|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Plants** |  |  |  |  | **Pollinators** |  |  |  |
| species | Family | Interaction degree | functional nectar depth (mm) |  | species | Family | Interaction degree | tongue length (mm) |
| *Achillea millefolium* | Asteraceae | 9 | 0.8 |  | *Andrena costillensis* | Andrenidae | 3 | 2.1 |
| *Agoseris aurantiaca* | Asteraceae | 2 | 0.9 |  | *Andrena cyanophila* | Andrenidae | 8 | 2.4 |
| *Agoseris glauca* | Asteraceae | 1 | 0.9 |  | *Andrena sp. 02* | Andrenidae | 5 | 2.4 |
| *Androsace septentrionalis* | Primulaceae | 18 | 1.8 |  | *Andrena transnigra* | Andrenidae | 5 | 2.9 |
| *Arenaria congesta* | Caryophyllaceae | 35 | 1.4 |  | *Andrena vicinoides* | Andrenidae | 7 | 2.2 |
| *Boechera stricta* | Brassicaceae | 6 | 3.4 |  | *Anthidium emarginatum* | Megachilidae | 1 | 5.1 |
| *Campanula rotundifolia* | Campanulaceae | 14 | 1.8 |  | *Anthophora terminalis* | Apidae | 5 | 6.8 |
| *Castilleja sulphurea* | Orobanchaceae | 1 | 9.5 |  | *Arctophila flagrans* | Syrphidae | 11 | 2.5 |
| *Claytonia lanceolata* | Montiaceae | 19 | 1.5 |  | *Bombus appositus* | Apidae | 12 | - |
| *Delphinium nuttallianum* | Ranunculaceae | 19 | 9.2 |  | queen | - | - | 12.8 |
| *Draba aurea* | Brassicaceae | 13 | 2.3 |  | worker | - | - | 10.5 |
| *Erigeron flagellaris* | Asteraceae | 46 | 1.1 |  | male | - | - | 11.4 |
| *Erigeron speciosus* | Asteraceae | 41 | 2.8 |  | *Bombus bifarius* | Apidae | 24 | - |
| *Eriogonum subalpinum* | Polygonaceae | 16 | 0.6 |  | queen | - | - | 8.4 |
| *Eriogonum umbellatum* | Polygonaceae | 21 | 0.9 |  | worker | - | - | 5.8 |
| *Erythronium grandiflorum* | Liliaceae | 4 | 3.4 |  | male | - | - | 6.6 |
| *Fragaria virginiana* | Rosaceae | 2 | 1.3 |  | *Bombus californicus* | Apidae | 11 | - |
| *Galium boreale* | Rubiaceae | 3 | 0.8 |  | queen | - | - | 12.2 |
| *Gentiana parryi* | Gentianaceae | 4 | 8.0 |  | worker | - | - | 10.1 |
| *Helianthella quinquenervis* | Asteraceae | 17 | 4.3 |  | male | - | - | 11.0 |
| *Heliomeris multiflora* | Asteraceae | 43 | 2.5 |  | *Bombus flavifrons* | Apidae | 18 | - |
| *Heterotheca villosa* | Asteraceae | 54 | 3.4 |  | queen | - | - | 10.2 |
| *Hydrophyllum capitatum* | Hydrophyllaceae | 8 | 5.5 |  | worker | - | - | 7.3 |
| *Hydrophyllum fendeleri* | Hydrophyllaceae | 1 | 5.5 |  | male | - | - | 9.0 |
| *Ipomopsis aggregata* | Polemoniaceae | 3 | 20.2 |  | *Bombus mixtus* | Apidae | 3 | - |
| *Lathyrus leucanthus* | Fabaceae | 9 | 4.4 |  | queen | - | - | *na* |
| *Linum lewisii* | Linaceae | 4 | 2.8 |  | worker | - | - | 7.2 |
| *Lomatium dissectum* | Apiaceae | 4 | 1.3 |  | male | - | - | 7.3 |
| *Mahonia repens* | Berberidaceae | 2 | 3.0 |  | *Bombus nevadensis* | Apidae | 5 | - |
| *Mertensia ciliata* | Boraginaceae | 2 | 6.5 |  | queen | - | - | 11.8 |
| *Mertensia fusiformis* | Boraginaceae | 7 | 4.4 |  | worker | - | - | 10.3 |
| *Phacelia heterophylla* | Hydrophyllaceae | 4 | 5.0 |  | male | - | - | *na* |
| *Potentilla gracilis* | Rosaceae | 17 | 0.5 |  | *Bombus occidentalis* | Apidae | 4 | - |
| *Potentilla hippiana* | Rosaceae | 36 | 0.8 |  | queen | - | - | 8.5 |
| *Pseudocymopterus montanus* | Apiaceae | 9 | 1.3 |  | worker | - | - | 5.8 |
| *Ranunculus inamoenus* | Ranunculaceae | 1 | 0.0 |  | male | - | - | 7.4 |
| *Rosa woodsii* | Rosaceae | 3 | 0.0 |  | *Bombus sylvicola* | Apidae | 10 | - |
| *Sedum lanceolatum* | Crassulaceae | 12 | 1.4 |  | queen | - | - | 8.4 |
| *Senecio integerrimus* | Asteraceae | 48 | 3.7 |  | worker | - | - | 5.8 |
| *Senecio serra* | Asteraceae | 5 | 4.6 |  | male | - | - | 7.4 |
| *Senecio wootonii* | Asteraceae | 2 | 3.7 |  | *Callophrys affinis* | Lycaenidae | 1 | 5.7 |
| *Solidago multiradiata* | Asteraceae | 22 | 2.2 |  | *Cartosyrphus sp. 02* | Syrphidae | 3 | 2.1 |
| *Taraxacum officinale* | Asteraceae | 30 | 0.8 |  | *Cartosyrphus tarda* | Syrphidae | 14 | 2.1 |
| *Vicia americana* | Fabaceae | 6 | 6.6 |  | *Chrysotoxum ventricosum* | Syrphidae | 10 | 1.9 |
| *Viola praemorsa* | Violaceae | 7 | 3.3 |  | *Coelioxus funeraria* | Megachilidae | 4 | 4.5 |
|  |  |  |  |  | *Coenonympha ochracea* | Nymphalidae | 2 | 6.3 |
|  |  |  |  |  | *Colias alexandra* | Lycaenidae | 3 | 11.0 |
|  |  |  |  |  | *Colletes kincaidii* | Colletidae | 8 | 2.3 |
|  |  |  |  |  | *Colletes nigrifrons* | Colletidae | 5 | 1.7 |
|  |  |  |  |  | *Cryptopogon sp 01* | Asilidae | 2 | 1.4 |
|  |  |  |  |  | *Eristalis latifrons* | Syrphidae | 9 | 1.8 |
|  |  |  |  |  | *Eupeodes lapponicus* | Syrphidae | 8 | 1.3 |
|  |  |  |  |  | *Eupeodes volucris* | Syrphidae | 14 | 0.9 |
|  |  |  |  |  | *Euphydras anicia* | Nymphalidae | 4 | 7.9 |
|  |  |  |  |  | *Glaucopsyche lygdamus* | Lycaenidae | 11 | 6.4 |
|  |  |  |  |  | *Halictus confusus* | Halictidae | 11 | 2.0 |
|  |  |  |  |  | *Halictus rubicundus* | Halictidae | 15 | 2.7 |
|  |  |  |  |  | *Halictus virgatellus* | Halictidae | 10 | 2.1 |
|  |  |  |  |  | *Hoplitus fulgida* | Megachilidae | 8 | 3.8 |
|  |  |  |  |  | *Hoplitus robusta* | Megachilidae | 3 | 3.2 |
|  |  |  |  |  | *Lasioglossum inconditum* | Halictidae | 29 | 1.6 |
|  |  |  |  |  | *Lycaena cupreus* | Lycaenidae | 5 | 5.0 |
|  |  |  |  |  | *Megachile frigida* | Megachilidae | 5 | 5.9 |
|  |  |  |  |  | *Megachile melanophea* | Megachilidae | 5 | 6.3 |
|  |  |  |  |  | *Megachile pugnata* | Megachilidae | 7 | 5.5 |
|  |  |  |  |  | *Megachile relativa* | Megachilidae | 12 | 4.8 |
|  |  |  |  |  | *Melanostoma kelloggi* | Syrphidae | 1 | 1.4 |
|  |  |  |  |  | *Melanstoma caerulescens* | Syrphidae | 2 | 1.9 |
|  |  |  |  |  | *Melissodes confusa* | Apidae | 1 | 5.8 |
|  |  |  |  |  | *Mesembrina latreillei* | Muscidae | 4 | 2.6 |
|  |  |  |  |  | *Muscidae sp. 01* | Muscidae | 17 | 1.8 |
|  |  |  |  |  | *Ochlodes sylvanoides* | Hesperiidae | 10 | 7.7 |
|  |  |  |  |  | *Osmia bucephala* | Megachilidae | 19 | 6.7 |
|  |  |  |  |  | *Osmia coloradensis* | Megachilidae | 11 | 4.7 |
|  |  |  |  |  | *Osmia grindeliae* | Megachilidae | 5 | 4.3 |
|  |  |  |  |  | *Osmia iridis* | Megachilidae | 6 | 4.8 |
|  |  |  |  |  | *Osmia lignaria* | Megachilidae | 1 | 5.3 |
|  |  |  |  |  | *Osmia montana* | Megachilidae | 11 | 5.4 |
|  |  |  |  |  | *Osmia proxima* | Megachilidae | 2 | 4.2 |
|  |  |  |  |  | *Osmia sp. 6* | Megachilidae | 3 | 3.7 |
|  |  |  |  |  | *Osmia subaustralis* | Megachilidae | 6 | 5.5 |
|  |  |  |  |  | *Osmia tristela* | Megachilidae | 2 | 3.6 |
|  |  |  |  |  | *Panurginus ineptus* | Andrenidae | 12 | 1.5 |
|  |  |  |  |  | *Papilio gothica* | Papilionidae | 4 | 14.8 |
|  |  |  |  |  | *Pieris rapa* | Pieridae | 8 | 7.2 |
|  |  |  |  |  | *Polygonia zephyrus* | Nymphalidae | 1 | 10.4 |
|  |  |  |  |  | *Psithyrus insularis* | Apidae | 6 | 9.4 |
|  |  |  |  |  | *Rhamphomyia sp. 01* | Empididae | 3 | 1.3 |
|  |  |  |  |  | *Scathophagidae sp. 01* | Scathophagidae | 5 | 1.5 |
|  |  |  |  |  | *Selasphorus platycercus\** | Trochilidae | 4 | 34.4 |
|  |  |  |  |  | *Speyeria mormonia* | Nymphalidae | 7 | 11.3 |
|  |  |  |  |  | *Sphaerophoria robusta* | Syrphidae | 17 | 1.3 |
|  |  |  |  |  | *Sphecodes sp. 01* | Halictidae | 6 | 1.7 |
|  |  |  |  |  | *Syrphidae sp. 02* | Syrphidae | 2 | 1.3 |
|  |  |  |  |  | *Systoechus vulgaris* | Bombyliidae | 16 | 5.4 |
|  |  |  |  |  | *Sachinidae sp. 01* | Tachinidae | 7 | 2.2 |
|  |  |  |  |  | *Tephritidae sp. 01* | Tephritidae | 1 | 0.6 |
|  |  |  |  |  | *Thricops septentrionalis* | Muscidae | 23 | 1.1 |
|  |  |  |  |  | *Villa eumenes* | Bombyliidae | 7 | 0.9 |
|  |  |  |  |  |  |  |  |  |

**Table S3**. Plant and pollinator species list for all species present in the three-year study at the Rocky Mountain Biological Laboratory, Gothic, CO, USA. Interaction degree indicates the number of interaction links a particular plant or pollinator has with other pollinators or plants across all three years of the study period. Functional nectar depth indicates the depth at which nectar is concealed. We considered a morphological size match between a given plant and pollinator pair to occur when the pollinator’s tongue was as long as the functional nectar depth of the flower (±1mm to account for pollinator behavior and intraspecific variation). Our measure of functional nectar depth accounts for the ability of small pollinators to crawl inside flowers to access nectar. For example, an open, cup-shaped flower that does not otherwise conceal its nectar reward would have a functional nectar depth at or near zero mm, and thus small pollinators can climb in and access nectar. Alternatively, an open, cup-shaped flower that has nectar tucked away inside concealed nectaries will have a functional nectar depth equal to the depth of the restricted portion of the nectaries; here, small pollinators will only be able to access the nectar reward if their feeding apparatus is long enough to reach it. *Notes:* \*Small temperate-zone hummingbirds such as *Selasphorus platycercus* can reach nectar with their tongues at a depth of approximately twice the length of their bills (*references in* Paton & Collins 1989); the measurement shown in this table for *S. platycercus* represents the bill length multiplied by two.