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 Katydids of the Mid-Atlantic States)