

Factsheet

Pollinator Bees



Every time that a bee forages from flower to flower, it performs one of the most important and beneficial functions for plants and flowers – **pollination**. Pollinators visit flowers in their search for food (nectar and pollen). During a flower visit, a pollinator may accidentally brush against the flower’s reproductive parts, depositing pollen from a different flower. The plant then uses the pollen to produce a fruit or seed. Many crops cannot reproduce without pollen carried to them by foraging pollinators. Some crops are auto-pollinated, but the best results are produced when plants are pollinated by animals like bees, bats, birds, butterflies, moths, lady bugs, ants and other insects. Crops such as tomatoes and eggplants need wild bee pollination to produce fruit. In particular, bees provide about 66% of the pollination in the world.

Why Are We Losing Pollinators?

- Climate change
- Pesticide use
- Habitat fragmentation
- Monocultures
- Disease
- Introduction of species that compete with and displace native species



Yield and production of many fruits and vegetables would not be possible without pollinators.

Agricultural practices, like chemical use and cultivation frequency and depth, may directly or indirectly affect bee health and habitat, because farm chemicals may come in contact with pollen, bees or nests. Not all crops are pollinated by honey bees (melliferous bees or *Apis mellifera*), so some practices are recommended to attract and keep wild bees (and other pollinators) on or near the farm.

Bees that pollinate crops in Puerto Rico and the USVI:

Crop	Pollinator Bee Species				
	<i>Ceratina guarnacciana</i>	<i>Exomalopsis</i> spp.	<i>Megachile lanata</i> (leafcutter bee)	<i>Melissodes trifasciata</i>	<i>Xylocopa mordax</i> (Carpenter bee)
Avocado					X
Eggplant		X			X
Pumpkin			X	X	X
Pigeon pea			X		X
Lemon					X
Watermelon		X			X
Pepper	X	X		X	
Tomato					X



Carpenter bee (*Xylocopa mordax*) (Photo: USGS).

Exomalopsis spp., *Megachile lanata* and *Melissodes trifasciata* nest in soil. In Jamaica, *M. lanata* was found nesting in clay nests in walls and abandoned nests of wasps in the *Sphecidae* family. *Ceratina guarnacciana* and *Xylocopa mordax* nest in dry dead branches.

Wild Flower Buffer Strips

Strips made of permanent diverse plants and abundant flowers provide nesting habitat and a continuous source of food for bees. These facilitate survival and protection against agricultural practices that may become noxious to bees. Wild flowers may be considered weeds, but kept in borders or along roadsides they

can reduce pesticide impacts and are beneficial to wildlife. It is important to maintain these strips to minimize or remove the impact of pesticides. Wild flower buffer strips can be planted and managed. The following table lists plants that can attract pollinators to local crops.

Vegetation for Wild Flower Buffer Strips

Plant Name	Pollinator			
	<i>Exomalopsis</i> spp.	<i>Megachile</i>	<i>Melissodes trifasciata</i>	<i>Xylocopa mordax</i>
<i>Amaranthus dubius</i> (spleen amaranth)	X			
<i>Arivela viscosa</i> (wild mustard)	X			
<i>Asystasia gangetica</i> (Chinese violet)	X			
<i>Centrosema virginianum</i> (spurred butterfly pea)				X
<i>Euphorbia heterophylla</i> (Mexican fireplant)	X			
<i>Euphorbia prostrata</i> (blue weed)	X			
<i>Helianthus annuus</i> - Girasol (common sunflower)				X
<i>Gynandropsis gynandra</i> (spiderwisp)	X			
<i>Kallstroemia maxima</i> (big caltrop)	X			
<i>Lantana</i> spp. (i.e., <i>Lantana camara</i>)				X
<i>Ludwigia octovalvis</i> (Mexican primrose-willow)	X			
<i>Macroptilium lathyroides</i> (wild bushbean)			X	X
<i>Malvastrum coromandelianum</i> (threelobe false mallow)	X			
<i>Melochia pyramidata</i> (pyramid flower)	X		X	
<i>Merremia quinquefolia</i> (rock rosemary)	X			
Other legumes		X		
<i>Prosopis juliflora</i> (mesquite, bayahonda blanca)		X		

Simple and economic practices can be used to increase native bee populations on your farm:

- Build mounds or leave dead tree trunks or brush in the area to help bees build their nests.
- Do not till or cultivate the soil where bee nests are present.
- Do not till a strip adjacent to the crop.
- Establish permanent strips of native flowering plants to attract wild bees.
- Avoid using pesticides when bees are foraging.
- Never apply pesticides when flowers are open, or on wild flowers.
- Allow native plants to flower near crops, orchards, plantations, roads and miscellaneous areas.
- Help to create a more favorable habitat for bees to build their nests.



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