



Pollinator Conservation Resources for the Eastern U.S.

Here are some web links for pollinator conservation. Please contact me if you have any questions or suggestions. Thank you for supporting pollinators!

Nancy Lee Adamson, nancy@xerces.org or nancy.adamson@gnb.usda.gov

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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/pollinator-conservation/>

Attracting Native Pollinators & Farming With Native Beneficial Insects: Ecological Pest Control Solutions
<http://www.xerces.org/books/>

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

Natural Resources Conservation Service (NRCS) pollinator resources
<http://plants.usda.gov/pollinators/NRCSdocuments.html>
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate>

NRCS Using Farm Bill Programs for Pollinator Conservation
<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=37370.wba>

Pollinator & beneficial insect webinars (in "Insects & Pollinators" category)
<http://www.conservationwebinars.net/>

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

Pollinator Conservation Guide compiled by Debbie Roos, NC Cooperative Extension (links to beneficial insect habitat research, regional resources, fantastic photo gallery)
<http://chatham.ces.ncsu.edu/growingsmallfarms/pollinatorconservation.html>

Insect Pollination of Cultivated Crop Plants
<http://afrsweb.usda.gov/sp2userfiles/place/53420300/onlinepollinationhandbook.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

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

Farming for Beneficial Insects (Pollinators, Predators, & Parasitoids) slide show
<http://www.slideshare.net/NancyXerces/southern-sawg-farming-for-beneficial-insects-pollinators-predators-ssawg-15-to-18-jan-2014>

Conservation Biological Control & Minimizing Pesticide Risks

- Xerces Society pesticide-related publications <http://www.xerces.org/pesticides/>
 - *Beyond the Birds and the Bees: Effects of Neonicotinoid Insecticides on Agriculturally Important Beneficial Insects*
 - *Are Neonicotinoids Killing Bees?*
 - *Neonicotinoids in Your Garden*
 - *Organic-Approved Pesticides: Minimizing Risk to Pollinators*
 - *How to Reduce Bee Poisoning from Pesticides*
 - *Ecologically Sound Mosquito Management in Wetlands*
- Xerces Society conservation biological control resources <http://www.xerces.org/conservationbiocontrol>

- Wild Farm Alliance Biodiversity Conservation Guides http://wildfarmalliance.org/resources/organic_BD.htm
- How to Protect Honeybees [read "and Other Bees"] from Pesticides http://www.clemson.edu/public/regulatory/pesticide_regulation/bulletins/bulletin_5_protecting_honeybees.pdf
- Pesticide Considerations for Native Bees In Agroforestry <http://www.unl.edu/nac/agroforestrynotes/an35g09.pdf>
- Biorationals: Ecological Pest Management Database by Rex Dufour (ATTRA) <https://attra.ncat.org/attra-pub/biorationals/>
- USDA pest ID guides <http://blogs.usda.gov/2013/08/14/busting-bugs-usda-creates-online-tools-to-id-pests/>
- USDA Preventing or Mitigating Potential Negative Impacts of Pesticides on Pollinators Using Integrated Pest Management and Other Conservation Practices <http://directives.sc.egov.usda.gov/34828.wba>

Agroforestry Guidelines & Benefits of Invasive Plant Removal for Supporting Pollinators

- Working Trees for Pollinators http://nac.unl.edu/Working_Trees/brochures.htm
- Use Agroforestry to Help Pollinators http://nac.unl.edu/documents/insideagroforestry/IA_vol23issue2_pollinators.pdf
- Sustaining Native Bee Habitat For Crop Pollination <http://nac.unl.edu/documents/agroforestrynotes/an32g06.pdf>
- Improving Forage For Native Bee Crop Pollinators <http://nac.unl.edu/documents/agroforestrynotes/an33g07.pdf>
- Enhancing Nest Sites For Native Bee Crop Pollinators <http://nac.unl.edu/documents/agroforestrynotes/an34g08.pdf>
- Windbreaks (read hedgerows) for pollinators (p 8-10) <http://www.unl.edu/nac/insideagroforestry/vol20issue1.pdf>
- Article by foresters Scott Horn and James Hanula on resurgence of native been populations following removal of invasive Chinese privet from forest understory http://www.srs.fs.usda.gov/pubs/ja/2011/ja_2011_hanula_003.pdf

Habitat Assessment, Plants, & Nest Management for Pollinators

- Pollinator Habitat Assessment Form and Guide <http://www.xerces.org/pollinator-conservation/habitat-assessment-guides/>
- Milkweeds: Conservation Practitioner's Guide <http://www.xerces.org/milkweeds-a-conservation-practitioners-guide/>
- Bee-friendly Plant Lists <http://www.xerces.org/pollinator-conservation/plant-lists/>
- Native Plants for Wildlife Habitat and Conservation <http://www.nps.gov/plants/pubs/chesapeake/>
- Farmscaping with Native Plants by Josh Fodor <http://www.ecolandscaping.org/09/native-plants/farmscaping-with-native-plants/>
- The Lady Bird Johnson Wildflower Center Xerces' recommended pollinator and conservation biocontrol plants. View "Value to Beneficial Insects" <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>
- USDA-NRCS Seedling ID Guide for Native Prairie Plants www.plant-materials.nrcs.usda.gov/pubs/mopmcpu6313.pdf
- Managing Alternative Pollinators <http://www.sare.org/Learning-Center/Books/Managing-Alternative-Pollinators>
- [Pollinator Management for Organic Seed Producers](http://www.xerces.org/wp-content/uploads/2013/06/PollinatorManagementForOrganicSeedProducers.pdf)
<http://www.xerces.org/wp-content/uploads/2013/06/PollinatorManagementForOrganicSeedProducers.pdf>

Pollinator Conservation in Urban Areas/Communities

- Pollinator Friendly Parks http://www.xerces.org/wp-content/uploads/2009/05/pollinator_friendly_parks_21ed_xerces_society.pdf
- Bee City USA <http://www.beecityusa.org> (has wide variety of resources regarding sustaining pollinators in urban/suburban areas and local list of native plants showing which local nurseries carry them)
- Wild Ones <http://www.wildones.org/>
- Going Native: Urban Landscaping for Wildlife With Native Plants <http://www.ncsu.edu/goingnative/>

Bee Identification & Monitoring

- *The Bees in Your Backyard: A Guide to North America's Bees* by Joseph S. Wilson & Olivia Messinger Carril <http://press.princeton.edu/titles/10593.html>
- *Pollinators of Native Plants* by Heather Holm. Though Midwestern focus, still an excellent resource for the east, highlighting bees and other insects along with the native plants they visit.
- Fantastic 68 page field guide for observing bees http://eol.org/info/disc_observer
- [Bugguide.net](http://bugguide.net) and DiscoverLife.org
- Sam Droege of USGS & colleagues resources
 - video on how to use DiscoverLife bee ID guide <http://www.youtube.com/watch?v=75klhCa2vEM>

- slideshows on bee families and genera <http://www.slideshare.net/sdroege>
- videos on monitoring techniques <http://www.youtube.com/user/swdroege>
- stunning (identified to species) close-ups of bees at <http://www.flickr.com/photos/usgsbiml/sets/>
- *Common Bees and Best Bee Plants of the East* webinar <http://www.conservationwebinars.net/webinars/common-bees-and-best-bee-plants-of-the-east/>
- USGS Pollinator Library <http://www.npwrc.usgs.gov/pollinator/>
- Bees of Georgia <http://native-bees-of-georgia.ggc.edu/>
- Great Sunflower Project (monitoring) <http://www.greatsunflower.org/>
- Native Buzz (nest monitoring) <http://entomology.ifas.ufl.edu/ellis/nativebuzz/default.aspx>
- 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.xerces.org/wp-content/uploads/2008/09/Eastern_Bumble_Bee.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
- Key for bee genera of Eastern Canada http://www.biology.ualberta.ca/bsc/ejournal/pgs_03/pgs_03_key.html
- Mason bee observation box <http://nurturing-nature.co.uk/wild-bee-nesting-box/>

Bumble Bee & Butterfly Conservation

<http://www.xerces.org/bumblebees/> and <http://bumblebeewatch.org/>
Join Bumble Bee Watch <http://www.youtube.com/watch?v=vTLKMAtXGnA>
Conserving Bumble Bees http://www.xerces.org/wp-content/uploads/2012/06/conserving_bb.pdf
Butterfly conservation <http://www.xerces.org/butterfly-conservation/>
Butterfly habitat http://www.nababutterfly.com/guide_index.html
Monarch Watch & Monarch Joint Venture <http://monarchwatch.org/> and <http://monarchjointventure.org/>

Native Bee Posters

<http://www.fs.fed.us/wildflowers/features/posters.shtml>
<http://www.dmnh.us/>
<http://nrcspad.sc.egov.usda.gov/DistributionCenter/search.aspx?Keywords=pollinator> (NRCS may be out of pollinator posters, but check back periodically. New posters are developed annually.)
Native bees by Alex Surciă <https://www.facebook.com/Digital.Museum.of.Natural.History> (look in photos)

Video Clips

Marla Spivak's TED Talk http://www.ted.com/talks/marla_spivak_why_bees_are_disappearing.html
Bee pollinators of SW VA crops https://www.youtube.com/watch?v=l_etyEdu9fQ
Native plants visited by various native bees <https://www.youtube.com/watch?v=HhC5iY0ijJM>
Leaf-cutter bee <http://www.arkive.org/megachile-leaf-cutter-bee/megachile-centuncularis/video-00.html>
Hibiscus bee <http://www.youtube.com/watch?v=JxBMRuMp35o>
Mining bees <http://www.youtube.com/watch?v=Bwzz9tNKUE8>

Fire

Good fires <http://www.goodfires.org/>

Additional Resources for NC region

- NC Research Stations (conservation techniques & plantings to support pollinators) <http://www.ncagr.gov/research/>
- NC Botanical Gardens showcases regional native plant communities <http://ncbg.unc.edu/>
- NC Native Plant Society <http://www.ncwildflower.org/>
- NC Plant Conservation <http://www.ncplantfriends.org> and <http://www.ncagr.gov/plantindustry/plant/plantconserve/>
- NC Wildlife Resources Commission <http://www.ncwildlife.org/>
- NC Land Trusts <http://www.ctnc.org/> and <http://www.blueridgeforever.info/>
- Land Trusts near Fletcher, NC <http://www.carolinamountain.org/> and <https://www.appalachian.org/>
- NC Environmental Ed. Certification Program <http://www.eenorthcarolina.org/certification--about-the-program.html>
- Living Web Farms <http://www.livingwebfarms.org/>

- NC & SC Lepidoptera (butterflies and moths) sites (most shared by Sudie Thomas, SC NRCS Wildlife Biologist)
 - <http://www.carolinabutterflysociety.org/>
 - <http://www.dpr.ncparks.gov/nbnc/> - detailed records of all butterfly species in SC and NC- maps, photos, etc.- data often gleaned from the listserve, verified by Harry LeGrand in NC (NC Natural Heritage Program)
 - <http://www.jeffpippen.com/carolinaleps.htm> - subscribe to listserve
 - <https://lists.duke.edu/sympa/arc/carolinaleps> - listserve archives
 - Monarch Rescue (national orgs listed above) <http://www.storypowered.com/monarch/>

Books on native plants, pollinators, and other insects/wildlife

- *Flora of the Southern and Mid-Atlantic States* <http://www.herbarium.unc.edu/flora.htm> (available as an app as FloraQuest) by Alan Weakley
- *Wildflowers and Plant Communities of the Southern Appalachian Mountains and Piedmont: A Naturalist's Guide to the Carolinas, Virginia, Tennessee, and Georgia* by Timothy Spira <http://uncpress.unc.edu/books/T-6813.html>
- *Bringing Nature Home: How You Can Sustain Wildlife with Native Plants* by Doug Tallamy and the 2014 how-to with Rick Darke *The Living Landscape: Designing For Beauty And Biodiversity In The Home Garden.*
- *Noah's Garden: Restoring the Ecology of Our Own Backyards* by Sara Stein
- *Garden Insects of South Carolina: Beneficial Species and Potential Pests* by Merle Shepard and Ed Farnworth, published by the Lowcountry Biodiversity Fndation. www.lcbiodiversity.org

Xerces Society on Facebook

Xerces' Facebook page highlights current news and events related to invertebrate conservation (pollinators and much more) <https://www.facebook.com/pages/The-Xerces-Society/193182577358618?ref=stream>