

**Appendix 4.** Supplementary Electronic Material - A list of all of the plant species from each community included in the analyses, together with the predicted pollinator [Euclidean distances to the closest and next closest syndromes (if within 10%)] and their actual major functional group(s) of pollinators (where known - see Methods for details).

**California**

<b>Species</b>	<b>Principal pollinators observed</b>	<b>Predicted nearest syndrome (Euclidean distance)</b>	<b>2nd closest syndrome (if within 10%)</b>
Achillea millefolium	fly	fly	X
Apocynum androsaemifolium		moth/hawkmoth	X
Aquilegia formosa	butterfly	butterfly	X
Arabis holboellii		moth/hawkmoth	X
Arctostaphylos glandulosa		moth/hawkmoth	X
Arnica chamissonis	butterfly	butterfly	X
Aster occidentalis	bee	butterfly	X
Calyptridium umbellatum	fly	butterfly	fly
Castilleja miniata	bird	bird	X
Chamomilla suaveolens		butterfly	X
Cirsium tioganum	wasp	butterfly	X
Collomia linearis	fly	butterfly	X
Epilobium angustifolium	bee	bee	X
Epilobium ciliatum		butterfly	X
Epilobium glaberrimum		butterfly	X
Epipactis gigantea		wasp	X
Erigeron divergens	fly	butterfly	fly
Eriophyllum lanatum	beetle	fly	X
Erysimum capitatum	beetle	butterfly	X
Gayophytum diffusum	fly	fly	X
Geranium richardsonii	bee	fly	X
Heracleum lanatum	bee	fly	X
Horkelia rydbergii	bee	fly	X
Hypericum anagalloides		fly	X
Iris hartwegii		butterfly	X
Kelloggia galioides		moth/hawkmoth	butterfly
Lepidium virginicum	wasp	fly	X
Lilium parryi	moth	small mammal	X
Lotus nevadensis	bee	bee	X
Lotus oblongifolius		bee	X
Lotus purshianus		butterfly	X
Lupinus andersonii	bee	butterfly	bee
Lupinus latifolius	fly	butterfly	X
Lupinus lepidus	bee	bee	X
Lupinus polyphyllus	bee	wasp	X
Madia elegans	bee	butterfly	bee
Madia glomerata		butterfly	fly

Mimulus guttatus		bee	X
Mimulus moschatus		bee	X
Monardella linoides	wasp	fly	X
Pedicularis semibarbata		wasp	X
Penstemon caesius	moth	butterfly	X
Penstemon grinnellii		butterfly	X
Penstemon labrosus	bird	bird	X
Perideridia parishii	bee	fly	X
Phacelia imbricata	bee	fly	X
Platanthera leucostachys	butterfly	moth/hawkmoth	X
Polygonum bistortoides		fly	X
Potentilla anserina		fly	butterfly
Potentilla glandulosa	fly	fly	X
Potentilla gracilis	bee	fly	X
Prunus virginiana	beetle	fly	X
Ranunculus alismifolius	beetle	butterfly	fly
Ribes nevadense	bee	butterfly	X
Rosa californica	beetle	fly	X
Sidalcea pedata	butterfly	wasp	X
Silene verecunda		butterfly	fly
Spergularia rubra	fly	fly	X
Sphenosciadium capitellatum	bee	fly	X
Stachys albens	bee	butterfly	fly
Stellaria longipes		fly	X
Symphoricarpos rotundifolius	fly	butterfly	X
Taraxacum officinale	bee	butterfly	X
Tragopogon dubius		butterfly	X
Trifolium longipes	bee	butterfly	X
Veratrum californicum	fly	fly	X

## Colorado

Species	Principal pollinators observed	Predicted nearest syndrome (Euclidean distance)	2nd closest syndrome (if within 10%)
Achillea lanulosa	fly	moth/hawkmoth	X
Agoseris aurantiaca		fly	butterfly
Agoseris glauca	fly	butterfly	X
Androsace septentrionalis		butterfly	X
Antennaria rosea		butterfly	moth/hawkmoth
Aquilegia caerulea		butterfly	moth/hawkmoth
Arabis drummondii		moth/hawkmoth	butterfly
Arenaria congesta	fly	fly	moth/hawkmoth
Arnica cordifolia		butterfly	X
Arnica parryi	bee	butterfly	X
Arnica rydbergii		butterfly	X
Astragalus alpinus		butterfly	X
Castilleja miniata	bird	bird	X
Castilleja occidentalis	bee	bird	X
Castilleja rhexifolia		bird	X
Chrysopsis villosa	bee	butterfly	X
Cirsium scopulorum		butterfly	X
Delphinium barbeyi	bird	bee	X
Descurainia pinnata		fly	X

<i>Draba spectabilis</i>	fly	butterfly	X
<i>Epilobium angustifolium</i>		wasp	bee
<i>Erigeron elatior</i>	fly	butterfly	X
<i>Erigeron peregrinus</i>		butterfly	X
<i>Erigeron speciosus</i>	fly	butterfly	X
<i>Fragaria virginiana</i>	bee	fly	X
<i>Gentiana parryi</i>		bee	X
<i>Gentiana thermalis</i>		bee	X
<i>Gentianella amarella</i>	bee	wasp	X
<i>Geranium richardsonii</i>	fly	fly	X
<i>Helenium hoopesii</i>	fly	butterfly	X
<i>Helianthella quinquenervis</i>	fly	butterfly	X
<i>Hydrophyllum fendleri</i>		butterfly	fly
<i>Lathyrus leucanthus</i>		butterfly	X
<i>Ligusticum porteri</i>	fly	fly	X
<i>Linum lewisii</i>	fly	bee	X
<i>Lonicera involucrata</i>		butterfly	X
<i>Mertensia ciliata</i>		bee	X
<i>Pedicularis bracteosa</i>		fly	X
<i>Pedicularis groenlandica</i>		wasp	X
<i>Pedicularis racemosa</i>		butterfly	X
<i>Penstemon whippleanus</i>	bee	bee	X
<i>Polemonium pulcherrimum</i>	fly	fly	X
<i>Polygonum bistortoides</i>		fly	X
<i>Potentilla fruticosa</i>	fly	butterfly	X
<i>Potentilla pulcherrima</i>	fly	butterfly	fly
<i>Pseudocymopterus montanus</i>	fly	fly	butterfly
<i>Sedum integrifolium</i>		wasp	X
<i>Sedum stenopetalum</i>		butterfly	X
<i>Senecio bigelovii</i>		fly	moth/hawkmoth
<i>Senecio crassulus</i>	fly	butterfly	fly
<i>Solidago spathulata</i>		butterfly	moth/hawkmoth
<i>Valeriana edulis</i>	fly	fly	X
<i>Valeriana occidentalis</i>	fly	fly	X
<i>Vicia americana</i>	bee	bee	X
<i>Zygadenus elegans</i>		fly	X

## Guyana

Species	Principal pollinators observed	Predicted nearest syndrome (Euclidean distance)	2nd closest syndrome (if within 10%)
Araceae sp.	beetle	moth/hawkmoth	X
<i>Aristolochia peltato-deltoidea</i>		wasp	X
<i>Tilesia baccata</i>	butterfly	butterfly	X
Asteraceae sp. 2		moth/hawkmoth	X
Asteraceae sp. 3		butterfly	X
Asteraceae sp. 4		butterfly	X
Asteraceae sp. 5		fly	X
Bignoniaceae sp.		butterfly	X
<i>Blepharodon glaucescens</i>		fly	X
<i>Blepharodon nitidum</i>	wasp	wasp	X
<i>Stachytarpheta</i> sp.		butterfly	X
Chrysobalanaceae sp.		fly	X

Cissus sp.		fly	X
Costus sp.		butterfly	X
Curatella sp.		butterfly	X
Curculigo scorzonerifolia		fly	X
Cuscuta sp.		wasp	X
Cyphomandra sp.	bee	wasp	X
Dalechampia sp.	bee	fly	X
Desmodium sp.	bee	wasp	X
Dioscorea sp.		fly	X
Fabaceae sp. 1		bee	X
Fabaceae sp. 2		bee	X
Fabaceae sp. 3		butterfly	X
Fabaceae sp. 4		wasp	X
Fabaceae sp. 5		bee	X
Fabaceae sp. 6		butterfly	X
Fabaceae sp. 7		bee	X
Fabaceae sp. 8		bird	wasp
Fabaceae sp. 9		bee	X
Fabaceae sp. 10		wasp	X
Gesneriaceae sp.		butterfly	X
Heliconia sp. 1		bee	bird
Heliconia sp. 2		butterfly	bee
Hemerocallis sp.		butterfly	bird
Hydrocharitaceae sp. 1		fly	X
Hydrocharitaceae sp. 2		fly	X
Irlbachia sp.		wasp	X
Ischnosiphon sp.		butterfly	X
Lamiaceae sp		butterfly	fly
Lantana camara		moth/hawkmoth	butterfly
Lobelia sp.		bee	bird
Lythraceae sp.		butterfly	moth/hawkmoth
Malpigiaceae sp. 1	bee	fly	butterfly
Malphigiaceae sp. 2	bee	wasp	X
Malphigiaceae sp. 3	bee	fly	X
Malphigiaceae sp. 4		fly	X
Mandevilla hirsuta	butterfly	butterfly	bee
Mandevilla rugellosa	butterfly	butterfly	X
Manihot sp.		wasp	fly
Marantaceae sp.		butterfly	X
Marsdenia gillespieae		wasp	X
Matelea denticulata	fly	wasp	X
Melostomataceae sp. 1	bee	wasp	X
Melostomataceae sp. 2		wasp	X
Mesechites trifida	bee	fly	X
Mimosa sp.		wasp	X
Mimosoideae sp.		wasp	X
Odontadenia geminata	bee	butterfly	bee
Orchidaceae sp. 1		bee	X
Oxypetalum capitatum	wasp	wasp	X
Palicourea sp.	butterfly	butterfly	X
Passiflora sp.		bird	X
Piper sp.	bee	fly	X

Prestonia tomentosa	bee	butterfly	X
Psychotria sp.	butterfly	bee	X
Renealmia sp.		butterfly	bee
Rubiaceae sp. 1		moth/hawkmoth	butterfly
Rubiaceae sp. 2		wasp	X
Rubiaceae sp. 3		moth/hawkmoth	butterfly
Rubiaceae sp. 4		fly	butterfly
Smilax sp.		wasp	X
Solanaceae sp.	bee	wasp	X
Solanum sp.		wasp	X
Stemmadenia grandiflora		butterfly	X
Unidentified sp. 1		butterfly	X
Unidentified sp. 2		fly	X
Unidentified sp. 3	butterfly	moth/hawkmoth	X
Unidentified sp. 4	wasp	fly	X
Unidentified sp. 5		butterfly	X
Unidentified sp. 6		butterfly	fly
Unidentified sp. 7		fly	X
Unidentified sp. 8		butterfly	X
Unidentified sp. 9		butterfly	X
Unidentified sp. 10		fly	X
Unidentified sp. 11		wasp	X
Unidentified sp. 12		fly	X
Unidentified sp. 13		moth/hawkmoth	butterfly
Unidentified sp. 14		wasp	X
Unidentified sp. 17		butterfly	X
Unidentified sp. 18		fly	X
Xyridaceae sp.		wasp	X

## Peru

<b>Species</b>	<b>Principal pollinators observed</b>	<b>Predicted nearest syndrome (Euclidean distance)</b>	<b>2nd closest syndrome (if within 10%)</b>
Alonsoa acutifolia		wasp	X
Apiaceae sp. 1		fly	X
Arenaria lanuginosa		fly	X
Arenaria sp.		fly	X
Aristeguetia anisodonoton		butterfly	X
Aristeguetia discolor	bee	butterfly	X
Asclepiadoideae sp. 2	fly	wasp	X
Asclepiadoideae sp. 3	wasp	wasp	carrion
Aster sp.		moth/hawkmoth	butterfly
Asteraceae sp. 1	fly	fly	X
Asteraceae sp. 2		fly	X
Asteraceae sp. 3	bee	butterfly	X
Asteraceae sp. 4		wasp	X
Asteraceae sp. 5		moth/hawkmoth	fly
Asteraceae sp. 6	bee	butterfly	fly
Asteraceae sp. 7		fly	X
Asteraceae sp. 8		butterfly	moth/hawkmoth
Asteraceae sp. 9		butterfly	X
Asteraceae sp. 10		fly	butterfly
Asteraceae sp. 11		fly	moth/hawkmoth

Asteraceae sp. 12	bee	fly	X
Asteraceae sp. 13	bee	fly	X
Asteraceae sp. 14		moth/hawkmoth	butterfly
Asteraceae sp. 15	bee	butterfly	X
Asteraceae sp. 16	fly	fly	X
Baccharis latifolia	fly	fly	X
Barnadesia horrida	bird	bird	X
Bartsia sp.		butterfly	X
Begonia sp.		fly	X
Berberis carinata	bee	wasp	bird
Berberis humbertiana		wasp	X
Berbersinia sp.	bee	fly	butterfly
Bidens andicola		butterfly	X
Bomarea ovata	bird	bird	X
Bomarea sanguinea	bird	bird	butterfly
Bomarea sp. 1	bird	butterfly	bee
Bomarea sp. 2	bird	butterfly	bee
Brachyotum grisebachii	bird	bee	butterfly
Brugmansia arborea	bird	bird	X
Brugmansia sanguinea	bird	moth/hawkmoth	X
Buddleja sp.		moth/hawkmoth	X
Calceolaria sp. 1		bee	X
Calceolaria sp. 2		bee	wasp
Campanulaceae sp.	bird	butterfly	X
Cerastium sp.	fly	fly	X
Clematis sp.		wasp	X
Commelina diffusa		wasp	bee
Cosmos pseudanifolius		butterfly	X
Cronquistianthus sp.		fly	X
Cuscuta grandiflora		fly	X
Cynanchum tarmense	fly	wasp	X
Dioscorea monodelpha	fly	carrion	X
Duranta armata	bee	butterfly	X
Echeveria sp.		butterfly	X
Escalonia sp.		fly	X
Eustephia coccinea		butterfly	X
Fabaceae sp.		butterfly	X
Fragaria sp.		fly	X
Fuchsia apetala	bird	bird	wasp
Furcraea andina	bird	bird	X
Gaultheria bracteata	bird	bird	X
Gentianaceae sp.		wasp	X
Halenia umbellata	beetle	butterfly	X
Krapfia sp.		fly	X
Liliaceae sp. 1		butterfly	X
Liliaceae sp. 2		fly	X
Liliaceae sp. 3		fly	X
Liliaceae sp. 4		fly	X
Liliaceae sp. 5		wasp	X
Lobelia tenera	bird	butterfly	X
Marrubium vulgare		fly	X
Minthostachys spicata	fly	butterfly	X

Monnina salicifolia		wasp	X
Muhlenbeckia volcanica		moth/hawkmoth	X
Mutisia acuminata	bird	bird	X
Myosotis sp.		moth/hawkmoth	butterfly
Myrcianthes oreophylla	bird	butterfly	X
Nicotiana paniculata	bird	butterfly	X
Oenothera rosea		butterfly	X
Ophryosporus peruvianas		fly	X
Orchidaceae sp.		wasp	X
Oxalis sp.	fly	butterfly	X
Passiflora sp.	bird	bird	X
Passiflora tripartita	bird	bird	X
Peperomia sp. 1	fly	wasp	X
Peperomia sp. 2		wasp	X
Peperomia sp. 4	fly	wasp	X
Peperomia sp. 3		wasp	X
Pisum sp.		butterfly	X
Pleurothallis sp.		fly	X
Polygonaceae sp.		fly	X
Polylepis sp.		fly	X
Prunus serotina subsp serotina	bee	fly	X
Puya ferruginea	bird	bird	X
Ranunculus sp. 1		wasp	X
Ranunculus sp. 2		wasp	X
Rubus sp.	bird	wasp	X
Salpichroa sp.	bird	butterfly	X
Salvia opositiflora	bird	butterfly	moth/hawkmoth
Salvia sp. 1	bird	butterfly	bee
Salvia sp. 2	bird	butterfly	bee
Schinus microphyllus		fly	X
Senna birostris		butterfly	X
Serjania squarrosa		fly	X
Siphocampulus actinotrix		wasp	X
Sisyrinchium sp.		wasp	X
Solanaceae sp. 1		butterfly	X
Solanaceae sp. 2		wasp	X
Solanaceae sp. 3		fly	X
Solanaceae sp. 4	bee	butterfly	X
Solanaceae sp. 5	bee	fly	X
Solanum ochrophyllum	bee	fly	X
Solanum sp. 1	bee	fly	X
Solanum sp. 2	bee	fly	X
Tecoma sambucifolia	bird	butterfly	X
Thalictrum podocarpum		wasp	X
Trifolium amabile var pentlandianum	bee	butterfly	X
Trifolium sp.	bee	butterfly	X
Unidentified sp. 1		butterfly	X
Unidentified sp. 2		wasp	X
Unidentified sp. 3		moth/hawkmoth	butterfly
Unidentified sp. 4	fly	fly	X
Unidentified sp. 5	bee	wasp	X
Unidentified sp. 6		wasp	X

Unidentified sp. 7	fly	fly	X
Urtica sp.		wasp	X
Vallea stipularis	bird	wasp	bee
Vicia graminea		wasp	X
Weinmannia pentaphyla		fly	X

### South Africa

<b>Species</b>	<b>Principal pollinators observed</b>	<b>Predicted nearest syndrome (Euclidean distance)</b>	<b>2nd closest syndrome (if within 10%)</b>
Agapanthus campanulatus		bee	wasp
Albuca fastigiata		butterfly	X
Alepidea amatymbia	fly	fly	X
Aloe cooperi		butterfly	X
Anthericum sp.		fly	X
Anthospermum sp.		butterfly	moth/hawkmoth
Aristea woodii	bee	bee	fly
Asclepias albens		wasp	X
Asclepias cucullata		fly	X
Asclepias macropus		wasp	X
Asclepias woodi	beetle	wasp	X
Aspidonepsis diploglossa	bee	wasp	bee
Aster sp.		butterfly	X
Berkheya setifera	beetle	butterfly	X
Crassula pellucida		fly	X
Craterocapsa tarsodes		butterfly	X
Cucumis sp.		butterfly	X
Cyanotis speciosa		butterfly	X
Cyperus sphaeroccephalus	bee	wasp	X
Dierama sp.		wasp	X
Disa crassicornis	hawkmoth	moth/hawkmoth	X
Eulophia calanthoides		bee	wasp
Eulophia foliosa		wasp	X
Geranium sp.		wasp	X
Gladiolus dalenii	bird	bird	moth/hawkmoth
Gladiolus ecklonii	bee	wasp	X
Gladiolus senciovillosus		butterfly	X
Helichrysum pallidum	beetle	fly	X
Helichrysum sp.1		butterfly	fly
Helichrysum sp.2	beetle	fly	X
Helichrysum sp.3		fly	X
Helichrysum sp.4		fly	X
Hypericum aethiopicum		fly	X
Hypoxis sp.	bee	wasp	X
Indigotera dimidiata		bee	X
Indigotera hilaris		bird	wasp
Indigotera tristis	bee	bee	X
Ipomea crassipes		butterfly	X
Kniphofia laxiflora	bird	butterfly	X
Lamiaceae sp.		wasp	bee
Linium ehunbergii		fly	X
Miraglossum pilosum	wasp	wasp	X
Miraglossum verticillare	wasp	wasp	X

Monopsis decipiens		bee	X
Morea brevista		fly	X
Niclorella auriculata		fly	X
Oxalis smithiana		butterfly	X
Pachycarpus campanulatus		wasp	X
Pachycarpus concolor		wasp	X
Pachycarpus natalensis	wasp	wasp	X
Pelargonium luridum		butterfly	X
Pentanisia pruneloides	butterfly	butterfly	X
Polygala hottentotta		wasp	X
Rhus sp.		wasp	X
Satyrium longicauda	hawkmoth	moth/hawkmoth	X
Schizoglossum hamatum		wasp	X
Sebacea natalensis	butterfly	butterfly	X
Senecio sp.	beetle	butterfly	X
Silene sp. 1		moth/hawkmoth	X
Silene sp. 2		moth/hawkmoth	X
Sisyranthus trichostomus	beetle	butterfly	X
Striga sp.		butterfly	X
Tephrosia sp.		wasp	bee
Veronica capensis		butterfly	X
Walenbergia sp.		wasp	X
Xysmalobium gerrardii	wasp	butterfly	fly
Xysmalobium involucratum	beetle	fly	X
Zaluzianskya sp.	hawkmoth	moth/hawkmoth	butterfly
Zantedeschia bimaculata		butterfly	X
Zornia capensis		bee	X

## Venezuela

Species	Principal pollinators observed	Predicted nearest syndrome (Euclidean distance)	2nd closest syndrome (if within 10%)
Asteraceae sp. 1		butterfly	X
Asteraceae sp. 2		fly	X
Asteraceae sp. 3		butterfly	X
Asteraceae sp. 4		fly	X
Asteraceae sp. 5		butterfly	X
Asteraceae sp. 6		butterfly	X
Asteraceae sp. 7		butterfly	X
Asteraceae sp. 8		fly	X
Begonia sp.		fly	X
Bignoniaceae sp.		butterfly	X
Bombacaceae sp.	bat	fly	X
Boraginaceae sp.		fly	X
Cassia sp.		bee	X
Chenopodiaceae sp.		wasp	X
Commeliniaceae sp.		wasp	X
Convolvulaceae sp.		bee	fly
Cucurbitaceae sp.		wasp	X
Euphorbiaceae sp. 1		wasp	X
Euphorbiaceae sp. 2		wasp	X
Lamiaceae sp.		butterfly	X
Lobeliaceae sp.	bird	bee	X

Loranthaceae sp.		moth/hawkmoth	X
Malvaceae sp. 1		fly	X
Malvaceae sp. 2		fly	X
Marantaceae sp.		wasp	X
Matelea sp.	wasp	wasp	X
Meliconia sp.		bird	X
Mimosoideae sp. 1		fly	X
Mimosoideae sp. 2		wasp	X
Opuntia sp. 1		butterfly	X
Opuntia sp. 2	bee	wasp	X
Papillionidae sp. 2		bee	X
Papillionidae sp. 3	bee	butterfly	bee
Papillioideae sp. 1		bee	X
Piper sp. 1	bee	fly	X
Piper sp. 2		fly	beetle
Plumeria sp.		butterfly	X
Prestonia sp.		butterfly	X
Psychotria sp.		moth/hawkmoth	X
Sarcostemma sp.		fly	X
Smilax sp.		wasp	X
Solanum sp. 1	bee	fly	X
Solanum sp. 2	bee	fly	X
Unidentified 1		fly	X
Unidentified 3		fly	X
Unidentified 4	bee	fly	X
Unidentified 5	butterfly	wasp	X
Unidentified 6		wasp	X
Unidentified 7		wasp	X
Unidentified 8		moth/hawkmoth	fly
Unidentified 9		fly	moth/hawkmoth
Unidentified 10		wasp	X
Unidentified 11		fly	X
Unidentified 12		fly	X
Unidentified 13	butterfly	wasp	X
Unidentified 14		wasp	X
Unidentified 15		moth/hawkmoth	butterfly
Unidentified 16		fly	X
Unidentified 17		fly	X
Unidentified 18		fly	X
Unidentified 19		butterfly	X
Unidentified 20	butterfly	bee	wasp
Unidentified 21		fly	X
Unidentified 22	fly	butterfly	X
Unidentified 23		fly	X
Unidentified 24		butterfly	moth/hawkmoth
Unidentified 25		butterfly	fly
Unidentified 26		butterfly	X
Unidentified 27	bee	fly	X
Verbenaceae sp.		butterfly	X