

BEES

IDENTIFICATION OF WILD BEES (VARIABILITY)

The traits you need to observe at first are size, hairs and tegument colour. For each of these categories, we propose several classes. In each morphogenus more than one class per category may be present.

SIZE

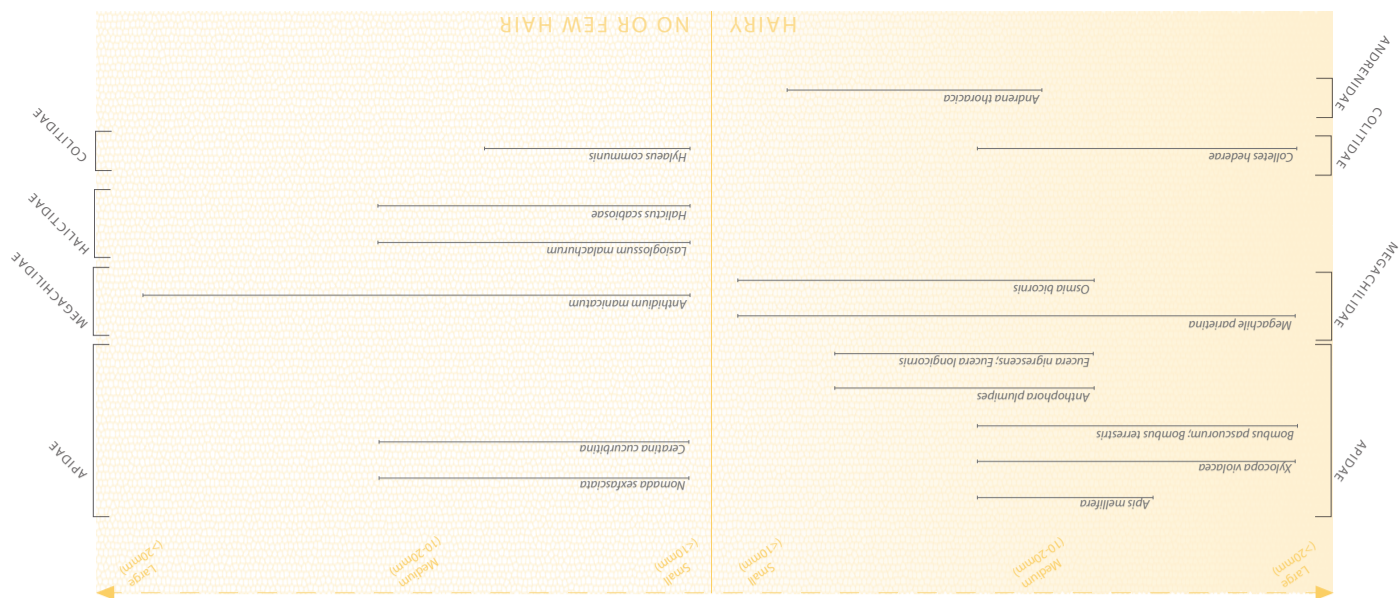
Small: 4-8 mm / **Medium:** 8-13 mm / **Big:** >13 mm

HAIRS

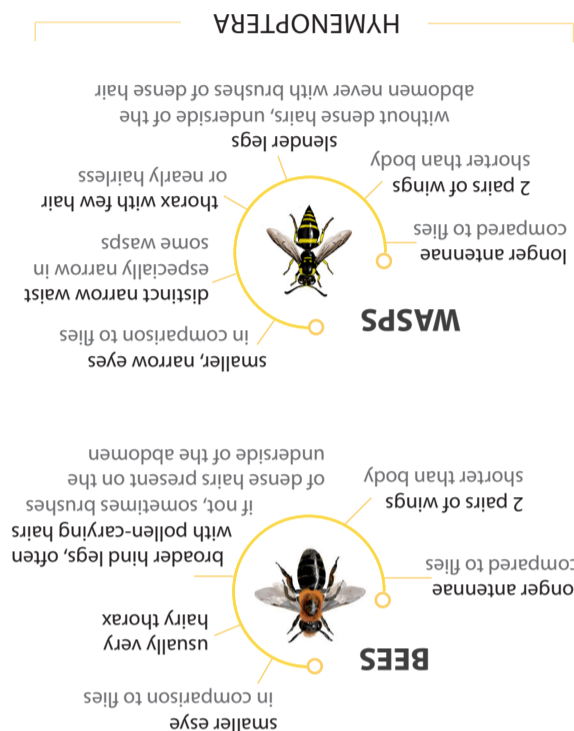
Hairless: only few hairs on the body surface

Short hairs: spots or bands of short dense hair

Long hairs: furry bees with long hair on most of the body



POLLINATING INSECTS



MORE THAN ONE BEE
The word "bee" is often referred solely to the honey bee, the highly social insect well known to provide the hive products. However, the honeybee is just one of more than 2000 bee species in Europe. The so-called wild bees, counting solitary, social and parasitic species, visit flowers and provide some extent of pollination service.

LIFE 4 POLLINATORS
The aim of the project is to improve pollinator conservation by creating a virtuous circle leading to a progressive change in practices across the Mediterranean region.



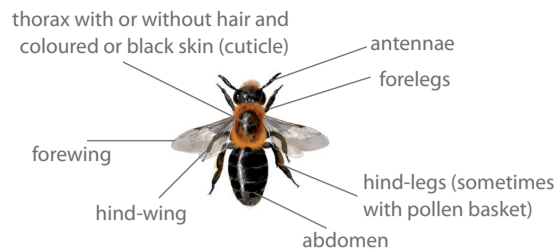
In Mediterranean countries (Spain, Italy, France and Greece) there is inadequate awareness about the role of wild pollinators and the importance of conserving their diversity. This knowledge gap is one of the main obstacles to proper planning of successful programmes to address the main drivers behind pollinator decline and ensure sustainable management and restoration of the remaining high-value pollinator habitats. The project will contribute to a range of EU policy and legislation, including amongst others the biodiversity strategy, the pollinators initiative and biodiversity protection under the common agricultural policy.

WHY BEES?
Bees are part of the pollinators guild altogether with butterflies, flies, beetles and other insects. All of them play a fundamental role in plant reproduction, but bees are a bit special amongst them. While other pollinators visit flowers only to feed themselves, female bees collect on flowers the nurture for their well-cared brood. The long bee tongue (ligula) is used to collect nectar from flowers, whilst the long and plumose hairs are used to gather the pollen grains. However, bees make up a surprisingly diverse group in shape, color and size. Thus, we can find on flowers almost hairless bees with short ligule, which we cannot easily distinguish from the predatory wasps from which they evolved millions of years ago.

IDENTIFICATION TIPS
Assessing the diversity of wild bee is a good mean to evaluate the environmental complexity and resilience. Whenever we find many different bee species, we assume a great floristic diversity and an overall healthy ecosystem. This is a simplified guide, which, based on visible morphological traits only, allows the bees to be recognised within 15 morpho-groups and not at the level of individual species. Bees species are not easy to identify, but we regroup them in few big groups of species called morphogenera defined by few traits. The traits you need to observe at first are size, hairs and tegument colour. For each of these categories, we propose several classes. In each morphogenus more than one class per category may be present.



PHYSICAL & SOCIAL CHARACTERISTICS



Colletes (Colletidae)

Illustrated species:
Colletes hederæ



WINGS / CELLS
3 cells - Apex of marginal cell more or less distant from forewing margin

BODY LENGTH 13 - 30 mm

BODY

Ligula is short and bilobed, wide and flat. Pygidial plate is absent. Thorax with thick short hairs. Tergites with wide apical bands of pale coloured hairs.



Hylaeus (Colletidae)

Illustrated species:
Hylaeus communis



LEGS
Mostly small sized species, with few hairs. Cuticle generally black except yellow spotted anterior thorax tubercles

WINGS / CELLS
2 cells - Apex of marginal cell almost terminating on the forewing margin, pointed or tightly rounded

BODY LENGTH 4 - 8 mm

HEAD

Face with typical yellow or white marks

BODY

Mostly small sized species, with few hairs. Cuticle generally black except yellow spotted anterior thorax tubercles



Halictus (Halictidae)

Illustrated species:
Halictus scabiosae



WINGS / CELLS
3 cells - Curved basal vein.

BODY LENGTH 4 - 16mm

HEAD

Head of sub-rounded shape

BODY

Metallic hues, with body abundantly hairy. In medium and big species: abdomen cuticle is black, often with pale coloured bands on apical margins of tergites.



Lasioglossum (Halictidae)

Illustrated species:
Lasioglossum malachurum



WINGS / CELLS
3 cells

BODY LENGTH 4 - 16mm

SIMILAR GENUS: Andrena

HEAD

Head of sub-rounded shape

BODY

Most species have black cuticle, but some species can show metallic hues. Generally little hair, abdomen without bands.



Andrena (Andrenidae)

Illustrated species:
andrena thoracica



LEGS
Seta for pollen collection are present on the tibia of hind pair of legs (scopa)

WINGS / CELLS
3 cells - Basal vein is almost straight or slightly arch-shaped

BODY LENGTH 6 - 16mm

HEAD

Shape of head is a subtriangle

BODY

Pygidial plate is present and covered by fimbria. Seta for pollen collection are present on the sides of the propodeus and on the trocantera



Megachile (Megachilidae)

Illustrated species:
Megachile pilidens



WINGS / CELLS
2 cells - Apex of marginal cell more or less distant from forewing margin. Second recurrent vein terminates before the second submarginal vein.

BODY LENGTH 8 - 30 mm

HEAD

Strong mandibles, mostly 4- or 3-toothed.

BODY

First tergites strongly concave that allows the insect to elevate the abdomen upwards. Arolia missing between the two leg nails.



Osmia (Megachilidae)

Illustrated species:
Osmia bicornis



WINGS / CELLS
2 cells Sm. Apex of marginal cell more or less distant from anterior wing margin. Second recurrent vein terminates before the second submarginal vein.

BODY LENGTH 4 - 16mm

BODY

Cuticle sometimes with metallic hues ♀ with abdominal scopa (pollen brush)



Anthidium (Megachilidae)

Illustrated species:
Anthidium manicatum



WINGS / CELLS
2 cells Sm. Apex of the marginal cell more or less distant from the front edge of the wing. Second recurrent vein ending after the second submarginal vein.

BODY LENGTH 4 - 30 mm

BODY

Cuticle is mostly black and yellow; only few hairs ♀ with abdominal scopa. Arolia between the two leg nails absent or present.

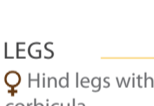


For more information on each group, please visit:
www.life4pollinators.eu/bees



Apis mellifera (Apidae)

Illustrated species:
Apis mellifera



LEGS
♀ Hind legs with corbicula

WINGS / CELLS
3 cells Sm. Marginal cell is an elongated ellipse, reaching the wing margin.

BODY LENGTH 13 - 16mm

BODY

Little hairy body, more hair on thorax; cuticle with reddish areas

Common name: **HONEY BEE**



Xylocopa (Apidae)

Illustrated species:
Xylocopa violacea



WINGS / CELLS
3 cells. Pigmented wings, sometimes with purple hue.

BODY LENGTH 13 - 30 mm

BODY

Body cuticle black or with metallic hue.



Bombus (Apidae)

Illustrated species:
Bombus terrestris



LEGS
♀ hind legs with corbicula (pollen basket)

WINGS / CELLS
3 cells Sm. First submarginal cell split in two by a narrow line

BODY LENGTH 13 - 30 mm

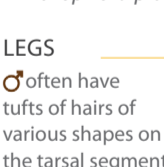
BODY

The whole body is very hairy with black cuticle. Patterns: black/yellow or white and black/red or orange



Anthophora (Apidae)

Illustrated species:
Anthophora plumipes



LEGS
♂ often have tufts of hairs of various shapes on the tarsal segments of the second pair of legs

WINGS / CELLS
3 cells Sm.

BODY LENGTH 8 - 16mm

BODY

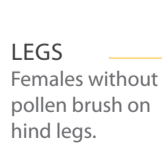
♀ Noticeable scopa on hind pair of legs. Whole body very hairy, with or without bands, rarely black.

Quick flight.



Nomada (Apidae)

Illustrated species:
Nomada sexfasciata



LEGS
Females without pollen brush on hind legs.

WINGS / CELLS
3 cells Sm. Apex of the marginal cell narrow and pointed, close to the front edge of the wing.

BODY LENGTH 4 - 16mm

ANTENNA

Antennae often at least partially red

BODY

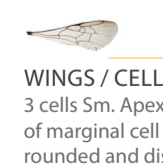
Body with few hairs. Wide parts of the body with bright red or bright yellow cuticle, or black with white or yellow spots.

Similar to wasps!



Ceratina (Apidae)

Illustrated species:
Ceratina cucurbitina



WINGS / CELLS
3 cells Sm. Apex of marginal cell rounded and distant from margin

BODY LENGTH 4 - 13mm

HEAD

♀ Face with typical pale yellow mark with an I shape.

♂ Face with typical pale yellow mark with a reverse T shape.

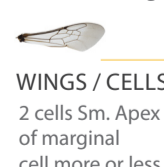
BODY

Most species are small, with few hairs and a black, green or metallic blue cuticle.



Eucera (Apidae)

Illustrated species:
Eucera longicornis



WINGS / CELLS
2 cells Sm. Apex of marginal cell more or less distant from forewing margin, pointed or tightly rounded.

BODY LENGTH 8 - 16mm

ANTENNA

♂ Antennae almost as long as the whole body.

BODY

Little hairy body, flattened, enlarged abdomen; black abdomen cuticle with light bands on the apical edges of the tergites.

