

Introduction to Singing Insects

This will be a quick overview: I started a survey of singing insects in DuPage County in 2006.

The group is not defined by systematics but by having behavioral displays we can hear.
2 orders represented: cicadas in Homoptera, crickets and katydids and a few grasshoppers in Orthoptera; potential of more than 50 species in Chicago Wilderness area.

PowerPoint slide show and recordings: this will feature just a few species to give an idea of the range of forms and sounds.

Woodland slide, early to mid-season species

Protean shieldback **and recorded sounds**

Predaceous

Woodland slide, mid- to late-season species

Linne's cicada **and recorded sounds**

Several species of dog day cicadas in late summer into fall

Greater angle-wing **and recorded sounds**

Common true katydid **and recorded sounds**

Say's trig **and recorded sounds**

Broad-winged tree cricket **and recorded sounds**

Broad-winged was not found north of the state midline in a 1930's survey, but I have found it common in many DuPage preserves.

Dolomite Prairie slide

Black-legged meadow katydid **and recorded sounds**

Sword-bearing conehead **and recorded sounds**

Tallgrass Prairie slide

Texas bush katydid (I am not making this up! As Dave Barry would say), **sound**

Recording has mix of day (similar to broad-winged bush katydid's) and night (distinctive) songs

Snowy tree cricket **and recorded sounds**

Path slide

Greenstriped grasshopper **and recording**

Our earliest singer, in a group of grasshoppers whose wings rattle in flight

Field cricket (spring and fall sibling spp. separated by time rather than **song**)

Allard's ground cricket **and sound**

Ground crickets common and diverse, smaller than field crickets.

Periodical Cicadas, 2007

Two species

Small size

Pre-settlement map

Forest species, expected to match forest locations

Map of my emergence data

Does not match expectations

Three-lobed area follows commuter rail lines

1874 Atlas map

I looked back at historical records; the atlas showed detailed forest outlines, 1874

Newspaper quotes: cicadas once abundant in areas I did not find them in 2007; these include forested areas in original survey

Railroad picture from atlas

Railroads significant, eastern DuPage towns boomed around them and people planted trees, establishing urban forests into which cicadas spread.

Also, agriculture curtailed in eastern DuPage, preserving forest habitat until cicadas could spread into towns.

Wayne Grove forest area photo

In western DuPage agriculture dominated for a longer time. By 1939, little forest was left

I looked at all the major forest blocks in the original survey, and by studying the 1874 atlas, 1939 aerial photos, and present-day GoogleEarth images, identified the bottleneck for each area

Bottleneck data

Above 50ha, all but one forest area had cicadas in large numbers in 2007

The exception, St. James Farm with only a few, was isolated by several miles

Wheaton-Glen Ellyn aerial 1939

Cicadas continue to spread, as shown over the 1939 photo

Same area present day

The habitat is there, only the 17-year generation time and dispersal limitations hold them back

Citizen data map

The citizen data are similar to my own emergence map, but reflect a significant dispersal that took place during a 3-day period in early June. Whether that will lead to more widespread cicadas in 2024 remains to be seen.

Acknowledgements and contact info. For an annotated list of northeast Illinois species which summarizes my experience to date, request via e-mail: cstrang@dupageforest.com also updated via my blog: <http://natureinquiries.wordpress.com>

Resources:

Singing Insects of North America website (song recordings for crickets and katydids available there unless indicated otherwise; <http://buzz.ifas.ufl.edu/>)

Michigan cicada website

(http://insects.ummz.lsa.umich.edu/fauna/Michigan_Cicadas/Michigan/Index.html)

Elliott and Hershberger (*The Songs of Insects*, a book with excellent photos and CD)

Rannels et al. CD (*Songs of Crickets and Katydid of the Mid-Atlantic States*)