Packer, L. 2005. Species Profile: *Halictus harmonius*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). *Red List of Pollinator Insects of North America*. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.

Halictus harmonius Sandhouse, 1941 (Halictidae: Halictinae: Halictini)

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SUMMARY

Halictus harmonius is a rare localized species that has only ever been recorded from the foothills of the San Bernardino and, but with less certainty, from the San Jacinto mountains in Southern California. This whole area is subject to considerable anthropogenic disturbance through construction, pollution and agriculture. The species is active for long periods in spring and summer and appears to be primitively eusocial with macrocephalic queens and smaller workers. It appears not to be restricted in pollen and nectar source plants. A survey of suitable habitat in the small area from which the species is known is badly required.

CONSERVATION STATUS

Xerces Red List Status: Critically Imperiled

Other Rankings:

Canada – Species at Risk Act:	N/A
Canada – provincial status:	N/A
Mexico:	N/A
USA – Endangered Species Act	None
USA – state status:	None
Nature Serve:	N/A
IUICH Red List:	N/A

SPECIES PROFILE

DESCRIPTION

Halictus harmonius is a member of the subgenus *Seladonia*. This is the only subgenus of Halictine bee in North America that has the combination of greenish metallic coloration and apical bands of pale hairs on the metasomal terga. Halictine bees can be readily identified on the basis of the strongly curved basal vein and, except in certain cleptoparasitic forms, by the pseudopygidial area on female T5. Identification of bees of this subgenus cannot be made on the basis of the apical bands on pubescence in old, or worn specimens. In such instances, the absence of a cleft in the apex of T5 combined

with strong apical wing veins and greenish coloration, are sufficient to diagnose a specimen as belonging to the correct subgenus.

Halictus harmonius is easily separated from other *Seladonia* species in North America by its minute size, less than 4.5mm in length. The most likely bees to be confused with *H. harmonius* are species of the *Lasioglossum* subgenus *Dialictus*, most of which are similar in size and coloration. However, *Dialictus* have weakened apical forewing veins and, if they have bands of pubescence on the metasoma, these are basal rather than apical.

TAXONOMIC STATUS
Halictus (*Seladonia*) *harmonius* Sandhouse, 1941.

The subgeneric and generic level classifications of bees in *Halictus* has long been inconsistent with different authors incorporating different concepts. The most commonly accepted concept is that *Halictus* comprises those strongly veined, non-parasitic members of the tribe Halictini that have apical bands of hairs on the metasomal terga and with an obtuse epistomal lobe. The latter feature differentiates the genus from *Pseudagapostemon*, a genus that is restricted to South America. Past authors sometimes considered those taxa with weakened apical wing veins as belonging here. In North America, all such weakened veined bees are generally considered to be members of the speciose genus *Lasioglossum* which itself has a checkered and complex subgeneric classification.

Halictus has been considered to be comprised of three subgenera by most North American researchers. These are *Halictus* sensu stricto, *Seladonia*, and *Vestitohalictus*. Only the former two subgenera are found in the New World. Pesenko considers both subgenera to deserve generic rank but with *Vestitohalictus* sunk within *Seladonia*, and he recognizes numerous subgenera within both *Halictus* and *Seladonia*.

There are seven species of *Seladonia* in North America, the most common of which, *H. confuses*, is a Holarctic species. *H. virgatellus* is found at high altitude in the rocky mountains, *H. tripartitus* is known from the U.S. southwest where it is common.

LIFE HISTORY
This species has been collected at various times during spring, summer and early fall (from May to September). Size variation among females with the larger ones being macrocephalic and the results of dissection of a small sample of individuals collected in early summer all suggest that it is a primitively eusocial species with a colony cycle typical for halictines with this type of sociality. Thus, only mated potential queens survive the winter, produce a brood of females in spring, and males emerge later in the year to mate with the new generation of overwintering females.

Those sites where the species has been collected for which detailed habitat data are available suggest that it is a "weedy" species. A longish series recently collected was obtained from the edge of a new housing development in an overgrown vegetable garden where they were found foraging upon California poppy (*Eschscholzia californica*). It has

also been collected from California (or Eastern Mojave) buckwheat (*Eriogonum fasciculatum*).

Based upon comparisons with related species, the nests of this species are expected to consist of narrow burrows in the soil, perhaps branched during the summer provisioning phase, and with brood cells arising from the burrows directly rather than being at the end of their own separate lateral burrow extensions. Cavity construction around the brood cells, as is known for some bees in the subfamily, is not expected.

DISTRIBUTION

This species has been recorded with certainty only from the foothills of the San Bernardino and San Jacinto Mountains in southern California. It is known only from San Bernardino and Riverside counties with its center of distribution apparently being San Timoteo Canyon. Earlier records from Colorado (Krombein et al., 1979) have not been verified and have been discounted (Moure and Hurd, 1987; Janjic and Packer, 2001). The fact that the area to which this species is endemic was surveyed in some detail over an extended period by a melittologist based at Riverside (P. H. Timberlake) who collected comparatively few specimens of it (approximately two dozen), suggests that it has not been an abundant species for at least 50 years.

THREATS

Development of the area in which this species has been found has been intense and some of its earlier localities are now covered with roads and buildings. Habitat modification of some suitable areas has probably resulted from the construction of vacation homes in the San Bernardino Mountain area as well as urban expansion. The area in which it has been found harbors considerable agricultural development and also receives a great deal of pollution from Los Angeles. The species' response to drought is unknown.

CONSERVATION STATUS

This is a narrowly endemic species known only from a very restricted range. The status of its populations is poorly known. It has been collected on comparatively few occasions, especially considering the activities of melittologists in the area. It probably requires formal listing as an endangered species.

CONSERVATION NEEDS

As it is unlikely that this species is narrowly specialized on any particular flower or to a highly specific nesting site, it is possible that its conservation needs might be comparatively easily met once its other habitat requirements are recognized.

RESEARCH NEEDS

A detailed survey for this species should be made during the spring and early summer of a year in which there has been adequate winter rainfall. A wide variety of habitats, including artificial and otherwise anthropogenically altered sites, should be surveyed for it. The flowers preferred by this species should be investigated, as should its preferred nesting substrate.

RESOURCES

CONTACTS

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REFERENCES

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Krombein, K. V., P. D. Hurd, Jr., D. R. Smith, and B. D. Burks. 1979. *Catalog of the Hymenoptera of America North of Mexico, vol. 2, Apocrita.* Washington, D.C.: Smithsonian Institution Press. xvii+pp. 1199-2209.

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WEBSITES

This bee has no web presence.