



THE XERCES SOCIETY

FOR INVERTEBRATE CONSERVATION

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*An international
nonprofit organization
that protects wildlife
through the conservation of
invertebrates and their habitat*

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Pollinator Conservation Resources for the Eastern U.S.

Here are links promised during the webinar, and a few additional links. Please contact me if you have any questions or suggestions. *There is another pollinator webinar 14 August 2012 on organic methods for managing pollinator habitat. See the webinar schedule for details.*

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General Resources

Nearly all the resources listed (plus many others) can be found at the Xerces Society Pollinator Resource Center <http://www.xerces.org/pollinators-mid-atlantic-region/>

USDA Natural Resources Conservation Service pollinator resources

<http://plants.usda.gov/pollinators/NRCSdocuments.html>

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate>

Using Farm Bill Programs for Pollinator Conservation <http://www.xerces.org/wp-content/uploads/2009/04/using-farbill-programs-for-pollinator-conservation.pdf>

Attracting Native Pollinators <http://www.xerces.org/books/>

Farming for Bees <http://www.xerces.org/guidelines-farming-for-bees/>

Pollinator Conservation Guide compiled by Debbie Roos, NC Cooperative Extension (links to regional resources, plant list, and her fantastic photo gallery)

<http://chatham.ces.ncsu.edu/growingsmallfarms/pollinatorconservation.html>

Attracting Pollinators to Your Garden Using Native Plants

http://www.fs.fed.us/r9/wildlife/plants_botany/docs/National_Pollination_v3.pdf

Native Bee Benefits: How to Increase Native Bee Pollination on Your Farm in Several Simple Steps <http://winfreelab.rutgers.edu/documents/NativeBeeBenefits2009.pdf>

Farming for Native Bees in Delaware

http://dda.delaware.gov/publications/plant_industries/Bee%20Guide_07.pdf

Meadows & Buffers for Bees: Creating Mid-Atlantic Pollinator Habitats

http://matthewsarver.com/downloads/Meadows_and_Buffers_for_Bees.pdf

National Sustainable Agriculture Information Service's *Alternative Pollinators: Native Bees*

<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=75>

Organic Farming for Bees toolkit <http://www.xerces.org/organic-farms/>

Wild Pollinators of Eastern Apple Orchards

http://www.fruit.cornell.edu/tree_fruit/resources/wild_pollinators.pdf

WV Pollinator Handbook

<http://www.xerces.org/wp-content/uploads/2009/11/WVPH-SEC.pdf>

Minimizing Pesticide Risks

How to Reduce Bee Poisoning from Pesticides

<http://extension.oregonstate.edu/catalog/pdf/pnw/pnw591.pdf>

Pesticide Considerations for Native Bees In Agroforestry

<http://www.unl.edu/nac/agroforestrynotes/an35g09.pdf>

USDA Agroforestry Guidelines for Supporting Pollinators

Sustaining Native Bee Habitat For Crop Pollination <http://www.unl.edu/nac/agroforestrynotes/an32g06.pdf>

Improving Forage For Native Bee Crop Pollinators <http://www.unl.edu/nac/agroforestrynotes/an33g07.pdf>

Enhancing Nest Sites For Native Bee Crop Pollinators <http://www.unl.edu/nac/agroforestrynotes/an34g08.pdf>

Windbreaks (read hedgerows) for pollinators (p 8-10) <http://www.unl.edu/nac/insideagroforestry/vol20issue1.pdf>

Plants & Nest Management for Pollinators

Mid-Atlantic Plants for Native Bees <http://www.xerces.org/wp-content/uploads/2010/01/midatlantic-plants-for-bees-xerces3.pdf>

Southeast Plants for Native Bees http://www.xerces.org/wp-content/uploads/2010/06/plants-fact-sheet_southeast.pdf

Native Plants for Wildlife Habitat and Conservation <http://www.nps.gov/plants/pubs/chesapeake/>

Managing Alternative Pollinators <http://www.sare.org/Learning-Center/Books/Managing-Alternative-Pollinators>

The Lady Bird Johnson Wildflower Center has an online database that includes Xerces' recommended pollinator/conservation biocontrol plants. If you scroll below the map, you will see the "Value to Beneficial Insects" collection (which includes some 1,500+ records for the U.S. and Canada). Within the collection there are separate categories for native bees in general, bumble bees, honey bees, key plants that provide nest habitat, and plants for conservation biological control. Within each sub-category, you can refine your search based upon which state you live in, as well as a number of other categories (annuals vs perennials, bloom time, shade tolerance, soil moisture requirements, height, flower color, and so on). <http://www.wildflower.org/collections/>

Delaware Native Plants for Native Bees

<http://dda.delaware.gov/plantind/forms/publications/Delaware%20Native%20Plants%20for%20Native%20Bees.pdf>

Pollinator planting guides <http://pollinator.org/guides.htm>

Wildflower meadows for wildlife and pollinators (plant list p 5) http://plants.usda.gov/pollinators/Conservation_Cover_Wildflower_Meadow_for_Wildlife_and_Pollinators_327a.pdf

Bumble Bee & Butterfly Conservation

<http://www.xerces.org/bumblebees/>

Rusty patched and yellowbanded bumble bee pocket guides & "Wanted" posters

http://www.xerces.org/wp-content/uploads/2009/02/affinis_pocketid.pdf

http://www.xerces.org/wp-content/uploads/2009/02/terricola_pocketid1.pdf

http://www.xerces.org/wp-content/uploads/2008/09/wanted_affinis.pdf

http://www.xerces.org/wp-content/uploads/2008/09/wanted_terricola.pdf

Butterfly conservation <http://www.xerces.org/butterfly-conservation/>

Bee Identification & Monitoring

[Bugguide.net](http://bugguide.net) and DiscoverLife.org

Sam Droege of USGS has posted many slideshows on bee families and genera <http://www.slideshare.net/sdroege>

Sam has also posted YouTube videos on monitoring techniques <http://www.youtube.com/user/swdroege>

Pennsylvania Citizen Science Bee Monitoring Guide and Pocket Guide

http://www.xerces.org/download/pdf/PA_Xerces%20Guide.pdf

http://www.xerces.org/download/pdf/PA_Pocket_Guide.pdf

Eastern bumble bees <http://www.fs.fed.us/wildflowers/pollinators/documents/BumbleBeeGuide2011.pdf>

North American bumble bees <http://www.bumblebee.org/NorthAmerica.htm>

Ohio bee identification guide http://www.oardc.ohio-state.edu/ale/images/Bee_ID_guide.pdf

Native Bee Posters <http://www.fs.fed.us/wildflowers/features/posters.shtml>

<http://nrcspad.sc.egov.usda.gov/DistributionCenter/product.aspx?id=795>

Video Clips of Buzz Pollination, Mining Bees, and SW VA Bee Crop Pollinators

http://www.youtube.com/user/MelittologyNancy?ob=0&feature=results_main

Follow-up to questions asked in the webinar not covered in the webinar or links above:

Pycnanthemum tenuifolium looks very similar to *Pycnanthemum virginianum*, but the first is common in bogs, meadows and low open pastures (at least in NC, where Debbie, the questioner is located) and the 2nd is not common and found in woodlands.

Is there a minimum acreage needed to support bees? Minimum acreage required for NRCS practices will vary with the practice and state. In general, there is no set amount of acreage that will provide for bees since so many things affect how they will use a site. We just don't know the clear relationship between the amount of habitat and the service provided. There has been research in CA showing that if 30% of the landscape around crops is natural, it supports enough pollinators for watermelon. Research in NJ and PA shows that heterogeneity and smaller crop acres (fields in the mid-Atlantic are on average less than 100 acres), support a lot of pollination. Also, habitat should be large enough to buffer itself against pesticide drift or other threats. We know that habitat is providing pollination service, and have a research proposal pending that aims to get some more answers for this question.

Are Africanized honey bees affecting native bees and is there competition between honey bees and native bees? There is research on competition. Some indicates complementary relationships in pollinating some crops (like in hybrid sunflower and strawberry). Some does indicate that honey bees do displace native bees. Other studies have found that the displaced populations return when honey bees are removed and/or that the native bees are not displaced from an area, but change their foraging habits. Potential negative effects of honey bees are associated with transition and spread of disease, as well as pollination of exotic invasive species, which are visited more by exotic bees (which include honey bees) than native bees (but those impacts are on whole ecosystems, not just bee populations). If you would like specific papers on these issues, please email me.

