kniphofia</i>	7	<i>Phoenicaulis</i>	3	<i>Melaleuca</i>	1		
<i>Claytonia</i>	403	<i>Perideridia</i>	86	<i>Pyrrocoma</i>	34	<i>Ipomoea</i>	13	<i>Distichlis</i>	6	<i>Phygostegia</i>	3	<i>Moenchia</i>	1		
<i>Physocarpus</i>	403	<i>Doellingeria</i>	84	<i>Calystegia</i>	33	<i>Nothocalais</i>	13	<i>Galanthus</i>	6	<i>Silybum</i>	3	<i>Mycelis</i>	1		
<i>Anaphalis</i>	401	<i>Fagopyrum</i>	81	<i>Agapanthus</i>	32	<i>Nothalithocarpus</i>	13	<i>Gentiana</i>	6	<i>Gratiola</i>	6	<i>Valerianella</i>	3	<i>Nicotiana</i>	1
<i>Prunella</i>	401	<i>Trichostema</i>	80	<i>Campanula</i>	32	<i>Pentaglottis</i>	13	<i>Hastingsia</i>	6	<i>Vinca</i>	3	<i>Nuphar</i>	1		
<i>Fragaria</i>	394	<i>Myosotis</i>	79	<i>Chorispora</i>	32	<i>Platanthera</i>	13	<i>Hemizonia</i>	6	<i>Hyacinthus</i>	2	<i>Nymphaea</i>	1		
<i>Plectritis</i>	381	<i>Thlaspi</i>	79	<i>Collomia</i>	32	<i>Reynoutria</i>	13	<i>Hibiscus</i>	6	<i>Juglans</i>	2	<i>Onobrychis</i>	1		
<i>Nepea</i>	376	<i>Cosmos</i>	78	<i>Lathenaria</i>	32	<i>Sancium</i>	13	<i>Ivesia</i>	6	<i>Ligularia</i>	2	<i>Opopanax</i>	1		
<i>Lavandula</i>	372	<i>Hesperocniren</i>	78	<i>Satureja</i>	32	<i>Scutellaria</i>	13	<i>Juniperus</i>	6	<i>Ligustrum</i>	2	<i>Osteospermum</i>	1		
<i>Horkelia</i>	352	<i>Solanum</i>	78	<i>Eremogone</i>	31	<i>Teesdalia</i>	13	<i>Nestotus</i>	6	<i>Lobelia</i>	2	<i>Oxythea</i>	1		
<i>Lathyrus</i>	347	<i>Oreostemma</i>	77	<i>Escallonia</i>	31	<i>Tithonia</i>	13	<i>Rheum</i>	6	<i>Lysimachia</i>	2	<i>Parnassia</i>	1		
<i>Wyethia</i>	341	<i>Syringa</i>	77	<i>Hycanthodes</i>	31	<i>Abies</i>	12	<i>Securigera</i>	6	<i>Moehringia</i>	2	<i>Pediacactus</i>	1		
<i>Monardella</i>	339	<i>Downingia</i>	76	<i>Scrophularia</i>	31	<i>Coriandrum</i>	12	<i>Tolmiea</i>	6	<i>Ocimum</i>	2	<i>Pheidimus</i>	1		
<i>Erythranthe</i>	338	<i>Digitalis</i>	75	<i>Alcea</i>	30	<i>Elaeagnus</i>	12	<i>Veronicastrum</i>	6	<i>Omph</i>					

Table 2: Number of bee species collected from each plant genus

Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count	Genus	Count
<i>Phacelia</i>	179	<i>Fragaria</i>	41	<i>Aster</i>	19	<i>Coriandrum</i>	10	<i>Alyssum</i>	5	<i>Aliciella</i>	3	<i>Achlys</i>	1		
<i>Penstemon</i>	167	<i>Triteleia</i>	41	<i>Boysinia</i>	19	<i>Cynara</i>	10	<i>Baptisia</i>	5	<i>Anthriscus</i>	3	<i>Actinidia</i>	1		
<i>Ericameria</i>	140	<i>Angelica</i>	40	<i>Digitalis</i>	19	<i>Dicentra</i>	10	<i>Canadanthus</i>	5	<i>Armeria</i>	3	<i>Allotropa</i>	1		
<i>Grindelia</i>	133	<i>Bellis</i>	40	<i>Alcea</i>	18	<i>Hymenoxys</i>	10	<i>Croton</i>	5	<i>Asparagus</i>	3	<i>Alnus</i>	1		
<i>Rubus</i>	129	<i>Collinsia</i>	40	<i>Antennaria</i>	18	<i>Lythrum</i>	10	<i>Delosperma</i>	5	<i>Astrantia</i>	3	<i>Alstroemeria</i>	1		
<i>Cirsium</i>	126	<i>Marrubium</i>	40	<i>Arbutus</i>	18	<i>Orthocarpus</i>	10	<i>Diplacus</i>	5	<i>Bassia</i>	3	<i>Amaranthus</i>	1		
<i>Eriophyllum</i>	123	<i>Onopordum</i>	40	<i>Caragana</i>	18	<i>Primula</i>	10	<i>Galanthus</i>	5	<i>Boechera</i>	3	<i>Anemone</i>	1		
<i>Erigeron</i>	120	<i>Lonicera</i>	39	<i>Cosmos</i>	18	<i>Caluna</i>	9	<i>Glandora</i>	5	<i>Brunnera</i>	3	<i>Anethum</i>	1		
<i>Potentilla</i>	120	<i>Cryptantha</i>	38	<i>Hesperochiron</i>	18	<i>Erythronium</i>	9	<i>Heliotropium</i>	5	<i>Capsella</i>	3	<i>Arctium</i>	1		
<i>Sympotrichum</i>	119	<i>Heracleum</i>	38	<i>Hieracium</i>	18	<i>Euonymus</i>	9	<i>Isatis</i>	5	<i>Centromadia</i>	3	<i>Argemone</i>	1		
<i>Solidago</i>	117	<i>Raphanus</i>	38	<i>Lactuca</i>	18	<i>Hydrangea</i>	9	<i>Kalmia</i>	5	<i>Chrysopsis</i>	3	<i>Atriplex</i>	1		
<i>Ceanothus</i>	115	<i>Diasiphora</i>	37	<i>Lamium</i>	18	<i>Leptosiphon</i>	9	<i>Leucophysalis</i>	5	<i>Cirsaea</i>	3	<i>Aucuba</i>	1		
<i>Melilotus</i>	113	<i>Medicago</i>	37	<i>Lasthenia</i>	18	<i>Narcissus</i>	9	<i>Matriaria</i>	5	<i>Clinopodium</i>	3	<i>Begonia</i>	1		
<i>Lupinus</i>	109	<i>Anthemis</i>	36	<i>Ligusticum</i>	18	<i>Oreocarya</i>	9	<i>Notholithocarpus</i>	5	<i>Conioselinum</i>	3	<i>Betonica</i>	1		
<i>Trifolium</i>	109	<i>Crataegus</i>	35	<i>Plantago</i>	18	<i>Petrosedum</i>	9	<i>Pilosella</i>	5	<i>Crassula</i>	3	<i>Betula</i>	1		
<i>Eriogonum</i>	108	<i>Tanacetum</i>	35	<i>Adelinia</i>	17	<i>Platanthera</i>	9	<i>Rheum</i>	5	<i>Cucumis</i>	3	<i>Buxus</i>	1		
<i>Salix</i>	105	<i>Claytonia</i>	34	<i>Columbiadoria</i>	17	<i>Salsola</i>	9	<i>Sambucus</i>	5	<i>Cymopterus</i>	3	<i>Calochortis</i>	1		
<i>Chrysanthemus</i>	102	<i>Eriodictyon</i>	34	<i>Cotoneaster</i>	17	<i>Scrophularia</i>	9	<i>Symplytum</i>	5	<i>Dahlia</i>	3	<i>Calibrachoa</i>	1		
<i>Calochortus</i>	100	<i>Hydrophyllum</i>	34	<i>Downingia</i>	17	<i>Aconitum</i>	8	<i>Townsendia</i>	5	<i>Daturu</i>	3	<i>Calocedrus</i>	1		
<i>Chamaenerion</i>	98	<i>Castilleja</i>	33	<i>Foeniculum</i>	17	<i>Aronia</i>	8	<i>Abronia</i>	4	<i>Deutzia</i>	3	<i>Carex</i>	1		
<i>Achillea</i>	97	<i>Corrus</i>	33	<i>Hirschfeldia</i>	17	<i>Bellardia</i>	8	<i>Aesculus</i>	4	<i>Echinops</i>	3	<i>Catalpa</i>	1		
<i>Centauraea</i>	96	<i>Descurainia</i>	33	<i>Linaria</i>	17	<i>Cakile</i>	8	<i>Ajuga</i>	4	<i>Eriastrum</i>	3	<i>Cerinthe</i>	1		
<i>Senecio</i>	96	<i>Oenothera</i>	33	<i>Linum</i>	17	<i>Cardamine</i>	8	<i>Aruncus</i>	4	<i>Fraxinus</i>	3	<i>Chaenomeles</i>	1		
<i>Ribes</i>	95	<i>Rhus</i>	33	<i>Persicaria</i>	17	<i>Cercis</i>	8	<i>Asperugo</i>	4	<i>Fritillaria</i>	3	<i>Chamaemelum</i>	1		
<i>Rosa</i>	90	<i>Amelanchier</i>	32	<i>Viburnum</i>	17	<i>Chorispora</i>	8	<i>Calandrinia</i>	4	<i>Galium</i>	3	<i>Chimaphila</i>	1		
<i>Geranium</i>	85	<i>Dipsacus</i>	32	<i>Dichelostemma</i>	16	<i>Cuscuta</i>	8	<i>Choisya</i>	4	<i>Gleditsia</i>	3	<i>Clindonia</i>	1		
<i>Leucanthemum</i>	84	<i>Marath</i>	32	<i>Kolkwitzia</i>	16	<i>Elaeagnus</i>	8	<i>Cistus</i>	4	<i>Actaea</i>	2	<i>Cormus</i>	1		
<i>Prunus</i>	84	<i>Oreasterma</i>	32	<i>Lapsana</i>	16	<i>Escallonia</i>	8	<i>Cordylanthus</i>	4	<i>Aegopodium</i>	2	<i>Corydalis</i>	1		
<i>Helianthus</i>	83	<i>Sphaeralcea</i>	32	<i>Leontodon</i>	16	<i>Hemizonella</i>	8	<i>Damasonium</i>	4	<i>Allophylum</i>	2	<i>Corylus</i>	1		
<i>Vicia</i>	83	<i>Corcospis</i>	31	<i>Mertensia</i>	16	<i>Jasmea</i>	8	<i>Distichlis</i>	4	<i>Apium</i>	2	<i>Cypripedium</i>	1		
<i>Allium</i>	82	<i>Delphinium</i>	31	<i>Nothochelone</i>	16	<i>Lobularia</i>	8	<i>Draba</i>	4	<i>Arum</i>	2	<i>Elymus</i>	1		
<i>Camassia</i>	81	<i>Philadelphus</i>	31	<i>Stephanomeria</i>	16	<i>Pieris</i>	8	<i>Eruga</i>	4	<i>Bauhinia</i>	2	<i>Eremothera</i>	1		
<i>Spiraea</i>	81	<i>Thymus</i>	31	<i>Styrax</i>	16	<i>Robinia</i>	8	<i>Humeralis</i>	4	<i>Beta</i>	2	<i>Fagus</i>	1		
<i>Sidalcea</i>	80	<i>Vaccinium</i>	31	<i>Blepharipappus</i>	15	<i>Torella</i>	8	<i>Hesperis</i>	4	<i>Bromus</i>	2	<i>Filipendula</i>	1		
<i>Arctostaphylos</i>	79	<i>Acer</i>	30	<i>Crocidium</i>	15	<i>Weigela</i>	8	<i>Hibiscus</i>	4	<i>Camellia</i>	2	<i>Forsythia</i>	1		
<i>Taraxacum</i>	79	<i>Carduus</i>	30	<i>Echinacea</i>	15	<i>Zinnia</i>	8	<i>Hylotelephium</i>	4	<i>Cardionema</i>	2	<i>Fremontodendron</i>	1		
<i>Plagiobothrys</i>	78	<i>Frasera</i>	30	<i>Ilex</i>	15	<i>Abelia</i>	7	<i>Lavula</i>	4	<i>Castanea</i>	2	<i>Fuchsia</i>	1		
<i>Salvia</i>	77	<i>Amsinckia</i>	29	<i>Microseris</i>	15	<i>Agapanthus</i>	7	<i>Lagerstroemia</i>	4	<i>Celosia</i>	2	<i>Glechoma</i>	1		
<i>Hypochaeris</i>	76	<i>Iliama</i>	29	<i>Pyrocoma</i>	15	<i>Amorpha</i>	7	<i>Layia</i>	4	<i>Centranthus</i>	2	<i>Gnaphalium</i>	1		
<i>Lotus</i>	75	<i>Menzelia</i>	29	<i>Trichostema</i>	15	<i>Aralia</i>	7	<i>Nasturtium</i>	4	<i>Daphne</i>	2	<i>Knautia</i>	1		
<i>Balsamorhiza</i>	74	<i>Nemophila</i>	29	<i>Borago</i>	14	<i>Pentaglottis</i>	7	<i>Oenothera</i>	4	<i>Comandra</i>	2	<i>Grayia</i>	1		
<i>Syphocarpas</i>	74	<i>Polemonium</i>	29	<i>Colomia</i>	14	<i>Ipomopsis</i>	7	<i>Ozalis</i>	4	<i>Dipterostemon</i>	2	<i>Leucocrinum</i>	1		
<i>Lomatium</i>	72	<i>Mahonia</i>	28	<i>Erysimum</i>	14	<i>Conium</i>	7	<i>Mimulus</i>	4	<i>Crocus</i>	2	<i>Holcus</i>	1		
<i>Anaphalis</i>	71	<i>Viola</i>	28	<i>Sonchus</i>	14	<i>Cotinus</i>	7	<i>Pastinaca</i>	4	<i>Echinocystis</i>	2	<i>Leycesteria</i>	1		
<i>Erythranthe</i>	70	<i>Myosotis</i>	27	<i>Stellaria</i>	14	<i>Doronicum</i>	7	<i>Photinia</i>	4	<i>Euephalus</i>	2	<i>Limonium</i>	1		
<i>Agastache</i>	69	<i>Purshea</i>	27	<i>Tragopogon</i>	14	<i>Narthecium</i>	4	<i>Phylodoce</i>	4	<i>Eucryphia</i>	2	<i>Linnaea</i>	1		
<i>Apocynum</i>	68	<i>Bistorta</i>	26	<i>Artemisia</i>	13	<i>Ficaria</i>	7	<i>Polygonatum</i>	4	<i>Ligustrum</i>	2	<i>Ludwigia</i>	1		
<i>Nepeta</i>	68	<i>Fagopyrum</i>	26	<i>Campanula</i>	13	<i>Sinapis</i>	7	<i>Helleborus</i>	3	<i>Daphne</i>	2	<i>Lepechinia</i>	1		
<i>Asclepias</i>	67	<i>Packera</i>	26	<i>Cercocarpus</i>	13	<i>Tithonia</i>	4	<i>Notothocalis</i>	2	<i>Oplopanax</i>	1				
<i>Mentha</i>	65	<i>Solanum</i>	26	<i>Chrysolepis</i>	13	<i>Papaver</i>	7	<i>Pinus</i>	4	<i>Garrya</i>	2	<i>Lunaria</i>	1		
<i>Ranunculus</i>	65	<i>Verbena</i>	26	<i>Gutierrezia</i>	13	<i>Phylodoe</i>	4	<i>Quercus</i>	4	<i>Gratiola</i>	2	<i>Lycopus</i>	1		
<i>Wyethia</i>	65	<i>Whipplea</i>	26	<i>Helianthella</i>	13	<i>Glycyrrhiza</i>	7	<i>Physalis</i>	4	<i>Lycopodium</i>	2				
<i>Sisymbrium</i>	64	<i>Acimopsis</i>	25	<i>Oenleria</i>	13	<i>Pentaglottis</i>	7	<i>Pinus</i>	4	<i>Parthenocissus</i>	2	<i>Osteospermum</i>	1		
<i>Clarkia</i>	62	<i>Dalea</i>	25	<i>Phlox</i>	13	<i>Populus</i>	7	<i>Reynoutria</i>	4	<i>Kniphofia</i>	2	<i>Machaeranthera</i>	1		
<i>Drymocallis</i>	62	<i>Doellingeria</i>	25	<i>Satureja</i>	13	<i>Sabulina</i>	7	<i>Romanzoffia</i>	4	<i>Kopsiopsis</i>	2	<i>Magnolia</i>	1		
<i>Eschscholzia</i>	61	<i>Erodium</i>	25	<i>Sisyrinchium</i>	13	<i>Scandix</i>	7	<i>Scabiosa</i>	4	<i>Laophyla</i>	2	<i>Melaleuca</i>	1		
<i>Gilia</i>	61	<i>Monarda</i>	25	<i>Anchusa</i>	12	<i>Scutellaria</i>	7	<i>Swainsona</i>	4	<i>Laurus</i>	2	<i>Moenchia</i>	1		
<i>Jacobaea</i>	61	<i>Polygonum</i>	25	<i>Argentina</i>	12	<i>Sinapis</i>	7	<i>Tithonia</i>	4	<i>Ligularia</i>	2	<i>Mycelis</i>	1		
<i>Plectritis</i>	61	<i>Syringa</i>	25	<i>Spergularia</i>	12	<i>Buddleja</i>	6	<i>Minuartia</i>	3	<i>Phoenicaulis</i>	2	<i>Nicotiana</i>	1		
<i>Hackelia</i>	59	<i>Calendula</i>	24	<i>Teucrium</i>	12	<i>Cathla</i>	6	<i>Physalis</i>	3	<i>Physostegia</i>	2	<i>Pleiacanthus</i>	1		
<i>Rudebeckia</i>	59	<i>Cucurbita</i>	24	<i>Lithophragma</i>	12	<i>Centaurium</i>	6	<i>Impatiens</i>	3	<i>Omphalodes</i>	2	<i>Polystichum</i>	1		
<i>Sedum</i>	59	<i>Aquilegia</i>	23	<i>Geum</i>	12	<i>Antirrhinum</i>	6	<i>Ornithogalum</i>	3	<i>Patrinia</i>	2	<i>Parnassia</i>	1		
<i>Thelypodium</i>	58	<i>Calyptridium</i>	23	<i>Opuntia</i>	12	<i>Arenaria</i>	6	<i>Petasites</i>	3	<i>Pelargonium</i>	2	<i>Pedicularis</i>	1		
<i>Brassica</i>	55	<i>Cleomella</i>	23	<i>Rupertia</i>	12	<i>Gentiana</i>	6	<i>Juniperus</i>	3	<i>Portulaca</i>	2	<i>Rhamnus</i>	1		
<i>Helianthemum</i>	53	<i>Frangula</i>	22	<i>Rupertia</i>	12	<i>Hastingsia</i>	6	<i>Lippia</i>	3	<i>Petunia</i>	2	<i>Phedimus</i>	1		
<i>Helodium</i>	53	<i>Hosackia</i>	23	<i>Eryngium</i>	12	<i>Hedera</i>	3	<i>Minuartia</i>	3	<i>Phoenicaulis</i>	2	<i>Platycodon</i>	1		
<i>Horkebia</i>	53	<i>Malva</i>	23	<i>Hyacinthoides</i>	12	<i>Helleborus</i>	6	<i>Petroselinum</i>	3	<i>Physostegia</i>	2	<i>Pleiacanthus</i>	1		
<i>Monardella</i>	53	<i>Ageratina</i>	22	<i>Navarretia</i>	12	<i>Scutellaria</i>	6	<i>Sanicula</i>	3	<i>Picea</i>	2	<i>Polystichum</i>	1		
<i>Lepidium</i>	52	<i>Agoseris</i>	22	<i>Ladeania</i>	11	<i>Scorzonera</i>	6	<i>Montia</i>	3	<i>Portulaca</i>	2	<i>Rhamnus</i>	1		
<i>Crepis</i>	51	<i>Brodiaea</i>	22	<i>Opuntia</i>	12	<i>Lobelia</i>	6	<i>Juniperus</i>	3	<i>Polygonatum</i>	2	<i>Sarcobatus</i>	1		
<i>Lavandula</i>	51	<i>Diceria</i>	22	<i>Rupertia</i>	12	<i>Hedysarum</i>	6	<i>Lippia</i>	3	<i>Petunia</i>	2	<i>Saxifrage</i>	1		
<i>Berberis</i>	50	<i>Perideridia</i>	22	<i>Teucrium</i>	12	<i>Heliospasis</i>	6	<i>Minuartia</i>	3	<i>Phoenicaulis</i>	2	<i>Stokesia</i>	1		
<i>Chaenactis</i>	50	<i>Stachys</i>	22	<i>Valeriana</i>	12	<i>Sanguisorba</i>	6	<i>Petroselinum</i>	3	<i>Physostegia</i>	2	<i>Trilepidium</i>	1		
<i>Hypericum</i>	49	<i>Cynoglossum</i>	21	<i>Limanthes</i>	11	<i>Sanguisorba</i>	6	<i>Sanicula</i>	3	<i>Pseuderanthemum</i>	2	<i>Sempervivum</i>	1		
<i>Gaulardia</i>	48	<i>Euphorbia</i>	21	<i>Arabis</i>	11	<i>Scorzonera</i>	6	<i>Securigera</i>	3	<i>Pseudognaphalium</i>	2	<i>Sizaliz</i>	1		
<i>Prunella</i>	48	<i>Euthamia</i>	21	<i>Chamaebatia</i>	11	<i>Liatris</i>	6	<i>Stanleya</i>	2	<i>Pulmonaria</i>	2	<i>Skimmia</i>	1		
<i>Veronica</i>	48	<i>Geum</i>	21	<i>Clematis</i>	11	<i>Lithodora</i>	6	<i>Veronica</i>	3	<i>Saponaria</i>	1				
<i>Madia</i>	46	<i>Bidens</i>	20	<i>Echium</i>	11	<i>Maianthemum</i>	6	<i>Wulfenia</i>	3	<					

## 6 County records

Table 3: Number of bee specimens from each county, by genus. You may want to focus your sampling in under-sampled counties.

Table 4: Number of bee specimens from each county, by species

Table 4: Number of bee specimens from each county, by species (continued)

	Baker	Benton	Clackamas	Columbia	Coos	Crook	Curry	Douglas	Deschutes	Grant	Gilliam	Hayne	Hood River	Jackson	Jefferson	Josephine	Klamath	Lake	Lane	Lincoln	Linn	Malheur	Marion	Morrow	Multnomah	Polk	Sherman	Tilamook	Umatilla	Union	Wallowa	Wasco	Washington	Wheeler	Yamhill	Total			
<i>Anthophora affabilis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
<i>Anthophora albata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5						
<i>Anthophora bomboides</i>	5	0	3	0	1	0	1	3	1	0	0	4	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
<i>Anthophora californica</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Anthophora crotchii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Anthophora curta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9						
<i>Anthophora edwardsii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Anthophora exigua</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7						
<i>Anthophora maculifrons</i>	0	0	0	0	0	0	0	0	25	0	0	0	2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32						
<i>Anthophora pacifica</i>	10	2	0	0	0	0	0	9	0	11	0	0	4	3	0	0	2	20	6	37	3	0	0	0	0	0	0	0	0	0	0	9	135						
<i>Anthophora peritoma</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Anthophora portera</i>	1	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10						
<i>Anthophora terminalis</i>	0	0	0	0	0	0	0	0	5	2	0	2	7	9	11	0	0	5	1	0	0	2	0	0	0	0	0	0	0	0	0	0	50						
<i>Anthophora urbana</i>	7	1	1	0	0	0	36	3	199	7	18	34	114	1	139	14	45	66	205	33	0	10	131	9	6	0	0	2	0	4	0	1	28	1119					
<i>Anthophora ursina</i>	2	0	0	0	0	0	4	0	2	0	0	4	0	0	1	0	0	0	35	0	0	0	2	0	0	0	0	0	0	0	0	0	65						
<i>Anthophorula chionura</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38						
<i>Apis mellifera</i>	1	77	42	16	9	5	5	36	30	49	1	4	1	79	34	3	58	58	5	23	29	37	15	73	0	99	26	17	4	34	8	2	127	103	6	181	1297		
<i>Ashmeadiella attadenea</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4						
<i>Ashmeadiella buconis</i>	6	0	0	0	0	0	0	0	11	0	6	0	0	7	11	0	0	0	1	4	13	0	0	1	11	0	0	0	0	0	0	0	77						
<i>Ashmeadiella cactorum</i>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	10						
<i>Ashmeadiella californica</i>	3	0	0	0	0	0	0	5	0	0	2	0	6	23	15	13	1	4	2	8	2	0	19	0	0	0	0	0	0	0	0	103							
<i>Ashmeadiella cubiceps</i>	2	0	0	0	0	0	0	1	0	0	3	8	5	6	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	31						
<i>Ashmeadiella fugitiva</i>	0	0	0	0	0	0	0	0	0	1	0	0	0	23	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	31						
<i>Ashmeadiella forrestae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Ashmeadiella foxyella</i>	1	0	0	0	0	0	6	0	0	0	1	3	0	1	0	0	4	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0	26						
<i>Ashmeadiella prosopis</i>	1	0	0	0	0	0	0	0	10	0	0	4	4	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
<i>Ashmeadiella timberlakei</i>	1	0	0	0	0	0	0	0	0	10	0	0	4	4	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Atoposmia obiecta</i>	1	0	0	0	0	0	0	0	0	0	0	1	1	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17						
<i>Atoposmia anthodyta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
<i>Atoposmia copelandica</i>	7	0	0	0	0	0	0	0	0	1	2	1	0	13	6	0	5	5	2	3	6	2	0	0	0	0	0	0	0	0	0	0	64						
<i>Atoposmia elongata</i>	4	0	0	0	0	0	0	0	0	0	0	1	1	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62						
<i>Atoposmia oregonia</i>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10						
<i>Atoposmia triodontoida</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5						
<i>Biastes fulviventris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Bombus appositus</i>	8	6	2	0	1	0	0	0	2	4	0	1	13	16	6	0	0	3	8	4	1	6	0	27	0	2	1	0	0	7	2	12	5	153					
<i>Bombus caliginosus</i>	0	28	3	21	12	14	0	37	2	34	0	0	0	1	8	2	3	10	0	139	94	3	0	19	0	0	32	14	0	61	0	0	0	35	0	57	629		
<i>Bombus centralis</i>	56	0	0	0	0	0	0	63	0	40	0	6	67	141	0	0	7	0	37	65	0	0	0	13	0	6	0	0	0	14	0	44	34	46	11	1	55	0	706
<i>Bombus fervidus</i>	18	60	5	26	34	1	24	6	14	8	2	18	147	25	3	5	12	14	30	77	65	16	24	79	2	7	4	1	8	20	9	16	23	103	23	95	1024		
<i>Bombus flavidus</i>	6	32	1	2	0	0	0	8	4	3	0	10	1	27	40	1	8	35	4	78	11	42	0	13	1	0	1	0	10	4	6	8	1	12	0	3	372		
<i>Bombus flavifrons</i>	4	51	88	18	81	1	4	0	3	12	0	19	13	59	35	2	8	49	14	198	21	78	0	15	90	8	50	45	3	91	0	25	1163						
<i>Bombus griseocollis</i>	36	20	2	0	9	0	3	0	38	0	6	10	6	1	5	27	2	5	4	7	0	1	30	72	1	1	2	24	0	41	5	12	27	21	19	27	464		
<i>Bombus huntii</i>	35	0	0	0	0	0	40	0	128	0	1	27	196	0	1	16	2	24	45	0	0	63	1	3	0	1	4	0	17	16	4	4	0	3	0	631			
<i>Bombus impatiens</i>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Bombus insularis</i>	18	0	0	0	1	0	0	0	0	2	1	0	0	6	20	8	49	0	3	72	22	1	0	1	0	0	0	0	0	0	0	229							
<i>Bombus melanopygus</i>	0	77	50	13	25	15	3	73	21	6	0	0	0	12	29	26	17	160	0	74	47	25	0	41	0	75	2	0	9	0	1	3	2	877					
<i>Bombus mixtus</i>	10	118	98	87	95	7	4	51	15	26	0	14	3	82	99	41	101	58	2	308	182	69	1	111	4	114	20	0	82	11	19	46	2	215	9	129	2233		
<i>Bombus morrisoni</i>	0	0	0	0	0	0	3	0	29	0	0	0	2	0	0	3	0	4	4	1	0	0	10	0	0	0	0	0	0	0	0	0	57						
<i>Bombus nevadensis</i>	6	1	2	0	2	0	8	0	12	0	0	2	17	1	4	5	0	1	14	5	1	14	0	1	0	0	2	17	13	22	5	0	1	0	131				
<i>Bombus occidentalis</i>	1	0	3	0	0	0	0	0	7	1	0	2	4	3	1	1	0	10	8	2	0	20	0	0	0	0	0	0	0	0	0	0	72						
<i>Bombus rufocinctus</i>	0	1	0	1	4	0	0	0	5	1	0	3	0	6	1	12	0	1	14	5	1	14	0	1	0	0	2	17	13	22	5	0	1	0	131				
<i>Bombus sitkensis</i>	0	22	18	12	8	6	0	17	0	1	0	0	0	4	1	1	0	1	0	61	66	30	0	1	0	8	0	0	29	0	1	2	0	7	0	13	309		
<i>B</i>																																							

Table 4: Number of bee specimens from each county, by species (*continued*)

Table 4: Number of bee specimens from each county, by species (continued)

	Baker	Benton	Clatskanie	Columbia	Cross	Crook	Curry	Douglas	Gilliam	Grant	Hood River	Jackson	Jefferson	Josephine	Klamath	Lane	Linn	Marble	Marion	Multnomah	Polk	Sherman	Tillamook	Umatilla	Union	Wasco	Washington	Wheeler	Yamhill	TOTAL							
<i>Eucera edwardsii</i>	6	5	3	0	0	0	2	0	7	0	0	6	4	1	1	0	0	0	0	16	2	0	16	1	3	4	5	30	151								
<i>Eucera frater</i>	3	16	0	0	3	1	4	0	1	0	0	2	0	8	10	5	1	8	30	0	1	0	4	0	0	3	0	5	22	200							
<i>Eucera fulvifrons</i>	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7							
<i>Eucera hirta</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1							
<i>Eucera lunata</i>	0	13	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	2	23						
<i>Eucera virgata</i>	1	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	24						
<i>Haboda cineraria</i>	0	0	0	0	0	0	0	0	0	7	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29						
<i>Habropoda dammersi</i>	0	0	0	0	0	0	0	0	52	0	0	0	0	0	0	2	1	4	3	16	0	0	0	0	0	0	0	0	0	0	78						
<i>Habropoda depressa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	12	0	1	7	0	0	0	0	0	0	0	0	0	0	24						
<i>Habropoda miserabilis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34						
<i>Habropoda tristissima</i>	9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25						
<i>Halictus confusus</i>	2	25	36	3	39	0	11	10	4	8	0	3	13	4	42	3	13	14	5	18	22	14	0	25	0	27	0	6	8	4	0	86					
<i>Halictus farinosus</i>	13	69	2	0	2	4	24	29	29	30	3	32	38	38	45	57	90	124	159	78	1	3	14	90	8	3	15	4	1	78	4	29	53	50	22	73	1314
<i>Halictus ligatus</i>	221	306	116	4	91	5	94	0	99	21	7	59	105	19	185	15	474	324	18	148	73	10	227	367	41	58	63	34	12	72	105	60	176	340	202	395	4546
<i>Halictus rubicundus</i>	7	73	22	14	37	3	12	25	22	3	0	6	18	2	68	7	55	21	13	96	93	16	13	50	2	22	27	5	20	17	10	23	10	109	11	64	996
<i>Halictus tripartitus</i>	89	169	81	2	97	5	151	28	272	13	2	64	124	65	174	45	254	84	152	102	1	66	70	134	14	30	51	19	0	44	98	89	188	234	154	363	3528
<i>Halictus virgatulus</i>	1	1	0	1	0	0	1	0	0	0	0	0	411	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	420					
<i>Heriades carinata</i>	0	2	0	0	1	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55						
<i>Heriades carinatus</i>	0	4	0	0	1	0	0	0	15	1	0	0	0	0	0	0	0	13	1	0	1	0	0	0	0	0	0	0	0	0	70						
<i>Heriades cressoni</i>	4	2	0	0	0	0	0	1	25	4	0	2	0	0	1	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	42						
<i>Heriades variolosus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
<i>Heriades carinatus</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6						
<i>Holcopasites pulchellus</i>	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5						
<i>Hoplitis albifrons</i>	5	0	0	0	1	0	3	0	1	3	0	8	2	3	11	4	12	8	14	3	0	0	3	2	1	1	0	0	0	1	1	0	90				
<i>Hoplitis boharti</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24					
<i>Hoplitis emarginata</i>	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	11	0	0	0	9	0	15	0	0	0	0	0	0	0	0	38					
<i>Hoplitis fulgidula</i>	3	0	0	0	0	0	0	3	0	7	2	1	10	47	0	8	6	23	3	20	4	0	2	0	1	2	0	0	0	0	0	3	152				
<i>Hoplitis grinnelli</i>	0	6	0	0	0	0	0	0	4	0	0	0	2	0	2	1	4	2	0	5	0	0	2	3	1	0	0	0	0	0	51						
<i>Hoplitis hypocrita</i>	3	1	0	0	0	0	0	6	0	14	0	0	3	6	0	2	6	5	0	2	2	0	10	6	0	0	2	2	0	1	2	80					
<i>Hoplitis louiseae</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	8	0	2	0	0	2	5	0	0	0	0	0	0	0	0	0	0	23						
<i>Hoplitis orthognatha</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10						
<i>Hoplitis plagiostoma</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Hoplitis producta</i>	1	7	1	0	1	2	0	2	1	2	0	0	2	3	2	2	8	9	1	2	2	0	8	1	18	0	0	3	6	0	0	0	1	5	0	2	90
<i>Hoplitis rematula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	0	0	0	0	0	0	0	0	9						
<i>Hoplitis sambuci</i>	1	0	0	0	0	0	2	0	2	1	0	1	3	0	11	2	1	1	0	0	0	0	0	0	0	5	0	2	1	0	7	43					
<i>Hoplitis uvulalis</i>	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	2	1	0	0	0	0	0	0	0	0	0	6						
<i>Hoplitis viridimicans</i>	0	0	1	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6						
<i>Hylaeus Mesillae</i>	11	1	0	0	3	0	1	0	15	1	0	0	10	0	3	2	6	0	12	0	0	0	4	1	2	2	0	0	0	0	2	10	6	92			
<i>Hylaeus basalis</i>	0	0	1	0	0	0	0	6	0	0	3	0	0	6	7	6	18	10	3	0	2	0	0	1	0	0	0	0	0	0	3	0	67				
<i>Hylaeus nuenenmacheri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21					
<i>Hylaeus mesillae</i>	14	9	0	0	7	1	1	0	50	0	0	4	27	2	9	5	16	35	1	6	1	0	6	25	0	7	13	5	0	11	2	0	0	13	14	24	308
<i>Lasioglossum albipenne</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57					
<i>Lasioglossum albohirtum</i>	0	0	0	0	0	0	0	15	0	42	0	1	0	0	0	0	0	0	0	2	9	0	0	0	0	0	0	0	0	0	7						
<i>Lasioglossum allontonis</i>	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	1	31	0	0	6	0	2	0	0	2	0	0	0	0	0	3	85					
<i>Lasioglossum anhypops</i>	2	0	1	0	0	0	1	1	49	0	0	6	10	3	11	7	5	8	10	12	0	3	2	0	0	0	0	4	2	0	0	143					
<i>Lasioglossum argemonis</i>	0	1	0	0	0	0	0	19	0	6	1	1	0	0	0	13	2	20	12	1	13	3	3	0	5	0	0	2	2	0	0	7	4	4	121		
<i>Lasioglossum aspidurum</i>	0	0	0	0	0	0	0	7	0	3	0	0	1	0	0	0	2	5	13	0	0	0	0	0	0	0	0	0	0	0	0	54					
<i>Lasioglossum boreale</i>	2	0	1	0	0	0	1	0	2	0	0	0	2	0	2	4	6	1	3	2	5	1	0	1	0	0	1	5	6	0	2	4	54				
<i>Lasioglossum brunniventris</i>	0	1	0	0	0	0	12	0	5	0	7	2	1	0	1	0	2	1	3	0	0	0	0	0	0	0	1	14	0	0	0	8					

Table 4: Number of bee specimens from each county, by species (continued)

	Baker	Benton	Clackamas	Columbia	Coos	Crook	Curry	Deshutes	Douglas	Gilliam	Grant	Harney	Hood River	Jackson	Jefferson	Josephine	Klamath	Lake	Lane	Lincoln	Linn	Malheur	Marion	Morrow	Multnomah	Polk	Sherman	Tilamook	Umatilla	Union	Wallowa	Wasco	Washington	Wheeler	Yamhill	TOTAL				
<i>Lasioglossum macropinense</i>	0	0																																						
<i>Lasioglossum macroporosum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum marinense</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum megastictum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum mellipes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum nevadense</i>	0	0	1	0	0	0	3	0	28	0	0	5	2	0	2	0	5	1	2	0	0	2	1	2	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum nigrum</i>	0	1	1	0	3	0	2	0	8	6	0	1	4	3	16	3	6	5	6	5	6	14	1	8	0	4	0	0	0	0	0	0	0	0	4	112				
<i>Lasioglossum novascotiae</i>	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5					
<i>Lasioglossum occultum</i>	0	15	13	0	5	6	0	4	10	0	0	0	0	1	8	2	3	8	1	17	14	3	0	14	0	4	5	0	10	0	0	0	5	25	0	60	233			
<i>Lasioglossum olympiae</i>	0	208	37	1	10	0	7	1	0	9	0	3	0	7	64	6	5	45	31	59	6	15	0	66	0	6	59	0	0	3	25	3	28	95	0	108	907			
<i>Lasioglossum orthocarpi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum ovaliceps</i>	2	0	0	0	1	0	4	0	12	0	0	1	3	3	7	2	5	2	11	0	0	1	0	0	1	4	0	0	0	0	0	0	0	0	1	2	1	70		
<i>Lasioglossum pacatum</i>	0	0	0	0	1	0	1	0	2	0	1	2	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
<i>Lasioglossum pacificum</i>	0	13	17	0	6	1	0	4	0	1	0	0	0	3	3	0	7	2	0	23	28	0	0	19	0	5	1	0	5	0	0	0	0	7	28	0	16	189		
<i>Lasioglossum pavonatum</i>	0	0	0	0	0	5	0	8	0	7	0	0	0	1	0	1	0	0	15	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95		
<i>Lasioglossum prasinogaster</i>	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0					
<i>Lasioglossum pruinosum</i>	1	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	2	0	0	0	0	3	10	5	1	0	0	8	0	4	0	0	0	5	0	3	46			
<i>Lasioglossum pulveris</i>	14	0	0	0	0	0	0	40	0	79	0	7	35	81	0	2	24	1	6	14	1	0	0	58	1	4	0	0	50	0	17	11	10	25	2	151	1	634		
<i>Lasioglossum punctatoventre</i>	5	0	0	0	0	0	0	0	1	1	0	2	2	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18				
<i>Lasioglossum quebecense</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	18				
<i>Lasioglossum robustum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28				
<i>Lasioglossum rudividense</i>	3	14	5	0	6	0	4	3	7	2	0	3	19	1	17	3	34	8	5	31	2	6	0	10	1	5	28	0	1	2	2	0	2	11	11	47	293			
<i>Lasioglossum sandwicensium</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22				
<i>Lasioglossum sedi</i>	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10				
<i>Lasioglossum sequoiae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14				
<i>Lasioglossum sibiricum</i>	19	8	9	0	4	0	12	0	33	0	0	10	40	6	11	30	5	7	24	22	1	2	36	26	2	3	10	0	0	7	9	18	9	27	3	35	428			
<i>Lasioglossum tegulariforme</i>	0	0	0	0	0	0	1	0	2	0	0	0	0	0	5	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14				
<i>Lasioglossum tenax</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8				
<i>Lasioglossum testaceum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2				
<i>Lasioglossum timberlakei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
<i>Lasioglossum titusii</i>	1	251	64	8	31	0	12	4	1	1	0	33	26	0	44	0	64	65	15	58	20	6	12	191	5	4	56	1	2	1	15	11	8	206	8	101	1325			
<i>Lasioglossum trizonatum</i>	0	0	0	0	0	0	8	0	3	0	0	3	6	0	0	0	3	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39				
<i>Lasioglossum tuolumnense</i>	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19				
<i>Lasioglossum villosulum</i>	0	60	40	18	45	0	0	0	0	7	0	0	0	0	4	0	0	1	0	0	0	38	91	14	0	65	0	27	6	1	33	0	0	0	0	18	62	0	75	605
<i>Lasioglossum yukonae</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
<i>Lasioglossum zephyrus</i>	0	1	0	0	0	0	2	0	0	2	0	0	3	1	0	0	0	0	0	6	23	0	1	9	0	2	3	0	0	1	0	0	0	0	1	45	59			
<i>Lasioglossum zonulatum</i>	0	9	6	10	14	2	0	5	0	1	0	0	0	0	2	0	0	0	0	0	0	18	37	0	0	8	0	7	2	0	0	0	0	0	7	0	2	137		
<i>Megachile addenda</i>	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7				
<i>Megachile angelarum</i>	0	51	9	0	6	0	14	0	53	1	3	3	1	9	10	2	10	17	6	22	0	15	0	31	2	15	1	2	0	4	0	0	0	0	0	0	0	0	24	
<i>Megachile angris</i>	0	0	1	0	0	0	0	1	0	0	0	0	0	3	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11				
<i>Megachile apicalis</i>	5	1	0	0	0	0	1	0	10	1	5	1	2	5	16	11	3	4	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	133					
<i>Megachile brevis</i>	0	5	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17				
<i>Megachile centuncularis</i>	0	2	0	0	0	0	0	1	3	1	0	1	1	0	3	0	0	4	1	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	24				
<i>Megachile clemonis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
<i>Megachile coquilletti</i>	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10				
<i>Megachile fidelis</i>	0	6	0	0	1	0	4	2	0	6	0	1	3	4	20	0	11	16	8	17	1	5	0	15	0	2	0	0	0	0	0	0	0	0	126					
<i>Megachile frigida</i>	0	0	0	0	0	0	0	0	2	0	0	3	0	1	0	0	1	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	15				
<i>Megachile gemula</i>	1	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	2	16			
<i>Megachile gentilis</i>	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	1	1	1																						

Table 4: Number of bee specimens from each county, by species (continued)

	Baker	Benton	Clackamas	Columbia	Cross	Crook	Douglas	Grant	Harney	Hood River	Jackson	Jefferson	Josephine	Klamath	Lake	Lane	Linn	Malheur	Marion	Morrow	Multnomah	Polk	Sherman	Tillamook	Umatilla	Union	Wasco	Washington	Wheeler	Yamhill	TOTAL					
<i>Melecta separata</i>	0	0	0	0	0	3	0	4	0	0	1	4	0	1	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	35					
<i>Melecta thoracica</i>	0	0	0	0	0	1	0	4	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8						
<i>Melissodes agilis</i>	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	8					
<i>Melissodes bimacris</i>	0	0	0	0	0	1	0	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	38					
<i>Melissodes clarkiae</i>	0	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6					
<i>Melissodes communis</i>	0	0	0	1	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	10					
<i>Melissodes dagosus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5					
<i>Melissodes lupinus</i>	1	115	8	0	1	0	3	3	2	0	0	2	3	0	2	0	3	13	8	45	2	6	2	152	2	0	8	0	0	0	1	2	72	5	42	503
<i>Melissodes lustrus</i>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1					
<i>Melissodes metenus</i>	2	7	1	0	0	0	25	3	0	0	0	5	1	0	2	0	0	3	2	13	2	0	0	10	0	0	0	0	0	0	8	0	3	87		
<i>Melissodes microstictus</i>	2	8	1	0	9	0	15	4	29	8	0	21	3	5	25	0	33	3	3	5	6	5	0	10	0	6	0	0	4	0	0	0	5	0	11	221
<i>Melissodes pallidostigatus</i>	0	12	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15				
<i>Melissodes rivalis</i>	1	0	0	0	0	0	0	1	0	10	0	4	1	2	1	0	0	0	1	1	7	4	0	1	1	1	0	0	0	0	1	1	39			
<i>Melissodes robustior</i>	0	8	0	0	3	0	0	0	17	0	1	0	2	0	0	0	3	0	9	0	0	0	19	2	14	0	0	0	1	0	0	0	21	0	1	101
<i>Melissodes semilupinus</i>	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	16				
<i>Microlictoides ruficaudus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
<i>Neocarra vigilans</i>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
<i>Nomia melanander</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5				
<i>Osmia aglaia</i>	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
<i>Osmia albilateralis</i>	1	0	0	0	0	0	0	0	1	0	0	0	1	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
<i>Osmia atriventris</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
<i>Osmia atrocyanea</i>	7	3	0	0	1	0	3	0	1	0	1	4	4	4	0	9	5	8	2	0	6	0	1	0	10	0	0	1	0	3	1	2	0	1	7	87
<i>Osmia bakeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2				
<i>Osmia bella</i>	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
<i>Osmia brevis</i>	33	0	1	0	0	0	2	0	5	0	0	18	5	0	9	8	9	4	3	0	0	0	2	1	0	0	0	0	1	5	6	0	0	1	113	
<i>Osmia bruneri</i>	5	0	0	0	0	0	2	1	10	0	1	17	22	0	11	3	7	0	17	0	0	0	4	0	3	0	4	3	0	5	0	119				
<i>Osmia buechala</i>	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12				
<i>Osmia caeruleocephala</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1				
<i>Osmia californica</i>	1	0	0	0	0	0	8	0	1	0	0	3	3	0	1	0	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0	27				
<i>Osmia calla</i>	2	0	0	0	0	0	5	0	15	0	0	26	17	0	5	2	0	4	14	0	0	0	1	0	0	0	0	0	0	0	0	1	0	96		
<i>Osmia carra</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
<i>Osmia carfornsis</i>	0	0	0	0	0	0	1	0	0	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9		
<i>Osmia cobaltina</i>	0	0	0	0	0	0	0	3	0	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16			
<i>Osmia coloradensis</i>	1	0	0	0	1	0	5	0	1	0	0	4	0	0	4	1	9	1	5	1	0	1	0	3	0	1	0	3	0	0	0	2	1	45		
<i>Osmia cornifrons</i>	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	7	2	0	0	0	0	0	0	26			
<i>Osmia cyanella</i>	15	3	0	0	0	0	9	1	4	2	0	3	0	0	8	5	10	1	0	5	0	1	0	1	0	0	0	2	0	2	1	4	3	82		
<i>Osmia densa</i>	7	1	1	0	0	0	12	1	7	4	0	8	2	2	2	16	7	90	3	8	3	0	4	0	3	0	0	0	5	7	8	1	0	2	202	
<i>Osmia dolorosa</i>	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6			
<i>Osmia ednac</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
<i>Osmia enixa</i>	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	6			
<i>Osmia exigua</i>	3	0	0	0	0	0	0	1	1	0	2	0	5	0	0	3	4	4	4	7	2	0	0	0	3	0	0	0	0	0	0	0	1	0	44	
<i>Osmia gabrieli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
<i>Osmia gaudiosa</i>	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
<i>Osmia gitarrum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
<i>Osmia glauca</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
<i>Osmia integrata</i>	0	0	0	0	0	0	1	0	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
<i>Osmia inurbana</i>	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
<i>Osmia juxta</i>	3	0	0	0	0	0	0	0	2	0	0	0	0	0	8	5	7	5	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	1	39	
<i>Osmia kincaidii</i>	5	0	0	0	0	0	5	0</																												

Table 4: Number of bee specimens from each county, by species (continued)

	Baker	Benton	Clackamas	Columbia	Crook	Curry	Douglas	Gilliam	Grant	Harney	Hood River	Jackson	Josephine	Klamath	Lane	Linn	Malheur	Marion	Morrow	Multnomah	Polk	Sherman	Tillamook	Umatilla	Union	Wallowa	Wasco	Washington	Wheeler	Yamhill	TOTAL						
<i>Osmia rostrata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1							
<i>Osmia sananofae</i>	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1							
<i>Osmia similima</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2							
<i>Osmia sladeni</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Osmia tanneri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Osmia tersula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Osmia texana</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Osmia tristella</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	6						
<i>Osmia vandykei</i>	0	0	0	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4						
<i>Osmia visenda</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Peponapis pruinosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
<i>Perdita albipennis</i>	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4						
<i>Perdita nevadensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Protosmia rubifloris</i>	0	17	23	0	19	0	0	1	0	0	0	0	11	155	2	169	10	2	63	0	0	0	16	0	16	12	0	0	0	0	24	39	0	77	656		
<i>Pseudanthidium nanum</i>	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	16				
<i>Sphecodes arvensiformis</i>	0	1	0	1	5	0	0	0	1	0	0	1	1	0	1	0	0	1	3	0	1	1	0	1	0	1	0	1	1	2	25						
<i>Sphecodes davisi</i>	0	0	4	0	3	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12						
<i>Sphecodes kincaidii</i>	0	0	1	0	0	4	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	14						
<i>Sphecodes olympicus</i>	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Sphecodes pecosensis</i>	0	0	0	0	0	0	0	0	7	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	15						
<i>Stelis ashmeadiellus</i>	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Stelis carinifex</i>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Stelis laticincta</i>	0	4	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	7	0	4	0	0	0	0	0	0	0	0	2	39						
<i>Stelis monticola</i>	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6						
<i>Stelis rubi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Stelis subemarginata</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	1	6						
<i>Trachusa timberlakei</i>	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	1	0	0	3	0	0	2	0	0	0	0	0	0	0	0	14						
<i>Triopeltalus argyreus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Triopeltalus californicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Triopeltalus concavus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4						
<i>Triopeltalus helianthi</i>	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
<i>Triopeltalus heterurus</i>	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	11				
<i>Triopeltalus lunatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1						
<i>Triopeltalus melanarius</i>	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	8	0	1	20			
<i>Triopeltalus paenpectoralis</i>	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9						
<i>Triopeltalus utahensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	10						
<i>Xylocopa californica</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	21					
<i>Xylocopa tabaniformis</i>	0	0	0	0	0	1	1	0	0	8	0	0	0	17	0	55	17	1	16	0	0	0	0	0	0	0	0	0	0	0	116						
<i>Xylocopa virginica</i>	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7						
<i>Zacosmia maculata</i>	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5						
<b>TOTAL</b>	1265	3073	1104	312	1105	115	1463	752	3362	614	109	1356	2923	1462	2979	867	3288	3371	2500	3314	1455	964	1458	2929	214	1320	916	408	415	984	701	909	1375	3459	1299	3669	57809

Table 5: Your determination accuracy in 2023.

Taxon
No specimens identified

## 7 Taxonomic Accuracy, 2023

In 2023, you identified 0 of your 1133 specimens to genus level and 0 to species level (see Table 5). In total, volunteers from the Oregon Bee Atlas project identified 44.5 % (9993) of the 22478 bee specimens to the level of genus, with an average accuracy of 94.5%. Volunteers also identified 8.4% (1887) of the specimens to species level, and had an average accuracy of 88.9% (see Table 6). Nicely done!

Table 6: Determination accuracy for all volunteers in 2023.

	Taxon	Specimens ID-ed	Correct ID	% Correct
<b>Family</b>				
	<i>Andrenidae</i>	1171	1121	95.7
	<i>Apidae</i>	3080	3039	98.7
	<i>Colletidae</i>	422	396	93.8
	<i>Halictidae</i>	2297	2266	98.7
	<i>Megachilidae</i>	3020	2970	98.3
	<i>Melittidae</i>	4	1	25.0
	<i><b>TOTAL</b></i>	9994	9793	98.0
<b>Genus</b>				
	<i>Agapostemon</i>	86	86	100.0
	<i>Andrena</i>	682	662	97.1
	<i>Anthidiellum</i>	30	7	23.3
	<i>Anthidium</i>	125	124	99.2
	<i>Anthophora</i>	198	184	92.9
	<i>Apis</i>	85	85	100.0
	<i>Ashmeadiella</i>	58	47	81.0
	<i>Atoposmia</i>	46	44	95.7
	<i>Biastes</i>	3	3	100.0
	<i>Bombus</i>	1671	1670	99.9
	<i>Brachymelecta</i>	5	5	100.0
	<i>Calliopsis</i>	21	10	47.6
	<i>Ceratina</i>	273	268	98.2
	<i>Chelostoma</i>	27	24	88.9
	<i>Coelioxys</i>	43	42	97.7
	<i>Colletes</i>	265	245	92.5
	<i>Diadasia</i>	71	59	83.1
	<i>Dianthidium</i>	97	78	80.4
	<i>Dioxys</i>	2	1	50.0
	<i>Dufourea</i>	53	52	98.1
	<i>Epeolus</i>	10	9	90.0
	<i>Eucera</i>	60	57	95.0
	<i>Habropoda</i>	49	47	95.9
	<i>Halictus</i>	902	862	95.6
	<i>Heriades</i>	40	29	72.5
	<i>Hesperapis</i>	4	1	25.0
	<i>Holcopasites</i>	1	1	100.0
	<i>Hoplitis</i>	231	195	84.4
	<i>Hylaeus</i>	157	151	96.2
	<i>Lasioglossum</i>	1163	1101	94.7

Table 6: Determination accuracy for all volunteers in 2023. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Megachile</i>	562	546	97.2
<i>Melecta</i>	21	20	95.2
<i>Melissodes</i>	370	322	87.0
<i>Micralictoides</i>	14	14	100.0
<i>Neolarra</i>	3	3	100.0
<i>Nomada</i>	207	201	97.1
<i>Osmia</i>	1670	1639	98.1
<i>Panurginus</i>	140	120	85.7
<i>Perdita</i>	319	249	78.1
<i>Protandrena</i>	8	7	87.5
<i>Protosmia</i>	48	33	68.8
<i>Pseudoanthidium</i>	4	1	25.0
<i>Sphecodes</i>	79	65	82.3
<i>Stelis</i>	31	21	67.7
<i>Trachusa</i>	6	5	83.3
<i>Triepeolus</i>	43	41	95.3
<i>Xylocopa</i>	10	9	90.0
<b>TOTAL</b>	9993	9445	94.5
<b>Species</b>			
<i>Anthidiellum robertsoni</i>	7	7	100.0
<i>Apis mellifera</i>	68	68	100.0
<i>Bombus appositus</i>	8	7	87.5
<i>Bombus caliginosus</i>	32	24	75.0
<i>Bombus centralis</i>	43	38	88.4
<i>Bombus fervidus</i>	43	43	100.0
<i>Bombus flavidus</i>	23	22	95.7
<i>Bombus flavifrons</i>	57	54	94.7
<i>Bombus frigidus</i>	3	0	0.0
<i>Bombus griseocollis</i>	46	46	100.0
<i>Bombus huntii</i>	50	46	92.0
<i>Bombus insularis</i>	9	7	77.8
<i>Bombus kirbiellus</i>	1	0	0.0
<i>Bombus melanopygus</i>	42	20	47.6
<i>Bombus mixtus</i>	139	121	87.1
<i>Bombus morrisoni</i>	4	4	100.0
<i>Bombus nevadensis</i>	13	12	92.3
<i>Bombus occidentalis</i>	5	3	60.0
<i>Bombus rufocinctus</i>	6	4	66.7
<i>Bombus sitkensis</i>	29	15	51.7
<i>Bombus sylvicola</i>	45	14	31.1
<i>Bombus vagans</i>	4	2	50.0
<i>Bombus vancouverensis</i>	259	257	99.2
<i>Bombus vandykei</i>	31	24	77.4
<i>Bombus vosnesenskii</i>	269	252	93.7
<i>Brachymelecta californica</i>	3	3	100.0
<i>Ceratina pacifica</i>	1	0	0.0
<i>Halictus confusus</i>	35	28	80.0
<i>Halictus farinosus</i>	28	24	85.7
<i>Halictus ligatus</i>	208	207	99.5
<i>Halictus rubicundus</i>	16	15	93.8
<i>Halictus tripartitus</i>	108	107	99.1

Table 6: Determination accuracy for all volunteers in 2023. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Halictus virgatellus</i>	7	6	85.7
<i>Holcopasites pulchellus</i>	1	1	100.0
<i>Lasioglossum anhypops</i>	3	3	100.0
<i>Lasioglossum aspilurum</i>	1	1	100.0
<i>Lasioglossum boreale</i>	2	2	100.0
<i>Lasioglossum cooleyi</i>	23	0	0.0
<i>Lasioglossum cressonii</i>	1	1	100.0
<i>Lasioglossum diatretum</i>	1	1	100.0
<i>Lasioglossum diversopunctatum</i>	4	4	100.0
<i>Lasioglossum glabriventre</i>	1	1	100.0
<i>Lasioglossum helianthi</i>	1	0	0.0
<i>Lasioglossum incompletum</i>	74	72	97.3
<i>Lasioglossum inconditum</i>	2	2	100.0
<i>Lasioglossum kincaidii</i>	2	2	100.0
<i>Lasioglossum nevadense</i>	1	1	100.0
<i>Lasioglossum olympiae</i>	1	1	100.0
<i>Lasioglossum ovaliceps</i>	5	5	100.0
<i>Lasioglossum pavonotum</i>	10	10	100.0
<i>Lasioglossum pruinosum</i>	4	4	100.0
<i>Lasioglossum pulveris</i>	6	6	100.0
<i>Lasioglossum quebecense</i>	1	0	0.0
<i>Lasioglossum ruidosense</i>	3	3	100.0
<i>Lasioglossum sisymbrii</i>	19	19	100.0
<i>Lasioglossum titusi</i>	24	20	83.3
<i>Lasioglossum zephyrus</i>	1	1	100.0
<i>Lasioglossum zonulum</i>	4	4	100.0
<i>Megachile perihirta</i>	1	0	0.0
<i>Micralictoides ruficaudus</i>	14	14	100.0
<i>Osmia atrocyanea</i>	1	0	0.0
<i>Osmia brevis</i>	2	0	0.0
<i>Osmia coloradensis</i>	1	0	0.0
<i>Osmia cyanella</i>	3	0	0.0
<i>Osmia densa</i>	5	0	0.0
<i>Osmia sculleni</i>	3	0	0.0
<i>Protosmia rubifloris</i>	15	15	100.0
<i>Trachusa timberlakei</i>	5	5	100.0
<i>TOTAL</i>	1887	1678	88.9

## 8 Taxonomic Accuracy, All Years

Over your time in the Atlas you identified 1525 of your 9051 specimens to genus level and 106 to species level, with a genus-level identification accuracy of 84.7% and a species-level identification accuracy of 98.1% (see Table 7). In total, volunteers from the Oregon Bee Atlas project identified 45 % (53168) of the 118170 bee specimens to the level of genus, with an average accuracy of 94.2%. Volunteers also identified 11.3% (13393) of the specimens to species level, and had an average accuracy of 89.9% (see Table 8). Nicely done!

Table 7: Your determination accuracy.

	Taxon	Specimens ID-ed	Correct ID	% Correct
<b>Family</b>				
<i>Andrenidae</i>	281	63	22.4	
<i>Apidae</i>	403	402	99.8	
<i>Colletidae</i>	162	161	99.4	
<i>Halictidae</i>	338	338	100.0	
<i>Megachilidae</i>	341	339	99.4	
<i>TOTAL</i>	1525	1303	85.4	
<b>Genus</b>				
<i>Agapostemon</i>	40	40	100.0	
<i>Andrena</i>	219	1	0.5	
<i>Anthidiellum</i>	1	1	100.0	
<i>Anthidium</i>	18	18	100.0	
<i>Anthophora</i>	83	82	98.8	
<i>Ashmeadiella</i>	3	3	100.0	
<i>Atoposmia</i>	1	0	0.0	
<i>Bombus</i>	103	103	100.0	
<i>Brachymelecta</i>	14	14	100.0	
<i>Ceratina</i>	42	42	100.0	
<i>Chelostoma</i>	2	2	100.0	
<i>Coelioxys</i>	9	9	100.0	
<i>Colletes</i>	92	91	98.9	
<i>Dianthidium</i>	9	9	100.0	
<i>Dufourea</i>	11	11	100.0	
<i>Epeolus</i>	4	4	100.0	
<i>Eucera</i>	11	11	100.0	
<i>Habropoda</i>	23	21	91.3	
<i>Halictus</i>	76	75	98.7	
<i>Heriades</i>	1	1	100.0	
<i>Hoplitis</i>	8	6	75.0	
<i>Hylaeus</i>	70	70	100.0	
<i>Lasioglossum</i>	196	195	99.5	
<i>Megachile</i>	39	37	94.9	
<i>Melecta</i>	3	3	100.0	
<i>Melissodes</i>	69	69	100.0	
<i>Nomada</i>	43	43	100.0	
<i>Osmia</i>	245	245	100.0	
<i>Panurginus</i>	26	26	100.0	
<i>Perdita</i>	36	36	100.0	
<i>Sphecodes</i>	15	15	100.0	
<i>Stelis</i>	3	1	33.3	
<i>Trachusa</i>	2	2	100.0	
<i>Triepeolus</i>	8	6	75.0	
<i>TOTAL</i>	1525	1292	84.7	
<b>Species</b>				

Table 7: Your determination accuracy. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Bombus appositus</i>	1	1	100.0
<i>Bombus centralis</i>	11	10	90.9
<i>Bombus fervidus</i>	1	1	100.0
<i>Bombus flavifrons</i>	4	4	100.0
<i>Bombus griseocollis</i>	7	7	100.0
<i>Bombus huntii</i>	7	7	100.0
<i>Bombus melanopygus</i>	4	4	100.0
<i>Bombus mixtus</i>	10	10	100.0
<i>Bombus morrisoni</i>	3	3	100.0
<i>Bombus nevadensis</i>	6	6	100.0
<i>Bombus occidentalis</i>	6	6	100.0
<i>Bombus vancouverensis</i>	28	27	96.4
<i>Bombus vandykei</i>	1	1	100.0
<i>Bombus vosnesenskii</i>	14	14	100.0
<i>Hylaeus basalis</i>	3	3	100.0
<i>TOTAL</i>	106	104	98.1

Table 8: Determination accuracy for all volunteers.

	Taxon	Specimens ID-ed	Correct ID	% Correct
<b>Family</b>				
<i>Andrenidae</i>		6786	6064	89.4
<i>Apidae</i>		17614	17375	98.6
<i>Colletidae</i>		2847	2685	94.3
<i>Halictidae</i>		14510	14302	98.6
<i>Megachilidae</i>		11434	11275	98.6
<i>Melittidae</i>		4	1	25.0
<i>TOTAL</i>		53195	51702	97.2
<b>Genus</b>				
<i>Agapostemon</i>		965	961	99.6
<i>Andrena</i>		4750	4155	87.5
<i>Anthidiellum</i>		56	24	42.9
<i>Anthidium</i>		546	539	98.7
<i>Anthophora</i>		1213	1144	94.3
<i>Apis</i>		594	585	98.5
<i>Ashmeadiella</i>		342	291	85.1
<i>Atoposmia</i>		137	93	67.9
<i>Biastes</i>		8	6	75.0
<i>Bombus</i>		7802	7774	99.6
<i>Brachymelecta</i>		95	71	74.7
<i>Calliopsis</i>		98	57	58.2
<i>Ceratina</i>		2971	2923	98.4
<i>Chelostoma</i>		82	63	76.8
<i>Coelioxys</i>		152	143	94.1
<i>Colletes</i>		1346	1229	91.3
<i>Diadasia</i>		368	322	87.5
<i>Dianthidium</i>		314	280	89.2
<i>Dioxyx</i>		6	3	50.0
<i>Dufourea</i>		260	217	83.5
<i>Epeolus</i>		61	43	70.5
<i>Eucera</i>		635	583	91.8

Table 8: Determination accuracy for all volunteers. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Habropoda</i>	279	259	92.8
<i>Halictus</i>	5622	5393	95.9
<i>Heriades</i>	223	179	80.3
<i>Hesperapis</i>	4	1	25.0
<i>Holcopasites</i>	1	1	100.0
<i>Hoplitis</i>	748	605	80.9
<i>Hylaeus</i>	1500	1454	96.9
<i>Lasioglossum</i>	7189	6828	95.0
<i>Megachile</i>	2279	2223	97.5
<i>Melecta</i>	72	69	95.8
<i>Melissodes</i>	2045	1860	91.0
<i>Micralictoides</i>	16	14	87.5
<i>Neolarra</i>	3	3	100.0
<i>Nomada</i>	1220	1164	95.4
<i>Nomia</i>	2	2	100.0
<i>Oreopasites</i>	3	0	0.0
<i>Osmia</i>	6165	6055	98.2
<i>Panurginus</i>	750	567	75.6
<i>Perdita</i>	1147	1060	92.4
<i>Protandrena</i>	27	9	33.3
<i>Protosmia</i>	268	212	79.1
<i>Pseudoanthidium</i>	6	3	50.0
<i>Sphecodes</i>	454	354	78.0
<i>Stelis</i>	97	64	66.0
<i>Trachusa</i>	8	7	87.5
<i>Triepeolus</i>	176	147	83.5
<i>Xylocopa</i>	62	60	96.8
<i>Zacosmia</i>	1	1	100.0
<b>TOTAL</b>	53168	50100	94.2
<b>Species</b>			
<i>Agapostemon femoratus</i>	181	171	94.5
<i>Agapostemon melliventris</i>	14	14	100.0
<i>Agapostemon subtilior</i>	228	214	93.9
<i>Agapostemon virescens</i>	109	95	87.2
<i>Andrena angustitarsata</i>	18	18	100.0
<i>Andrena astragali</i>	1	1	100.0
<i>Andrena chlorogaster</i>	2	2	100.0
<i>Andrena crataegi</i>	1	1	100.0
<i>Andrena cupreotincta</i>	14	14	100.0
<i>Andrena fuscicauda</i>	2	2	100.0
<i>Andrena illinoiensis</i>	1	1	100.0
<i>Andrena nigrocaerulea</i>	2	2	100.0
<i>Andrena pallidifovea</i>	1	1	100.0
<i>Andrena perplexa</i>	1	1	100.0
<i>Andrena piperi</i>	3	2	66.7
<i>Andrena prunorum</i>	34	34	100.0
<i>Andrena salicifloris</i>	2	2	100.0
<i>Andrena vicina</i>	4	3	75.0
<i>Anthidiellum robertsoni</i>	19	19	100.0
<i>Anthidium atrifrons</i>	3	3	100.0
<i>Anthidium banningense</i>	5	5	100.0
<i>Anthidium duomarginatum</i>	1	0	0.0

Table 8: Determination accuracy for all volunteers. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Anthidium emarginatum</i>	5	0	0.0
<i>Anthidium manicatum</i>	53	44	83.0
<i>Anthidium mormonum</i>	12	12	100.0
<i>Anthidium oblongatum</i>	14	14	100.0
<i>Anthidium palliventre</i>	33	30	90.9
<i>Anthidium placitum</i>	1	1	100.0
<i>Anthidium tenuiflorae</i>	2	2	100.0
<i>Anthidium utahense</i>	3	3	100.0
<i>Anthophora bomboides</i>	3	3	100.0
<i>Anthophora californica</i>	1	0	0.0
<i>Anthophora neglecta</i>	3	0	0.0
<i>Anthophora pacifica</i>	3	3	100.0
<i>Anthophora urbana</i>	251	249	99.2
<i>Anthophora ursina</i>	2	0	0.0
<i>Apis mellifera</i>	492	488	99.2
<i>Ashmeadiella aridula</i>	1	0	0.0
<i>Ashmeadiella californica</i>	1	1	100.0
<i>Ashmeadiella clypeodentata</i>	1	0	0.0
<i>Ashmeadiella cubiceps</i>	2	1	50.0
<i>Ashmeadiella difugita</i>	1	0	0.0
<i>Ashmeadiella eurynorhyncha</i>	1	0	0.0
<i>Ashmeadiella timberlakei</i>	1	1	100.0
<i>Atoposmia abjecta</i>	3	3	100.0
<i>Atoposmia copelandica</i>	6	6	100.0
<i>Atoposmia oregonia</i>	4	3	75.0
<i>Atoposmia triodonta</i>	1	0	0.0
<i>Bombus Griseocollis</i>	1	0	0.0
<i>Bombus Mixtus</i>	8	0	0.0
<i>Bombus Nevadensis</i>	1	0	0.0
<i>Bombus appositus</i>	48	36	75.0
<i>Bombus caliginosus</i>	345	273	79.1
<i>Bombus centralis</i>	201	187	93.0
<i>Bombus fervidus</i>	362	325	89.8
<i>Bombus flavidus</i>	145	134	92.4
<i>Bombus flavifrons</i>	541	454	83.9
<i>Bombus frigidus</i>	5	0	0.0
<i>Bombus griseocollis</i>	140	138	98.6
<i>Bombus huntii</i>	160	139	86.9
<i>Bombus insularis</i>	33	25	75.8
<i>Bombus kirbiellus</i>	1	0	0.0
<i>Bombus melanopygus</i>	328	274	83.5
<i>Bombus mixtus</i>	956	877	91.7
<i>Bombus morrisoni</i>	11	10	90.9
<i>Bombus nevadensis</i>	65	58	89.2
<i>Bombus occidentalis</i>	33	27	81.8
<i>Bombus rufocinctus</i>	58	36	62.1
<i>Bombus sitkensis</i>	195	147	75.4
<i>Bombus suckleyi</i>	2	0	0.0
<i>Bombus sylvicola</i>	69	31	44.9
<i>Bombus vagans</i>	24	8	33.3
<i>Bombus vancouverensis</i>	829	802	96.7
<i>Bombus vandykei</i>	86	62	72.1

Table 8: Determination accuracy for all volunteers. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Bombus vosnesenskii</i>	1378	1284	93.2
<i>Brachymelecta californica</i>	45	43	95.6
<i>Calliopsis zonalis</i>	1	0	0.0
<i>Ceratina acantha</i>	679	665	97.9
<i>Ceratina micheneri</i>	44	43	97.7
<i>Ceratina nanula</i>	3	2	66.7
<i>Ceratina neomexicana</i>	1	1	100.0
<i>Ceratina pacifica</i>	8	6	75.0
<i>Ceratina sequoiae</i>	5	0	0.0
<i>Ceratina tejonensis</i>	7	2	28.6
<i>Ceratina timberlakei</i>	5	0	0.0
<i>Chelostoma minutum</i>	1	1	100.0
<i>Coelioxys alternatus</i>	1	0	0.0
<i>Coelioxys rufitarsis</i>	4	0	0.0
<i>Coelioxys sayi</i>	2	2	100.0
<i>Coelioxys texanus</i>	4	0	0.0
<i>Diadasia angusticeps</i>	7	7	100.0
<i>Diadasia australis</i>	4	4	100.0
<i>Diadasia diminuta</i>	17	17	100.0
<i>Diadasia enavata</i>	100	99	99.0
<i>Diadasia lutzi</i>	28	6	21.4
<i>Diadasia nigrifrons</i>	9	9	100.0
<i>Diadasia opuntiae</i>	8	0	0.0
<i>Dianthidium curvatum</i>	22	22	100.0
<i>Dianthidium heterulkei</i>	9	0	0.0
<i>Dianthidium pudicum</i>	12	12	100.0
<i>Dianthidium subparvum</i>	3	3	100.0
<i>Dianthidium ulkei</i>	24	17	70.8
<i>Dioxys aurifuscus</i>	2	2	100.0
<i>Eucera actuosa</i>	11	10	90.9
<i>Eucera cordleyi</i>	18	4	22.2
<i>Eucera edwardsii</i>	48	20	41.7
<i>Eucera frater</i>	8	8	100.0
<i>Eucera speciosa</i>	19	0	0.0
<i>Habropoda depressa</i>	4	4	100.0
<i>Habropoda miserabilis</i>	7	6	85.7
<i>Habropoda tristissima</i>	3	2	66.7
<i>Halictus Ligatus</i>	4	0	0.0
<i>Halictus confusus</i>	149	122	81.9
<i>Halictus farinosus</i>	284	246	86.6
<i>Halictus ligatus</i>	1475	1464	99.3
<i>Halictus rubicundus</i>	361	333	92.2
<i>Halictus tripartitus</i>	723	684	94.6
<i>Halictus virgatellus</i>	114	109	95.6
<i>Heriades carinata</i>	2	0	0.0
<i>Holcopasites pulchellus</i>	1	1	100.0
<i>Hoplitis albifrons</i>	5	5	100.0
<i>Hoplitis boharti</i>	2	2	100.0
<i>Hoplitis coleii</i>	1	0	0.0
<i>Hoplitis emarginata</i>	1	1	100.0
<i>Hoplitis fulgida</i>	7	7	100.0
<i>Hoplitis grinnelli</i>	8	5	62.5

Table 8: Determination accuracy for all volunteers. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Hoplitis hypocrita</i>	1	1	100.0
<i>Hoplitis louisae</i>	2	2	100.0
<i>Hoplitis orthognatha</i>	7	7	100.0
<i>Hoplitis producta</i>	12	10	83.3
<i>Hoplitis uvulalis</i>	3	3	100.0
<i>Hoplitis viridimicans</i>	6	4	66.7
<i>Hylaeus basalis</i>	6	3	50.0
<i>Hylaeus mesillae</i>	1	0	0.0
<i>Hylaeus verticalis</i>	1	0	0.0
<i>Lasioglossum albipenne</i>	3	3	100.0
<i>Lasioglossum albohirtum</i>	7	7	100.0
<i>Lasioglossum allonotus</i>	1	1	100.0
<i>Lasioglossum anhypops</i>	6	5	83.3
<i>Lasioglossum aspilurum</i>	2	2	100.0
<i>Lasioglossum athabascense</i>	2	0	0.0
<i>Lasioglossum boreale</i>	2	2	100.0
<i>Lasioglossum brunneiventre</i>	4	4	100.0
<i>Lasioglossum buccale</i>	3	3	100.0
<i>Lasioglossum colatum</i>	1	1	100.0
<i>Lasioglossum cooleyi</i>	24	1	4.2
<i>Lasioglossum cordleyi</i>	5	5	100.0
<i>Lasioglossum cressonii</i>	30	30	100.0
<i>Lasioglossum diatretum</i>	5	3	60.0
<i>Lasioglossum diversopunctatum</i>	4	4	100.0
<i>Lasioglossum egregium</i>	4	1	25.0
<i>Lasioglossum glabriventre</i>	4	4	100.0
<i>Lasioglossum helianthi</i>	1	0	0.0
<i>Lasioglossum imbrex</i>	7	0	0.0
<i>Lasioglossum incompletum</i>	79	73	92.4
<i>Lasioglossum inconditum</i>	7	5	71.4
<i>Lasioglossum kincaidii</i>	10	10	100.0
<i>Lasioglossum macroprosopum</i>	2	2	100.0
<i>Lasioglossum mellipes</i>	3	0	0.0
<i>Lasioglossum nevadense</i>	9	9	100.0
<i>Lasioglossum novascotiae</i>	1	0	0.0
<i>Lasioglossum occultum</i>	3	2	66.7
<i>Lasioglossum olympiae</i>	138	127	92.0
<i>Lasioglossum ovaliceps</i>	12	12	100.0
<i>Lasioglossum pacificum</i>	64	55	85.9
<i>Lasioglossum pavonotum</i>	59	58	98.3
<i>Lasioglossum pruinosum</i>	12	12	100.0
<i>Lasioglossum pulveris</i>	27	27	100.0
<i>Lasioglossum quebecense</i>	1	0	0.0
<i>Lasioglossum rubicundus</i>	1	0	0.0
<i>Lasioglossum ruidosense</i>	5	5	100.0
<i>Lasioglossum sequoiae</i>	6	0	0.0
<i>Lasioglossum sisymbrii</i>	105	101	96.2
<i>Lasioglossum titusi</i>	260	214	82.3
<i>Lasioglossum villosulum</i>	11	8	72.7
<i>Lasioglossum zephyrus</i>	2	2	100.0
<i>Lasioglossum zonulum</i>	25	22	88.0
<i>Megachile angelarum</i>	25	22	88.0

Table 8: Determination accuracy for all volunteers. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>Megachile anograe</i>	6	0	0.0
<i>Megachile apicalis</i>	4	4	100.0
<i>Megachile brevis</i>	23	1	4.3
<i>Megachile fidelis</i>	6	5	83.3
<i>Megachile melanophaea</i>	2	1	50.0
<i>Megachile mellitarsis</i>	4	4	100.0
<i>Megachile montivaga</i>	1	0	0.0
<i>Megachile nevadensis</i>	8	0	0.0
<i>Megachile perihirta</i>	61	55	90.2
<i>Megachile pugnata</i>	8	4	50.0
<i>Megachile rotundata</i>	23	22	95.7
<i>Megachile wheeleri</i>	4	4	100.0
<i>Melecta edwardsii</i>	8	8	100.0
<i>Melecta pacifica</i>	5	3	60.0
<i>Melecta separata</i>	4	4	100.0
<i>Melecta thoracica</i>	2	0	0.0
<i>Melissodes agilis</i>	1	1	100.0
<i>Melissodes bimatratus</i>	2	0	0.0
<i>Melissodes metenueus</i>	3	3	100.0
<i>Melitta americana</i>	2	0	0.0
<i>Micralictoides ruficaudus</i>	14	14	100.0
<i>Nomia melanderi</i>	1	1	100.0
<i>Osmia aglaia</i>	10	0	0.0
<i>Osmia albolateralis</i>	1	0	0.0
<i>Osmia atrocyanea</i>	10	9	90.0
<i>Osmia brevis</i>	2	0	0.0
<i>Osmia bruneri</i>	8	7	87.5
<i>Osmia californica</i>	2	0	0.0
<i>Osmia calla</i>	6	0	0.0
<i>Osmia coloradensis</i>	1	0	0.0
<i>Osmia cornifrons</i>	10	10	100.0
<i>Osmia cyanella</i>	3	0	0.0
<i>Osmia densa</i>	6	1	16.7
<i>Osmia kincaidii</i>	3	3	100.0
<i>Osmia laeta</i>	2	0	0.0
<i>Osmia lignaria</i>	11	11	100.0
<i>Osmia montana</i>	3	3	100.0
<i>Osmia nemoris</i>	5	1	20.0
<i>Osmia sculleni</i>	3	0	0.0
<i>Perdita nevadensis</i>	1	1	100.0
<i>Protosmia rubifloris</i>	168	167	99.4
<i>Pseudoanthidium nanum</i>	2	2	100.0
<i>Stelis laticincta</i>	5	5	100.0
<i>Trachusa timberlakei</i>	5	5	100.0
<i>Triepeolus concavus</i>	4	4	100.0
<i>Triepeolus utahensis</i>	5	2	40.0
<i>Xylocopa californica</i>	1	1	100.0
<i>Xylocopa tabaniformis</i>	16	16	100.0
<i>Xylocopa virginica</i>	1	0	0.0
<i>Zacosmia maculata</i>	1	1	100.0
<i>bombus flavifrons</i>	1	0	0.0
<i>bombus melanopygus</i>	1	0	0.0

Table 8: Determination accuracy for all volunteers. (*continued*)

Taxon	Specimens ID-ed	Correct ID	% Correct
<i>bombus sitkensis</i>	1	0	0.0
<i>bombus vosnesenskii</i>	1	0	0.0
<i>TOTAL</i>	13393	12047	89.9