



Why Pollinators Are Important and What We Can Do to Protect and Promote Them





Who are the pollinators?

There are between 100,000 and 200,000 species of invertebrate pollinators!!

à bees, butterflies, wasps, ants, moths, flies, and beetles

There are over 1000 species of vertebrate pollinators.

à birds, bats, small mammals, and a few reptiles





Why Are Pollinators Important?



Pollinators are a keystone species.

As the keystone species goes, so goes the ecosystem.

“Without the keystone species, the ecosystem would be dramatically different or cease to function at all.”

National Geographic Society



Why Are Pollinators Important?



Over 85% of the flowering plants on the planet require pollination.

This gives pollinators a very large role in maintaining biodiversity.

Fruits and seeds derived from insect pollination are a major part of the diet of approximately 25% of all birds, and of mammals ranging from voles to grizzly bears.

-- Xerces Society for Invertebrate Conservation



Why Are Pollinators Important?

Functioning ecosystems provide important services, including:

- moderation of weather extremes and their impacts
- mitigation of drought and floods
- nutrient cycling
- erosion protection
- detoxification
- pest control
- soil health preservation
- climate stability
- purification of water and air
- regulation of disease carrying organisms
- and pollination of crops and natural vegetation.





Why Are Pollinators Important?



Your produce choices
with bees



Pollinators are responsible for 1 in 3 bites of food humans eat.

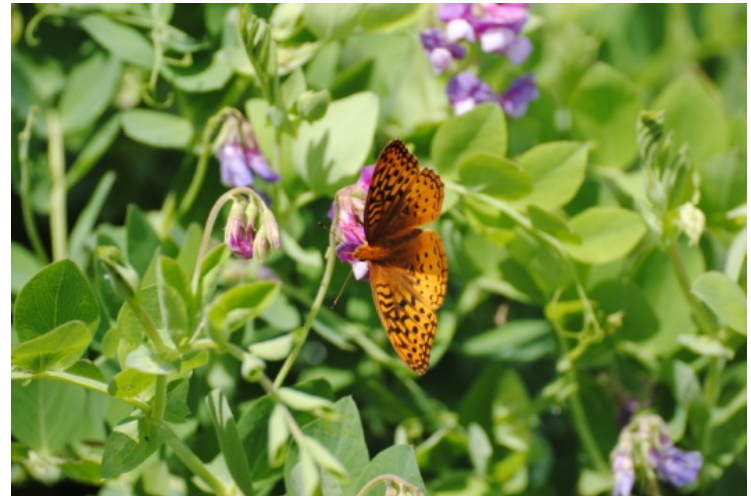
"Our nutritional security is intimately linked to pollinators, with many of our vitamins derived from pollinated crops. So there is this kind of link between pollinators, crops and human diets and ultimately health." Simon Potts, February 26, 2016



Pollinators impact the economy

Worldwide, pollinators contribute \$210 billion in agricultural earnings.

In the US, honeybees alone contribute \$17 billion in pollination services.





Why are we talking about pollinators today?

Pollinators are declining at alarming rates.

HONEY BEES – 2006 - COLONY COLLAPSE DISORDER

MONARCH BUTTERFLIES – 2014 - LOWEST WINTER POPULATION ON RECORD





Why are pollinators declining?

Habitat loss

Loss of biodiversity

Increased pesticide use → neonics

Introduced diseases and pests





What can we do to help?

On the farm:

- **Retain or restore natural habitat -**

- Marginal lands, edges, ponds, fallow fields, riparian buffers, snags, hedgerows and windbreaks

- **Create pollinator habitat –**

- Foraging habitat and nesting sites*

- CRP à other programs (CSP, CREP, GRP, WRP, EQIP, WHIP, Monarch Watch)

- **Eliminate or reduce pesticide use**



What can we do to help?

On the farm, continued:

- **Utilize farming strategies that support pollinators:**

Organic practices, agroecology, conservation biological control, integrated pest management, patch burn grazing, no-till, regenerative agriculture, and others

- **Plant natives!**
- **Increase soil health**
- **Increase diversity: habitat, crops, animals**
- **Utilize cover crops**
- **Reduce tillage**
- **Allow crops to bolt**





Native pollinator plants

Early

Antelope horn milkweed
Cream wild indigo
Prairie penstemon
Prairie spiderwort
Scarlet globemallow

Mid

Blanketflower
Lemon beebalm
Mexican hat
Narrowleaf coneflower
Narrowleaf mountain mint
Purple poppy mallow
White prairie clover

Late

Aromatic aster
Azure blue sage
Giant goldenrod
Maximilian sunflower
Showy goldenrod

Mid-late

Baldwin's ironweed
Dotted blazing star
Leavenworth's eryngo
Wholeleaf rosinweed





Resources

Xerces Society for Invertebrate Conservation - <https://xerces.org/pollinator-conservation/>

Pollinator Plant List - http://www.xerces.org/wp-content/uploads/2015/07/SouthernPlainsPlantList_July2015_web.pdf

Establishing Pollinator Meadows from Seed - <http://xerces.org/establishing-pollinator-meadows-from-seed/>

Using Farm Bill Programs for Pollinator Conservation - <http://xerces.org/guidelines/using-farm-bill-programs-for-pollinator-conservation/>

Guidelines -

Habitat Planning for Beneficial Insects

Farming for Bees



SARE - Cover Cropping for Pollinators and Beneficial Insects - <http://www.sare.org/Learning-Center/Bulletins/Cover-Cropping-for-Pollinators-and-Beneficial-Insects>

USDA – Using Farm Bill Programs for Pollinator Conservation - https://plants.usda.gov/pollinators/Using_Farm_Bill_Programs_for_Pollinator_Conservation.pdf



Thank
you!



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